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The influence of charismatic leadership on followers' attentional processes

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ABSTRACT

We examined how followers process consistent versus inconsistent messages from a highly charismatic versus non-charismatic leader on a theme relevant to both leader and follower (i.e., climate change). We conducted a lab eye-tracking experiment (Study 1, $N = 32$) and an online reading experiment (Study 2, $N = 1729$) to observe followers' reactions towards (written) information that they received from a leader with high versus low charisma and that was consistent or inconsistent with the leader's previously expressed views. In Study 1, we found some evidence that participants spent longer reading consistent and inconsistent messages in the high (vs. low) charisma condition. There was no interaction between the charisma and message inconsistency factors. In Study 2, we observed that exposure to a message from a highly charismatic leader (vs. low charisma) increased reading times across consistent and inconsistent sentences. However, when excluding potentially endogenous variables from the analysis, we found some evidence that charisma moderates the processing of inconsistencies, such that participants spent longer reading inconsistent information in the high versus low charisma condition. We discuss the influence of charismatic signaling on followers' attentional processes in the context of leadership and cognitive attention theories and provide recommendations for future research.

Charismatic leaders play a key role in shaping people's opinions about society, work, and domestic life. People depend on information from these leaders to guide their judgments and decisions, not just in their daily affairs but also in responding to potentially threatening events (e.g., climate change). In an era in which highly charismatic leaders frequently use social media to express their views on matters like COVID-19, migration, and climate change, it is important to understand how their messages are being processed by their followers. In this regard, inconsistencies in what leaders say are particularly interesting to study because they can surprise, confuse, disappoint, or even anger followers. An example is former US president Barack Obama – by many Americans seen as a highly charismatic leader – who flip-flopped on his stance on military interventions in the Middle East. Whereas Obama repeatedly stated that authorizing military attacks without imminent domestic threat is not legitimate, he authorized military action in Libya in 2011 (the US joined an international coalition at the time and helped to establish a no-fly zone; Altman & Miller, 2013). This is just one example of leaders contradicting themselves on important policy themes, creating confusion and perhaps frustration among their followers.

In the present research, we sought to answer the question of whether followers spend more (or less) time processing messages from a charismatic leader. We were also interested in how followers responded to messages from a charismatic leader when messages were incongruent with what followers expected from their leader. To create a relevant leader–follower context, we focused our research on the leader's stance on climate change and participants who were highly concerned about the environment. In the next section, we describe the gaps in the current literature and the potential contributions of our research to fill those gaps. We then review leadership research on charisma and embed it within signaling theory. We proceed with a review of research on attention in relation to how followers process conflicting information they receive from their leader. Finally, we describe the usefulness of studying reading behavior to gauge followers' attention to messages from charismatic leaders and conclude with an overview of the two experimental studies we conducted.

Contributions to the literature

We aim to contribute to the leadership literature in two ways. First, research has paid limited attention to how followers process information when they are exposed to messages from particularly charismatic

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leaders (but see Engelbert et al., 2023, 2024). In the present studies, we focus on the cognitive processes involved in the effectiveness of charismatic leadership. To do so, we investigate followers' attentional processes when reading messages from a charismatic leader. Examining attentional processes can tell more about the effectiveness of charismatic leadership in influencing followers and adds substantial elements to developing a cognitive theory on charismatic leadership. Second, leadership scholars have often relied on self-report data when assessing the effects of charismatic leadership on follower behaviors. Self-report data can indeed provide valuable insights. However, there are some limitations to solely relying on these methods (e.g., social desirability biases, demand effects), and not all follower behaviors can be reliably assessed using self-reports (Banks et al., 2023; Fischer et al., 2023). We try to overcome these limitations by directly observing follower behavior, using eye-tracking technology (Study 1) and a behavioral reading paradigm (Study 2). We further utilize videos of an actor demonstrating charismatic leadership tactics (CLTs; Antonakis et al., 2011), accommodating the contemporary standards to manipulate charisma by showing actual leader behavior (e.g., Antonakis et al., 2022; Ernst et al., 2021; Fest et al., 2021; Meslec et al., 2020). Our study combines research on charismatic leadership with cognitive psychology tasks and theories to understand better how charismatic leaders exert influence. In particular, we draw on cognitive theories on processing inconsistent information, conflict monitoring, and cognitive effort and use cognitive behavioral methods such as eye-tracking and self-paced reading paradigms. The data and results reported here are useful in further developing experimental research and informing theory on the effects of charismatic leadership on attentional processes. They provide a plethora of insights for new hypotheses and point towards new variables of interest.

We preregistered the methods and hypotheses for Studies 1 and 2: Study 1 https://osf.io/z5xhv; Study 2 https://osf.io/h2wuk. The data did, for the most part, not support our hypotheses. A description of deviations from the preregistrations is provided in the online supplementary materials. Due to the complex and partially contradictory nature of our findings, which was not anticipated, we present a broad literature review that guides the reader in interpreting the data from the experimental studies, focusing on theories from leadership science and cognitive psychology that are relevant to answering our research questions.

The power of charisma

The first goal of this research is to examine how followers attend to and process messages from a particularly charismatic leader. Leaders use influencing behavior to coordinate group actions (Van Vugt & Smith, 2019). Charismatic leadership, in particular, has evolved as a leadership style that is especially effective in signaling an individual's competencies in carrying out actions aimed at guiding a group (Grabo et al., 2017). Charisma has been defined as a *values-based, emotion-laden, and symbolic leader signal* (Antonakis et al., 2016) for the purpose of mobilizing followers towards a shared goal or activity (Grabo et al., 2017). Researchers have identified a set of nine verbal (using *metaphors, rhetorical questions, contrasts, lists and repetitions, setting ambitious goals, creating confidence, stating the sentiments of the collective, moral conviction, stories and anecdotes*) and three non-verbal CLTs (*facial expressions, gestures, animated tone of voice*; Antonakis et al., 2011) that charismatic leaders commonly use to attract and persuade followers. Political leaders who use more CLTs in their speeches have been found to effectively influence followers' attitudes and behaviors. For instance, during the COVID-19 crisis, charismatic signaling significantly increased COVID-19 mitigating behavior (Jensen et al., 2023). Researchers have also started studying the use of CLTs in the workplace and found robust effects of these tactics on improving workers' individual task performance (e.g., Antonakis et al., 2022; Ernst et al., 2021; Fest et al., 2021; Meslec et al., 2020).

