

ORIGINAL ARTICLE OPEN ACCESS

Eyes on the Leader: Gaze Behavior as a Cue for Follower Conscientiousness

Simon Liegl^{1,2}  | Thomas Maran^{3,4}  | Marco Furtner⁵  | Pierre Sachse² 

¹Institute for Leadership and Human Resource Management, University of St. Gallen, St. Gallen, Switzerland | ²Department of Psychology, University of Innsbruck, Innsbruck, Austria | ³Department of Economics & Management, Free University of Bozen-Bolzano, Bozen, Italy | ⁴New Leadership, Vaduz, Liechtenstein | ⁵Department Entrepreneurship & Management, University of Liechtenstein, Vaduz, Liechtenstein

Correspondence: Simon Liegl (simon.liegl@unisg.ch)

Received: 6 May 2025 | **Revised:** 9 November 2025 | **Accepted:** 21 November 2025

Keywords: conscientiousness | gaze behavior | leader-follower interaction

ABSTRACT

A key to a leader's effectiveness lies in their ability to convey information about their traits and abilities to their followers by means of charismatic signaling. The traits followers might signal in turn have, however, not yet been observed. Focusing on one of the most salient and potent nonverbal behaviors and the most valued follower trait in the organizational context, we investigated the potential of eye-directed gaze behavior to signal follower conscientiousness. Using mobile eye-tracking we unobtrusively measured participants' gaze behavior in a naturalistic yet standardized leader-follower interaction. Our findings indicate conscientiousness to shape followers' eye-directed gaze behavior which, in turn, affects observers' impressions of conscientiousness. While other traits were also related to gaze behavior, they were not inferred from gaze. Importantly, more conscientious followers appear to specifically instrumentalize their gaze when speaking and direct it at the leader to support their own arguments. Thus, this study underscores the importance of investigating followers' signaling of their traits and abilities, identifies eye-directed gaze as a potential signal of conscientiousness, and further emphasizes the significance of gaze behavior as a particularly potent social cue in the organizational context.

1 | Introduction

Few nonverbal behaviors are as salient and potent as gaze behavior. We use our gaze to both collect and communicate information (Risko et al. 2016). Looking others in the eyes is an almost surefire way to garner attention (Kampe et al. 2003) while not keeping eye contact is (erroneously) seen as an indicator of dishonesty and lying (Vrij et al. 2019). But what do eye-gazes actually communicate? In the organizational context they could be identified as a particularly potent communication tool for leaders, allowing them to signal their leadership ability by displaying visual engagement (Liegl et al. 2024; Maran et al. 2019) and thus motivating followers (Maran et al. 2019). In contrast, followers are traditionally seen as mere gaze providers (Cheng et al. 2022). Nevertheless, they also possess the capacity

to utilize their gaze to convey information about themselves. Yet, research has not investigated which *follower abilities* they would signal through this particularly salient behavior. Whereas charisma is the trait of exceptional leaders (Banks et al. 2017), conscientiousness is the trait of exceptional followers. As leaders are recommended to select for this trait in job candidates (Barrick and Mount 2012; Dudley et al. 2006; Wilmot and Ones 2019), it presents itself as a promising counterpart to charisma for followers to signal.

We therefore propose eye-directed gaze behavior as an indicator of follower conscientiousness and consequently investigate how personality affects objectively and unobtrusively measured eye-directed gaze behavior and, through this cue, personality perceptions in a naturalistic leader-follower interaction. With this

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2025 The Author(s). *Journal of Applied Social Psychology* published by Wiley Periodicals LLC.

study, we provide tripartite contributions to research and practice. Firstly, we shift away from the prevailing focus on leaders in current organizational behavior research and rather shed light on follower communication. This enables us to contribute to the signaling theory by differentiating the process of downward signaling from leaders, with the lateral and upward signaling processes followers engage in, and to provide further support for the dual function of social gaze (Risko et al. 2016). Secondly, by conducting a mobile eye-tracking study in a naturalistic social context, we provide first support for followers' gaze acting as a potential signal for their conscientiousness. Thirdly, our findings assist leaders in identifying the most promising followers and followers in more effectively conveying their traits.

1.1 | Signaling in Organizations

Communication, particularly in the organizational setting (Connelly et al. 2011), is often characterized by information asymmetry between the involved entities. The signaling theory (Spence 1973) describes the process of overcoming this asymmetry. An entity trying to convey their traits and intentions can provide information through observable behaviors, so-called signals (Spence 1973). The key criteria for such signals being utilized by others to infer information are twofold (Connelly et al. 2011). First, they should be costly, that is, difficult to fake. Second, they should be honest, that is, not actually faked. Based on an implicit judgement of their cost and honesty, receivers decide which signals to utilize to inform their judgement of the sender.

In recent years, researchers have mostly focused on the signaling of leaders, a trend that can be traced back to the signaling approach to charisma defining the construct as a specific type of leader signaling (Antonakis et al. 2016). When it comes to follower signaling, however, little is known about the characteristics followers tend to signal and how they go about signaling them. Yet, to produce conclusive insights into the leader-follower signaling process, both sides need to be investigated. This is of particular relevance, as it is unlikely that followers intend to convey the same traits that leaders do. Charismatic signaling communicates leadership aptitude and thus facilitates leader emergence and effectiveness (Grabo et al. 2017) – a process that is quite desirable for individuals engaged in formal or informal leadership positions or striving to obtain them but less so for the majority of workers that are not. This, however, does not imply that they have nothing to gain from signaling. Rather, there should be other attributes more essential for followers to convey. Both leaders and followers would benefit from distinguishing themselves by signaling characteristics that not everyone possesses, thereby conveying their value to others. Whereas leaders benefit most from convincing others of their aptitude at identifying the most beneficial way forward, followers would benefit most by demonstrating they are able to clear the path for their leader and to cooperate with others to achieve this objective. Or, phrased differently, leaders engage in downward signaling, showing others why they should be followed. In contrast, followers engage in both upward and lateral signaling, demonstrating to both their leader and peers their value as contributors to goal achievement. Followers should

therefore prioritize signaling characteristics that allow them to appear as a valuable asset rather than attempting to rise above the crowd. Thus, we strived to identify characteristics followers would benefit most from signaling and the behaviors they engage in to signal them. Thereby, we shift the present focus of research from downward signaling by leaders to lateral and upward signaling by followers.

1.2 | The Communicative Function of Gaze

Our gaze behavior is not solely a means to collect information; rather it is one of the most salient and potent nonverbal behaviors available to us. Humans are predisposed to direct their attention to the eyes (Farroni et al. 2002). Their eyes have potentially even evolved a pronounced white sclera around the pupil to specifically facilitate others discerning the focus of one's attention (Kobayashi and Kohshima 1997). Intently gazing at someone can elicit similar responses to calling their name (Kampe et al. 2003). It draws their attention to the individual gazing and ensures they are more receptive to information by increasing their arousal level (Hietanen et al. 2020). Thus, gaze can shape the flow of conversations (Maran et al. 2021), stimulate social synchronization (Luft et al. 2022) and facilitate interpersonal attentional coordination (Haraped et al. 2024). Further, depictions of watchful or staring eyes can elicit certain behavioral reactions, such as increasing donations (Powell et al. 2012), self-awareness (Park et al. 2022), voter mobilization (Panagopoulos and van der Linden 2019), hygiene (Pfafftheicher et al. 2018), compliance (Snyder et al. 1974), and prosocial behavior (Manesi et al. 2016), while simultaneously discouraging deviant behaviors such as fare evasion (Ayal et al. 2021), bike thefts (Nettle et al. 2012), and antisocial behavior in general (Dear et al. 2019).

This dual function of social gaze, that is, the capacity of human gaze to both collect, but also to provide information for others (Risko et al. 2016) which, in turn, affects their behavior, implies gaze to act as a signal. Supporting this notion, gaze could be connected to perceptions of desirable leader attributes (Dovidio and Ellyson 1982; Hall et al. 2005), credibility (Hemsley and Doob 1978) and charisma (Liegl et al. 2024; Maran et al. 2019). This is based on the mechanism, that in natural environments, particularly in social contexts, focusing on the entirety of the scene – including all individuals present – enhances one's ability to detect potential cooperative opportunities or threats (Maran 2025). Neglecting the broader visual and social environment in favor of focusing on a single individual signals a prioritization of that source of information and thus visual engagement.

