Entrepreneurial Leadership: An Experimental Approach Investigating the Influence of Eye Contact on Motivation

Abstract

The founding of a small business is, due to a lack of resources, often accompanied by the challenge of effectively motivating employees. Charismatic leadership is effective in increasing the performance of both groups and organizations. Specifically, the impact of charismatic leadership practices on followers is based on nonverbal communication and the immediacy construed. The purpose of this study is to investigate the impact of an entrepreneurial leaders' eye contact and smiles on followers' objective motivation in an experimental leadership situation.

A sample of 129 young adults was tested in a 2×2 (high eye contact/low eye contact × high smile/low smile) experimental design. Motivation was measured by objective performance in a motoric reaction time task. The conditions were operationalized by manipulating gaze behaviour and facial expressions of a successful start-up entrepreneur in a staged instructional video. Regardless of whether the leader smiled or not, participants showed faster responses and therefore performed more effectively when the leader maintained eye contact.

These findings support the hypothesis of increased eye contact being a strong nonverbal signal that stimulates an increase in performance in immediate leader-follower interactions. Eye contact could in fact induce an increased level of motivational arousal in followers, resulting in improved confidence and self-belief when taking instructions. This study advances the existent research on learnable skills that can be used to appear more charismatic and thus potentially increasing follower performance by adopting simple nonverbal rules in communications. This offers an invaluable and low-cost tool for leaders undertaking a business start-up.

Keywords Entrepreneurial Leadership, Charismatic Leadership, Motivation, Communication

1. Introduction

A key construct of leadership is motivating followers and thus achieving increased business performance (van Knippenberg, 2012). In this regard, certain leadership styles have proved more effective. For example, transformational leadership is often quoted as being the optimum approach to adopt (Bass, 1985). Closely related is the entrepreneurial leadership style, which takes the transformational concept and combines it with an entrepreneurial spirit and requires leaders to transport this spirit to their followers (Lajin & Zainol, 2015). The nexus of transformational and entrepreneurial leadership offers significant potential for innovative research leading to findings both fields can profit from (Reid, Anglin, Baur, Short, & Buckley, 2017). Specifically, charismatic communication, which is characterized by a value-based, emotional, visionary and expressive style of delivery (Antonakis, Bastardoz, Jacquart, & Shamir, 2016), enables leaders to inspire and motivate followers (Antonakis, Fenley, & Liechti, 2011; S. K. Johnson & Dipboye, 2008; Towler, 2003). However, there is minimal empirical investigation on what operative tactics and concrete behaviours should be employed in management practice to foster charismatic communication in order to successfully persuade and motivate followers. This study evaluates communication between a leader and followers and aims to identify nonverbal signals that lead to increased employee motivation within leader-follower interactions. The investigation selected an experimental design that operationalizes nonverbal leader-follower communication signals as independent variables and motivation regarding objective performance as a dependent variable. Thereby, our design allows to examine whether specific communicative behaviours that are associated with charismatic leadership (Antonakis et al., 2016), exert effects on followers' objective motivation (Wang, Oh, Courtright, & Colbert, 2011) at the very moment of interaction, beyond the mere immediate construal of charisma ascriptions (Antonakis et al., 2011; Towler, 2003).

The outstanding importance of charismatic leadership in organization science arises because convincing evidence proves its effectiveness in leading an organization. Meta-analytic evidence from 76 independent studies shows that charismatic leadership increases organizational

effectiveness by improving objective performance on multiple levels (Banks et al., 2017). Charismatic leadership predicts supervisor-rated task performance, supervisor-rated citizenship behaviour, and group or organization performance (Banks et al., 2017). Moreover, charismatic communication constitutes a crucial component of effective leadership in the early formation of an enterprise (McGrath & MacMillan, 2000; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Renko, El Tarabishy, Carsrud, & Brännback, 2015), as well as at subsequent higher management levels with more differentiated organizational structures (Jacquart & Antonakis, 2015). This means that alongside providing technical knowledge, leaders also need to adopt a visionary charismatic role in order to effectively sustain an organization (Thompson, 1999). Therefore, while one features entrepreneurial talent and shows high levels of competence in a given field, they might lack the necessary charisma needed to increase the motivation of others, which is indispensable in order to join the leader in a risk-taking approach (Renko et al., 2015).

Leaders' charisma exerts its strongest influence on followers' behaviour in face-to-face communication. Hence, for small and medium size enterprises (SME), where leaders and followers stay in close exchange and communicate directly with each other, enhancing a leader's charismatic communication should be particularly effective in addressing the challenge of followers' motivation. In small scale owner/manager operated businesses, the individual and the organizational level may be equivalent (Frese, van Gelderen, & Ombach, 2000), and leadership in SMEs is more direct than in larger companies. An entrepreneur's decisions strongly shape the firm's strategy, culture, and actions, hence their behaviour is critical to the survival and development of SMEs (Beaver & Jennings, 2001; Davies, Hides, & Powell, 2002; Puplampu, 2005). Since leaders in SMEs are intensively involved in operations, their leadership is highly demanding (Baldegger & Gast, 2016). Additionally, when the firm and employee numbers grow, leaders increasingly have to manage the formal leadership and micro-politics, which constitute social and interpersonal processes (Leitch, Mcmullan, & Harrison, 2013). Moreover, recent accounts describing leadership emphasizes the crucial role of social influence and persuasion (Ruben & Gigliotti, 2016, 2017).