There are two possible attentional outcomes when followers are exposed to a highly charismatic leader – which we operationalize in our studies as someone who uses CLTs in their speeches. A first possible attentional outcome is that using CLTs increases followers' attention. Displaying CLTs (such as through the use of metaphors or gestures) demonstrates the qualities of a leader, elevates them in the social hierarchy, and makes them the focus of attention for the rest of the group (cf. prestige-bias; Henrich & Gil-White, 2001). In research on humans and non-human primates, the disproportionate attention paid to the leader (the alpha) is frequently referred to as their attention-holding capacity (Gilbert et al., 1995). Charismatic leaders should have an exceptionally high degree of attention-holding power over followers because CLTs are highly relevant social signals, increasing confidence in their ability to mobilize followers for some shared purpose. For example, the use of CLTs has been linked to both the perception that the leader is competent and intelligent as well as group-oriented (cf. signaling theory; Akstinaite et al., 2024; Bastardoz, 2020; Grabo et al., 2017; Spence, 1973; Spence, 2002).

Signaling theory (Spence, 2002) offers an explanation for the attention-holding capacity of charismatic leaders. In essence, charismatic leaders have information about their leadership qualities and competencies that the followers do not possess, creating an information asymmetry between the leader and follower (Connelly et al., 2011; Spence, 2002). These leaders use a broad repertoire of verbal and non-verbal signals (CLTs) to resolve the information asymmetry and show their expertise. Some important leadership qualities, such as the leader's intelligence or group commitment, are not directly observable to followers but can be inferred from the CLTs that leaders display (Antonakis et al., 2011). Thus, charismatic signals – as expressed through CLTs – inform followers if the individual is qualified to be a good leader and worth following. This should result in greater attention being paid to charismatic rather than non-charismatic leaders.

There is some indirect evidence for this assertion. Using eye-tracking methodologies, various studies have shown that observers look longer and more frequently at high-status group members, such as team leaders (for an extensive review, see Cheng et al., 2022). For example, when watching clips of team meetings, observers looked longer at those individuals who were seen as team leaders by the group members (Gerpott et al., 2018). Greater attention to leaders – measured by how long others look at the leader – has been shown to generalize across different leadership styles (e.g., democratic vs. autocratic leadership styles; Capozzi et al., 2019). Furthermore, leaders who look more at their followers during speeches are seen as more charismatic and group-prototypical (Maran et al., 2019).

An alternative attentional outcome, however, is that, through the use of CLTs, charismatic leaders could reduce the attention to the content of the messages they convey. By definition, followers are individuals who temporarily set aside their own goals and desires to follow those of another individual, the leader (Van Vugt & Smith, 2019). When investing in the leader, followers do not need to think or decide for themselves what the appropriate action to take is, and this could free up their cognitive capacity to attend to other matters. In biological and evolutionary models, leadership is an efficient coordination mechanism that allows the rest of the group to save time and energy to devote to other important matters pertinent to their survival (Van Vugt, 2006). This claim is consistent with various models of cognitive effort. According to a (neuro)economic perspective, people prefer to use the least possible effort when accomplishing a task (Inzlicht et al., 2015) – people are essentially cognitive misers (Stanovich, 2018). Extrapolating from this insight, followers should not be motivated to invest more effort than necessary in processing information from a leader. Efficient, fast processing of the message content from a charismatic leader is beneficial for followers because the leader has already signaled their competence and group orientation via the use of CLTs. Thus, following a highly charismatic leader could prime followers to save cognitive and attentional resources. Anecdotal evidence for this argument comes from an

experimental study in which participants remembered fewer details from a charismatic than neutral leader speech, indicating a more superficial processing of charismatic speech content (cf. cognitive effort reduction; Engelbert et al., 2023).

When charismatic leaders contradict themselves

A second goal of our research was to study how and to what extent followers attend to inconsistencies in the communications of a charismatic leader. Leaders may not always be consistent in the messages they communicate, and there are many examples in the domain of religion, business, and politics (e.g., Barack Obama's position on US foreign policy, as previously discussed). Inconsistent leader messages are a particularly interesting case for studying followers' attention. Followers may generally disengage attention because the information presented by a charismatic leader is already known. However, when the leader's messages violate followers' expectations, this might increase attention. When charismatic leaders violate what followers expect them to say based on what they communicated before, this creates a potential conflict in the minds of followers, causing surprise, confusion, and perhaps anger or disappointment, aversive arousal that could affect their attentional focus (Proulx et al., 2012). When followers are surprised by a contradicting message from their leader, they may automatically engage in a process of error detection, leading to scrutinizing a message carefully. In the case of a charismatic leader, whom followers trust and respect, followers should be especially surprised when the leader makes a U-turn on an important, shared value (e.g., environmentalism). Inconsistent messages have serious consequences for followers because such messages cause confusion about what action to take, what information to believe, or whether followers should keep following this leader. Such messages can result in a process of re-engagement with the message content because it conflicts with what the follower was anticipating (i.e., information in line with the leader's and followers' values), creating a surprising signal.

There are various complementary explanations to account for how followers' attention to a charismatic leader's message may change when confronted with inconsistencies from this leader. First, these message inconsistencies contradict information the leader has previously presented. A consequence may be that followers will slow down their information processing to resolve this emergent conflict. This argument is in line with evidence from cognitive psychology, showing that people process information inconsistent with what they heard or read before slower and with more scrutiny (Albrecht & O'Brien, 1993; De Vega, 1995; Gernsbacher et al., 1992; Huitema et al., 1993; O'Brien & Albrecht, 1992; Sparks & Rapp, 2011). Second, message inconsistencies from leaders displaying CLTs are perhaps more noticeable because they contrast with the original charisma signal, causing a prediction error (i.e., a difference between the leader's signaled value and what the leader says). In particular, message inconsistencies jeopardize the prestige of the charismatic leader because they undermine followers' previously held beliefs about the competence and group commitment of their leader. This is especially true when a leader expresses views that are misaligned with some fundamental beliefs and values of followers and, therefore, are highly personally relevant (cf. signal fit; Connelly et al., 2011).

Alternatively, in ambiguous situations – for example, when the leader behaves in value-incongruent ways by sending inconsistent messages – followers may rely more on signals such as charisma to help them resolve the conflict (Jacquart & Antonakis, 2015; Tversky & Kahneman, 1974). Followers make inferences about the leader according to the charismatic signals, signaling the leader's competence and intelligence (Akstinaite et al., 2024). Inconsistent information can trigger a process in which followers try to make sense of the conflicting information by relying on their knowledge of the leader (Schilling et al., 2022). Followers could be determined to seek information that is supportive of the image they hold of the leader – as a competent and trustworthy individual who is effective in guiding the group – and ignore information that contradicts this image, making them less motivated to scrutinize inconsistent messages (cf. confirmation bias; Nickerson, 1998).