1.3 | Current Research

Our inherent focus on others' gaze, its resulting salience and demand for attention, and its ability to stimulate certain attributions and behavioral tendencies in senders makes it a prime candidate to act as a strong social signal (Connelly et al. 2011). To indeed act as a signal, it is, however, necessary that inter-individual characteristics can affect gaze behavior. Research

supports this, as traits, particularly the Big Five, were indicated to predict eye movement patterns during visual exploration of objects (Rauthmann et al. 2012), information seeking (Al-Samarraie et al. 2017), and social attention (Wu et al. 2014). Gaze parameters have consequently been utilized to predict these traits (e.g., Hoppe et al. 2018). Thus, gaze presents itself as a salient and potent nonverbal signal.

Followers would particularly benefit from signaling their characteristics in a context where they must prove themselves, such as in a job interview or negotiation. As leaders are encouraged to select applicants based on their conscientiousness (Barrick and Mount 2012), it would be a highly valuable trait for followers to be able to saliently signal to their prospective leaders. This is based on the high degree of discipline, persistence, and diligence more conscientious individuals are typically disposed towards (Costa and McCrae 1992a), which led to this trait being repeatedly identified as the best noncognitive predictor of job performance and other highly desirable occupational outcomes (e.g., Barrick and Mount 1991; Dudley et al. 2006; Mammadov 2022; Wilmot and Ones 2019), as well as overall employability (Barrick and Mount 2012; Perkins 2016). We consequently chose a leader-follower interaction setting in which new recruits to a company must negotiate for their job compensation with their leader as the context to investigate followers' signaling in.

While other traits were also found to relate to gaze behavior, we expect conscientiousness to be the central characteristic followers would try to convey in leader-follower interactions for three reasons: Firstly, meta-analyses show conscientiousness to be consistently linked to desirable work outcomes (e.g., Barrick and Mount 1991; Dudley et al. 2006; Mammadov 2022; Wilmot and Ones 2019), whereas other traits appear to be more context specific (e.g., Mammadov 2022; Maran et al. 2022; Zare and Flinchbaugh 2019). Consequently, in lieu of a specific working context that would render other traits more desirable for leaders, as is the case in our study, conscientiousness should be the trait most likely to ensure selection from the leader and thus the most valuable to convey. Additionally, we expect the remaining Big Five traits, namely extraversion, agreeableness, neuroticism, and openness, to potentially be undesirable to convey or to be conveyed in a different manner. In detail, extraversion, though being a prime catalyst of social behavior, could have adverse effects when signaled towards a leader. Extraverted individuals tend to be identified as more prototypical and effective leaders, which is described as the extraverted leadership advantage (Spark and O'Connor 2021; Wilmot et al. 2019; but see Liegl and Furtner 2023). Consequently, incumbent leaders might view them as a potential threat to their station. Neuroticism would not be a trait desirable to leaders and therefore followers would benefit more from hiding it. We would expect agreeableness to be more valuable to be signaled laterally to peers, facilitating someone to fit in, rather than upward to a leader. Moreover, if expressed through one's gaze at all, we would not expect agreeableness to be expressed through gaze behavior toward the leader's eyes. Rather, agreeable individuals should be more likely to shy away from doing so as not to challenge their leader's status. Instead, the trait is more likely to be related to a more equally distributed gaze frequency across all interlocutors as not to alienate anyone present. Finally, while openness might

also be a beneficial trait to signal when trying to convince a leader of one's value, research indicates its relevance to be particularly specific to the modern workplace (e.g., Maran et al. 2022; Silvia and Christensen 2020). It might, therefore, be less universally desirable in more traditional work contexts. Furthermore, we would not expect openness to be expressed through a leader-centered but rather through a more exploratory gaze behavior, depicting a literal openness for other perspectives and a broad attentional focus.

Secondly, in such leader-follower interactions, a critical factor that influences the probability of success is the extent to which individuals have diligently prepared themselves for the task. Conscientious individuals are more likely to engage in preparatory measures. Yet, others could exhibit comparable aptitude by improvising and feigning preparedness. Such efforts, however, would deplete cognitive resources (Ekman and Friesen 1969), which brings us back to the signaling potential of eye-directed gaze behavior. Exhibiting eye contact requires cognitive resources (Doherty-Sneddon and Phelps 2005), particularly while speaking (Kajimura and Nomura 2016). Consequently, as the cognitive resources of more conscientious individuals should get less depleted from having to develop arguments on the spot, they would be available to expend on increased eye contact.

Thirdly, similar to how leaders' eye-directed gaze indicates them to focus on the follower (Maran 2025), followers' visual engagement with their leader could indicate their diligence and willingness to follow. We therefore propose conscientiousness as the central predictor of followers' eye-directed gaze behavior in leader-follower interactions. Nevertheless, we will measure all five personality traits to assess the specificity of conscientiousness as a predictor of eye-directed gaze in leader-follower interactions, as well as to explore further effects of personality on social gaze behavior beyond its signaling function.

Hypothesis 1. *Followers' conscientiousness is positively related to the frequency of gazes directed at their leader's eyes.*

Beyond the notion that gaze behavior is shaped by personality, it should also incite corresponding attributions in perceivers to fulfil its signaling function. According to the Brunswik lens model (Brunswik 1956), people refer to certain behavioral cues as a lens to infer unobservable characteristics from others, particularly in situations of zero or minimal acquaintance (Hirschmüller et al. 2018; Nestler and Back 2013). While these judgements might not always be accurate, in the long-term, observers should learn to only inform their judgements through behaviors with informative value that validly relate to the behavior (Nestler and Back 2013), which should be the case for such a basal behavior as eye-directed gaze. Further, to be utilized for impression formation, producing or maintaining this cue should come at a cost (Connelly et al. 2011). Beyond the already identified general costs of requiring cognitive resources and limiting the perceptual scope, eye-directed gaze behavior entails a third cost specific to the leader-follower context. Gazing at others is seen as indicative of one's status and power (Dovidio and Ellyson 1982). Lower status individuals thus tend to gaze less at higher status individuals, such as leaders, when directly interacting with them (Gobel et al. 2015) as this could be seen as violating norms (Emery 2000; Risko et al. 2016). If this outstanding behavior is not backed up by outstanding qualities it could lead to

repercussions (Bellezza et al. 2014). Conscientious individuals are able to incur these costs, as they possess a highly desirable quality, being conscientious, which justifies deviant behavior and allows them to diverge from the norm of restricting their eye-contact with leaders. Based on these inherent cognitive and social costs, followers' eye-directed gaze behavior should be perceived as an honest signal for conscientiousness in leader-follower interactions.

Hypothesis 2. *The frequency of followers' gazes directed at their leader's eyes is positively related to others' perceptions of their conscientiousness.*

With both pathways of signaling in place, the Brunswik lens model (Brunswik 1956; Nestler and Back 2013) lends itself as a framework to assess the full signaling process of followers' conscientiousness. We proposed eye-directed gaze behavior as a valid cue for conscientiousness, as conscientious individuals will have an easier time affording the cognitive and social costs of this signal. Based on this costliness, we also expect receivers to utilize this cue to inform their judgements of conscientiousness. Thus, followers' eye-directed gaze should act as a mediator between their conscientiousness and others' perceptions thereof.

Hypothesis 3. *The frequency of followers' gaze directed at their leader's eyes mediates the relationship between self- and observer-rated conscientiousness.*

2 | Methods and Design

To investigate the signaling function of followers' gaze, we designed a mobile eye-tracking study. This study employed confederates and a leader-follower interaction paradigm to provide a naturalistic social setting in which we could measure gaze behavior objectively and unobtrusively. We utilized the New Recruit Negotiation (Pinkley et al. 1994), adapted for multiple negotiators (Liegl et al. 2024). As opposed to Liegl et al. (2024), however, the subject in our study was assigned the role of a negotiator rather than the leader. Otherwise, we followed the procedures laid out therein, which we describe in greater detail in 2.3 *Leader-follower interaction*. Following the interaction, confederates provided observer-ratings of the subject, who, in turn, completed self-rating questionnaires. To set firm boundaries for our proposition of eye-directed gaze specifically signaling conscientiousness and to differentiate follower from leader signaling (Liegl et al. 2024; Maran et al. 2019), we collected self- and observer-ratings of the full five factor model of personality as well as charisma. We assessed charisma and the four personality traits beyond conscientiousness to examine whether conscientiousness is indeed the key trait followers signal. This approach also allowed us to explore other potential predictors of eye-directed gaze behavior in leader-follower interactions. Study data and supplementary analyses are available at OSF: https://osf.io/k5bgs/?view_only=c18f76c921e2478fa12e8ebd36c88efd.

