

**Charismatic Leadership in Context:  
Awe-Inducing Environments Influence Leader Perceptions**

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### Abstract

Research on charismatic leadership has thus far largely overlooked contextual factors that interact with charisma. Context, however, is a necessary element of any holistic leadership theory and central to the practical field as managers and CEOs always act in physical, organizational, social, and situational environments. The current research aims to provide a first step towards understanding contextual factors in charismatic leadership. Three studies – a vignette, a picture and a video study – were conducted to investigate the effect of environmental awe on the extent to which leaders appear charismatic to their followers. The first study demonstrated that environmental awe increased perceived leader charisma for leaders naturally low but not high in charisma. In the second study, this effect held for both leaders low and high in natural charisma, but was smaller for the latter group. The effect extended to perceived leader effectiveness as one exemplary consequence of leader charisma, but not to the unrelated construct of leader morality. Unexpectedly, the third study showed an effect of awe in the opposite direction, i.e. low and not high environmental awe increased charisma perceptions. Finally, results showed that this effect was mediated by positive affect. The implications of our results and the conflicting findings of the third study are discussed from a methodological, theoretical, and practical perspective.

### **Charismatic Leadership in Context**

Charisma is an important characteristic attributed to many successful leaders.

Leadership theories suggest that charismatic leaders have the power to transform followers' needs, values, preferences, and aspirations (House & Howell, 1992). Both field and laboratory studies have shown that leader charisma predicts leader effectiveness (Lowe, Kroeck, & Sivasubramaniam, 1996), and charismatic leaders, compared to non-charismatic leaders, significantly increase followers' commitment, satisfaction, motivation, performance, trust in the leader, effort, and organizational citizenship behavior (Waldman & Yammarino, 1999). Thus, leader charisma is a central component of strategic and successful leadership (Bass & Stogdill, 1990; Hunt, 1991; Pawar & Eastman, 1997) and an understanding of the factors that increase how charismatic leaders are perceived is of key importance for today's managers and CEOs.

Though charisma has long been of great interest to researchers from different disciplines and has played a central role in theories of leadership, pertinent research has thus far mostly been limited to the effects of charismatic leadership. At least partially, this is due to the fact that most definitions of charismatic leadership explain the concept by its consequences (Antonakis, Bastardo, Jacquart, & Shamir, 2016). The presupposed effects included in extant definitions are then tested in empirical studies. The majority of these studies looked at positive outcomes, such as increased motivation of followers, trust in leaders' beliefs, identification with the leader, emotional involvement with the mission and increased self-efficacy (e.g. Etzioni, 1975; House, 1976; Shamir, House, & Arthur, 1993); only some consider negative outcomes such as unquestioned leader obedience and the acceptance of the leader, or the suppression of emotions (e.g. House, 1976; Menges, Kilduff, Kern, & Bruch, 2015). The effects of charismatic leadership are thus well-known.

In contrast, the context that charismatic leadership is embedded in has thus far mostly been overlooked (Shamir & Howell, 1999). Very few situational contextual variables have been investigated, including the occurrence of a crisis, and attributional ambiguity. Some theoretical explorations have also considered the effect of other contextual variables (Shamir & Howell, 1999), however, no empirical research has been conducted to support these claims. Contextual investigations are thus very limited. To our knowledge, no research has yet looked at basic contextual variables present in all leadership situations, such as the physical office environment that charismatic leaders act in.

The central importance of contextual factors for an understanding of leadership and its consequences in general has recently received increased attention in the literature (e.g. Dinh et al., 2014; Porter & McLaughlin, 2006). Taking away context from considerations and investigations of leadership also takes away any link to the practical field where context cannot be removed. As Porter and McLaughlin (2006) phrase it, “leadership in organizations does not take place in a vacuum” (p.559). Like any kind of leadership, charismatic leadership thus takes place in a context, and therefore needs to be understood in its interacting effects with environmental variables. While a solely leader-focused perspective on charisma may still be theoretically interesting and help explain the ‘pure’ construct, it will always be incomplete and miss important theoretical aspects explaining the interaction of charisma and other variables. Such explanations, however, are necessary to increase an understanding of the effects of charismatic leadership as we find them in organizations. On a practical level, considerations of context are necessary to be able to draw any conclusions from experimental research and develop concrete practical guidelines for today’s leaders. The context leaders find themselves in, can broadly be divided into the physical context (the office environment), the work context (e.g. task variety, responsibility), the organizational context (e.g.

organizational life-cycle stage, culture), the social context (e.g. climate, leader distance) and situational characteristics (e.g. a crisis).

The work, organizational and social context are all complex classes of environmental factors involving a large variety of facets. The physical work environment component, by contrast, is less complex. Regarding physical characteristics, we argue that the main and most obvious difference between environments is the extent to which they impress. Such an appearance may be due to e.g. size, modern design, or color, but regardless of what makes these environments impressive, they will all induce the feeling of awe in perceivers. Awe has been shown to be a very powerful emotion (e.g. Keltner & Haidt, 2003; Piff, Dietze, Feinberg, Stancato, & Keltner, 2015; Rudd, Vohs, & Aaker, 2012; Shiota, Campos, & Keltner, 2003). We thus argue that, likely, awe influences how people perceive leaders in an environment that creates this emotion. Given our focus on leader charisma, we are interested in the effects that awe induced by the environment has on followers' perceptions of charismatic leaders in this environment.

The present research therefore looks at environmental awe as one specific contextual variable and its potential effect on perceived leader charisma. Specifically, we argue that the extent to which the environment a leader is in induces awe in people in that environment, may affect their perceptions of leader charisma through spillover or misattribution processes. To our knowledge, no extant research has yet investigated contextual spillover effects on leader charisma, i.e. there have not been any studies looking at whether characteristics of the environment transfer to leaders in that environment and thereby change how they are perceived by followers. Theories of transfer, spillover, or misattribution can provide some indication as to how charisma and context may interact: assuming spillover effects, the attribution of context as one stimulus may influence the attribution of another stimulus embedded in the first, i.e. the leader. Thus, followers may, subconsciously, attribute

characteristics of the context to the leader and thereby have a different perception of the leader than they would have independent of the context. *Misattribution* processes may therefore explain differences in leader perceptions depending on the context the leader is in.

Understanding the effect of context on leader charisma perceptions makes a twofold contribution. First, it improves our understanding of charisma by enriching our knowledge of factors that influence charisma perceptions and the conditions under which the same leaders may seem more or less charismatic. Invoking context goes beyond the idea of a solely leader-focused theory of charisma and moves towards a more holistic understanding of the concept. Second, understanding contextual influences of leader charisma perceptions will contribute towards concrete recommendations for the practical field. Understanding context elements that foster charisma perceptions can help non-charismatic leaders to emulate the benefits of charismatic leadership through a simple manipulation of contextual factors.

### **Theoretical background**

The following will provide an overview of charisma and awe as our main variables to establish the theoretical base from which we developed the hypotheses for the present research. We will start by explaining the construct of charisma from a historical perspective and justify our choice of definition. We will then focus in some detail on the few attempts that have been made to understand contextual factors that influence charismatic leadership. Next, we will turn to awe and explain the construct and outline some effects of the emotion established in prior research. The focus here is on awe felt in response to charismatic leaders, as this is an interesting cross point between the two variables. Charisma and awe will finally be linked to provide the rationale for an interaction effect between the two. We will explain the processes we suggest underlie this interaction and propose a mediator that gives a more detailed explanation of the expected effects. Together, both will serve as the rationale of our hypotheses, which will be specified in the next section.

**Charisma.** Weber (1947) introduced charisma in the field of sociology as a somewhat mystical notion, an exceptional power that allowed leaders to have a special authority over their followers. Although Weber (1947) engaged in great detail with the idea and the concept of charisma, he never offered a definition (Antonakis et al., 2016). Making the occurrence of a crisis the core of his theory, he argued that the special authority given in charismatic leadership always results from a crisis, be it psychic, physical, economic, ethical, religious or political distress. This, in turn, was said to change followers into people devoted to their leaders who would enthusiastically help them on their mission and spread hope and optimism while losing all negative expectations and feelings of despair (Weber, 1947). Trice and Beyer (1986) formalized these ideas into five necessary conditions for charismatic leadership: (1) a person with extraordinary gifts, (2) a crisis, (3) a radical solution to the crisis, (4) followers who are attracted to an exceptional person because they believe that they are linked through him or her to transcendent powers, and (5), the validation of the person's gifts and transcendence in repeating experiences of success.