The present research

In two experiments, we investigated how exposure to a highly charismatic leader, operationalized through the display of CLTs, affects followers' attentional processes. Study 1 used eye-tracking technology to capture how followers read text messages from the leader. Messages were congruent or incongruent with what the leader expressed before on an important theme for followers (i.e., climate change). Eye-tracking offers a particularly promising method for studying expectancy violations, and it has also been frequently used to study social gaze patterns in leader–follower interactions (for a review, see Cheng et al., 2022). Using this technique, we can determine precisely how long followers attend to a message from the leader and what message details they focus on (Duchowski, 2017). Study 2 employed an online reading paradigm to examine attentional processes toward information from a leader (cf. sentence-by-sentence; Van der Schoot et al., 2012; cf. moving window method; Just et al., 1982). Using a reading paradigm, we can estimate followers' attention to information by examining reading times of text messages originating from a leader with either high or low charisma.

Study 1

Experiment

Design

We used a 2 (high vs. low charismatic leader) x 2 (consistent vs. inconsistent message) within-subjects repeated measures design and a self-paced reading paradigm. The within-subjects design was chosen to prevent confounds due to individual differences in reading speed and eye movements that would otherwise influence differences between experimental conditions. Even though such factors should balance out across conditions in a randomized between-subjects experiment, this design requires a substantially larger sample size (Duchowski, 2017). This was not feasible to achieve for the present laboratory eye-tracking study, which required participants to come to the lab in person. The study was approved by the local ethical review board.

Sample

We computed a power analysis and simulated data for $N = 40$ participants based on a pilot eye-tracking study ($N = 11$) using the same experimental procedure. The analysis indicated a required sample size of $N = 32$ for a power of $> 90\%$ to detect an interaction effect of leader charisma and message inconsistency on fixation durations for texts (online supplementary material). This estimation aligns with sample sizes used in eye-tracking studies on reading inconsistent texts (Koornneef & Van Berkum, 2006; Rinck et al., 2003; Experiment 1) or observing leader behavior (Gerpott et al., 2018). We recruited 32 participants (M age = 21.16, SD age = 2.41, female = 26) interested in the environment via the recruitment system of a large Dutch university, flyers, online university and social media channels, and environmental organizations. Participants could choose to either receive course credits or monetary compensation (€15) for completing the study. Participants who completed the pilot or previous studies using the same stimuli could not participate. Participants had to be at least 18 years old, have normal to corrected vision, and could only participate if they were not dyslexic. We recruited participants who took or had taken part in English-taught university courses and believed in climate change. All participants believed in climate change; 18 were *concerned*, and 12 were *very concerned* with the environment; two participants responded with *neutral*. Nine participants reported *average*, nine *good*, and 14 *excellent* English language proficiency. At the time of the experiment, 26 participants

were completing an English-taught university course, and six had done so in the past.

Stimuli

Leader charisma

We manipulated leader charisma with 20 short video clips (7–18 s) of an actor who talks about climate change in a more (using CLTs) or less charismatic way (10 high and 10 low charisma videos). All videos showed the same male actor to avoid person-specific confounds between the high and low charisma conditions. For example, leader sex has been shown to affect cognitive variables such as detecting false information (see, e.g., Study 1, Engelbert et al., 2023). We decided to prevent such confounds at the cost of limiting the generalizability of our findings, which is constrained when keeping the individual actor constant across conditions. The speaker was introduced as the CEO of an environmental company to establish him as a leader in the environmental movement. This instruction was necessary to create a leader–follower hierarchy in the experimental context. Student participants likely ascribe more status within the environmental movement to a CEO working in a relevant organization than a speaker who does not hold such a prestigious position. Furthermore, we could not use speeches from real CEOs because it would not have been possible to manipulate CLT usage while keeping the speech content similar. Using an unknown leader figure also avoids familiarity and other person-specific effects (e.g., public opinions shared by this person). It should not be qualitatively different from watching a video of an actual CEO unknown to participants. Including instructions for a fictional scenario would have further complicated the experimental instructions for participants who may have wondered about the hypothetical nature of the scenario. In the high charisma clips, the speaker uses verbal and non-verbal CLTs (Antonakis et al., 2011). These tactics are almost absent in the low charisma clips. The videos were cut from validated material used in previous research on charisma, in which two independent coders identified 40 CLTs in the high charisma and no CLTs in the low charisma speech fragments (Engelbert et al., 2023). The CLT coding is available in the online supplementary material. We also included a subjective manipulation check in the present study. At the end of the study, participants rated the videos of the charismatic and neutral conditions in two separate compiled videos on a) how frequently the speaker used each of the verbal CLTs (1 = *Never*, 5 = *A lot*); b) how well the speaker used gestures, facial expressions, and tone of voice (single item measure; 1 = *Very poor*, 5 = *Excellent*); and c) five attributes associated with leader charisma (charisma perception: *charismatic, inspiring, likable, enthusiastic, warm*; 1 = *Strongly disagree*, 5 = *Strongly agree*; Grabo & Van Vugt, 2016). Participants' perceptions of the speaker's charismatic attributes (Table 1, Cronbach's alpha charisma = 0.86, Cronbach's alpha neutral = 0.84, $p < .001$), ratings for the use of non-verbal (single item measure, $p < .001$), and verbal CLTs (Cronbach's alpha charisma = 0.57, Cronbach's alpha neutral = 0.73, $p < .001$) were significantly higher for the high than the low charisma videos. Notably, the ratings for the use of verbal signals showed low to moderate internal consistency and should, therefore, be interpreted with caution.

Message inconsistency

We created 100 consistent and inconsistent messages (60–110 words long) on climate change and sustainability. Inconsistency was manipulated by including a pro (consistent) or contra (inconsistent) environmental sentence (target sentence) in the text. For example, "*That governments implement policies to ensure the preservation of the environment is responsible.*" is a pro-environmentalism statement, and "*That governments implement policies to ensure the preservation of the environment is annoying.*" is a contra-environmentalism statement. The last word in each target sentence created the inconsistency and was defined as an Area of Interest (AOI). All AOI words were used in a consistent and inconsistent target sentence and matched on word frequency (10–100 per million words; Van Heuven et al., 2014) to prevent word familiarity, valence, or arousal effects on eye movements. The target sentences were pilot-tested on readability and assessed on participants' ability to identify the sentence as pro or contra environmentalism in a separate pilot study (online supplementary materials). We increased stimuli variability by varying target sentences on readability and the difficulty of identifying them as pro or contra environmentalism. The remaining sentences in the messages were adapted from open-source material on climate change (The Royal Society, 2021a, 2021b, 2021c). To minimize the influence of surrounding information, we counterbalanced target sentences across text messages by creating two lists with 100 text messages per list. Lists were counterbalanced between participants such that they read texts from one of the lists (Keating & Jegerski, 2015). All participants were presented with all target sentences and text messages once during the task. Message order was pseudorandomized during the experiment such that the pro or contra version of a target sentence was presented in a different block and leader condition. The information in the videos differs from the information presented in the text messages. Video transcripts and messages are available in the online supplementary material.