2.1 | Sample

Our initial sample encompassed 48 students. We based this sample size on a G*Power analysis recommending a sample of 37 to 49 participants to detect an effect of 0.35 to 0.40,

respectively (Liegl et al. 2024) at a power of 0.80. We chose the more conservative threshold to ensure that if not all eye-tracking recordings were usable, we would still reach an adequate sample size. Indeed, eye-tracking recordings of six participants proved to be faulty (incomplete or low-quality recordings). Furthermore, in the debriefing, three subjects indicated they recognized the other participants as confederates. They were consequently excluded from data analyses.

This left us with a final sample of 39 participants (18 female; 21 male) with a mean age of 24.08 (SD = 3.42; range 19 to 32 years). Participation was restricted to individuals with normal or corrected-to-normal (soft contact lenses only) visual ability. The study was conducted following the guidelines of the ethics committee of the senior authors' university and all participants provided informed consent.

Three confederates (1 female; 2 male, all aged 23), participated in each interaction. The same male confederate was appointed to the leader position in each trial.

2.2 | Measures

2.2.1 | Eye-Directed Gaze Behavior

We objectively measured the subjects' gaze behavior using the mobile eye-tracking device Tobii Pro Glasses 2. Using an in-built algorithm of the software Tobii Pro Lab, we mapped each recorded gaze point to a separate static image of each confederate on a frame-by-frame basis. This allowed us to define standardized areas of interest for each confederate's eye-region, ensuring a high degree of comparability between recordings. The automated mapping had a substantial error rate, which resulted in about two thirds of the gaze points being assigned to an incorrect location on the reference image. All automatic mappings therefore had to be controlled and were manually recoded in case of deviations. This process took about 15–25 h per recording and was conducted by the first author and six student assistants. Once all gaze points were correctly assigned and verified, they were processed using the Tobii I-VT Attention filter. Final analyses are based on the frequency of gazes per second on the eye-regions to account for differences in recording durations. In our analyses, we differentiate between the gaze targets, that is, gazes on the eye-region of the leader, of the two other followers, and of all three confederates (overall eye gazes). Furthermore, we made a distinction between eye gazes while the participant was speaking, that is, actively engaged in the interaction, and while they were listening to the confederates. Only the first index was used for hypothesis testing, while the others allowed us to assess whether the relationship between conscientiousness is specific to participants actively engaging in the leader-follower interaction or more universal. To account for the right-skewed distribution of our data, we performed a square root transformation on the five eye-tracking parameters.

2.2.2 | Personality

Subjects provided self-ratings of their personality on the NEO-FFI (60-items; McCrae and Costa 2004; German translation by Borkenau and Ostendorf 2008). This questionnaire follows the

five-factor model of personality and assesses neuroticism (McDonald's omega reliability: $\omega = 0.84$), extraversion ($\omega = 0.84$), openness ($\omega = 0.74$), agreeableness ($\omega = 0.88$), and conscientiousness ($\omega = 0.80$) using twelve items each, which were rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Confederates provided observer-ratings of the subjects' personality on the BFI-S16 (Lang 2005), the prelude being rephrased to "the person I am rating is someone, who..." to allow for peer ratings (e.g., Costa and McCrae 1992b; Rammstedt and John 2007; Soto and John 2017). Neuroticism ($\omega = 0.79$, $ICC = 0.74$), extraversion ($\omega = 0.88$, $ICC = 0.81$), agreeableness ($\omega = 0.73$, $ICC = 0.37$), and conscientiousness ($\omega = 0.86$, $ICC = 0.77$) were assessed with three items each, openness ($\omega = 0.74$, $ICC = 0.56$) with four. All were rated on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree).

2.2.3 | Charisma

We assessed self-ratings and observers' perceptions of charisma using the six-item General Charisma Inventory (GCI; Tskhay et al. 2018). This measure differentiates between an influence (self-rating: $\omega = 0.79$; observer-rating: $\omega = 0.88$, $ICC = 0.76$) and an affability (self-rating: $\omega = 0.74$; observer-rating: $\omega = 0.86$, $ICC = 0.72$) component of charisma. Ratings were provided on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

2.3 | Leader-Follower Interaction

To stimulate an engaged leader-follower interaction, we employed a negotiation task based on the New Recruit Negotiation (Pinkley et al. 1994). This task was adapted to accommodate multiple followers and consisted of only one topic for each negotiator (see Liegl et al. 2024).

At the start of the study, the subject was seated at a round table. They received a short introduction to the following study and were informed to be acting as both a negotiator and a participating observer in a negotiation task with three other participants. This latter step would be necessary as no experimenter would be present during the interaction as not to influence the interaction. As a recording device, they were provided with the Tobii Pro Glasses 2 mobile eye-tracker. Subjects were elucidated about the function of the glasses as an eye-tracker during a debriefing after the study. Following the calibration of the eye-tracking device, three confederate, introduced as fellow study subjects, joined the participant at the table (Liegl et al. 2024; Maran et al. 2021). They were randomly assigned to one of the remaining seats. These confederates participated in all negotiations and were extensively trained to appear natural while speaking (e.g., by pausing, showing speech disfluencies and uttering fillers), show limited gestures and facial expressions, and to display an equal amount of eye contact to each participant.

The participants were informed that they had randomly been assigned as the leader of the negotiation or as one of three

followers, whereas in actuality, all roles were consistent throughout the study and the subject always held the position of a follower. The follower role in this negotiation was tasked with choosing one of three types of bonus compensations they would like to receive in their current job (i.e., an increased wage, additional vacation days, or additional benefits including bonus payments and a better health insurance) and persuading the leader to provide them with. They were presented with a minimum goal they had to achieve. The leader was provided with ten categories for each type of compensation that they could offer to the followers (e.g., wages from 1.000 to 10.000€ per month, or vacation days from 10 to 55 a year). The leader was limited in their total amount of resources and could not grant each follower what they would wish for. Thus, followers had to provide persuasive arguments supporting their own preferences and opposing the others to achieve their goal. The negotiation consisted of four rounds, each round beginning with an offer from the leader, followed by each follower in alternating order presenting one reason to increase their chosen type of compensation, and one reason opposing each of the two other types. Both the leader and the followers were asked to keep their speaking time at about 2 min each per round, resulting in an expected negotiation time of 32 min.

To facilitate arguing for the respective compensation, sample arguments supporting and opposing each type were handed out to each follower in a written form. The actual subject was the first to choose, followed by the confederates who each had prepared verbatim protocols to advocate two of the compensation types so that they could adapt based on the subject's choice. After the followers chose their topic and had time to prepare their arguments, the experimenter handed the lead of the negotiation over to the leader and left the room. The leader would go on to start the interaction by listing his initial offerings and providing the order in which the followers had to speak. He would check that each follower provided exactly one reason supporting their chosen type of compensation and one each opposing the other two followers' choices. After that he would start the next round by reflecting on each argument and declaring his updated allocation of compensations.

3 | Results

As a first step, we computed Pearson correlations to assess the relationships between participants' personality, their eye-directed gaze behavior, and confederates' impressions of their personality (see Table 1). Participants' self-rated conscientiousness was related to more frequent gazes at their leader's eyes ($r = 0.45$, $p = 0.004$; Figure 1A) and when speaking ($r = 0.33$, $p = 0.042$; Figure 1B). Interestingly, their openness was related to less eye gazes when speaking ($r = -0.35$, $p = 0.027$). These results provide initial support for Hypothesis 1, particularly emphasizing the role of the leader as a target of participants' eye-directed gaze, as well as the instrumentalization of gaze while being actively engaged in the interaction. In turn, eye gazes both on the leader ($r = 0.37$, $p = 0.020$; Figure 1C) and negotiators ($r = 0.35$, $p = 0.031$), both while listening ($r = 0.36$, $p = 0.024$) and speaking ($r = 0.53$, $p < 0.001$; Figure 1D), and overall eye gazes ($r = 0.42$, $p = 0.008$) were positively related to ascriptions of conscientiousness, but no other personality trait (all p 's > 0.05). While, consistent with