Effectively understanding the way leaders communicate with their followers offers a promising psychological approach towards increased appreciation of a crucial component of successful entrepreneurial leadership.

In the early developmental stages of a new venture the entrepreneur's leadership style tends to be mostly transformational, which changes when the venture is growing, becoming more of a transactional style (Baldegger & Gast, 2016). However, early entrepreneurial leadership, which features certain combinations of leadership styles unique for this setting (Kempster & Cope, 2010), is not identical with transformational leadership, although many definitions recognize the ability to influence employees and strengthen their intrinsic motivation or commitment to increase the business performance as a key element (Gupta, MacMillan, & Surie, 2004; Ireland, Hitt, & Sirmon, 2003; Renko, El Tarabishy, Carsrud, & Brännback, 2015). A unique characteristic of entrepreneurial leadership is the additional focus on opportunities (Renko et al., 2015). More so on recognizing and exploiting (Shane & Venkataraman, 2000) entrepreneurial opportunities that enable an access to markets through innovations (Renko et al., 2015; Tidd, 2014). They also face challenges in the early stages of their business development, making it necessary to motivate their followers to improve performance, in order to succeed in gaining market share (McGrath & MacMillan, 2000). All this while still knowing their companies, their own, and their followers' limits (Brazeal & Herbert, 1999), and having limited access to resources (Drucker, 1985; Leitch et al., 2013). However, there are also two aspects of charismatic leadership that seldom appear in the entrepreneurial leadership literature: individualized consideration and, most notably, charisma (Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Renko et al., 2015). Charismatic leaders are normally recognized as entrepreneurial (Conger, 1999), but it is not necessarily the other way around, with entrepreneurs often lacking the necessary charisma to motivate others in following their risk-taking approach (Renko et al., 2015).

Thompson (1999) argues that entrepreneurial leaders are only able to sustain an effective organization if they adopt a visionary charismatic role beneath the architectural role (i.e. control) in

their enterprise. Only a balance between those aspects qualifies the founder to be an "entrepreneur" or an "entrepreneurial manager" (Thompson, 1999). However, it is not only within their business that entrepreneurs need to demonstrate charisma. Since being an entrepreneur means bringing novel and creative ideas to the market, it is necessary to positively influence others regarding idea validity (van Knippenberg & van Kleef, 2016). Persuasion as an outcome of charismatic leadership and communication (Niebuhr, Tegtmeier, & Brem, 2017; Tskhay, Zhu, Zou, & Rule, 2018) is required to acquire potential customers, but also to attract investors (Parhankangas & Ehrlich, 2014). Since newly founded businesses typically lack information regarding their market potential and cannot predict expected revenue, subjective factors like positive affect greatly influence the decision of investors (Davis, Hmieleski, Webb, & Coombs, 2017; Dimotakis, Conlon, & Ilies, 2012). As described previously, positive affect is associated with charisma and effective leadership (Bono & Ilies, 2006; van Knippenberg & van Kleef, 2016). Furthermore, the task of an entrepreneurial leader is to influence their followers, which, as stated in the definitions of entrepreneurial leadership, is typically achievable by being charismatic and inspiring trust (Alvarez & Barney, 2005, 2007). The necessity to acquire trusting and committed followers is described in Gupta et al. (2004) as "cast enactment", being one of the two cross cultural challenges entrepreneurial leaders have to face. Concluding this it seems that being a charismatic person is a key factor to attaining entrepreneurial success. This may sound challenging for those seeking to undertake business startup, but lacking personal charisma. However, as research demonstrates, appearing more charismatic can actually be taught (Antonakis et al., 2011; Frese, Beimel, & Schoenborn, 2003; Towler, 2003). So, a potential perceived lack of charisma in entrepreneurial leadership (Renko et al., 2015) could and should be overcome. But although convincing evidence exists on the effectiveness of transformational or charismatic leadership interventions, its definition and measurement has been criticized because of a lack of a tight definition (van Knippenberg & Sitkin, 2013). First of all, it remains unclear which specific behavioural signals and tactics charismatic leaders use to persuade and motivate their followers (Antonakis, Day, & Schyns, 2012). Hence, opening the black box of transformational and

charismatic communication represents a sparsely addressed topic in leadership research, but holds promise to close the gap between distal interpersonal perception of charisma and closely related transformational leadership and proximal actual communicative signals. We feel this is an important step in order to advance effective leadership development.

The effect of charisma in the context of leadership relies on the communicative abilities of leaders (de Vries, Bakker-Pieper, & Oostenveld, 2010), on both verbal and nonverbal channels (Connelly, Gaddis, & Helton-Fauth, 2013; Tskhay, Zhu, & Rule, 2017). Nonverbal signals are not merely an expression of an inner state, but at the same time act as a social signal and therefore have an interactive meaning. The expressive and communicative function of nonverbal cues either signals to the partner one's own state or the kind of behaviour one would like to see from the other person (Jack & Schyns, 2015; van Kleef, 2009, 2014; van Kleef, van den Berg, & Heerdink, 2015). Thus, smiling while praising someone would first and foremost indicate an inner state („I am happy"). But from an interactive point of view, different messages are being sent on a relational level (e.g. „I am happy because you achieved something!"), which also communicates to the other person that smiling is likely if such behaviour is being shown („I like what you are doing, please keep on doing that!"; Chartrand and Lakin, 2013; Goldin-Meadow and Alibali, 2013). Hence, in the workplace, nonverbal behaviour also plays a vital role, even beyond leadership processes (Reh, van Quaquebeke, & Giessner, 2017). In fact, it can promote affective and inferential reactions in organizations (van Kleef, 2014; van Kleef, Homan, & Cheshin, 2012; van Knippenberg & van Kleef, 2016). Summarizing, it is clear that social influence is required for successful leadership (e.g. Côté and Hideg, 2011; Van Kleef et al., 2011; Schultheiss and Brunstein, 2002) and nonverbal displays are crucial communicative skills for persuasion (Kopelman, Rosette, & Thompson, 2006; Overbeck, Neale, & Govan, 2010; van Kleef et al., 2015). However, research is scarce on which exact nonverbal signals increase followers' motivation.