Table 1
Manipulation Check Charisma Study 1.

DV	Charismatic Attributes	Verbal CLTs	Nonverbal CLTs
Model	1	2	3
Intercept	0.85	0.83	–
	(0.86)	(0.90)	–
Charisma	**0.89*****	**0.93*****	**1.96*****
	(0.17)	(0.09)	(0.45)
Concern	0.25	**0.24**†	0.81
	(0.22)	(0.14)	(0.63)
Age	**0.08***	**0.06**†	0.22
	(0.04)	(0.03)	(0.18)
English	−0.17	**−0.17**†	**−0.54**†
	(0.12)	(0.09)	(0.31)
Sex	−0.13	−0.08	0.10
	(0.22)	(0.14)	(0.80)
Observations	64	64	64
R^2 adjusted	0.31	0.50	0.36

Note. The table reports estimation results of linear regressions for the mean sum scores of charismatic attribute ratings and usage of verbal CLTs (Models 1–2) and ordinal regression results for the single nonverbal CLT rating (Model 3) with robust standard errors clustered at the subject level in parentheses. Charisma: high charisma (1); low charisma condition (0). Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor*, 4 = *Excellent*). Sex: participants' sex, female (0) and male (1). ***p < .001, *p < .05, †p < .10.

Procedure

The experimental task was programmed in OpenSesame (Mathôt et al., 2012). Monocular eye movements were recorded with an Eyelink 1000 Plus (Desktop Mount model, infra-red video -based, SR Research Ltd., Canada) with a resolution of 1000 Hz (temporal) and 0.01° RMS (spatial). Participants positioned their heads on a chin rest at 73 cm distance from the display (1920 x 1080 pixel resolution) in a laboratory cubicle. The text was presented in black letters (mono-spaced, Courier New font, 30 px) on a grey background. Participants gave informed consent and answered a set of demographical questions (age, sex, educational level, English proficiency, participation in an English-taught university course, environmental concern, belief in climate change, handedness, whether they wear glasses or contact lenses). They were told to watch videos of a leader, read extracts from a speech given by this leader, and rate how convincing they perceived the information in the texts. The eye-tracking procedure started with a 10-point calibration and validation. Participants completed a practice block in which they watched a sound check video and read two instruction texts to familiarize themselves with the reading procedure. Then, they completed 20 experimental blocks in randomized order (one leader video followed by

five text passages per block; the same number of consistent and inconsistent text passages per leader condition). Text messages were counterbalanced across the leader conditions and randomly assigned to a video block of the respective leader condition. Participants started each video by pressing the space bar. Drift checks for eye position were initiated before each text message appeared. Subsequently, a red cross was shown in the top left corner of the screen, located at the position of the first word. The text was displayed if the participant's gaze was within a 30 px range from the cross. Reading time was self-paced. After reading a text, participants rated the convincingness of the written message on a 5-point Likert scale (1 = *Not at all convincing*, 5 = *Very convincing*). At the end of the experiment, participants rewatched all videos in two separate compiled video sequences (high vs. low charisma) and completed the subjective manipulation check for each of these videos. The order of the two videos was randomized. After the experimental session, participants received a written debriefing to inform them about the study goals. Participants were further verbally instructed not to share this information with other potential future participants and enrolled independently from each other in the experiment to avoid spill-over effects.

Data analysis

Analyses were conducted in R (R Core Team, 2024). The raw eye-tracking data were parsed with the *eyelinker* package (Barthelme, 2021). We removed fixations and saccades outside the computer screen and saccades that started or ended outside text line boundaries. Reading time was computed by measuring the time between the message presentation on screen and the button press to proceed with rating the message. Fixations on inconsistent and consistent AOI words were computed by summing up durations for all eye fixations on AOIs. The number of times participants re-read message parts was computed by counting regressions (i.e., regressive eye movements) to a text line the participant had already looked at. We analyzed the data using regression models with a Poisson distribution because of the positive skew and power law distribution of the reading time data.

Results Study 1

Table 2 shows descriptive statistics. Table 3 shows correlations of all variables used in the analysis. Tables 4 and 5 show the statistical models that tested the effect of leader charisma and message inconsistencies on reading behavior and message evaluations. The models include different combinations of main and interaction effects as well as different covariates.

Reading times. The charisma condition significantly increased reading times (Table 4, Model 1, $p = .009$), but the inconsistency predictor was nonsignificant ($p = .266$). We found no significant interaction effect between the experimental conditions (charisma x inconsistency) on total reading times (Model 3, $p = .698$). The effect of charisma on reading times becomes statistically nonsignificant when only examined at the level of consistent messages (Model 3).

Fixation times inconsistencies. The high charisma condition did not predict fixation times for AOI words (Model 6, $p = .376$), but inconsistencies significantly increased fixation times ($p < .001$). We found no significant interaction effect between the experimental manipulations (Model 8, $p = .533$).

Re-reading count. The high charisma condition did not affect the frequency of re-reading a message (Table 5, Model 1, $p = .134$). However, the inconsistency indicator variable significantly increased the number of times participants looked back ($p = .022$). There was no significant interaction effect between charisma and inconsistency on re-reading text (Model 3, $p = .876$).

Convincingness ratings. The high charisma condition did not influence convincingness (Table 5, Model 6, $p = .956$), but the inconsistency predictor significantly decreased message convincingness ($p < .001$). We found no significant interaction effect between the manipulations on message evaluations (Model 8, $p = .727$).

Robustness checks. Participants' English proficiency and environmental concerns are potentially endogenous. We, therefore, conducted additional robustness checks and computed the statistical models for our dependent measures without these covariates. The results corroborate the main analyses (Tables 4 & 5).

Discussion

In Study 1, there was a main effect of high charisma increasing reading times across both consistent and inconsistent messages. However, the effect of charisma on reading times becomes nonsignificant for consistent messages only. The lack of CLTs in the written messages (compared to the leader videos) could explain why charisma did not affect reading times for consistent messages and did also not influence the convincingness of messages. Notably, when excluding participants who reported to be *neither concerned nor unconcerned* with the environment, the effect of charisma on reading times was no longer significant (online supplementary material). The statistical analysis showed that

Table 2
Descriptive Statistics Study 1.