TABLE 1 | Means, standard deviations, reliabilities, and correlations among participants' age and gender, their eye-directed gaze behavior, and self- and observer-ratings of personality and charisma.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Age	24.08	3.42																					
2. Gender ^a	0.54	0.51	0.02																				
3. Eye gazes (leader)	0.14	0.08	-0.11	0.11																			
4. Eye gazes (followers)	0.47	0.35	0.09	-0.11	0.57***																		
5. Eye gazes (listening)	0.76	0.32	0.00	-0.14	0.75***	0.93***																	
6. Eye gazes (speaking)	0.67	0.31	-0.01	-0.12	0.73***	0.82***	0.84***																
7. Eye gazes (total)	0.73	0.31	0.00	-0.14	0.77***	0.93***	0.99***	0.91***															
8. Neuroticism (self)	2.56	0.65	-0.07	-0.36*	-0.17	0.02	0.00	0.01	0.01	(0.84)													
9. Extraversion (self)	3.42	0.60	-0.14	-0.20	0.18	0.08	0.15	0.01	0.12	-0.35*	(0.84)												
10. Openness (self)	3.79	0.46	0.10	-0.08	-0.18	-0.16	-0.22	-0.35*	-0.26	0.22	0.10	(0.74)											
11. Agreeableness (self)	3.85	0.54	-0.02	-0.55***	0.02	0.03	0.10	0.00	0.08	-0.02	0.50**	0.20	(0.80)										
12. Conscientiousness (self)	3.27	0.72	0.05	0.01	0.45**	0.19	0.26	0.33*	0.27	-0.49**	0.19	-0.32*	0.00	(0.88)									
13. Charisma influence (self)	3.27	0.72	-0.09	0.13	0.41**	0.03	0.15	0.15	0.15	-0.33*	0.23	-0.05	-0.14	0.26	(0.79)								
14. Charisma affinity (self)	3.93	0.82	-0.31	-0.29	0.27	0.22	0.35*	0.25	0.33*	0.03	0.40*	-0.11	0.45**	-0.13	0.25	(0.74)							
15. Neuroticism (observer)	4.01	1.13	0.00	-0.19	-0.27	-0.09	-0.12	-0.22	-0.15	0.34*	-0.17	0.11	-0.04	-0.12	-0.39*	-0.12	(0.79)						
16. Extraversion (observer)	4.10	1.32	-0.16	-0.16	0.07	0.08	0.07	0.15	0.09	0.02	0.30	-0.03	0.17	-0.10	0.25	0.33*	-0.65***	(0.88)					
17. Openness (observer)	4.41	0.73	-0.10	-0.45**	-0.19	0.00	-0.04	-0.03	-0.04	0.14	0.39*	0.14	0.47**	-0.07	0.00	0.26	-0.30	0.69***	(0.74)				
18. Agreeableness (observer)	4.99	0.71	-0.19	-0.38*	-0.12	0.16	0.13	0.12	0.13	0.07	0.02	-0.09	0.32*	0.03	-0.26	0.21	-0.13	0.29	0.54***	(0.73)			
19. Conscientiousness (observer)	4.39	1.13	-0.08	-0.47**	0.37*	0.35*	0.36*	0.52***	0.42**	0.01	0.25	0.04	0.45**	0.29	0.12	0.23	-0.26	0.30	0.36*	0.18	(0.86)		
20. Charisma influence (observer)	2.83	0.83	-0.18	-0.08	0.28	0.14	0.17	0.30	0.21	-0.05	0.21	0.00	0.24	0.02	0.35*	0.29	-0.74***	0.81***	0.62***	0.19	0.60***	(0.88)	
21. Charisma affinity (observer)	2.98	0.79	-0.16	-0.32*	-0.03	0.16	0.16	0.14	0.16	0.24	0.19	-0.08	0.31	-0.18	0.05	0.39*	-0.44**	0.78***	0.73***	0.64***	0.23	0.61***	(0.86)

Note: *N* = 39 participants, observer-ratings based on three confederates. Reliabilities are presented along the diagonal in parentheses

p* < 0.05; *p* < 0.01; ****p* < 0.001.

^aDummy variable (0 = female, 1 = male).

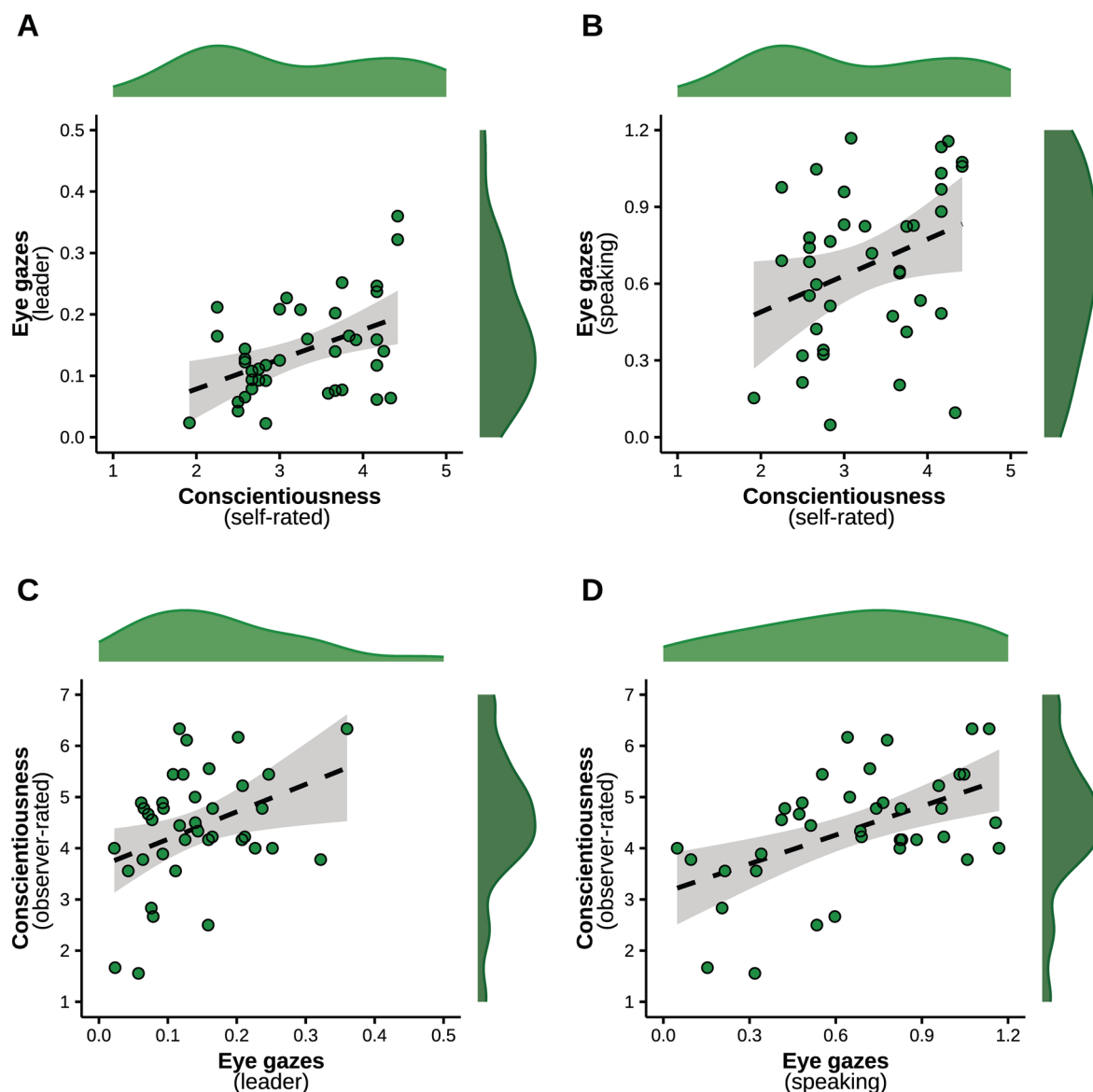


FIGURE 1 | Correlations between the frequency of eye gazes directed at the leader (A, C) and while speaking (B, D) and self- (A, B) as well as observer-ratings (C, D) of conscientiousness. Scatter plots display unstandardized values ($N = 39$) and include linear regression lines with a 95% confidence interval. Density distributions on top and to the right of the plots denote relative frequencies.

previous research (Liegl et al. 2024; Maran et al. 2020; Maran et al. 2019), we find charismatic influence self-ratings to be related to eye gazes, they did not stimulate perceptions of charisma in observers. These findings support Hypothesis 2 but indicate less specificity of observers regarding the target and context of eye-directed gaze. As further exploratory analyses, we computed correlations between participants' personality and their total speaking time to investigate whether these could drive gaze frequencies. We find no significant relationships (for detailed statistics see the supplementary analyses, Table S1 on OSF).