Over time, different disciplines added different perspectives to the topic, e.g. Davies (1954), a political scientist, used charisma to refer to the relationship between leaders and their followers, not to a leader characteristic. The modern idea of charisma is shaped by ideas from applied psychology and management. House (1976) offered a theory of charismatic leadership with possession of ideological goals and high expectations, role modelling, attention management, and communicated confidence in goal attainment as the central elements. Charismatic leaders were said to create intense emotional interactions with their followers, challenge existing structures, initiate important changes, and, often, though not necessarily, rise with a crisis. Bass (1985) integrated charismatic leadership into the general leadership literature and included it as one of three major components in his transformational leadership model. Transformational leadership was defined as a leadership type that



motivates followers to go beyond what they would otherwise be willing to do, and charismatic leadership was the emotional component of this construct (Bass, 1985). This conceptualization made charisma, at least theoretically, measurable, but evoked serious criticism. Van Knippenberg and Sitkin (2013) noted that no actual conceptual definition was provided and the measures used to develop the theory, the Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1995; Bass, 1985) hindered an advancement of further theoretical work on the construct. Despite this, the MLQ is still the dominant measure of leadership behavior today. In the most recent version of the questionnaire, charisma is assessed as the “idealized influence” component, consisting of both a behavioral and an attributional subcomponent, and the “inspirational motivation” component of transformational leadership. Various problems have been noted with the theory and the questionnaire. Antonakis et al. (2016), for example, bemoaned that most authors conflate charismatic and transformational leadership or even assert that they are the same, while they are clearly distinct, with transformational leadership including “intellectual stimulation” and “individualized consideration” as further components, aside charismatic leadership. Going one step further, Yukl (1999) claimed the two constructs may even be incompatible, e.g. if a leader is too transformational, this may prevent charisma from arising.

Antonakis et al. (2016) noted that many authors do not even attempt to give a definition but rather describe charisma as a miraculously given power (Davies, 1954); a relational property and ability of leaders to influence others (Etzioni, 1975); or some other unknown quality or gift leaders may possess. Alternatively, authors who do give a definition, often define the construct by its outcomes, antecedents, or with exemplars (see e.g. House, 1976; Spencer, 1973; Yukl, 1999). This, however, makes the definitions contingent upon empirical findings, which goes against the function of a definition (MacKenzie, 2003). For the present research, we thus sought to adopt a definition that avoids both setbacks. Such a

definition was provided by Antonakis et al. (2016), who identified the problems with the extant definitions and, in an attempt to solve them, not only incorporated psychological elements relevant to leadership, but also drew from economics to include a “signaling” component (Spence, 2002) in their theorizing. We follow their conceptualization and define charisma as *leader signaling that is values-based, symbolic, and emotion-laden*. This does not presuppose any effect; leaders will only influence followers to whom their values and advocated missions appeal (Antonakis et al., 2016), and may even be strongly disliked by people who do not share their values (Tucker, 1968).

The problems with previous definitions of charismatic leadership also limited empirical investigations that went above and beyond its direct consequences. Very few researchers looked at moderating influences, and those who did mostly concentrated on leader characteristics besides charisma. For example, Van Knippenberg and Van Knippenberg (2005) investigated the moderating role of leader prototypicality on the effect of self-sacrifice on leadership effectiveness. Self-sacrifice has been suggested to be a typical example of charismatic leadership behavior (Bass, 1985; Choi & Mai-Dalton, 1999; Conger & Kanungo, 1987; Jacobsen & House, 2001; Shamir et al., 1993) as such behaviors deliver the direct message that the leader considers the welfare of the group to be most important, and explicitly shows group-commitment (Van Knippenberg & Van Knippenberg, 2005). The researchers proposed that leader prototypicality raises trust in the group-orientedness of the leader, and thus reduces the contingency of group oriented behavior such as leader self-sacrifice on leader effectiveness (Van Knippenberg & Van Knippenberg, 2005). Results confirmed that the effect of self-sacrificing behavior on leadership effectiveness increased with a decrease in leader prototypicality. In a similar study, De Cremer and Van Knippenberg (2004) explored the moderating effect of leader confidence, on the same relation of leader self-sacrificial behavior on leadership effectiveness. Results showed the relation was stronger

when self-confidence was high than when it was low (De Cremer & Van Knippenberg, 2004). Finally, Shamir (1995) conducted a theoretical analysis of proximal and distant leader distance and an exploratory content analysis of interviews about the corresponding two kinds of leaders. Their results suggested that social distance is not necessary for charismatic leadership to arise, but charismatic leadership of a close leader possesses fundamentally different characteristics than that of distant leaders (e.g. leader image, exceptional rhetorical skills).

Even rarer are investigations of contextual influences on charismatic leadership. One study examining the moderating effect of crisis looked at the presidential leadership of George W. Bush before and after the terrorist attacks of September 11 (Bligh, Kohles, & Meindl, 2004). Crisis is a particularly interesting contextual factor to look at as it was initially included in the definition of the construct of charisma (Weber, 1947). Bligh et al. (2004) compared the rhetoric of Bush's public speeches before and after the crisis. They found that speeches were more charismatic after the crisis than before, and the media's portrayal of the President also showed an increase in charismatic rhetoric, indicating increased receptivity to an increase in charismatic leadership style after the crisis. Jacquart and Antonakis (2015) investigated another contextual factor, attributional ambiguity, in two empirical studies. They combined two streams of theories, one arguing leader evaluation occurs via inferential observer processes where the leader is compared to an ideal leader, and, the other, arguing that evaluations depend on knowledge of the leader's performance and skills. The authors argued for an interaction of the two processes, with attributional mechanisms forming the basis of leader evaluation when signals clearly indicate the quality of previous performance, and inferential processes dominating when situations are ambiguous. This was supported for the presidential election and a business context; the interaction predicted the selected president, as well as CEO retention. Finally, Shamir and Howell (1999) went beyond

situational characteristics and theoretically considered the effects of the contextual variables of organizational environment, life-cycle stage, technology, task goals, structure, culture, leader level in the organization, and circumstances surrounding leader appointment. However, their theoretical propositions were never empirically tested.

Therefore, efforts regarding moderating influences on perceived leader charisma have been very limited thus far. No study to our knowledge has looked at simple physical environmental influences. These, however, may be very powerful in that environments can evoke strong emotions that may influence the perceptions and attributions of the individual experiencing the emotion. One emotion potentially relevant to this is awe.

**Awe.** Awe is defined as an *emotional response to perceptually vast stimuli that transcend current frames of reference* (Piff et al., 2015). Keltner and Haidt (2003) note that experiencing beautiful things such as art, music, panoramic views or natural wonders may result in a variety of feelings, but the response occurring to all of them is best described as “awe”. Prototypically, this emotion occurs in the context of natural phenomena immense in size, scope, or complexity, e.g. the sky at night, the ocean, or mountains (e.g. Shiota et al., 2003; Shiota, Keltner, & Mossman, 2007), but can also be experienced in response to buildings and other architecture (Shiota et al., 2003).

Especially interesting for the present purpose is that charismatic leaders elicit the very same emotion in their followers. Menges et al. (2015) explored the expression of emotions in response to different kinds of leaders. In a series of three studies, involving both experiments and field research, the authors showed that charismatic leadership tends to cause followers to suppress their emotions, while the contrary is true for individual considerate leadership. Menges et al. (2015) concluded that, very likely, followers engage in a process in which they grant and confirm the high status of charismatic leaders. They are deemed “awe-struck”. This leads to a continuous reaffirmation of status differences between the leaders and their

follower: when one party expresses dominant assertive behavior, and another party matches this by submissive behavior, status differences are continuously established and reaffirmed (Grant, Gino, & Hofmann, 2011; Kiesler, 1983). Charismatic leadership, therefore, partially works through the awestruck effect, where followers suppress their own emotion as soon as they attribute high status to the leader, thus reinforcing this status difference (Menges et al., 2015). Concluding from this, awe can be a response to both environments and leaders.

Typical outcomes of awe are the experience of reduced time pressure (Rudd et al., 2012), reduced openness to being convinced by weak messages (Griskevicius, Shiota, & Neufeld, 2010), an increase in supernatural belief and intentional pattern perception as well as decreased tolerance for uncertainty making people more likely to believe in nonhuman agents and perceive human agency in random effects (Valdesolo & Graham, 2014), and activated religious and spiritual feelings and related behavioral intentions (Van Cappellen & Saroglou, 2012). Besides these, experiencing awe has the unique emotional effect of feeling small and humble (Joye & Bolderdijk, 2014; Shiota et al., 2007).