	High Charisma		Low Charisma	
Charismatic Attributes	4.03		3.14	
	(0.73)		(0.87)	
Verbal CLTs	3.52		2.58	
	(0.52)		(0.61)	
Nonverbal CLTs	4.28		3.22	
	(0.77)		(1.21)	
	Consistent	**Inconsistent**	**Consistent**	**Inconsistent**
Reading Time (s)	33.61	34.44	32.42	32.75
	(14.65)	(15.80)	(14.00)	(14.81)
AOI Fixation Time (ms)	521.06	665.27	520.23	641.89
	(489.42)	(540.35)	(382.43)	(482.02)
Re-Reading Count	3.54	3.86	3.42	3.67
	(3.17)	(3.47)	(3.24)	(3.35)
Convincingness	3.65	3.00	3.67	2.98
	(1.02)	(1.17)	(1.01)	(1.23)

Note. The table shows means with standard deviations in parentheses. Charismatic attributes are the mean sum score for ratings of the leader on *charismatic, likable, enthusiastic, inspiring*, and *warm* (1 = *Strongly disagree*, 5 = *Strongly agree*). Verbal CLTs are the mean sum score for usage of verbal CLTs (1 = *Never*, 5 = *A lot*). Nonverbal CLTs is a single-item measure for using nonverbal CLTs (1 = *Very poor,* 5 = Excellent). Reading time is the average reading time in seconds. AOI fixation time is the average total fixation time on an AOI word in milliseconds. Re-reading count is the average frequency count of looking back within a message. Convincingness is coded 1 = *Not at all*, 5 = *Very convincing*.

Table 3
Means, Standard Deviations, and Correlations Study 1.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Charisma	0.50	0.50													
2. Inconsistency	0.50	0.50	.00												
3. Charisma x Inconsistency	0.25	0.43	**.58****	**.58****											
4. Message Length	592.01	73.60	.00	.00	.00										
5. Concern	4.31	0.58	.00	.00	.00	−.00									
6. Age	21.16	2.41	.00	.00	.00	−.00	**.37****								
7. English	3.16	0.83	.00	.00	.00	.00	**.16****	**.13****							
8. Sex	0.19	0.39	.00	.00	.00	.00	**−.39****	**−.16****	.01						
9. First Leader	0.81	0.39	.00	.00	.00	.00	−.02	**−.13****	−.01	**.23****					
10. Trial	50.50	28.87	**−.08****	−.00	**−.05****	−.02	.00	.00	.00	.00	.00				
11. Reading Time	33.30	14.84	**.05****	**.14****	**.09****	**.03**	**.12****	**.10****	**.14****	**.10****	**.15****	**−.25****			
12. AOI Fixation Time	587.68	482.18	.01	**.04***	**.04***	**.13****	**.07****	**.23****	**−.11****	**.05****	**.27****	**−.16****	**.64****	**.25****	
13. Re-Reading Count	3.62	3.31	.02	**.04***	**.04***	**.13****	**.07****	**.23****	**−.11****	**.05****	**.27****	**−.16****	**.64****	**.25****	
14. Convincingness	3.32	1.16	−.00	**−.29****	**−.16****	−.03	−.03	−.01	**−.12****	**−.03†**	**−.06****	**−.05****	**−.03†**	**−.12****	**−.05****

Notes. $N = 32$. Charisma: high charisma (1); low charisma condition (0). Inconsistency: inconsistent (1); consistent (0) message. Message Length: number of characters in the message. Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor*, 4 = *Excellent*). Sex: participants' sex, female (0); male (1). The first leader condition is the charisma condition of the first video the participant saw during the experiment: high charisma (1) and low charisma (0). Trial is a continuous variable: trial number in the experiment (1 = first text message, 100 = last text message). Reading time is displayed in seconds, and AOI fixation time is shown in milliseconds. Re-reading count is the count measure of the frequency with which participants re-read a message. Convincingness was coded as a continuous variable (1 = *Not at all*, 5 = *Very convincing*). **p < .01., *p < .05, †p < .10.

message inconsistency significantly increased re-reading messages and fixations on inconsistent words across high and low charismatic conditions. The two factors of charisma and message consistency did not interact.

Study 1 has several limitations that must be addressed. First, high and low leader charisma was manipulated using videos of the same actor, repeatedly shown to the same participants during the experiment. This design may have had undesirable effects because participants might have found it odd that the same actor displayed high and low charisma throughout the experiment. Thus, in addition to the message consistency, the leader also displayed flip-flopping behavior, potentially explaining the lack of an interaction between the charisma and message inconsistency manipulations. Second, participants' reading speed became faster as the experiment progressed, demonstrated by a statistically significant negative effect of the trial number (Tables 4 & 5). Although the effect of the trial number is small, the charismatic signals may have had less effect over time due to, for example, increased familiarity with the experimental procedure or fatigue effects. A shorter experiment could strengthen the effects of the leader's charisma. Third, the observations in Study 1 are not independent, and individual participants' responses potentially bias the results. Lastly, women were overrepresented in the sample, likely due to a female-biased sex ratio in the university participants pool from which respondents were recruited. The biased sex ratio in our sample limits the generalizability of our findings.

Study 2

Study 2 addresses the limitations of Study 1. First, we tested the effects of the experimental conditions in a large online sample using a between-subjects design with one reading trial to reduce the effects of repeated exposure to the same leader behaving differently and the possible bias of coefficients due to the interdependence of observations in Study 1. We further implemented a balanced sampling procedure to recruit an approximately equal number of male and female participants. Participants were randomly assigned to one of four conditions: 1) a leader with high charisma and a written consistent message; 2) a leader with high charisma and a written inconsistent message; 3) a leader with low charisma and a written consistent message; 4) a leader with low charisma and a written inconsistent message. Second, we reduced the experiment duration and only showed participants one leader video and one text message. Because the study was conducted online, we used a sentence-by-sentence reading paradigm instead of eye-tracking. We also included a measurement for self-reported reading effort for the text message and a decision to perform an additional task. These additional measures were included to pursue and validate existing research lines on the economic value of charismatic leadership (e.g., Ernst et al., 2021) and cognitive processes in followers of charismatic leaders (Engelbert et al., 2023, 2024).

Experiment

Design

We used a 2 (high vs. low charismatic leader) x 2 (consistent vs. inconsistent message) between-subjects design with four conditions (high charisma inconsistent message, high charisma consistent message, low charisma inconsistent message, low charisma consistent message). The study was approved by the local ethical review board.

Sample

We conducted a sample size calculation using the 'pwr' R package to estimate the number of participants needed to detect a small effect size of charisma on reading times. The used effect size ($f2 = 0.02$) was in line with a previous experiment that detected a small effect size ($d = 0.17$) of verbal CLTs on participants' performance on a task involving reading and exposure to charismatic signals in an online setting (transcription of

Table 4
Statistical Models Study 1.