After these initial analyses, we evaluated the robustness of our findings and the specificity of conscientiousness as a predictor for eye-directed gaze behavior by means of linear regression analyses. We computed a separate analysis for each of the five eye-tracking parameters. Only our first analysis regarding the frequency of gazes at the leader's eyes was used to test our hypothesis, while all other analyses were exploratory. In each

analysis, Model 1 encompassed age and gender as control variables, Model 2 the Big Five, and Model 3 charismatic influence and affability. We report standardized coefficients. For participants' gazes directed at their leader's eyes (see Table 2), self-rated conscientiousness acted as the sole significant predictor in Model 2. When adding the two charisma dimensions to the model, conscientiousness showed an even more pronounced weight, while charismatic influence, though correlating with this parameter, was not a significant predictor. Similarly, conscientiousness was the sole significant predictor for participants' eye gazes while speaking, though only when adding charisma to the model (see Table 2). In all other regression models, no parameter reached significance, indicating gazes at the leader's eye to be the central cue for conscientiousness. Thus, these results provide further support for Hypothesis 1.

To gain further insight into Hypothesis 2, we composed an exploratory regression model including our eye-tracking parameters

TABLE 2 | Results of the regression analyses, assessing the additional variance in participants' eye-directed gaze behavior explained beyond their age and gender (Model 1) by the inclusion of the five factors of personality (Model 2) and charisma (Model 3).

Variables	Eye gazes (leader)			Eye gazes (followers)			Eye gazes (listening)			Eye gazes (speaking)			Eye gazes (total)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Age	-0.12	-0.10	0.00	0.09	0.13	0.20	0.00	0.05	0.15	-0.01	0.03	0.11	0.00	0.05	0.14
Gender ^a	0.11	0.28	0.32	-0.11	-0.05	-0.04	-0.14	0.00	0.02	-0.12	-0.03	-0.01	-0.14	-0.01	0.01
Neuroticism		0.24	0.29		0.19	0.14		0.25	0.23		0.25	0.24		0.26	0.25
Extraversion		0.16	0.00		0.15	0.06		0.19	0.06		0.04	-0.08		0.15	0.02
Openness		-0.07	0.00		-0.17	-0.05		-0.23	-0.11		-0.31	-0.22		-0.25	-0.13
Agreeableness		0.11	0.10		-0.03	-0.20		0.07	-0.08		0.04	-0.07		0.05	-0.09
Conscientiousness		0.52*	0.56***		0.19	0.30		0.27	0.37		0.34	0.42*		0.29	0.39
Charisma influence			0.25			-0.13			0.01			0.03			0.01
Charisma affinity			0.32			0.39			0.44			0.36			0.43
R ²	0.03	0.27	0.42	0.02	0.09	0.17	0.02	0.15	0.27	0.01	0.23	0.31	0.02	0.17	0.29
F-Statistic	0.45	1.64	2.38	0.37	0.46	0.66	0.36	0.81	1.19	0.24	1.31	1.47	0.36	0.91	1.28
P (> F)	0.639	0.161	0.037	0.697	0.859	0.739	0.699	0.588	0.337	0.784	0.280	0.208	0.702	0.512	0.289

Note: N = 39. Standardized coefficients are reported.

*p < 0.05; **p < 0.01.

^aDummy variable (0 = female, 1 = male).

TABLE 3 | Results of the regression analyses, assessing the additional variance in perceived conscientiousness explained by participants' eye-directed gaze behavior (Model 2) beyond their age and gender (Model 1).

Variables	Perceived conscientiousness	
	(1)	(2)
Age	-0.07	-0.06
Gender ^a	-0.47**	-0.57***
Eye gazes (leader)		0.60*
Eye gazes (follower)		0.70
Eye gazes (listening)		-1.34
Eye gazes (speaking)		0.43
Eye gazes (total)		0.16
R ²	0.23	0.55
F-Statistic	5.27	5.36
P (> F)	0.010	< 0.001

Note: N = 39. Standardized coefficients are reported.

*p < 0.05; **p < 0.01; ***p < 0.001.

^aDummy variable (0 = female, 1 = male).

as predictors for perceived conscientiousness, again controlling for participants' age and gender. This analysis indicates participants' gazes on the leader's eyes as the sole significant predictor and thus utilized cue, apart from participants gender, to infer their conscientiousness from. Overall, the gaze parameters explained an additional 32.1% in the variance of observer-ratings compared to their demographics alone (see Table 3). To further investigate the gender effect, we computed exploratory mediation analyses between participants' gender and gaze behavior utilizing the PROCESS macro v4.2 (Hayes 2022) with 5,000 bootstrapping samples. However, we found no significant interaction effects that would indicate the presence of gendered gaze norms (for detailed statistics see the supplementary analyses on OSF).

Lastly, we computed mediation analyses, again using the PROCESS macro, to assess Hypothesis 3. The frequency of gazes directed at the leaders' eyes and while speaking acted as mediators between self- and observer-ratings of conscientiousness in a separate model each. Participants' age and gender were included as covariates to all models. We again report standardized coefficients. Analyses indicated that self-ratings of participants' conscientiousness indirectly shaped observer-ratings through the frequency of gazes at their leader's eyes (see Figure 2A), supporting Hypothesis 3. An additional exploratory analysis on eye gazes while speaking explained a substantial proportion of the relationship between self- and observer-ratings of conscientiousness, yet the mediation effect did not reach significance (see Figure 2B).

4 | Discussion

Utilizing mobile eye-tracking, we investigated whether followers' eye-directed gaze behavior in leader-follower interactions is

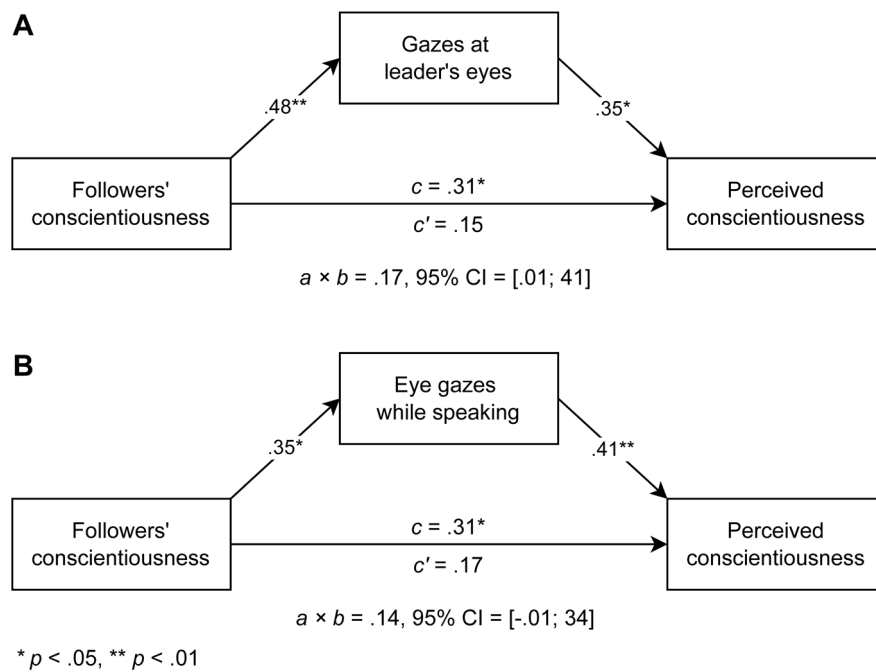


FIGURE 2 | Mediation models including path coefficients for the frequency of eye gazes directed at the leader (A) and while speaking (B).

related to their conscientiousness and, in turn, is linked to others' perceptions of this trait, that is, whether gaze could act as a signal for follower conscientiousness. Our findings support that follower conscientiousness, as opposed to any other Big Five trait or charisma, was related to their eye-directed gaze behavior which, in turn, appeared to be utilized by others as an indicator thereof. Even more importantly, we find that conscientiousness is specifically related to gazes at the leader's eyes. This indicates an active instrumentalization of eye-directed gaze behavior from followers to support their own arguments in the eyes (quite literally) of the decision maker. Mediation analyses based on the Brunswik lens model (Brunswik 1956) indicate that by directing their gaze at their leader's eyes, followers might be able to shape others' impressions of themselves and thus to increase their own likelihood of success in the leader-follower interaction. Thus, our study provides first support for a potential signaling function of followers' eye-directed gaze behavior. These findings support the notion, that similarly to leaders being able to signal their charisma and thus their leadership by visually engaging with their followers (Liegl et al. 2024; Maran et al. 2019), followers might be able to signal their conscientiousness by visually engaging with their leaders. This is based on the core mechanism, that showing eye-directed gaze behavior in leader-follower interactions entails cognitive (Doherty-Sneddon and Phelps 2005; Kajimura and Nomura 2016) and social (Gobel et al. 2015; Maran 2025) costs which more conscientious individuals should be more easily able to incur. Based on these costs and its salience, eye-directed gaze presents itself as a valuable signal for others to inform their judgements of the sender (Connelly et al. 2011).