**The link between awe and charisma.** Likely, a variety of contextual variables influence perceived leader charisma. Here we suggest awe to be one particularly strong contextual factor given its intensity as an emotion, the fact that it occurs for environments *and* leaders, and its effects on those experiencing it. Environmental awe could have different effects on perceived leader charisma. First, contrast effects may enhance perceived leader charisma when leaders are in environments that elicit no awe, or, alternatively, and as we argue, spillover and transfer effects may enhance perceived leader charisma in environments that elicit strong feelings of awe. Second, such an enhancement may occur either independent of how charismatic a leader is, or it may be limited to leaders that are either very charismatic or not charismatic. We thus set out to investigate the following research question: *Do*

*different levels of awe induced through the environment lead to different levels of perceived leader charisma?*

### **Hypothesis development**

For the current purpose, we distinguish between *actual* leader charisma as an input variable, and *perceived* leader charisma as an outcome variable. The former refers to objective characteristics of the leaders, specifically, to how charismatic they are independent of the context they are in, and will simply be referred to as *leader charisma* in the following. The latter, by contrast, refers to how charismatic leaders *seem* to others. Both may be equivalent in certain settings, but here we suggest that the relationship between how charismatic a given leader *is*, according to his or her characteristics, and how charismatic this leader *appears* to followers, may change depending on the context the leader is in. Leader charisma per se is a continuous variable, however, for the present research we distinguish between *high* vs. *low* leader charisma. Thus, we take the extreme ends of the continuous variable to form two categories. Our second input variable, environmental awe is treated similarly; while the extent to which an environment is awe inducing is clearly a continuum, we again take the extreme ends of this continuum and distinguish between environments that induce *high* vs. *low* awe to form two categories.

We assume different levels of awe induced through the environment lead to different levels of perceived leader charisma. Building on prior findings in the work-family literature (Greenhaus & Powell, 2006; S. Michel, Pichler, & Newness, 2014), we assume that the interaction effect of leader charisma and awe induced by the environment occurs via spillover effects from one domain to the other. Spillover effects have received a lot of attention in the work-family domain e.g. with mood caused by one domain transferring to the other domain (Greenhaus & Powell, 2006). Researchers also looked at spillover effects of particular leadership styles, such as ethical leadership on the work-family domain (Liao, Liu, Kwan, &

Li, 2015). Here, we propose that the feeling of awe in an awe-inducing context transfers to the leader in that context, resulting in an increase in perceived leader charisma. We further argue that this effect of contextual awe is limited to low-charisma leaders. Very charismatic leaders already induce high awe in their followers (the awe-struck effect), which further strengthens charisma perceptions through continuous status affirmation, so we suggest there will be no additional effect of environmental awe. Thus, we assume leader charisma moderates the relation between actual charismatic leader characteristics and perceived leader charisma by followers.

The mechanism underlying this moderating effect of contextual awe may be explained by a mediation process. We propose positive affect to be the relevant mediator. The positive emotion of awe may induce implicit tendencies towards positive affect in the individual experiencing the awe from the environment. These positive emotions may then generalize to the leader. Specifically, the positive affect tendencies may transfer to the awe that is felt in response to the leader (because of the awe-struck effect), thereby increasing the emotion which, in turn, will enhance the status difference affirmation between the individual and the leader, causing the leader to appear more charismatic.

**Hypothesis 1.** There is an amplification effect of contextual awe on perceived leader charisma when leader charisma is low, but not when leader charisma is high.

**Hypothesis 2.** The effects of charismatic leadership, specifically perceived leader effectiveness, are moderated by contextual awe in the same way charisma is.

**Hypothesis 3.** The moderation effect of contextual awe on perceived leader charisma is mediated by positive affect.

To test our hypotheses, we conducted three experiments using different paradigms. The first was a vignette study, testing hypothesis 1. The second study was a picture study testing hypotheses 1 and 2. Study 3 used a video design to test hypotheses 1, 2, and 3.

## Study 1

### Method

**Participants.** We recruited 128 participants from the US via Amazon MTurk, the required sample size was calculated using G\*Power, assuming a medium effect size. One was excluded because of failing the attention check. Of the 127 participants for the analysis (mean age = 37.26, range = 20-67), 59.1% were men and 40.9% were women. Participants held a variety of professions in diverse industries, worked for a mean of 26.57 hours per week, and had an average of 16.35 years of work experience. Participants were paid \$0.70.

**Design and Procedure.** The study was a 2 x 2 between-subjects design, with leader charisma (high vs. low) and environmental awe (high vs. low) as independent variables. The vignette experiment consisted of three parts, a vignette, different questions on leader charisma and awe in response to the described environment, and a demographic part. There were four conditions, and thus four different vignettes. The vignettes consisted of a short introduction, a section on the leader (high vs. low charisma), a section on the office environment (high vs. low awe), another section on the leader (high vs. low charisma) and a closing sentence. Readers were asked to imagine being in the described situation. The vignette started explaining to the readers that they were on their way to work and were thinking about the different things they had to do on that day. Their first meeting was with their supervisor concerning the upcoming project they were in charge of. A short description of the supervisor followed, either describing him as an inspiring role model (high charisma),



or as an average supervisor (low charisma). High charisma descriptions included “In his working style, your supervisor serves as a truly inspiring role model”, low charisma descriptions used “in his working style, your supervisor ranks as an ordinary supervisor”. Next, the office building and the way to the supervisor’s office as well as his office were described, either as very modern and impressive (high awe) or as an average office environment (low awe). An example from the high awe description of the office is “As you enter, you notice how wide the office is and how perfectly each piece of furniture matches the others”, with the low awe counterpart being “As you enter, you notice that the office looks like most other offices these days and that there is nothing special about the furniture in his office.” The final part was the meeting, again differentiating between high leader charisma (e.g. “After greeting you, your supervisor reminisces about how excited he was when he was supervising his first project.”), and low leader charisma (e.g. “After acknowledging you, your supervisor tells you about the time he was doing his first project.”). The vignette concluded with a finishing sentence of the reader having an idea about what to do and leaving the supervisor’s office to start working.

The elements were written individually for the high and the low condition of each factor and then put together in four combinations of high and low charisma and high and low awe. The first part of the charismatic leader descriptions were adapted from Menges et al. (2015), the second part used elements described as typical for charismatic leadership in the literature (e.g. Antonakis et al., 2016; Antonakis, Fenley, & Liechti, 2011; Antonakis, Fenley, & Liechti, 2012; House, 1976; Shamir, Zakay, Breinin, & Popper, 1998; Van Knippenberg & Sitkin, 2013). The awe part of the vignettes was also designed following principles from the literature (e.g. Keltner & Haidt, 2003). Low and high awe and charisma descriptions were as similar as possible in content, only the specific characteristics varied between them. See Appendix A for the vignettes for all four conditions.

The second part of the study consisted of two simple measures of awe and perceived leader charisma, asking participants to what degree they felt the former in response to the described office environment, and to what degree they would attribute the latter to the described leader, as well as two sets of items, one on charisma, and one on awe. The charisma items covered all 5 sections of the MLQ that are considered to assess charismatic leadership (the behavioural and the attributional component, inspirational motivation, intellectual stimulation, and individual consideration). The awe item set comprised three questions on how much awe the environment induced. This part of the experiment also comprised an attention check in which participants were asked about their favourite music composer with a side note that they should select the third option from the left to test whether they read the full instructions. This was done to be able to exclude participants who were not paying attention.

The final part consisted of demographic questions asking for e.g. participants' gender, age, ethnicity and work situation.

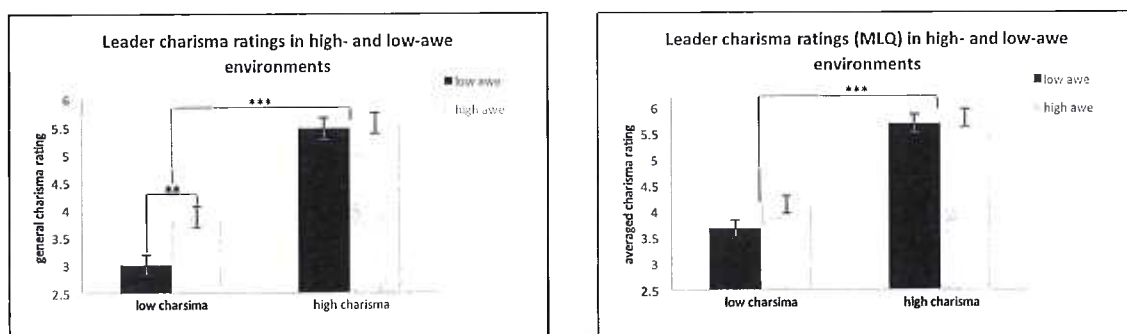
## Results

We conducted a 2 x 2 between-subject ANOVA with charisma (high, low) and awe (high, low) as the between-subject factors. First, we tested the for the assumptions of an ANOVA. An analysis of standard residuals showed that all z-values were below 3.29, hence no outliers had to be removed. The dependent variables of leader charisma ratings, awe ratings and averaged MLQ charisma ratings were all approximately normally distributed as the histograms of standardised residuals and the normal P-P plots indicated. The scatterplot of standardised residuals showed that the data met the assumptions of homogeneity of variance and linearity. Thus, our data fulfilled all requirements for an ANOVA.