DV	Reading Time (s)					AOI Fixation Time (ms)				
Model	1	2	3	4	5	6	7	8	9	10
Intercept	**3.48*****	**1.70*****	**1.70*****	**1.83*****	**1.83*****	**6.24*****	**4.85*****	**4.86*****	**5.31*****	**5.32*****
	(0.05)	(0.42)	(0.41)	(0.36)	(0.36)	(0.05)	(0.45)	(0.44)	(0.42)	(0.42)
Charisma	**0.04****	**0.03***	0.02	**0.02***	0.02	0.02	0.02	−0.00	0.02	−0.00
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.04)
Inconsistency	0.02	0.02	0.01	0.02	0.01	**0.23*****	**0.23*****	**0.21*****	**0.23*****	**0.21*****
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.04)	(0.03)	(0.04)
Charisma x Inconsistency			0.01		0.01			0.04		0.03
			(0.02)		(0.02)			(0.06)		(0.06)
Message Length		**0.00*****	**0.00*****	**0.00*****	**0.00*****		0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)
Concern		0.11	0.11				**0.20**†	**0.20**†		
		(0.09)	(0.09)				(0.11)	(0.11)		
Age		**0.03**†	**0.03**†	**0.03**†	**0.03**†		0.02	0.02	**0.04**†	**0.04**†
		(0.02)	(0.02)	(0.02)	(0.02)		(0.02)	(0.02)	(0.02)	(0.02)
English		**−0.09**†	**−0.09**†				−0.06	−0.06		
		(0.05)	(0.05)				(0.07)	(0.07)		
Sex		**0.17**†	**0.17**†	0.11	0.11		0.18	0.18	0.06	0.06
		(0.10)	(0.10)	(0.09)	(0.09)		(0.13)	(0.13)	(0.13)	(0.13)
First Leader Condition		**0.16***	**0.16***	**0.18***	**0.18***		0.05	0.05	0.09	0.09
		(0.08)	(0.08)	(0.09)	(0.09)		(0.11)	(0.11)	(0.11)	(0.11)
Trial		**−0.00*****	**−0.00*****	**−0.00*****	**−0.00*****		**−0.00****	**−0.00****	**−0.00****	**−0.00****
		(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)
Observations	3200	3200	3200	3200	3200	2719	2719	2719	2719	2719
R^2	0.02	0.80	0.80	0.74	0.74	1.00	1.00	1.00	1.00	1.00
AIC	37073.08	32046.10	32047.58	32870.72	32872.16	801030.01	764052.14	763912.84	781626.84	781516.54

Note. The table reports estimation results for regressions using a Poisson distribution. Robust standard errors clustered at the subject level are reported in parentheses. Results for regressions with a negative binomial distribution corroborate these results. Charisma: high charisma (1); low charisma condition (0). Inconsistency: inconsistent (1); consistent (0) message. Message Length: number of characters in the message. Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor,* 4 = *Excellent*). Sex: participants' sex, female (0); male (1). The first leader condition is the charisma condition of the first video the participant saw during the experiment: high charisma (1); low charisma (0). Trial is a continuous variable describing the trial number in the experiment (1 = first text message, 100 = last text message). We conducted several robustness checks that are reported in the online supplementary material. The effect of charisma on reading times was not significant (charisma $p < .10$) 1) when excluding participants who reported neutral concern with the environment ($n = 2$) or 2) when excluding extreme reading time values ($n = 75$). ***$p < .001$, **$p < .01$,*$p < .05$, †$p < .10$.

Table 5
Statistical Models Study 1.

DV	Regression Count					Convincingness				
Model	1	2	3	4	5	6	7	8	9	10
Intercept	**1.22*****	**−1.83****	**−1.83****	**−2.05*****	**−2.05*****	–	–	–	–	–
	(0.10)	(0.61)	(0.60)	(0.55)	(0.55)	–	–	–	–	–
Charisma	0.04	0.02	0.01	0.02	0.01	−0.00	−0.02	−0.04	−0.02	−0.04
	(0.03)	(0.03)	(0.05)	(0.03)	(0.05)	(0.07)	(0.07)	(0.09)	(0.07)	(0.09)
Inconsistency	**0.08***	**0.08***	0.07	**0.08***	0.07	**−1.04*****	**−1.06*****	**−1.08*****	**−1.05*****	**−1.07*****
	(0.03)	(0.03)	(0.05)	(0.03)	(0.05)	(0.15)	(0.15)	(0.19)	(0.15)	(0.18)
Charisma x Inconsistency			0.01		0.01			0.05		0.04
			(0.06)		(0.06)			(0.13)		(0.13)
Message Length		**0.00*****	**0.00*****	**0.00*****	**0.00*****		−0.00	−0.00	**−0.00**†	**−0.00**†
		(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)
Concern		0.02	0.02				−0.06	−0.06		
		(0.14)	(0.14)				(0.18)	(0.18)		
Age		**0.10*****	**0.10*****	**0.09*****	**0.09*****		0.00	0.00	−0.02	−0.02
		(0.02)	(0.02)	(0.02)	(0.02)		(0.04)	(0.04)	(0.04)	(0.04)
English		**−0.18**†	**−0.18**†				**−0.24***	**−0.24***		
		(0.09)	(0.09)				(0.10)	(0.10)		
Sex		0.10	0.10	0.06	0.06		−0.14	−0.14	−0.11	−0.11
		(0.17)	(0.17)	(0.16)	(0.16)		(0.18)	(0.18)	(0.17)	(0.17)
First Leader Condition		**0.86*****	**0.86*****	**0.86*****	**0.86*****		−0.27	−0.27	−0.29	−0.29
		(0.22)	(0.22)	(0.24)	(0.24)		(0.21)	(0.21)	(0.20)	(0.20)
Trial		**−0.00*****	**−0.00*****	**−0.00*****	**−0.00*****		**−0.00****	**−0.00****	**−0.00****	**−0.00****
		(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)
Observations	3173	3173	3173	3173	3173	3200	3200	3200	3200	3200
R^2	0.01	0.50	0.50	0.46	0.46	0.08	0.10	0.10	0.09	0.09
AIC	17625.67	15637.09	15639.03	15856.92	15858.85	9324.03	9269.22	9271.09	9304.22	9306.12

Note. The table reports estimation results for regressions using a Poisson distribution for regression count and ordinal regressions for convincingness ratings. Robust standard errors clustered at the subject level are reported in parentheses. Results for regressions with a negative binomial distribution corroborate the results for regression counts. Charisma: high charisma (1); low charisma condition (0). Inconsistency: inconsistent (1); consistent (0) message. Message Length: number of characters in the message. Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor*, 4 = *Excellent*). Sex: participants' sex, female (0); male (1). The first leader condition is the charisma condition of the first video the participant saw during the experiment: high charisma (1); low charisma (0). Trial is a continuous variable describing the trial number in the experiment (1 = first text message, 100 = last text message). We conducted several robustness checks that are reported in the online supplementary material. Analyses in which 1) participants who reported neutral concern with the environment ($n = 2$) or 2) extreme reading time values ($n = 75$) were excluded corroborate the main analyses.***$p < .001$, **$p < .01$,*$p < .05$, †$p < .10$.

historical documents; Fest et al., 2021) and took place in a similar time frame (10 min) compared to our study. According to the power analysis, at least $n = 292$ participants per condition were required for a model involving five predictors (the independent variables charisma and inconsistency, their interaction term, and participants' environmental concern and sex as covariates) to detect the effect size $f2 = 0.02$ with an alpha of 0.01 and a power level of 90%. To account for inattentive participants and potential technical problems and to align our study with previous sample sizes of similar studies (Fest et al., 2021; Study 2), we aimed to recruit at least $n = 400$ participants per condition.