Research shows that eye gaze and smiling are the most relevant nonverbal signals to regulate the flow of social interactions (Ho, Foulsham, & Kingstone, 2015; Kaukomaa, Peräkylä, & Ruusuvuori,

2015; Kleinke, 1986). Interestingly, these two nonverbal signals have been mentioned in all existing dramaturgical operationalization of charismatic leadership in research (e.g. Johnson and Dipboye, 2008) and are reliable cues for charisma evaluations. How leaders use eye signalling and smiling instrumentally and how this relates to different outcomes in followers has been paid little attention in leadership research so far. We know that frequent and prolonged eye contact and smiling are associated with ascriptions of charisma and dominance (Awamleh & Gardner, 1999; Damen, Van Knippenberg, & Van Knippenberg, 2008; Hall, Coats, & LeBeau, 2005; Strongman & Champness, 1968; Trichas, Schyns, Lord, & Hall, 2017), indicating leadership ability. Notably, beyond being one of the most prominent characteristics of charismatic personalities (Furtner, 2016), dominance plays an important role in entrepreneurial success (S. Kraus, Meier, & Niemand, 2016). Indeed, evidence suggests that leaders showing more frequent eye contact improve their followers' performance (S. K. Johnson & Dipboye, 2008). They also appear to be more effective, confident, powerful, and charismatic (Awamleh & Gardner, 1999; Brooks, Church, & Fraser, 1986; Gardner, 2003; Holladay & Coombs, 1993; Howell & Frost, 1989; Tskhay et al., 2017). It is noteworthy that a message's delivery, including how directed eye gaze is being used, is more important than the content when it comes to perceptions of leader charisma (Holladay & Coombs, 1994). The importance of eye gaze is likely based on the fact that humans are hardwired to shift their attention towards faces, especially pairs of eyes (M. H. Johnson, Dziurawiec, Ellis, & Morton, 1991). Once mutual eye contact is established, this also increases arousal levels (Helminen, Kaasinen, & Hietanen, 2011; Myllyneva & Hietanen, 2015). In addition, directed eye gaze also increases self-awareness and self-referential information processing (Baltazar et al., 2014; Conty, George, & Hietanen, 2016). Thus, offering eye contact might be particularly effective in hijacking a group's attention and gaining trust with a captivating message. In a next step, followers can then be persuaded to join in the pursuit of a leader's entrepreneurial vision.

Similarly, facial happiness regulates conversational dynamics (Kaukomaa et al., 2015), supports human cooperation (Centorrino, Djemai, Hopfensitz, Milinski, & Seabright, 2015; Danvers &

Shiota, 2018; Mussel, Göritz, & Hewig, 2013), and affects social perception (Chanes, Wormwood, Betz, & Barrett, 2018), for example promoting positive impressions in marketing communication (Söderlund & Sagfossen, 2017). Most importantly, happy facial expressions increase the ascription of leadership, sympathy and charisma (Damen et al., 2008; Rychlowska et al., 2017; Trichas et al., 2017) Damen, Van Knippenberg and Van Knippenberg, 2008), vice versa charismatic leaders generally display more positive emotions, which positively influence their followers (Bono & Ilies, 2006; Erez, Misangyi, Johnson, LePine, & Halverson, 2008). Finally, like directed eye gaze, smiling induces a state of heightened arousal in the observer (Krumhuber, Likowski, & Weyers, 2014).

The transfer of emotional arousal is one crucial mechanism in leadership communication (van Knippenberg & van Kleef, 2016) and refers to the most significant interpersonal effects of emotions within the social and organizational contexts (Erez et al., 2008; Grabo, Spisak, & van Vugt, 2017; van Kleef, 2009, 2014). Nonverbal communication, especially conveyed through emotional expressions and social gaze, demonstrates effects on all kinds of people and, depending on the adequacy of the nonverbal signal, can lead to affective and inferential reactions (van Kleef, 2014; van Kleef et al., 2012, 2015). Expressing energetic positive emotions, for example enthusiasm, and showing more directed eye gaze increases both charisma attributed to a person (Bono & Ilies, 2006; Erez et al., 2008; Tskhay et al., 2017) and the arousal level of the social encounter (Krumhuber et al., 2014; Myllyneva & Hietanen, 2015). Since arousal reflects motivational activation (Calderon, Kilinc, Maritan, Banavar, & Pfaff, 2016; Gable & Harmon-Jones, 2010; Lang, 2010), a behavioural willingness of the observer occurs (Damen et al., 2008). In fact, motivational arousal does not only alter cognitive functioning (Maran, Sachse, Martini, Weber, et al., 2017), but also modulates the processing of social signals (Maran, Sachse, & Furtner, 2015). Since both directed eye gaze and smiling heighten arousal state, they might enable to hijack followers' attention and increase their motivational preparedness. Taken together, using potent nonverbal tactics in leadership communication enables leaders to attract the focus of followers,

engage them, create a social bond with them, synchronize their levels of arousal, and tag followers while communicating a vision. This could help achieve increased performance in the context of organizational communication, combined with an increased willingness to act.