Thus, this study entails threefold contributions to research and practice. Firstly, by providing first indication of followers signaling their traits upwards to their leaders, we hope to stimulate further interest in investigating the signaling process in organizations from multiple perspectives rather than focusing on leaders' downward signaling. Future research will be able to

directly build up on our findings by assessing further behaviors that followers utilize to signal their characteristics and garner beneficial evaluations from their superiors. Secondly, this study advances our understanding of how our personality shapes our gaze behavior, which appears to be strongly dependent on the targets and the context it is employed in. In turn, it provides insights into how traits may be accurately predicted from gaze behavior (Hoppe et al. 2018). Thirdly, it is essential for leaders to recognize accurate markers of conscientiousness when selecting personnel for important tasks, as well as for followers to effectively convey their conscientiousness, as it is one of the best and most consistent predictors of job performance (Wilmot and Ones 2019). Our research suggests gaze behavior directed at leaders' eyes as one of these effective and valid markers.

4.1 | Limitations and Future Research Directions

As this study constituted a first expedition into the frontier of follower signaling, it possesses inherent limitations but also provides ample opportunity for future research to extend on its findings. First, in this investigation we focused on gaze behavior as it is a particularly salient and potent nonverbal signal (Grossmann 2017). However, as charisma can be signaled through a broad set of cues (Grabo et al. 2017), there should also be multiple means to signal conscientiousness. This presents a wellspring for future research opportunities, investigating verbal, nonverbal and embodied conscientious follower tactics, as well as their interdependences and interactions.

Second, our methodology focused on finding a balance between internal and external validity by employing a naturalistic leader-follower interaction setting and utilizing confederates to ensure standardization between trials. Due to the complexity of implementing such a design and collecting as well as analyzing eye-tracking recordings, our sample size is limited. To extend on our

findings, future research could both conduct more controlled experimental studies, for example actively manipulating gaze behavior and assessing onlookers' responses, and field studies, investigating followers' gaze behavior in situ. Doing so would also allow for an extension of our findings within larger samples.

Third, the boundary conditions and contextual factors that shape the signaling function of eye-directed gaze ought to be investigated further. Our study indicated gender effects of conscientiousness perceptions and previous research suggests culture to affect gaze behavior (Haensel et al. 2022), perceptions thereof (Uono and Hietanen 2015) and physiological responses to gaze (Akechi et al. 2013). Furthermore, while conscientiousness is an overall desirable trait for employees to possess (Barrick and Mount 1991; Wilmot et al. 2019), research indicates openness as a trait highly relevant for social problem solving (D'Zurilla et al. 2011) and the modern digital workplace (Maran et al. 2022). Thus, depending on the workplace setting and its respective affordances, different traits might be signaled. Additionally, we presume that signaling conscientiousness through gaze is at least partially explainable by eye-directed gaze behavior consuming cognitive resources, which should be less strained in more conscientious individuals due to their diligence in preparing for the interaction. Yet, we did not actually assess cognitive capabilities, such as intelligence, working memory capacity or verbal fluency (Doherty-Sneddon and Phelps 2005; Kajimura and Nomura 2016). These are further traits that would be well worth investigating in the future.

Lastly, our findings might suggest increased eye-directed gaze behavior to solely elicit positive attributions in observers. This, however, is likely not the case. Highly frequent and, particularly, prolonged eye gazes might be perceived as staring, which could result in a too-much-effect (Pierce and Aguinis 2013), stimulating inferences of undesirable attributes, such as competitiveness (Giacomantonio et al. 2018), rather than benefitting the sender.

5 | Conclusion

Successful leader-follower interactions are heavily reliant on both parties conveying information about their traits and states. While this is an interactive process, extant research has primarily focused on the leader and their signaling of leadership abilities. In contrast to charisma being the trait of effective leaders, conscientiousness is the trait of effective followers and thus lends itself well to be investigated as a central followership ability they might be enticed to signal. By employing mobile eye-tracking in a naturalistic leader-follower interaction setting, we could identify followers' eye-directed gaze behavior, particularly when directed at the eyes of their leader, to function as a valid and utilized cue for their conscientiousness.

Acknowledgments

We wish to express our gratitude to Marlon Erb, Hanna Wode, Christoph Herz, and Nils Bergau for their aid in data acquisition and processing. Open access publishing facilitated by University of St Gallen, as part of the Wiley - University of St Gallen agreement via the Consortium Of Swiss Academic Libraries.

Data Availability Statement

Study data is available at OSF <https://osf.io/k5bgs>.

References

- Akechi, H., A. Senju, H. Uibo, Y. Kikuchi, T. Hasegawa, and J. K. Hietanen. 2013. "Attention to Eye Contact in the West and East: Autonomic Responses and Evaluative Ratings." *PLoS One* 8, no. 3: e59312. <https://doi.org/10.1371/journal.pone.0059312>.
- Al-Samarraie, H., A. Eldenfria, and H. Dawoud. 2017. "The Impact of Personality Traits on Users' Information-Seeking Behavior." *Information Processing & Management* 53, no. 1: 237–247.
- Antonakis, J., N. Bastardo, P. Jacquart, and B. Shamir. 2016. "Charisma: an Ill-Defined and Ill-Measured Gift." *Annual Review of Organizational Psychology and Organizational Behavior* 3, no. 1: 293–319. <https://doi.org/10.1146/annurev-orgpsych-041015-062305>.
- Ayal, S., J. Celse, and G. Hochman. 2021. "Crafting Messages to Fight Dishonesty: A Field Investigation of the Effects of Social Norms and Watching Eye Cues on Fare Evasion." *Organizational Behavior and Human Decision Processes* 166: 9–19. <https://doi.org/10.1016/j.obhdp.2019.10.003>.
- Banks, G. C., K. N. Engemann, C. E. Williams, J. Gooty, K. D. McCauley, and M. R. Medaugh. 2017. "A Meta-Analytic Review and Future Research Agenda of Charismatic Leadership." *Leadership Quarterly* 28, no. 4: 508–529. <https://doi.org/10.1016/j.leaqua.2016.12.003>.
- Barrick, M. R., and M. K. Mount. 1991. "The Big Five Personality Dimensions and Job Performance: A Meta-Analysis." *Personnel Psychology* 44, no. 1: 1–26. <https://doi.org/10.1111/J.1744-6570.1991.TB00688.X>.
- Barrick, M. R., and M. K. Mount. 2012. "Select on Conscientiousness and Emotional Stability." In *Handbook of Principles of Organizational Behavior*, 19–39. John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781119206422.ch2>.
- Bellezza, S., F. Gino, and A. Keinan. 2014. "The Red Sneakers Effect: Inferring Status and Competence From Signals of Nonconformity." *Journal of Consumer Research* 41, no. 1: 35–54. <https://doi.org/10.1086/674870>.
- Borkenau, P., and F. Ostendorf. 2008. "NEO-FFI: NEO-Fünf-Faktoren-Inventar." In *nach Costa und McCrae*. Manual. Hogrefe.
- Brunswick, E. 1956. *Perception and the Representative Design of Psychological Experiments*. University of California Press.
- Cheng, J. T., F. H. Gerpott, and A. J. Benson, et al. 2022. "Eye Gaze and Visual Attention as a Window Into Leadership and Followership: A Review of Empirical Insights and Future Directions." *Leadership Quarterly* 34: 101654. <https://doi.org/10.1016/J.LEAQUA.2022.101654>.
- Connelly, B. L., S. T. Certo, R. D. Ireland, and C. R. Reutzel. 2011. "Signaling Theory: A Review and Assessment." *Journal of Management* 37, no. 1: 39–67. <https://doi.org/10.1177/0149206310388419>.
- Costa, P. T., and R. R. McCrae. 1992a. "Four Ways Five Factors Are Basic." *Personality and Individual Differences* 13, no. 6: 653–665. [https://doi.org/10.1016/0191-8869\(92\)90236-1](https://doi.org/10.1016/0191-8869(92)90236-1).
- Costa, P. T., and R. R. McCrae. 1992b. *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) Professional Manual*. Psychological Assessment Resources.
- Dear, K., K. Dutton, and E. Fox. 2019. "Do 'Watching Eyes' Influence Antisocial Behavior? A Systematic Review & Meta-Analysis." *Evolution and Human Behavior* 40, no. 3: 269–280. <https://doi.org/10.1016/J.EVOLHUMBEHAV.2019.01.006>.
- Doherty-Sneddon, G., and F. G. Phelps. 2005. "Gaze Aversion: A Response to Cognitive or Social Difficulty?" *Memory & Cognition* 33, no. 4: 727–733. <https://doi.org/10.3758/BF03195338>.
- Dovidio, J. F., and S. L. Ellyson. 1982. "Decoding Visual Dominance: Attributions of Power Based on Relative Percentages of Looking While Speaking and Looking While Listening." *Social Psychology Quarterly* 45, no. 2: 106–113. <https://doi.org/10.2307/3033933>.