On the research platform Prolific, we recruited non-dyslexic participants located in the UK, aged between 18 and 40, who previously reported to the research platform to be *concerned* or *very concerned* with the environment, *believed* in climate change, had English as their first language, had at least 50 previous study submissions with an approval rate of >= 95%, and had not participated in any of our previous studies on the platform. During data collection, the age limit for participants was raised to 40 because the preregistered sample size ($N = 1800$) was too large to recruit only from the predefined age group (18–30) on the research platform (with a typical response rate of 40–50%; Prolific, 2023). Data was, therefore, collected from two samples (sample 1: age 18–30; sample 2: age 18–40). Recruitment for sample 1 was stopped before recruitment for sample 2 started. Participants from sample 1 were prevented from entering sample 2 using prescreening functions on Prolific.[1] The age range was limited to 40 (initially 30) to restrict the influence of age on reading times in our sample (see, e.g., Connelly et al., 1991). Participants received a compensation of £1 for their participation.

1945 responses were collected. From this sample, we removed responses submitted with the same Prolific ID (e.g., when participants reloaded the experiment, this may have caused the program to restart; 109 responses), participants who completed previous studies that used the same charisma manipulations but due to a program error, were able to participate in Study 2 ($n = 34$), and incomplete responses ($n = 71$). Two additional participants were excluded because they reported an unrealistic age, and their data could not be used in the models that controlled for participant age. The final data set consisted of $N = 1729$ participants (M age = 29.99, SD age = 5.70, female = 875, male = 821, other = 33). Not all participants responded in line with the previous answers collected by the Prolific prescreening option. Most participants reported being *concerned* ($n = 818$) or *very concerned* ($n = 681$) with the environment. However, $n = 210$ participants reported feeling - *neutral* towards environmental concern, *not concerned* ($n = 18$), or *not at all concerned* ($n = 2$). Four participants also reported *not believing in climate change*; for 18 participants, no response was recorded for this question. The average reading speed across participants was 303.89 words per minute (wpm) for the practice passage and 216.83 wpm for the experimental text message, which is in line with the average reading speed for adults reading English non-fiction (175–300 wpm; Brysbaert, 2019).

Stimuli

Leader charisma

Two leader videos were edited from two video speeches used and validated in previous research in which two independent coders identified no verbal CLTs in the neutral speech and 10 verbal CLTs in the charismatic speech after reconciling their independent coding events (initially 87.5% agreement for the charismatic speech, Cohen's $\kappa = 0.40$, $z = 3.4$, $p < .05$; Engelbert et al., 2023). Because the interrater agreement was rather low, we also coded the speeches using a deep-learning algorithm (Carron, 2020; Garner et al., 2019), which identified 9.23 tactics in the high and 2.04 tactics in the low charisma speech (the algorithm has been used in other studies to objectively assess charisma; cf., Jensen et al., 2023; Tur et al., 2022). The high and low charisma videos are both 35–36 s long, have a similar number of words (high charisma: 81 words, low charisma: 90 words; 8 sentences), and show the same male speaker. The video transcript and CLT coding are available in the online supplementary material. With the exception that participants did not watch the speaker video again and rated each of the non-verbal CLTs separately, we used the same subjective manipulation checks as for Study 1. We also provided short explanations for each of the CLTs to ensure that tactics would be interpreted in a similar manner across participants. Table 6 shows regression results for the manipulation checks of the charisma variable. Participants in the charismatic condition rated the leader significantly higher on charismatic attributes (Table 6, Cronbach's alpha = 0.84, $p < .001$) and the usage of verbal (Cronbach's alpha = 0.80, $p < .001$) and non-verbal CLTs (Cronbach's alpha = 0.80, $p < .001$) across message conditions. Reading an inconsistent text message also affected the evaluation of CLT usage. Participants rated the usage of verbal ($p = .032$) and non-verbal ($p = .045$) CLTs lower in the inconsistent than the consistent message condition. We also found an interaction effect between the high charisma and inconsistency manipulation on participants' perceptions of the speaker's charismatic attributes (*warm, likable, inspiring, enthusiastic, charismatic;* $p = .016$). However, pairwise comparisons between consistent and inconsistent passages within charisma conditions did not show significant differences. Participants with higher self-reported environmental concerns rated the speaker significantly higher on charismatic attributes ($p < .001$) and the use of non-verbal CLTs ($p = .002$) across text conditions. The subjective manipulation checks demonstrate a significant difference in objective CLT usage and the subjective evaluation of charisma and CLT usage between the charismatic and non-charismatic videos. The participant ratings complement the previously validated video material (Engelbert et al., 2023). That participants with higher environmental concerns also rated the speaker higher on charismatic qualities and the usage of CLTs across message conditions may indicate an influence of value-congruence on receiving and interpreting charismatic signals (cf., Wilms et al., 2024), even if messages are inconsistent.

Message inconsistency

We created a new text message containing either a consistent or inconsistent target sentence. The consistent/inconsistent target sentence is shorter and less complicated compared to the target sentences of Study 1 to increase the strength of the manipulation ("*The severe impacts of climate change on health are overrated* (inconsistent)/*underrated* (consistent)"). The content of the text message is different from that of the video speech and is available in the online supplementary material.

Incentive

Participants who perform well on the research recruitment platform Prolific (i.e., their study participation is approved) are more likely to receive future study invitations. We utilized participants' reputational concerns (see, e.g., Al-Ubaydli et al., 2014) to ensure that participants would pay sufficient attention to the task and accordingly included additional instructions. In particular, we reminded participants of the importance of paying attention and completing all tasks to ensure that their participation will be approved: *"Dear participant, please keep in mind that participations can be rejected in line with the guidelines provided by the platform, causing no payment and a reduced chance of being invited for future studies. Rejection is justified when the participant objectively demonstrated clear low-effort throughout the experiment or the participant fails the attention check"*. A bonus payment (for example, incentivizing high scores for a memory task on the message content) would have increased participants' scrutiny of information while reading, likely causing a ceiling effect on reading times and masking the effect of charisma.