2. The Study

As stated previously, motivating employees to commit to their company's goals is an essential element of transformational leadership, and especially of entrepreneurial leadership, caused by the necessity to efficiently exploit opportunities (McGrath & MacMillan, 2000; Shane & Venkataraman, 2000). Although charismatic leadership is specifically effective in motivating followers and increasing team performance (Antonakis et al., 2011; Banks et al., 2017; Dvir, Eden, Avolio, & Shamir, 2002), it is still unclear which proximal communicative behaviours constitute the distal construal of this leadership style (Antonakis et al., 2016; van Knippenberg & Sitkin, 2013). Thus, of primary interest is how nonverbal signals can act as a motivating tool in managerial practice.

Nonverbal tactics are an essential part of effective leadership communication (Darioly & Mast, 2014; Trichas & Schyns, 2012; Trichas et al., 2017; Tskhay et al., 2017) and have an effect on the arousal state of the recipient, hence promoting a transfer of emotional arousal (van Kleef, 2014; van Kleef et al., 2012; van Knippenberg & van Kleef, 2016). Social gaze behaviour and smiling not only increase arousal in recipients (Krumhuber et al., 2014; Myllyneva & Hietanen, 2015), but also represent crucial characteristics of transformational and charismatic leadership communication (Awamleh & Gardner, 1999; Brooks et al., 1986; Gardner, 2003; Holladay & Coombs, 1993; Howell & Frost, 1989; Tskhay et al., 2017). Hence, the transfer of arousal by nonverbal signalling might represent an essential mechanism by which charismatic leaders effectively motivate their followers. General arousal refers to the activation of motivational systems (Calderon et al., 2016; Lang, 2010). More vividly, if emotional behaviour were understood as a vector, the associated arousal would be the vector magnitude and reflect the behaviour invigoration (Calderon et al.,

2016). This induction of a state of increased motivational willingness could have immediate effects on followers' behaviour and performance (e.g. Koning and van Kleef, 2015).

The goal of this study is to investigate whether the deliberate use of directed eye gaze and facial happiness is effective in motivating followers using an experimental design. Following Hisrich et al., (2007), we developed an experimental design focusing on entrepreneurial context to examine the causal role of nonverbal signals in invigorating performance (S. Kraus et al., 2016). The importance of using experimental approaches was mentioned by Hsu et al. (2017) especially to measure the impact leaders have on followers' performance (e.g. Koning and van Kleef, 2015). Considering psychological methods and experimental designs in entrepreneurship research is a valuable approach that offers insight into novel facets of entrepreneurial success at the behavioural level (Frese & Gielnik, 2014; Frese et al., 2000; S. Kraus et al., 2016). We predicted that more and prolonged eye gaze, conveyed by an entrepreneurial leader, increases followers' performance (hypothesis one). Our second prediction proposes that like directed eye gaze, a leader's facial happiness positively affects task execution (hypothesis two).

To test the derived predictions, we developed a 2 × 2 between-subject design with four experimental conditions. Participants received video-based task instructions by an entrepreneurial leader either displaying shortened or prolonged directed eye gaze and a low or high amount of smiling. Thereafter, participants performed the instructed motoric response task, were motivation was objectively measured by assessing response latencies. Although motivation is a multi-layered construct (Deci, Koestner, & Ryan, 1999), findings reveal that during a tapping task, motivated participants make significantly more taps than less motivated participants (Eysenck, 1964). Thus when information is gathered that extends beyond basic introspective surveys (Wilson, Tunstall, & Eysenck, 1972), the time required to achieve a specific reaction to a set target stimulus can be viewed as an objective measurement of motivation (Chiew & Braver, 2016; Zedelius, Veling, Bijleveld, Aarts, & Mattes, 2012). Moreover, leaders' nonverbal signals might exert their effect on followers through the transfer of arousal (van Kleef, 2009, 2014; van Knippenberg & van Kleef,

2016), which reflects the magnitude of behaviour invigoration (Calderon et al., 2016; Lang, 2010). Hence, the readiness to react, as reflected by response latencies, represents a reliable indicator of motivation. In fact, a plethora of evidence shows response latencies to be susceptible to systematic variations in immediate and future monetary reward, hence reflecting fluctuations in motivation (Bijleveld, Custers, & Aarts, 2012; Zedelius et al., 2014, 2012).

Evidence supporting our predictions would be an increase in objective performance, as measured by the reaction time, when the leader maintains directed eye gaze (hypothesis one) or shows more smiling (hypothesis two) as compared to the respective control condition. Furthermore, since evidence on the cumulative use of nonverbal displays is sparse, we performed exploratory analyses to test for an interaction between nonverbal signals.

3. Methods

A staged face-to-face situation was used to test the conditions of both high and low amounts of directed eye gaze as well as high and low amounts of smiles. In this experiment, participants played the role of followers and watched one of four instructional videos. Each video corresponded to one of the four 2 × 2 factorial conditions (high directed eye gaze vs. low directed eye gaze × high smile vs. low smile). Consistent with the experimental conditions, there were four different versions of the video, and aside from the manipulated variables, they were otherwise completely identical in terms of their content and presentation. The simulated leader in the video first presented himself as a successful entrepreneur who explained to the participants the importance of cooperation in the experiment towards optimizing business success and provided instructions on the following experimental task (see visual stimulus material).