- Dudley, N. M., K. A. Orvis, J. E. Lebiecki, and J. M. Cortina. 2006. "A Meta-Analytic Investigation of Conscientiousness in the Prediction of Job Performance: Examining the Intercorrelations and the Incremental Validity of Narrow Traits." *Journal of Applied Psychology* 91, no. 1: 40–57. <https://doi.org/10.1037/0021-9010.91.1.40>.
- D'Zurilla, T. J., A. Maydeu-Olivares, and D. Gallardo-Pujol. 2011. "Predicting Social Problem Solving Using Personality Traits." *Personality and Individual Differences* 50, no. 2: 142–147. <https://doi.org/10.1016/J.PAID.2010.09.015>.
- Ekman, P., and W. V. Friesen. 1969. "Nonverbal Leakage and Clues to Deception." *Psychiatry* 32, no. 1: 88–106. <https://doi.org/10.1080/00332747.1969.11023575>.
- Emery, N. J. 2000. "The Eyes Have it: The Neuroethology, Function and Evolution of Social Gaze." *Neuroscience and Biobehavioral Reviews* 24, no. 6: 581–604. [https://doi.org/10.1016/S0149-7634\(00\)00025-7](https://doi.org/10.1016/S0149-7634(00)00025-7).
- Farroni, T., G. Csibra, F. Simion, and M. H. Johnson. 2002. "Eye Contact Detection in Humans From Birth." *Proceedings of the National Academy of Sciences* 99, no. 14: 9602–9605. <https://doi.org/10.1073/pnas.152159999>.
- Giacomantonio, M., J. Jordan, F. Federico, M. J. van den Assem, and D. van Dolder. 2018. "The Evil Eye: Eye Gaze and Competitiveness in Social Decision Making." *European Journal of Social Psychology* 48, no. 3: 388–396. <https://doi.org/10.1002/EJSP.2336>.
- Gobel, M. S., H. S. Kim, and D. C. Richardson. 2015. "The Dual Function of Social Gaze." *Cognition* 136: 359–364. <https://doi.org/10.1016/j.cognition.2014.11.040>.
- Grabo, A., B. R. Spisak, and M. van Vugt. 2017. "Charisma as Signal: An Evolutionary Perspective on Charismatic Leadership." *Leadership Quarterly* 28, no. 4: 473–485. <https://doi.org/10.1016/J.LEAQUA.2017.05.001>.
- Grossmann, T. 2017. "The Eyes as Windows Into Other Minds: An Integrative Perspective." *Perspectives on Psychological Science* 12, no. 1: 107–121. <https://doi.org/10.1177/1745691616654457>.
- Haensel, J. X., T. J. Smith, and A. Senju. 2022. "Cultural Differences in Mutual Gaze During Face-to-Face Interactions: A Dual Head-Mounted Eye-Tracking Study." *Visual Cognition* 30, no. 1–2: 100–115. <https://doi.org/10.1080/13506285.2021.1928354>.
- Hall, J. A., E. J. Coats, and L. S. LeBeau. 2005. "Nonverbal Behavior and the Vertical Dimension of Social Relations: A Meta-Analysis." *Psychological Bulletin* 131, no. 6: 898–924. <https://doi.org/10.1037/0033-2909.131.6.898>.
- Haraped, L., S. E. Huber, W. F. Bischof, and A. Kingstone. 2024. "Looking, Pointing, and Talking Together: How Dyads of Differential Expertise Coordinate Attention During Conversation." *PLoS One* 19, no. 12: e0315728. <https://doi.org/10.1371/journal.pone.0315728>.
- Hayes, A. F. 2022. *Introduction to Mediation, Moderation, and Conditional Process Analysis* (3rd ed.). Guildford Press.
- Hemsley, G. D., and A. N. Doob. 1978. "The Effect of Looking Behavior on Perceptions of a Communicator's Credibility." *Journal of Applied Social Psychology* 8, no. 2: 136–142. <https://doi.org/10.1111/j.1559-1816.1978.tb00772.x>.
- Hietanen, J. O., M. J. Peltola, and J. K. Hietanen. 2020. "Psychophysiological Responses to Eye Contact in a Live Interaction and in Video Call." *Psychophysiology* 57, no. 6: e13587. <https://doi.org/10.1111/PSYP.13587>.
- Hirschmüller, S., S. C. Schmukle, S. Krause, M. D. Back, and B. Egloff. 2018. "Accuracy of Self-Esteem Judgments at Zero Acquaintance." *Journal of Personality* 86, no. 2: 308–319. <https://doi.org/10.1111/jopy.12316>.
- Hoppe, S., T. Loetscher, S. A. Morey, and A. Bulling. 2018. "Eye Movements During Everyday Behavior Predict Personality Traits." *Frontiers in Human Neuroscience* 12: 105. <https://doi.org/10.3389/fnhum.2018.00105>.
- Kajimura, S., and M. Nomura. 2016. "When We Cannot Speak: Eye Contact Disrupts Resources Available to Cognitive Control Processes During Verb Generation." *Cognition* 157: 352–357. <https://doi.org/10.1016/J.COGNITION.2016.10.002>.
- Kampe, K. K., C. D. Frith, and U. Frith. 2003. "Hey John: Signals Conveying Communicative Intention Toward the Self Activate Brain Regions Associated With Mentalizing, Regardless of Modality." *Journal of Neuroscience: The Official Journal of the Society for Neuroscience* 23, no. 12: 5258–5263. <https://doi.org/10.1523/JNEUROSCI.23-12-05258.2003>.
- Kobayashi, H., and S. Kohshima. 1997. "Unique Morphology of the Human Eye." *Nature* 387, no. 6635: 767–768. <https://doi.org/10.1038/42842>.
- Lang, F. R. 2005. Erfassung des kognitiven Leistungspotenzials und der Big Five mit Computer-Assisted-Personal-Interviewing (CAPI): Zur Reliabilität und Validität zweier ultrakurzer Tests und des BFI-S. Deutsches Institut für Wirtschaftsforschung.
- Liegl, S., and M. R. Furtner. 2023. "Introverted and yet Effective? A Faceted Approach to the Relationship Between Leadership and Extraversion." *Frontiers in Psychology* 14: 1185271. <https://doi.org/10.3389/FPSYG.2023.1185271>.
- Liegl, S., T. Maran, S. Kraus, M. Furtner, and P. Sachse. 2024. "Eyes That Lead: The Charismatic Influence of Gaze Signaling on Employee Approval and Extra-Effort." *Journal of Business Research* 183: 114861. <https://doi.org/10.1016/J.JBUSRES.2024.114861>.
- Luft, C., I. Zioga, and A. Giannopoulos, et al. 2022. "Social Synchronization of Brain Activity Increases During Eye-Contact." *Communications Biology* 5, no. 1: 412. <https://doi.org/10.1038/s42003-022-03352-6>.
- Mammadov, S. 2022. "Big Five Personality Traits and Academic Performance: A Meta-Analysis." *Journal of Personality* 90, no. 2: 222–255. <https://doi.org/10.1111/jopy.12663>.
- Manesi, Z., P. A. M. Van Lange, and T. V. Pollet. 2016. "Eyes Wide Open: Only Eyes That Pay Attention Promote Prosocial Behavior." *Evolutionary Psychology* 14, no. 2: 1–15. <https://doi.org/10.1177/1474704916640780>.
- Maran, T. 2025. "Developing and Validating the Charismatic Leadership Tactics Scale: Evidence From Multi-Source Questionnaire Studies, Cognitive and Behavioral Assessments and a Leadership Training Evaluation." *Review of Managerial Science* 19, no. 4: 1001–1039. <https://doi.org/10.1007/s11846-024-00782-w>.
- Maran, T., M. Furtner, S. Liegl, S. Kraus, and P. Sachse. 2019. "In the Eye of a Leader: Eye-Directed Gazing Shapes Perceptions of Leaders' Charisma." *Leadership Quarterly* 30, no. 6: 101337. <https://doi.org/10.1016/j.leaqua.2019.101337>.
- Maran, T., M. Furtner, S. Liegl, T. Ravet-Brown, L. Haraped, and P. Sachse. 2021. "Visual Attention in Real-World Conversation: Gaze Patterns Are Modulated by Communication and Group Size." *Applied Psychology* 70, no. 4: 1602–1627. <https://doi.org/10.1111/apps.12291>.
- Maran, T., S. Moder, M. Furtner, T. Ravet-Brown, and S. Liegl. 2020. "From Self-Report to Behavior: Mapping Charisma Onto Naturalistic Gaze Patterns." *Personality and Individual Differences* 152: 109562. <https://doi.org/10.1016/j.paid.2019.109562>.
- Maran, T. K., M. R. Furtner, S. Kraus, S. Liegl, and P. Jones. 2019. "Leaders' Eye Contact Enhances Motivation: An Experimental Approach." *Journal of Small Business Strategy* 29, no. 3: 16–32.
- Maran, T. K., S. Liegl, A. Davila, S. Moder, S. Kraus, and R. V. Mahto. 2022. "Who Fits Into the Digital Workplace? Mapping Digital Self-Efficacy and Agility Onto Psychological Traits." *Technological Forecasting and Social Change* 175: 121352. <https://doi.org/10.1016/J.TECHFORE.2021.121352>.
- McCrae, R. R., and P. T. Costa. 2004. "A Contemplated Revision of the NEO Five-Factor Inventory." *Personality and Individual Differences* 36, no. 3: 587–596. [https://doi.org/10.1016/S0191-8869\(03\)00118-1](https://doi.org/10.1016/S0191-8869(03)00118-1).