Manipulation checks showed a main effect of charisma manipulation on both simple charisma rating:  $F(1,127) = 114.38, p > .001, \eta_p^2 = .48$  and the MLQ charisma items:

$F(1,127) = 90.02, p > .001, \eta_p^2 = .47$ , and a main effect of awe manipulation on the simple awe rating:  $F(1,127) = 90.02, p > .001, \eta_p^2 = .42$  and the average of the three-item awe scale:  $F(1,127) = 68.95, p > .001, \eta_p^2 = .36$ .

Hypothesis 1 predicted that environmental awe would enhance perceived leader charisma for leaders with naturally low charisma, but not for leaders whose natural charisma is already high. To test the hypothesis, the effect of awe on charisma ratings was investigated. There was a main effect of awe on simple charisma ratings:  $F(1,127) = 6.31, p = .013, \eta_p^2 = .05$ , showing that high awe led to significantly higher charisma ratings ( $M = 4.71, SD = 1.48$ ) than low awe ( $M = 4.19, SD = 1.56$ ). This effect was qualified by an interaction between awe and charisma manipulations:  $F(1,127) = 4.07, p = .046, \eta_p^2 = .03$ . To explore this interaction, we conducted two independent-samples t-test which showed that for low leader charisma, charisma ratings were significantly higher in the high awe condition ( $M = 3.88, SD = 1.24$ ) than in the low awe condition ( $M = 3.00, SD = 1.05$ ):  $t(63) = 3.08, p = .003$ , but that there was no effect of awe in the high charisma condition:  $t(59) = .43, p = .668$ . There was no main effect of awe on the MLQ charisma ratings:  $F(1,127) = 2.71, p = .102, \eta_p^2 = .02$ , and the interaction for the MLQ items was also non-significant. See Figure 1 for a graphic presentation of the results.



**Figure 1.** The effect of environmental awe on leader charisma ratings for high and low charisma leaders. Effects are shown for the simple charisma measure on the left, and for the MLQ charisma items on the right.

## Discussion

Hypothesis 1 argued that there would be an amplification effect of contextual awe on perceived leader charisma when leader charisma is low but not when leader charisma is high. The results of our first study, which employed a between-subject design and manipulated environmental awe and leader charisma to create four different vignettes, support this hypothesis. They showed that environmental awe significantly increased perceived leader charisma when leader charisma was low but not when it was high. These results held for our own measure of leader charisma but not for the MLQ items. Given the extant problems with the MLQ (Antonakis et al., 2016) we do not, however, see this as a limitation.

Study 1 thus supported hypothesis 1. However, the study only tested a single leader and environment description per condition, and further used a single item measure of charisma (excluding the MLQ items). To validate the results, we thus sought to test the same hypothesis in a more complex design, firstly by using a different methodology to study 1; secondly a variety of leaders and environments per condition, and thirdly more than one item to measure charisma. Further, we aimed to extend the scope of the first study by including a second outcome variable, i.e. leader effectiveness, as one exemplary consequence of leader charisma. For this, we designed a picture study.

## Study 2

### Method

**Participants.** We recruited 211 participants via Amazon Mechanical Turk who participated in the study. The required sample size was calculated using G\*Power, for a between-subjects ANOVA, assuming a medium effect size ( $F = 0.25$ ). As we were using a within design, this was a very conservative measure. Six participants were excluded as they did not pass the attention check. This left 205 participants for the analysis (mean age = 38.29,

range = 19-81), 51.7% were men and 47.8% were women. Participants held a variety of professions in diverse industries, with a mean of 35.71 work hours per week, and an average of 17.40 years of work experience. Participants were paid \$1.20.

**Materials and Procedure.** The study was a 2 x 2 within-subjects design, with charisma (high vs. low) and awe (high vs. low) as independent variables. A total of 40 pictures of offices (20 presumed high awe, 20 presumed low awe) and 40 leaders (20 presumed high charisma, 20 presumed low charisma, with an equal gender proportion in both groups) were pretested in a separate sample of 40 Amazon MTurk Workers. The ten pictures of each category (high- and low charisma, high- and low awe) that received the most extreme ratings were chosen for the actual experiment. The leader pictures comprised 13 men and seven women. The pictures of the 20 chosen leaders were combined with the different backgrounds. The combination of backgrounds and persons was randomized such that each person-picture was combined with four different background pictures, two of which belonged to the high awe, and two of which belonged to the low awe category. This created four picture-collections of 20 pictures each. All four collections contained the same leaders and the same background-offices, but different combinations of them. The collections and the order of the 20 pictures within each collection were randomized between participants. Figure 3 and 4 give an example of the pictures used.

Participants first gave their consent to participate. They were randomly assigned to one of the four collections and thus conditions and were presented to the 20 pictures in the collection in random order. Each picture was followed by measures of perceived leader charisma, leader effectiveness, and leader morality as an alternative outcome measure; all measures are described in detail below. There was an attention check (see method section of study 1 for a more detailed description) and the experiment concluded with a demographic section.





*Figure 2. Example stimuli in the different conditions. The top row shows a high charisma leader (left) and a low charisma leader (right) in high awe environments, the bottom row in low awe environments.*



*Figure 3. Example stimuli in the different conditions. The top row shows a high charisma leader (left) and a low charisma leader (right) in high awe environments, the bottom row in low awe environments.*

**Measures.** Perceived leader charisma was measured on a scale from 0 – 100 with two items: (1) “To what extent do you perceive the person above as a charismatic leader?” and (2) “To what extent do you perceive the person above as an inspiring leader?”. Perceived leader effectiveness was measured with a slight adaptation of the six-item measure of a 5-point-scale form completely disagree to completely agree used by Giessner and van Knippenberg (2008) (adapted from Van Knippenberg & Van Knippenberg, 2005). Leader Morality was assessed to control for a simple halo effect, i.e. to show whether awe would make a unique contribution to perceived leader charisma. These two items asked, (1) “To what extent do you perceive the person above as an ethical leader” and (2) “To what extent do you perceive the person above as a moral leader?”. Participants indicated their answer on a scale from 0-100.

## Results

**Pre-test.** Forty-six participants from an independent sample completed the pretest for charismatic leaders. Forty pictures of business people (20 men, 20 women) were included in the pre-test for leader charisma. The ten with the highest scores ( $M = 66.41$ ,  $SD = 17.32$ ) were compared to the ten with the lowest scores ( $M = 47.37$ ,  $SD = 18.70$ ) showing a significant difference between the two picture-sets:  $t(45) = 10.93$ ,  $p > .001$ .

The pre-test for awe comprised 20 pictures of offices. Forty participants from an independent sample participated. The 10 with the highest scores ( $M = 67.89$ ,  $SD = 16.45$ ) were perceived as significantly more awe-inducing than the 10 offices with the lowest scores ( $M = 20.70$ ,  $SD = 18.81$ ):  $t(29) = 12.10$ ,  $p > .001$ .