Participants were randomized into four groups (high directed eye gaze and low directed eye gaze and/or high smile and low smile). They then completed a motoric reaction time task as soon as the video had finished. The measured task performance, namely reaction time, was operationalized as the dependent variable reflecting an objective indicator of participants' motivation.

3.1. Participant

All participants were volunteers and had normal or corrected-to-normal visual ability. They were not under the influence of psychoactive substances or psychopharmacologic treatment, nor had they suffered major head injuries at any time in their lives (self-report). Overall, 129 participants (67 females, 62 males; (Mage = 21.58, SD = 2.40; age range: 18-32 years) were randomly assigned to one of the four conditions and performed the motoric reaction time task. Informed consent was obtained according to the guidelines of the Ethics Committee of the Department of Psychology, University of Innsbruck.

3.2. Visual Stimulus Material

The video sequences lasted for five minutes. The content and delivery (i.e. prosody, speech tempo) were identical and showed an individual elaborating their career as the founder of a successful business start-up. The individual went on to explain the importance of ongoing employee tests, then revealing to the participants their participation in the subsequent task. For the sake of comparability, they should participate as part of their team. The video informed test participants that work precision, perception, and reaction time would be measured and that the requirements were accuracy and efficiency in task completion. Thereafter, participants were informed regarding the task they had to complete following the video. Depending on the testing condition, the participants viewed one of four videos where the entrepreneur either made high level or limited degree of directed eye gaze, and correspondingly smiled significantly or only to a limited extent (high directed eye gaze vs. low directed eye gaze × high smile vs. low smile). Notably, regarding directed eye gaze, it has been demonstrated that increased contact is equally as effective regardless of whether it is viewed as a video or through face-to-face interaction (Fry & Smith, 1975).

3.3. Motoric Reaction Time Task

In order to measure participants' performance, a reaction time task was used. Participants initially did one test round and received the instruction to press the space key as fast as possible as soon as they would see the letter "X" on the computer screen. Ten other white letters appeared during the test on a black background in one-second intervals as distractions between the target stimuli. The task lasted seven minutes and thirty seconds, and was presented in one of three conditions with five blocks each. The participants' motoric reaction time was measured as the time difference between the target letter appearing on the display and pressing the space key (A. T. Orosz, Cattapan-Ludewig, Gal, & Feldon, 2008; Ariane T. Orosz, Feldon, Gal, Simon, & Cattapan-Ludewig, 2007). The task results were evaluated with the goal of the investigation in mind, i.e. objectively understanding the motoric reaction time, since it proves to be a valid measurement for the participant's motivational level (Eysenck, 1964).

4. Data Analysis

A two-factor analysis of variance was performed to examine the interaction and primary effects of the 2 × 2 (high directed eye gaze vs. low directed eye gaze × high smile vs. low smile) investigation design. In addition, in order to test the hypotheses described above, a *t*-test for independent random samples (separated for each factor) was computed to allow a comparison of the participants' performance under the varying conditions. Degrees of freedom were corrected in case of deviance from sphericity (Greenhouse-Geisser). Effect sizes are reported by partial eta squared η_{Part}^2 [0.01 = small; 0.06 = medium; 0.14 = large] for analyses of variance and as Cohen's *d* [0.3 = small; 0.5 = medium; 0.8 = large] for *t*-tests (Elis, 2010). Bayesian factors were calculated according to the guidelines of Marsman and Wagenmakers (2017) and Wagenmakers et al. (2017). Bayes factors were reported as BF_{10} [1 to 3 = anecdotal evidence; 3 to 10 = moderate evidence; 10 to 30 = strong evidence; 30 to 100 = very strong evidence; >100 = extreme evidence; (Lee & Wagenmakers, 2013)]. Data analyses were conducted using SPSS (Version 24) and JASP (Version 0.8.6; JASP Team 2018).

5. Results

5.1. Effects of Directed Eye Gaze and Smiling

A 2 × 2 (high directed eye gaze vs. low directed eye gaze × high smile vs. low smile) factorial univariate analysis of variance (ANOVA) was conducted to investigate the interaction between eye contact and smiling. The results are presented in Table 1 and Figure 1. There was a main effect for directed eye gaze $F(1,125) = 10.117$, $MSE = 7082.266$, $p = 0.002$, $\eta_{Part}^2 = 0.075$, $BF_{10} = 14.51$, with neither an interaction between factors, $F(1,125) = 0.927$, $MSE = 641.603$, $p = 0.340$, $BF_{10} = 0.39$ nor a main effect for smiling $F(1,125) = 1.386$, $MSE = 970.578$, $p = 0.241$, $BF_{10} = 0.31$. In support of our first prediction, results indicate that maintained eye-contact during the leadership situation alters performance, as reflected by faster reaction times. On the other hand, no effect was found for smiling as stated in hypothesis two, or for an interplay between both directed eye gaze and smiling.

Table I.

Effects of alterations in eye contact and affective displays on the participants' motivational level, as indicated by their average reaction times.