- Nestler, S., and M. D. Back. 2013. "Applications and Extensions of the Lens Model to Understand Interpersonal Judgments at Zero Acquaintance." *Current Directions in Psychological Science* 22, no. 5: 374–379. <https://doi.org/10.1177/0963721413486148>.
- Nettle, D., K. Nott, and M. Bateson. 2012. "Cycle Thieves, We Are Watching You: Impact of a Simple Signage Intervention Against Bicycle Theft." *PLoS One* 7, no. 12: e51738. <https://doi.org/10.1371/journal.pone.0051738>.
- Panagopoulos, C., and S. van der Linden. 2019. "Political Identity Moderates the Effect of Watchful Eyes on Voter Mobilization: A Reply to Matland and Murray (2019)." *Social Influence* 14, no. 3–4: 152–158. <https://doi.org/10.1080/15534510.2019.1698123>.
- Park, I., D. Lee, and Y. J. Sah. 2022. "Under Watching Eyes in News Comment Sections: Effects of Audience Cue on Self-Awareness and Commenting Behaviour." *Behaviour & Information Technology* 42: 1–17. <https://doi.org/10.1080/0144929X.2022.2114937>.
- Perkins, A. 2016. *The Welfare Trait: How State Benefits Affect Personality*. Springer.
- Pfafftheicher, S., C. Strauch, S. Diefenbacher, and R. Schnuerch. 2018. "A Field Study on Watching Eyes and Hand Hygiene Compliance in a Public Restroom." *Journal of Applied Social Psychology* 48, no. 4: 188–194. <https://doi.org/10.1111/JASP.12501>.
- Pierce, J. R., and H. Aguinis. 2013. "The Too-Much-of-a-Good-Thing Effect in Management." *Journal of Management* 39, no. 2: 313–338. <https://doi.org/10.1177/0149206311410060>.
- Pinkley, R. L., M. A. Neale, and R. J. Bennett. 1994. "The Impact of Alternatives to Settlement in Dyadic Negotiation." *Organizational Behavior and Human Decision Processes* 57, no. 1: 97–116. <https://doi.org/10.1006/OBHD.1994.1006>.
- Powell, K. L., G. Roberts, and D. Nettle. 2012. "Eye Images Increase Charitable Donations: Evidence From an Opportunistic Field Experiment in a Supermarket." *Ethology* 118, no. 11: 1096–1101. <https://doi.org/10.1111/ETH.12011>.
- Rammstedt, B., and O. P. John. 2007. "Measuring Personality in One Minute or Less: A 10-item Short Version of the Big Five Inventory in English and German." *Journal of Research in Personality* 41, no. 1: 203–212. <https://doi.org/10.1016/j.jrp.2006.02.001>.
- Rauthmann, J. F., C. T. Seubert, P. Sachse, and M. R. Furtner. 2012. "Eyes as Windows to the Soul: Gazing Behavior is Related to Personality." *Journal of Research in Personality* 46, no. 2: 147–156. <https://doi.org/10.1016/j.jrp.2011.12.010>.
- Risko, E. F., D. C. Richardson, and A. Kingstone. 2016. "Breaking the Fourth Wall of Cognitive Science." *Current Directions in Psychological Science* 25, no. 1: 70–74. <https://doi.org/10.1177/0963721415617806>.
- Silvia, P. J., and A. P. Christensen. 2020. "Looking up at the Curious Personality: Individual Differences in Curiosity and Openness to Experience." *Current Opinion in Behavioral Sciences* 35: 1–6. <https://doi.org/10.1016/J.COBEHA.2020.05.013>.
- Snyder, M., J. Grather, and K. Keller. 1974. "Staring and Compliance: A Field Experiment on Hitchhiking." *Journal of Applied Social Psychology* 4, no. 2: 165–170. <https://doi.org/10.1111/j.1559-1816.1974.tb00666.x>.
- Soto, C. J., and O. P. John. 2017. "Short and Extra-Short Forms of the Big Five Inventory–2: The BFI-2-S and BFI-2-XS." *Journal of Research in Personality* 68: 69–81. <https://doi.org/10.1016/j.jrp.2017.02.004>.
- Spark, A., and P. J. O'Connor. 2021. "State Extraversion and Emergent Leadership: Do Introverts Emerge as Leaders When They Act Like Extraverts?" *Leadership Quarterly* 32, no. 3: 101474. <https://doi.org/10.1016/J.LEAQUA.2020.101474>.
- Spence, M. 1973. "Job Market Signaling." *Quarterly Journal of Economics* 87, no. 3: 355. <https://doi.org/10.2307/1882010>.
- Tskhay, K. O., R. Zhu, C. Zou, and N. O. Rule. 2018. "Charisma in Everyday Life: Conceptualization and Validation of the General Charisma Inventory." *Journal of Personality and Social Psychology* 114, no. 1: 131–152. <https://doi.org/10.1037/pspp0000159>.
- Uono, S., and J. K. Hietanen. 2015. "Eye Contact Perception in the West and East: A Cross-Cultural Study." *PLoS One* 10, no. 2: e0118094. <https://doi.org/10.1371/JOURNAL.PONE.0118094>.
- Vrij, A., M. Hartwig, and P. A. Granhag. 2019. "Reading Lies: Nonverbal Communication and Deception." *Annual Review of Psychology* 70, no. 1: 295–317. <https://doi.org/10.1146/annurev-psych-010418-103135>.
- Wilmot, M. P., and D. S. Ones. 2019. "A Century of Research on Conscientiousness at Work." *Proceedings of the National Academy of Sciences* 116, no. 46: 23004–23010. <https://doi.org/10.1073/pnas.1908430116>.
- Wilmot, M. P., C. R. Wanberg, J. D. Kammeyer-Mueller, and D. S. Ones. 2019. "Extraversion Advantages at Work: A Quantitative Review and Synthesis of the Meta-Analytic Evidence." *Journal of Applied Psychology* 104, no. 12: 1447–1470. <https://doi.org/10.1037/APL0000415>.
- Wu, D. W. L., W. F. Bischof, N. C. Anderson, T. Jakobsen, and A. Kingstone. 2014. "The Influence of Personality on Social Attention." *Personality and Individual Differences* 60: 25–29. <https://doi.org/10.1016/J.PAID.2013.11.017>.
- Zare, M., and C. Flinchbaugh. 2019. "Voice, Creativity, and Big Five Personality Traits: A Meta-Analysis." *Human Performance* 32, no. 1: 30–51. <https://doi.org/10.1080/08959285.2018.1550782>.