**Main study.** First, the assumptions of a multilevel analysis, which was our preferred method of analysis, were tested. An analysis of standard residuals was carried out on the data to identify any outliers, which indicated that six charisma ratings, ten leader effectiveness ratings, and 14 leader morality ratings needed to be removed. As the independent variables (charisma and awe) were randomly manipulated, collinearity was no concern in the present

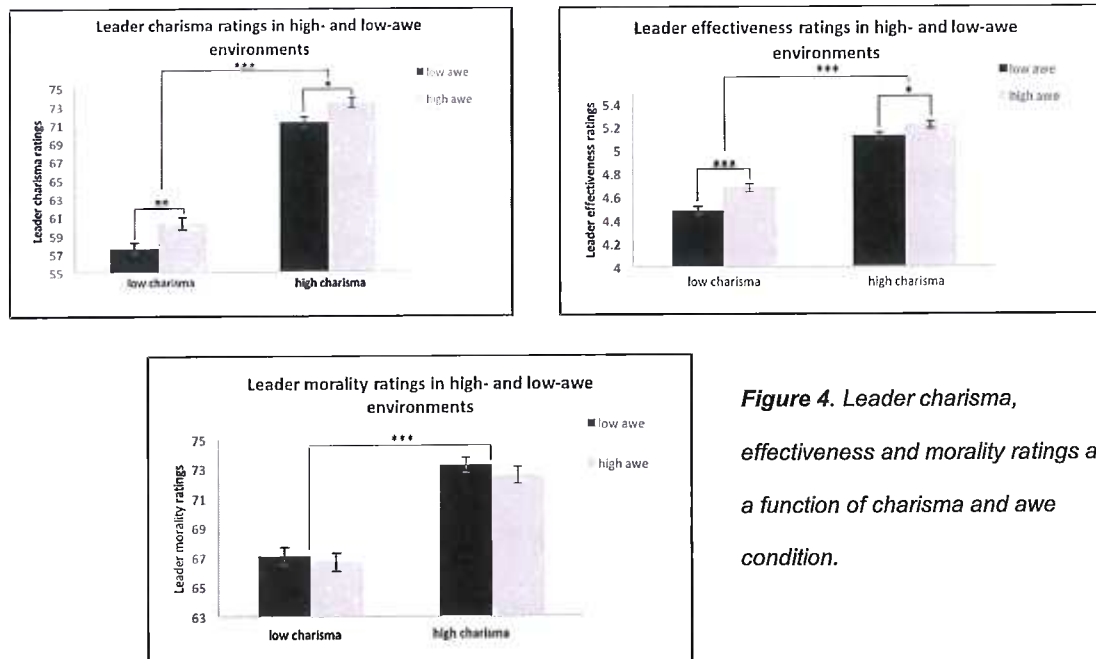
study. The histograms of standardised residuals for all three dependent measures indicated that the data contained approximately normally distributed errors, as did the normal P-P plots of standardised residuals, which showed points that were not completely on the line, but close. The scatterplot of standardised residuals showed that the data met the assumptions of homogeneity of variance and linearity. The data also met the assumption of non-zero variances (Charisma, Variance = 1.00; Awe, Variance = 1.00; Charisma ratings, Variance = 417.85; Leader effectiveness ratings, Variance = 1.36, Leader morality ratings, Variance = 372.07).

A multilevel analysis approach was adopted to test hypothesis 1, which argued that environmental awe amplified perceived leader charisma for leaders low in actual charisma but not for leaders high in actual charisma, and hypothesis 2, that that awe had the same effect on perceived leader effectiveness. We tested the hypotheses via three two-level models. For the first analysis, leader charisma ratings at level-1 were nested within individuals at level-2. The analysis was conducted using the linear mixed effect modelling function in SPSS with restricted log likelihood estimation. Charisma and awe were included as fixed predictors. The two-way interaction did not improve model fit and was thus not included in the final model. The analysis was repeated for leader effectiveness ratings and leader morality ratings. For all three analyses, the model included the two fixed factors of charisma and awe but not the two-way interaction as this did not improve model fit in either of the three models. Table 1 displays the descriptive statistics of the dependent variable by condition, and Figure 4 represents this graphically.

| Rating                      | Charisma | Awe  | Mean  | SD    |
|-----------------------------|----------|------|-------|-------|
| Charisma rating             | low      | low  | 57.64 | 21.36 |
|                             |          | high | 60.40 | 20.49 |
|                             | high     | low  | 71.50 | 17.84 |
|                             |          | high | 73.39 | 16.49 |
| Leader effectiveness rating | low      | low  | 4.48  | 1.20  |
|                             |          | high | 4.68  | 1.16  |
|                             | high     | low  | 5.12  | 1.06  |
|                             |          | high | 5.22  | 1.03  |
| Leader Morality rating      | low      | low  | 67.06 | 20.49 |
|                             |          | high | 66.67 | 20.03 |
|                             | high     | low  | 73.25 | 17.05 |
|                             |          | high | 72.55 | 18.20 |

Table 1. Means and SDs of all ratings by condition.





**Figure 4.** Leader charisma, effectiveness and morality ratings as a function of charisma and awe condition.

For charisma ratings, model results confirmed that charisma had a significant main effect on charisma ratings,  $F(1,4091) = 488.11, p > .001$  and awe also significantly predicted how charismatic a given leader appeared,  $F(1, 4091) = 15.79, p > .001$ . Thus, high leader charisma led to higher leader charisma ratings ( $M = 72.25, SD = 17.41$ ) than low leader charisma ( $M = 58.93, SD = 21.62$ ), and high awe also led to higher charisma ratings ( $M = 66.779, SD = 19.79$ ) than low awe ( $M = 64.39, SD = 21.01$ ). For Leader effectiveness ratings, results were similar with both charisma,  $F(1,4087) = 275.42, p > .001$ , and awe,  $F(1,4087) = 16.88, p > .001$ , as significant predictors. Specifically, leader effectiveness ratings were higher for high charisma ( $M = 5.16, SD = 1.05$ ) than for low charisma leaders ( $M = 4.58, SD = 1.19$ ) and for high ( $M = 4.94, SD = 1.13$ ) than for low awe ( $M = 4.80, SD = 1.13$ ). For neither rating, there was a significant interaction between the two factors. Regarding the final rating, leader morality, there was a main effect of charisma,  $F(1,4083) = 19.84, p > .001$ , with high charisma leading to higher ratings ( $M = 72.78, SD = 17.79$ ) than low charisma ( $M = 66.86, SD = 20.26$ ) but no significant prediction from awe,  $F(1,4083) = 1.14, p = .286$ . There was no significant interaction between the two factors. The results remained the same with the outliers included in the analysis.

The multilevel analysis was chosen as the alternative to a within-subjects ANOVA which would require averaging all five observations per participant per condition (there were 20 pictures per participant, five of each condition) so that each participant would contribute 1 data point per condition. In this process, variance would be lost. The ANOVA was conducted as a comparison and showed the same effects as the multilevel analysis. For charisma ratings, the 2 x 2 within subject ANOVA, with charisma (high, low) and awe (high, low) as the within subjects factors showed a main effect of charisma:  $F(1, 204) = 266.21, p > .001, \eta_p^2 = .56$ , and a main effect of awe:  $F(1, 204) = 12.91, p > .001, \eta_p^2 = .06$  on perceived leader charisma. The main effects were not qualified by an interaction:  $F(1, 204) = .68, p = .410, \eta_p^2 < .01$ . The ANOVA for leadership effectiveness confirmed the main effects of charisma:  $F(1, 204) = 156.60, p > .001, \eta_p^2 = .43$ , and awe:  $F(1, 204) = 14.77, p > .001, \eta_p^2 = .07$ , and showed no significant interaction between the two factors,  $F(1, 204) = 2.51, p > .114, \eta_p^2 = .01$  that was found in the multilevel analysis. Finally, the ANOVA with leader morality as the outcome variable also confirmed that charisma had a significant effect on leader morality:  $F(1, 204) = 85.24, p > .001, \eta_p^2 = .30$ , but there was no main effect of awe:  $F(1, 204) = .95, p = .330, \eta_p^2 = .01$ . There was also no significant interaction between the two factors.

## Discussion

Study 2 set out to confirm the results of study 1, that environmental awe increases perceived leader charisma for low but not high charisma leaders (hypothesis 1), and to test hypothesis 2, i.e. that this effect would also hold for perceived leader effectiveness as one exemplary consequence of leader charisma. The study used pictures as stimuli and was a within-subjects-design. The results of the second study from both a multilevel analysis and a within-subjects-ANOVA support hypothesis 1 and the results of study 1 by showing that the level of awe induced by the environment significantly predicts how charismatic and how effective a leader is perceived to be. While this effect held for both leaders with low and high

charisma and there was no interaction between charisma and awe, the effect was somewhat bigger for the latter than for the former group (see Figure 4), providing some support for the moderation prediction of hypothesis 1. The results also supported hypothesis 2 by showing that environmental awe predicted leader effectiveness, again with the effect being somewhat greater for low than for high charisma leaders (see Figure 4). Importantly, the effect of environmental awe on perceived leader charisma and leader effectiveness as one of its outcome variables was selective to charisma; there was no such effect on perceived leader morality.