Eye Contact	Affective Display				Total	
	Low		High			
	M [ms]	*SE* [ms]	*M* [ms]	*SE* [ms]	*M* [ms]	*SE* [ms]
Low	394.16	4.53	404.12	4.11	398.90	3.12
High	383.79	4.99	384.82	4.85	384.31	3.45
Total	388.98	3.41	394.47	3.41		

5.2. Effects of Directed Eye Gaze on Performance

T-tests for independent samples of the cross-subject variables of directed eye gaze and smiling were conducted to analyse performance differences. Compared to the low directed eye gaze group [*M* =

398.90; *SE* = 3.12], the participants from the high directed eye gaze group [*M* = 384.31; *SE* = 3.45] displayed faster reaction times, $t(127) = 3.13$, $p = 0.002$, $d = 0.551$, $BF_{10} = 14.51$. These results highlight a difference in the reaction time between both groups, supporting our first hypothesis, that a leader keeping eye contact within the simulated organizational context does in fact enhance objective performance.

5.3. Effects of Smiling on Performance

A *t*-test for independent samples was also conducted as part of diversity tests of the independent variables high smile and low smile. Compared to the low smile group [*M* = 388.98; *SE* = 3.41], test participants from the high smile group [*M* = 394.01; *SE* = 3.41], $t(127) = -1.04$, $p = 0.299$, $BF_{10} = 0.309$, did not display faster reaction time. Contrary to our second prediction, results showed that increased smiling on the part of the entrepreneur during the leader-follower interaction does not alter participants' performance.

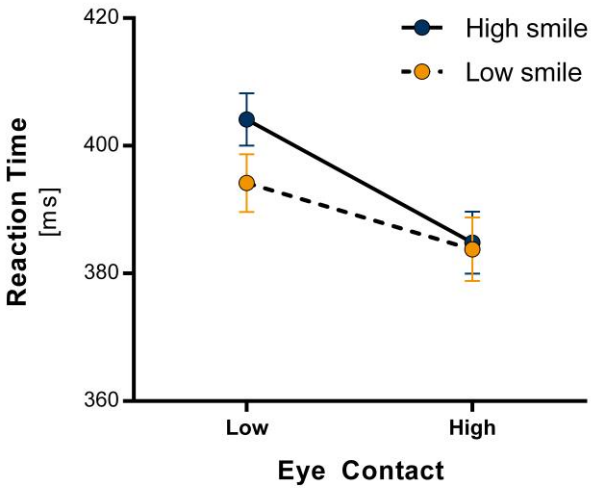

Figure 1.

Mean reaction times in the motoric reaction time paradigm across the four experimental conditions (low/high directed eye gaze × low/high smile). Error bars denote SE.

6. Discussion

The objective of this investigation was to determine whether the deliberate use of a leaders' directed eye gaze and smiling, two nonverbal signals associated with charisma and dominance, could increase objective performance in human subjects within an experimentally staged leader-follower situation. Indeed, our findings show enhanced performance when an entrepreneurial leader displayed high amounts of directed eye gaze as compared to low amounts of directed eye gaze while giving instructions. Participants who received eye contact from the leader reacted faster to the target stimulus than participants receiving low eye contact. Hence, directed eye gaze led to an increased behavioural readiness to act. This indicates that directed eye gaze acts on immediate motivational channels, as we determined it through an objective behavioural performance measurement. Manipulating directed eye gaze might represent a simple communication strategy to highlight the importance of any given task and potentially improve its execution through subtle persuasive signals, without having to use costly resources. Hence, a leader's use of nonverbal signals might be effective in motivating followers to show increased performance, and thereby represent a simple and effective tool in managerial practice. Our findings thus support the notion that a charismatic communication style characterized by increased directed eye gaze is beneficial for performance (Boies, Fiset, & Gill, 2015; Koning & van Kleef, 2015). But surprisingly and contrary to our expectations, alterations in the leader's smiling behaviour did not impact followers' performance. Based on our findings, two questions require further explanation. First, why does a leader's directed eye gaze increase follower performance and second, why does smiling show no such effect?

A plausible explanation for the performance enhancing effect of prolonged eye gaze is due to the fact that directed eye gaze increases arousal (Helminen et al., 2011; Jarick, Laidlaw, Nasiopoulos, & Kingstone, 2016). Arousal represents the driving force behind motivated behaviour and indicates the intensity of a performed action (Calderon et al., 2016; Pfaff & Banavar, 2007). In fact, arousal fluctuates in everyday life and dynamically changes human cognition and behaviour in response to immediate environmental demands (Berridge & Waterhouse, 2003; Maran, Sachse, & Furtner,

2018; Shields, Sazma, & Yonelinas, 2016) and even so at the workplace (Damen et al., 2008; Griffith, Connelly, Thiel, & Johnson, 2015; Koning & van Kleef, 2015; Malhotra, 2010). Thus, enhanced arousal leads to an increased behavioural preparedness, as measured by our motoric performance paradigm (Calderon et al., 2016; Lang, 2010; Lang & Bradley, 2010). Moreover, current theoretical models trying to explain the effect of leadership on followers' motivation postulate the transfer of arousal to be a key component (Damen et al., 2008; van Kleef, 2014). Therefore, increased arousal might enhance the motivational value of a represented task instruction (Zedelius et al., 2012) or simply increase action readiness (Calderon et al., 2016; Maran et al., 2018). The notion of arousal being a crucial phenomenon underlying the motivation-enhancing effects of leadership is supported by existing models that identify arousal as the central mode of action in organizational communication processes (van Kleef, 2014), focusing first and foremost on the effects of emotional facial expressions. Moreover, interpersonal transfer of arousal represents one crucial psychological mechanism behind the attribution of charisma and persuasion to leaders through their nonverbal emotional displays (Côté & Hideg, 2011; Damen et al., 2008). Beyond having merely an arousing effect, being gazed upon by others has also been demonstrated to promote comparable psychological effects to hearing our own name being called (Kampe, Frith, & Frith, 2003), as well as increasing self-focus (Conty et al., 2016). Hence, perceiving a leader's gaze might enhance the self-referential nature of a leader's instruction by signalling to followers that the leader's message is directed to oneself.