Study 2 thus supports both hypothesis 1 and hypothesis 2. While it included a number of different leaders and environments and used a two-item measure for charisma, it used pictures, i.e. static stimuli. Much of what is described as charisma, however, includes ways of acting and behaving; hence, the best way of investigating charismatic leadership would be by using leaders that *act* in a charismatic way. Thus, for study 3 we decided to use videos as stimuli. We further aimed to also investigate hypothesis 3 by testing for a mediation effect of positive affect, which was thus also included as a variable.

### Study 3

#### Method

**Participants.** We recruited 183 participants from the US via Amazon MTurk. The required sample size was again calculated using G\*Power and assuming a medium effect size. Participants' mean age was 37.87 (range = 22-70), 50.8% were men and 48.5% were women. Participants held a variety of professions in diverse industries, with a mean of 38.56 work hours per week, and an average of 17.21 years of work experience. All participants were paid \$2.40.

**Design and Procedure.** The experiment was a video study employing a 2 x 2 between-subjects design, with charisma (high vs. low) and environmental awe (high vs. low) as independent variables. We produced four videos containing speeches we had written for the study that were performed by a professional actress and filmed in front of a greenscreen so they could later be placed in different backgrounds. The videos showed the CEO of a building company giving a speech about the merger of the company with a former competitor. There was one charismatic and one non-charismatic speech, each of which was placed in front of a high or low awe background. Thus, there were four videos and conditions. The experiment consisted of five parts. After giving their consent and being informed about the content of the study, participants first saw one of the four videos. Second, they completed measures of leader charisma and effectiveness. The third part was a questionnaire on environmental awe. Fourth, they completed an implicit affect measure. The experiment concluded with the collection of demographic data.

Participants signed up for the study on Amazon Mechanical Turk. They received the link to the video experiment and were randomly assigned to one of the four conditions. They watched the respective video and filled in the questionnaires before returning their answers.

**Materials.** The speeches were written specifically for the experiment. The charismatic speech was written to include numerous tactics that had specifically been identified as particularly charismatic and as employed by charismatic speakers. They included verbal language specific means such as rhetorical devices, personal stories, the sharing of moral convictions and collective sentiments, and more general verbal tactics as the creation of a vision and an optimistic and ambitious connotation of the speech as a whole (e.g. Antonakis et al., 2011; Den Hartog & Verburg, 1997; Shamir, Arthur, & House, 1994; Shamir et al., 1993; Towler, 2003). The non-charismatic speech specifically sought not to include those tactics and was factual in nature. Both speeches had roughly the same length

(989 words for the charismatic, 981 words for the non-charismatic speech) and included the same basic information per paragraph. They addressed the reasons for the merger, potential difficulties, likely advantages and the need for cooperation on part of the employees.

A professional actress performed both speeches. She was instructed to perform the charismatic speech employing non-verbal tactics that had been demonstrated successful in the literature, e.g. body gestures, facial expressions, eye contact, and an animated voice tone (e.g. Antonakis et al., 2011; Awamleh & Gardner, 1999). She was given a list of these tactics as well as some video examples of speeches by charismatic leaders (e.g. Martin Luther King, Barack Obama, Robbin Williams in *Dead Poets Society*). For the non-charismatic speech, she was instructed to avoid those tactics and to maintain a neutral tone. The speeches were pretested in front of a neutral (white) background.

The speeches were filmed in front of a green screen. Both filmed speeches were placed in front of a high awe and a low awe background using the programmes Adobe Premiere Pro and Adobe After Effects. The high awe background was a photograph taken in the entrance hall of the Dreischeibenhaus in Düsseldorf, Germany, the low awe background was a picture of an ordinary office wall with a wooden door. Appendix C shows screenshots of the four videos.

**Measures.** Perceived leader charisma, leader effectiveness and leader morality were measured as in Study 2. Environmental awe was measured as in Study 1. The mediation variable tested for was positive and negative affect. Affectivity was measured with the 20-item word fragment completion measure developed by Johnson (2006). Ten fragments could be completed to form either a negative or a neutral word, the other ten items could be completed to form a positive affect or neutral word. Both the positive/negative affect word and the neutral word were of the same frequency in English for all given fragments. An example of a negative affect fragment is F E\_\_ (negative = fear; neutral = feed, feel), an

example of a positive fragment is \_ R R \_ Y (positive = merry, neutral = berry, ferry). The full list of word fragments is provided in appendix D. Participants were asked to complete the fragments as fast as possible and skip items they could not immediately think of. Positive and negative affect were operationalized by adding up the positive and negative affect words respectively. As in Johnson, Tolentino, Rodopman, and Cho (2010), the number of positive and negative affect words were divided by the total number of words completed per participant. The resulting proportional numbers served as the implicit positive and negative affect score. In their study, Johnson et al. (2010) showed that the initial interrater agreement for the implicit affect measure was 95%, and Cohen's (1960)  $\kappa = .89$ .

## Results

**Pretest.** An independent sample of 42 participants was recruited on MTurk to watch the speeches in front of a neutral background to check the charisma manipulation. Four participants were excluded due to not watching the speech properly or not filling in all required measures. The pretest included the same charisma items as the pretest in study 2, both of which were combined as there was no difference in effect for the two individual items. Results of the pretest showed that the high charisma speech was perceived as significantly more charismatic ( $M = 47.16$ ,  $SD = 31.36$ ) than the low charisma speech ( $M = 26.87$ ,  $SD = 23.37$ ):  $t(38) = 2.26$ ,  $p = .030$ .

**Main study.** An analysis of standard residuals showed that all z-values were below 3.29, hence no outliers had to be removed. The dependent variables of leader charisma, leader effectiveness and leader morality were all approximately normally distributed as the histograms of standardised residuals and the normal P-P plots indicated. The environmental awe histogram was slightly skewed but still considered appropriate for an ANOVA. The scatterplot of standardised residuals showed that the data met the assumptions of homogeneity of variance and linearity. All data points were included in the analysis.

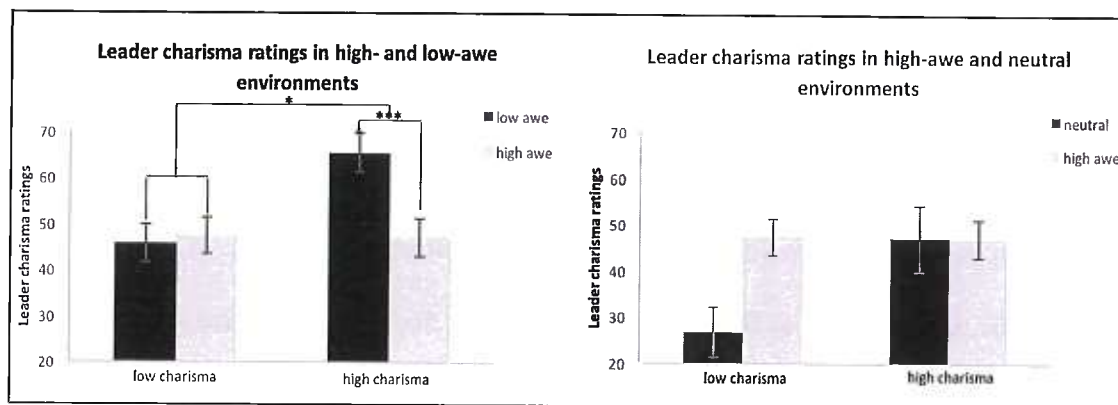
To test hypothesis 1 and 2, a 2 x 2 between-subjects ANOVA was conducted with charisma (high, low) and awe (high, low) as fixed factors. Effects were tested on perceived leader charisma, effectiveness, morality and environmental awe as the dependent variables. These variables were averaged from the individual items per section.

There was a main effect of actual leader charisma on perceived leader charisma:  $F(1, 197) = 5.67, p = .018, \eta_p^2 = .03$ , but not on perceived leader morality, effectiveness or environmental awe. Leader charisma ratings were higher for high charisma leaders ( $M = 56.20, SD = 29.40$ ) than for low charisma leaders ( $M = 46.68, SD = 28.34$ ).

For the awe factor, the manipulation check showed a significant effect of the awe manipulation on perceived environmental awe with an F ratio of  $F(1, 197) = 13.97, p < .001, \eta_p^2 = .07$ . High awe led to higher awe ratings ( $M = 2.56, SD = 1.66$ ) than low awe ( $M = 1.80, SD = 1.12$ ). There was also a main effect of awe on perceived leader charisma:  $F(1, 197) = 4.25, p = .041$  and a marginally significant effect on leader effectiveness:  $F(1, 197) = 3.82, p = .052, \eta_p^2 = .02$ . Low awe led to higher charisma ratings ( $M = 55.53, SD = 27.04$ ) than high awe ( $M = 47.30, SD = 29.09$ ), and to higher effectiveness ratings ( $M = 4.67, SD = 1.39$ ) than high awe ( $M = 4.26, SD = 1.48$ ). There was no main effect of awe on leader morality. The interaction effect of charisma and awe was significant for perceived leader charisma as an outcome variable:  $F(1, 197) = 6.14, p = .014, \eta_p^2 = .03$ . This interaction was further explored with 2 independent sample t-tests. These showed that there was a significant effect of charisma in the low awe condition, with high charisma leading to significantly higher charisma ratings ( $M = 65.5, SD = 26.04$ ) than low charisma ( $M = 45.80, SD = 24.56$ ):  $t(87) = 3.67, p < .001$ . The t-test for the high awe condition was not significant  $t(87) = -.07, p = .949$ . Thus, awe moderated the effect of charisma, with charisma having a strong effect when environmental awe was low, but no effect when environmental awe was high. Figure 5 shows the results of the charisma ratings (perceived leader charisma) grouped by charisma



condition (actual leader charisma). The graph on the left shows the ratings for the high and low awe condition, which is what was compared in the analysis. The graph on the right shows how the high awe condition compared to the pretest data which used a white background and can thus be classified as neutral, and likely low in awe. Given the low participant number of the pretest, the data was not included in the analysis, but the effects are interesting to compare to the other two conditions and therefore nevertheless included.



**Figure 5. Charisma ratings for the high and the low awe as well as the white background.** Low vs. high awe background effects by charisma condition are shown on the left. The neutral white background was not included in the analysis but is shown in comparison to the high awe background on the right. This should serve as a comparison value given the surprising effects that can be seen on the left.

The mediation analysis tested for a mediating effect of positive affect in the relationship between awe and charisma ratings (hypothesis 3). The mediation analysis was conducted with the SPSS PROCESS macro developed by Hayes (2013), using 5000 bootstrapping samples. The overall model containing awe as the predictor variable, positive affect as the mediating variable and perceived leader charisma as the outcome variable was significant:  $F(1,180) = 3.94, p = .049, R^2 = .021; b = 8.30, t(180) = 1.99, p = .049$ . There was a significant effect of awe on positive affect:  $F(1,180) = 5.29, p = .023, R^2 = .0286; b = .041, t(180) = 2.30, p = .023$ . The Final mediation model of the effect of awe and positive affect on perceived leader charisma was significant with  $F(2,179) = 5.23, p = .006, R^2 = .0552$ . Specifically, positive affect served as a significant predictor:  $b = 43.809, t(179) =$



2.53,  $p = .012$ , demonstrating the mediation was significant. There was no direct effect of awe on charisma ratings, hence there was a full mediation effect without a direct effect. The mediation analysis was repeated with negative affect as the mediating variable, but the model was non-significant.

## **Discussion**

Study three sought to replicate the effects of study 1 and 2 (hypothesis 1 and 2) and test whether positive affect served as a mediator of these effects (hypothesis 3). Results of the study showed a strong effect of environmental awe on perceived leader charisma, however, in the opposite direction than study 2 and 3. The results indicate that environmental awe reduced perceived leader charisma, so that perceived leader charisma was increased when environmental awe was low. High environmental awe eliminated any effect of charisma, while for low environmental awe charisma had a strong effect. This can be interpreted as in line with hypothesis 1. The ratings in the high awe condition indicate that the high awe background increases charisma ratings for low charisma leaders to the level of their charismatic peers. However, overall, charisma ratings were much higher in the low than in the high awe condition. The same was true for hypothesis 2, environmental awe had a marginally significant effect on perceived leader effectiveness, but, again, in the opposite direction than expected, with leaders appearing more effective when environmental awe was low than when it was high.

When comparing ratings in the high awe environment for both charisma conditions with the results from the pretest testing the performed speeches in front of a neutral (white) background, the effects are as expected and in line with hypothesis 1 and studies 1 and 2. Importantly, the white background was neutral and likely low in awe. Comparing these two backgrounds, high awe environments raised perceived leader charisma for leaders naturally low in charisma, but not for leaders naturally high in charisma. However, the pretest only

tested a low number of participants and can thus not be taken as a valid comparison. Future research is required to determine why the low awe background in this study led to such surprising results.

Finally Study 3 showed that positive affect served as a mediating variable between awe and perceived leader charisma and thus confirmed hypothesis 3. Results showed that positive affect fully mediated the effect of awe, giving strong support for the hypothesis. Given the direction of the effect of awe, however, the mediation needs to be further explored.

### **General Discussion**

Previous research on charismatic leadership largely focused on direct effects and antecedents of charisma, but hardly any studies have examined the moderating effects of contextual variables. We set out to start closing this gap in the literature by focusing on one very prominent contextual factor, the physical office environment leaders act in. Specifically, we focused on how the extent to which an environment is awe-inducing may moderate the charismatic effect of a leader. Three studies – a vignette study, a picture study and a video study – were designed to test the hypotheses that an awe-inducing environment would amplify perceived leader charisma (hypothesis 1, study 1,2,3) and effectiveness (hypothesis 2, study 2,3) for leaders low but not high in actual charisma, and that this effect would be mediated by positive affect (hypotheses 3, study 3). The theoretic rationale for this hypothesis was that the awe felt in response to an impressive environment would transfer to the leader in that environment, and thus the leader would seem more charismatic. Ceiling effects were proposed to decrease this transfer effect for highly charismatic leaders.

All three studies showed that awe has a strong effect on how charismatic leaders appear to their followers. We further provided evidence that this effect was not limited to charisma, but extended to perceived leader effectiveness with a significant effect in study 2,

and a marginally significant effect in study 3. Importantly, there was no effect of awe on perceived leader morality in either of the studies. Morality was measured as a separate variable to provide discriminant validity. The effect of awe was thus not a simple halo effect, but specific to charisma and perceived effectiveness as one of its consequences.

Hypothesis 1 further predicted that the effect of awe should be limited to leaders low in actual charisma. Study 1 confirmed this, showing a significant increase in perceived leader charisma for high awe compared to low awe, with the effect being limited to leaders that were low and not high in actual charisma. Study 2 showed significant effects of awe for both low and high charisma leaders, but the difference in means was smaller for the latter group. Thus, study 1 showed the expected ceiling effects, and study two gave some indication towards such a moderation. One potential reason why the ceiling effects were not fully attained in the second study is that the vignette study only described the leader, so participants could imagine the most charismatic leader they could think of, while study 2 gave pictures of the leaders which may not have matched the participants' ideal charisma image.

Study 3 also showed an effect of awe on perceived leader charisma, but the pattern of results was different from the other two studies. In this study, the high awe environment extinguished the effect of natural charisma, so that the leader who was actually low in charisma was perceived just as charismatic as her actually charismatic peer. In other words, the high awe environment caused followers to be unable to distinguish between charismatic vs. non-charismatic leaders. This was not the case for the low awe environment. This conforms to what we expected following hypothesis 1. However, unexpectedly, charisma ratings of the charismatic leader were higher in the low awe than in the high awe setting, i.e. awe reduced perceived charisma in study 3, while it increased perceived charisma in the other two studies, and the same was true for effectiveness ratings. This unexpected result needs to

be interpreted cautiously. The pretest of the speeches in front of a neutral (white) background showed results which conformed to the hypotheses and the results of the previous two studies (see figure 5), assuming the white background means induced awe was low: Charisma ratings did not differ between the high awe and the neutral condition for high charisma leaders, but were much higher for the high awe background when leader charisma was low, conforming to hypothesis 1. The pretest, however, only tested a low number of participants, and only tested for charisma and not leader effectiveness or awe. Future research is required to investigate what caused the increase in charisma ratings in the low awe condition of study 3.

There are two possibilities of why the surprising results of study 3 occurred. The first option is that the design of the study was flawed or the nature of the online study paired with the length of the video was problematic and distorted the results. Alternatively, there may be a theoretical explanation of why the effect of awe in study 3 was opposite to that in study 1 and 2. One potential such explanation is that contrast effects were at play. Possibly, the low awe environment in the video paired with the highly charismatic leader caused an expectation incongruence. Participants' expectations of the leader, given the context may have significantly been exceeded. This contrast may have caused participants to perceive the leader as much more charismatic than they would have done in a congruent (i.e. high awe) context.