Embedded in a broader approach on leadership communication, our findings indicate that directed eye gaze is effective in motivating followers. Experiencing directed eye gaze can increase self-awareness (Myllyneva & Hietanen, 2016), self-focus (Conty et al., 2016) and even alter cognitive functioning (Conty et al., 2010; Hietanen et al., 2016). It is also a crucial building block of our daily communication as it activates mind reading abilities (Senju & Johnson, 2009). Moreover, the effect of eye gaze goes far beyond these effects by enhancing cooperative behaviours (Bateson, Nettle, & Roberts, 2006; Ekström, 2012) and reducing dishonesty (Nettle, Nott, & Bateson, 2012). As these

outcomes are required for effective leadership, existing evidence strongly supports the notion that eye gaze is indeed vital in promoting cooperative coordination (Grabo & van Vugt, 2016). Humans are biologically hardwired to orient towards faces (M. H. Johnson et al., 1991), as also indicated by a heightened sensitivity towards the eye region from birth (Farroni, Csibra, Simion, & Johnson, 2002). The eyes of others also offer important social information, and this conveying of information has been termed social referencing (Striano & Rochat, 2000). Thus, offering eye contact might be especially effective in grabbing the attention of a follower or a whole group. In this manner, a charismatic leader can create a mutual bond, stimulate followers' social cognition supporting group interaction (Grossmann, 2017) and the charismatic appearance promotes cooperation among them (Bateson et al., 2006; Ernest-Jones, Nettle, & Bateson, 2011; Grabo & van Vugt, 2016). Summarizing, establishing mutual eye contact represents a strong social signal that allows leaders to grab their followers' attention and influence them. With this increased impact, it becomes more likely that followers will join the leader in his or her vision.

In contrast, even though smiling is considered a crucial cue eliciting arousal in followers (Damen et al., 2008), contrary to our expectations, we found an increased amount of smiling had no influence on subjects' performance. There are several reasons, which could explain why smiling failed to enhance performance in our study. First, when looking at the hierarchy dividing leaders and followers within an organization, our findings contribute to the contradictions found in the current literature on verticality and positive emotional expressions (Hall, Halberstadt, & O'Brien, 1997; Hall, Horgan, & Carter, 2002). Although facial happiness shapes leadership perception (Trichas et al., 2017), promotes ascriptions of charisma (Damen et al., 2008) and represents a potent tool for persuasion (Crivelli & Fridlund, 2018) in the workplace, the social message sent by a smile is highly dependent on context (e.g. culture or adequacy; Krys et al., 2016, van Kleef, 2014) and reaches from affiliative to aggressive intentions ascribed (Rychlowska et al., 2017). Second, although smiling has been considered to promote a transfer of arousal in organizational communication (Damen et al., 2008), psychological evidence suggests that happiness represents a

state of low arousal, hence low in motivational intensity (Gable & Harmon-Jones, 2010, 2011; Nesse & Ellsworth, 2009). Third, in our study, nonverbal tactics were experimentally varied in a way that the entrepreneurial leader motivates and directs instructions towards his followers. Directed eye gaze act as a personal cue (Kampe et al., 2003) signals dominance (Strongman & Champness, 1968) and promotes both increased self-focus (Hietanen et al., 2016) and self-referencing (Conty et al., 2016). Hence, social gazing supports a more self-referential processing of a leader's instructions and increases the affordance of a leader's message by signalling status. By contrast, facial happiness signals affiliative intent (Danvers & Shiota, 2018; Marsh, Ambady, & Kleck, 2005), is linked to less dominant traits (Deska, Lloyd, & Hugenberg, 2018; Hess, Adams, & Kleck, 2009) and reliably indicates decreased physical dominance in competitive challenges (M. W. Kraus & Chen, 2013). Although smiling represents a strong nonverbal signal in organizational communication (van Knippenberg & van Kleef, 2016), presumably acting as a social reward signal (Lin, Adolphs, & Rangel, 2012), facial happiness alone might fail to increase the affordance of a leader's message.

These findings contradict Chen et al. (2013), suggesting that directed eye gaze leads to a lower degree of suggestibility. However, this inconsistency could be explained by the fact that Chen et al. selected controversial statements with political content. Additionally, it is important to consider that the relationship of the person in the video with the test participant was different in the conceptualization of the two studies. Our investigation used a staged interaction between an entrepreneurial leader and employees. Chen et al.'s (2013) video has a stimulus person providing their opinion about socio-political statements. Therefore, no hierarchical interaction has been simulated. Their study does not have the inspirational motivational content that was a decisive aspect of our investigation. Finally, Chen et al.'s (2013) study features persuasiveness as the key dependent variable, not objective performance as seen in this study.