Our final result is a significant mediation effect in study 3. The effect of awe on perceived leader charisma was fully mediated by positive affect. This is a very interesting finding, showing that high awe induced implicit tendencies towards positive affect, that then generalized to benefit perceived leader charisma. This is in line with hypothesis 3 and offers an explanation of the mechanism behind the contextual effect of awe on the extent to which a leader appears charismatic. However, given the direction of the effect in study 3, which was not anticipated, interpreting these results becomes difficult. This is because not high but low

environmental awe raised perceived leader charisma. Thus, the mediation effect needs to be further investigated.

Our findings contribute to the ongoing literature on charismatic leadership in several ways. First, they extend our knowledge of the concept of charisma by showing that actual leader charisma interacts with the extent to which an environment is awe inducing to lead to different levels of perceived leader charisma. Second, our research may provide a first step towards broadening the general research field of charismatic leadership. Our results highlight the relevance of contextual factors and may motivate further research on other contextual factors and their potential effects on leadership components. Third, and regarding the practical field, we hope that our research will motivate leaders to consider contextual factors besides their own behavior and e.g. carefully choose the location of a speech when delivering important messages or when trying to convince another party. Finally, our research contributes to the current knowledge of what makes leaders appear charismatic, by emphasizing how complex the factors involved are, and how much is yet unknown. This becomes clear when considering the opposite direction of effects in our last study, which highlighted that, likely, various factors interact in causing charisma perceptions and we yet need to find out which processes occur under which conditions.

### **Strength and limitations**

There are several strong points about our present research. First, we conducted three different experiments with different methodologies, i.e. one vignette, one picture and one video study, all of which clearly showed that there was an effect of awe on perceived leader charisma. Hence, we produced strong evidence in favor of a moderating role of environmental awe for charismatic leadership. Second, we produced evidence that these effects did not merely pertain to charisma, but extended to perceived leader effectiveness as one exemplary consequence of leader charisma. More importantly, the effect did not extend

to the unrelated construct of leader morality, and thus shows a specific effect of awe on charisma, rather than a general halo effect. Third, we tested a diverse sample of people of different age, gender and different professions, thus preventing the typical drawbacks of an undergraduate participant group. Finally, all studies used sample sizes that had been determined through a prior power analysis, ensuring sufficient power for an interpretation.

Despite these obvious strengths, there were two major limitations to our research. First, there was the obvious drawback of online studies, i.e. the impossibility of controlling for inattention of participants. While all three studies included an attention check, professional MTurkers may be familiar with such measures and fill them in correctly despite not having paid full attention to other questions/stimuli. This problem may have been particularly relevant for the video study given the long duration of the video. We took several measures to ensure participants actually watched the full video, we disabled the *continue* button for several minutes, included a filter function prior to the video where participants were filtered out if they stated not to have a properly working/turned on sound system and added an item asking for an honest answer whether the full video was watched, with the guarantee that their answer would in no way affect their rating or payment. This likely helped limiting the problem, but provided no guarantee that full attention was paid. This also leads to the second drawback of our research: the length of the filmed speeches. Both speeches lasted for more than eight minutes, which is a very long duration given the nature of our study as an online experiment. It is likely that participants became bored or distracted at some point. While this drawback was apparent relatively early in the design process, we found it impossible to shorten the speeches further without losing crucial charismatic tactics in the charismatic speech, which set it apart from its non-charismatic counterpart.

### **Future research**

Our research helps identify promising avenues for future research. First, future

research should target the limitations of our study and solve the conflicting findings of our third study compared to the other two studies. Either, the different findings were a consequence of the setbacks of our video study, and in this case study 3 should be repeated with a shorter video, potentially with different low awe backgrounds, and outside of an online setting to control for participants' attention during the watching of the speech. Alternatively, the results of study 3 were theoretically meaningful and, in this case, likely due to contrast effects as explained above. In this case, future research should investigate more closely the background used in study three as well as what differentiated both the leader as well as the environment from the other two studies in order to investigate when environmental awe would increase leader charisma because of transfer effects, and when the opposite would be the case because of contrast effects.

Second, the mediating effect of positive affect should be looked at more closely given the results of study 3. While the finding is in line with our hypothesis, the direction of the effect of awe is not, and thus it is unclear what the mediation result means. Future research needs to test the mediating variable of positive affect in replications of study 1 and 2, and should repeat study 3 with different backgrounds to explore whether this will change the mediating effect of positive affect. This may increase our understanding of whether the results of study 3 were due to contrast effects, or whether there was a methodological flaw in our design. In the case of confirmed contrast effects for certain backgrounds, differences in mediator between context-leader combinations where contrast vs. transfer effects occur should be targeted in future research. Such studies would provide valuable information about the mechanisms behind contextual influences of awe on charismatic leadership.

Third, it should be investigated whether the effect of awe also extends to other consequences of leader charisma beyond leader effectiveness. This links to the distinction we drew in the current research, between *actual* leader charisma and *perceived* leader charisma.

As study 1 and 2 clearly showed, non-charismatic leaders may nevertheless *appear* very charismatic when placed in a highly awe-inducing environment. The question then is, do they only *appear* as charismatic as their charismatic peers, or do they achieve similar effects as well? In the business context, this may be of high importance. Thus, it should be investigated whether environmental awe can, by raising how charismatic a leader appears, also increase how motivated followers are, how much trust they have in the leaders' beliefs, how much they identify with them, and how much they become emotionally involved with a mission as well as how high their self-efficacy is, all of which are typical consequences of actual charisma listed in the literature (Etzioni, 1975; House, 1976; Shamir et al., 1993). To investigate this, video studies would be the best option as they can show the actions of charismatic leaders best in an experimental setting. For this, charismatic and non-charismatic leaders in high and low awe environments could e.g. ask participants to complete a certain task, without specifying the amount of work they have to do, and participants could then be asked to specify how motivated they are or how much they would like to do (e.g. how many anagrams they would like to solve).

Fourth, and on a more general note, our present research should be taken as a first step towards a more thorough investigation of contextual factors influencing the charismatic effect of a leader. Such a shift towards moderating variables is most valuable to the practical setting. Leader charisma can be trained to a limited extent only, as it is very difficult to manipulate or increase charisma *per se*. Thus, contextual factors that are easy to manipulate may be a more promising approach to help Managers and CEOs that do not benefit from naturally high charisma. Other contextual variables that may play a role could be factors as simple as the physical work environment, e.g. knowledge about the leader, industry, or contact with the leader. Alternatively, more complex factors such as psychological climate or climate could be of critical relevance.



The present research helps to identify some important recommendations for future research on the topic. First, our conflicting findings from study 3 draw attention to the difficulty of designing experiments investigating contextual influences. We chose the physical office context partly because it is less complex than e.g. the social or organizational context. Nevertheless, and despite pretesting our backgrounds to confirm differences in the level of awe induced by the different environments up front, our effects were in the opposite direction than expected. This shows how careful the environments of such studies need to be chosen, and important it is to identify all potential factors that may influence the effects before designing a study. Second, our research shows the importance of replicating results before publishing studies, as we found an opposite effect only in the second replication, while our first replication still supported our hypothesis and preliminary result. Third, our experience with online studies leads us to recommend using short durations and non-complex stimuli for such experiments, e.g. when using a video design the video should be as short as possible while still conveying the desired effect. Finally, and again on a broader level, our research encourages future research to consider contextual influences of charismatic leadership, as we have successfully shown that such effects are relatively easy to demonstrate and may crucially change effects of charismatic leadership and thus be important for both theory and the practical field.

### **Conclusions**

Our research provides converging evidence that the level of awe induced by the environment surrounding a leader greatly influences how charismatic that leader appears to followers. We demonstrated a strong effect of awe using three different methodologies - a vignette, a picture and a video study. Two of our three studies showed that an environment inducing high levels of awe can increase perceived leader charisma, especially when the leader is otherwise

perceived as uncharismatic. This has crucial implications for the practical setting, indicating that a more impressive environment may help non-charismatic leaders to *appear* charismatic, even when they do not possess this 'gift' naturally, and thereby attain similar effects to their charismatic peers. Our third study did not confirm this effect so future research is needed to further investigate these conflicting results. Generally, future research on charismatic leadership should shift towards moderating influences of contextual factors to be able to provide direct recommendations of how context may be manipulated to help non-charismatic leaders to achieve the effects normally attained through natural charisma. Our research has made a first step into this direction by giving some insight into the contextual influence of environmental awe on how followers perceive their leaders. Thereby, we have extended our knowledge of charisma, demonstrated the importance of the office environment for today's leaders, and have provided a promising base for investigating contextual influences on charismatic leadership in future research.

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