Despite the application of a reliable experimental paradigm (e.g. Koning and van Kleef, 2015) and results providing strong evidence (Lee & Wagenmakers, 2013) for the derived predictions, the

present study has some limitations. First, although we refer to entrepreneurial leadership, our design was not performed in an organizational context, hence ecological validity represents one important limitation. To ensure the transfer of our findings to organizational performance and to prove their importance for actual leadership practice, there is a need to design field studies using a similar experimental approach. Second, in contrast to some evidence, our findings show that positive nonverbal displays are not effective in increasing follower motivation. The social message conveyed by smiling does in fact seem ambiguous and strongly context dependent (Rychlowska et al., 2017), but existing evidence shows smiling to increase charisma ascriptions (Bono & Ilies, 2006; Erez et al., 2008) and leadership effectiveness (van Knippenberg & van Kleef, 2016). Therefore, further research is needed to address the question under which conditions smiling affects follower motivation. For example, since smiling acts as a reward signal, it seems plausible that facial happiness increases motivation in followers when a leader's expression is shown after any given performance, acting as social reinforcement. In fact, recent approaches highlight the crucial role of adequacy when displaying facial expressions in the workplace (van Kleef, 2014; van Kleef et al., 2012), indicating that facial emotion exerts its effects when displayed as an evaluative response to a given situation.

6.1 Conclusions

The goal of this study was to investigate how a leader's charismatic communication can exert influence on followers' motivation to act. Our findings demonstrate that increased leader eye contact promotes enhanced performance of followers. This supports the hypothesis that an increased strategic use of specific nonverbal signals such as directed eye gaze is important for motivational issues in leadership situations. By contrast, this effect was not found with increased amounts of smiling by the leader. In managerial practice leader's eye contact might act like a pointer, tagging followers with the spoken content, as reflected by increased self-referential processing (Lamer, Reeves, & Weißbuch, 2015), along with increased self-focus (Conty et al.,

2016) and even altered attention (Böckler, van der Wel, & Welsh, 2014). Indeed, the effects of directed eye gaze stretch across multiple aspects. Not only can the eyes of others increase self-awareness (Myllyneva & Hietanen, 2016) and arousal (Helminen et al., 2011; Myllyneva & Hietanen, 2015), but eye gaze can effect cooperation (Bateson et al., 2006; Ekström, 2012), prosocial behaviour (Shotland & Johnson, 1978), honesty (Nettle et al., 2012) and even facilitates behavioural synchronization (Prinsen et al., 2017), hence creating the antecedents of successful group coordination, the main function of charismatic leadership (Grabo & van Vugt, 2016). We conclude that a leaders deliberative use of directed eye gaze might be effective in motivating followers to show increased performance, hence representing a simple and effective tool in leadership communication to enhance managerial practice.

Although transformational and charismatic leadership represents the most effective form of leadership (Banks et al., 2017; Barling, Weber, & Kelloway, 1996; Dvir et al., 2002), it has recently been criticized for its conceptual definition and operationalization (Antonakis et al., 2016; van Knippenberg & Sitkin, 2013). Since our study examines the effect of observable and measurable behaviour on follower motivation, it advances the quest to link the distal construal of transformational or charismatic leadership and proximal behaviour (Antonakis et al., 2012). Furthering this line of research represents a promising avenue to identify potent leadership communication skills and thereby aiding in the design for more effective interventions in leadership development (Antonakis et al., 2011; Frese et al., 2003; Towler, 2003).

Finally, this study supports the value of experimental approaches for research on leadership behaviour, extending beyond survey data and cross-sectional designs to identify and examine causal factors (Bommer, Pesta, & Storrud- Barnes, 2011; Fodor, Curşeu, & Fleştea, 2016; S. Kraus et al., 2016; Rico & Cohen, 2005).

6.2 Implications/Practical Relevance

This study offers important lessons for business practice, but requires further investigation. Nonverbal signals impact business communication effectiveness, most notably in leadership situations (Furtner & Baldegger, 2016; van Kleef, 2014; van Kleef et al., 2012). Transformational leadership behaviour is specifically effective in affecting the motivation of followers (Antonakis et al., 2011; Barling et al., 1996; Dvir et al., 2002). Therefore, in an actual leadership relationship that does not occur within an experiment, transformational leadership behaviour promotes desirable effects on employees (Furtner, 2016; Wang et al., 2011). Social perception of personality traits is ultimately in the eye of the beholder (Meindl, 1995). It is therefore irrelevant whether a leader actually displays charismatic personality traits or whether they are able to act charismatically to achieve a positive effect. Leaders can indeed be trained to appear charismatic (Antonakis et al., 2011; Frese et al., 2003; Towler, 2003). Our findings add to existing knowledge supporting the importance of nonverbal communication tactics to perform transformational leadership and thereby offers insights that might be addressed by effective leader and leadership training. The effectiveness of business training, even in terms of financial outcomes, have been queried by existing studies (Barling et al., 1996; Jones, Beynon, Pickernell, & Packham, 2013).

Specifically in business start-ups, survival is only possible if leaders are able to motivate their employees to deliver optimum performance (Renko et al., 2015), while possessing limited resources (Drucker, 1985; Leitch et al., 2013). Therefore, it is essential to use business resources as advantageously as possible. This research provides evidence for an easy way to achieve motivational preparedness to act with employees. The opportunity to increase followers' performance by employing simple behavioural tactics like maintaining directed eye gaze while delivering important messages would finally increase business performance. This study recognizes the need for future experimental research considering teachable, business-relevant behaviours for leaders to appear more charismatic and thus being able to adopt a more efficient and charismatic leadership communication style.

7. References

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