[1] Sample 2 received additional recruitment information in the study description on Prolific ("*You cannot participate if you have dyslexia. We will ask you whether you believe in climate change and whether you are concerned about the environment.*").

Table 6
Manipulation Check Charisma Study 2.

DV	Charismatic Attributes		Verbal CLTs		Nonverbal CLTs	
Model	1	2	3	4	5	6
Intercept	**3.54*****	**3.62*****	**3.04*****	**3.07*****	**3.54*****	**3.60*****
	(0.34)	(0.35)	(0.37)	(0.37)	(0.36)	(0.36)
Charisma	**0.26*****	**0.19*****	**0.59*****	**0.56*****	**0.37*****	**0.32*****
	(0.03)	(0.05)	(0.03)	(0.04)	(0.04)	(0.05)
Inconsistency	−0.04	**−0.12***	**−0.07***	**−0.10***	**−0.08***	**−0.13***
	(0.03)	(0.05)	(0.03)	(0.05)	(0.04)	(0.06)
Charisma x Inconsistency		**0.16***		0.06		0.11
		(0.07)		(0.06)		(0.07)
Concern	**0.10*****	**0.09*****	**0.04**†	**0.03**†	**0.08****	**0.08****
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)
Age	−0.00	−0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
English	−0.08	−0.09	**−0.14**†	**−0.15**†	−0.07	−0.07
	(0.08)	(0.08)	(0.09)	(0.09)	(0.08)	(0.08)
Sample	−0.01	−0.01	−0.05	−0.05	−0.00	−0.00
	(0.05)	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)
Sex [*male*]	0.04	0.04	−0.04	−0.04	0.05	0.05
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)
Sex [*other*]	−0.13	−0.12	−0.15	−0.14	−0.19	−0.18
	(0.12)	(0.12)	(0.12)	(0.12)	(0.16)	(0.16)
Observations	1729	1729	1729	1729	1729	1729
R^2 adjusted	0.04	0.05	0.19	0.19	0.06	0.06
AIC	3623.65	3619.87	3207.36	3208.17	4051.45	4051.46

Note. The table reports estimation results for linear regressions with robust standard errors reported in parentheses. Charisma: high charisma (1); low charisma condition (0). Inconsistency: inconsistent (1); consistent (0). Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor*, 4 = *Excellent*). Sample: data from the second (1 = age 18–40) or the first sampling round (0 = age 18–30). Sex [*male*]: female and other (0); male (1). Sex [*other*]: male and female (0); other (1). ***$p < .001$, **$p < .01$,*$p < .05$, †$p < .10$.

Procedure

The experimental task was programmed in Qualtrics. After participants gave informed consent, they answered a set of demographical questions (age, sex, education, environmental concern, belief in climate change, handedness, whether they wear glasses or contact lenses). Participants were recruited for a study on evaluating the quality of informational material on climate change. We incentivized participants' reputational concerns and provided instructions to emphasize the importance of completing the study conscientiously. After reading the instructions, participants had to decide whether to continue (*Yes, I understand and want to continue*) or stop their participation (*No, I would like to stop my participation and return my submission*). Participants who decided to continue completed a practice block. They read a short text to familiarize themselves with the reading procedure and were instructed to rate the practice text message with "*Convincing*" (attention check item). Participants were then randomly assigned to one of the four conditions using the Qualtrics randomizer function. First, participants watched the video of the speaker talking about his environmental mission (high or low charisma). Second, they read the text, which was described as a fragment of a speech that was given by the speaker. The text of the speech was presented sentence by sentence, i.e., participants could only see one sentence at a time while the other sentences were masked with dashes. Participants could not move backward in the text. We measured the time they spent on each page, which showed a sentence displayed in black letters on a white background. After reading the text, participants rated it on its convincingness (1 = *Not at all convincing*, 5 = *Very convincing*) and the effort they needed to read the text (*How much effort did you need to invest in reading the text* (i.e., *how difficult was the text to read)?;* 1 = *No effort at all*, 5 = *A lot of effort*). The participants were also asked to indicate whether they would like to read and rate an additional text message (*"You have some participation time left. Would you like to read and rate an additional text?"*; *Yes, No*). Regardless of their decision, participants did not see an additional text. If participants chose to read an additional text, they were told they were first required to answer some additional questions about the speaker. Finally, participants completed the subjective manipulation checks and received a written debriefing.

Data analysis

Analyses were conducted in R (R Core, 2024). Reading time was measured as the duration (seconds) from when a sentence appeared on the screen until participants clicked a button to proceed to the next sentence. Total reading time was computed by summing up the reading times for all sentences. Target sentence reading time is the reading time for the target sentence. Individual reading speed was measured in a practice text passage – containing information on the reading procedure (available in the online supplementary material) – shown to participants before they saw the experimental manipulations (practice block) and was computed as read words per minute (wpm; 94 (i.e., the number of words in the practice text) / (reading time (s) /60)).

Results Study 2

Table 7 shows descriptive statistics. Table 8 shows correlations of all variables. Tables 9 and 10 show the statistical models to test the effect of leader charisma and message inconsistencies on reading behavior, self-reports, and decision-making. The models include different sets of covariates and the main and interaction effects of the experimental manipulations.

Reading times. Using Poisson regression models, we found no significant effect of the high charisma (Model 1, $p = .365$) or inconsistency ($p = .510$) conditions on total reading times. There was no significant interaction effect between charisma and message inconsistency on total reading times (Model 3, $p = .382$).

Target sentence reading times. The high charisma (Table 9, Model 7, $p = .033$) and inconsistency ($p < .001$) conditions significantly increased reading times for the target sentence. We found no significant interaction effect between charisma and inconsistency (Model 9, $p = .089$). Notably, the effect of charisma on reading times for target sentences turns nonsignificant in the interaction model when examining the effect for consistent messages only (Model 9).

Exploratory analysis. To explore the influence of individual cognitive

Table 7
Descriptive Statistics Study 2.

	High Charisma		Low Charisma	
	Consistent	Inconsistent	Consistent	Inconsistent
	$n = 435$	$n = 425$	$n = 441$	$n = 428$
Charismatic Attributes	3.74	3.79	3.57	3.44
	(0.66)	(0.67)	(0.71)	(0.72)
Verbal CLTs	3.15	3.12	2.59	2.50
	(0.51)	(0.56)	(0.69)	(0.66)
Nonverbal CLTs	3.99	3.98	3.69	3.55
	(0.72)	(0.74)	(0.81)	(0.85)
Reading Time (s)	55.46	59.30	59.65	57.98
	(29.80)	(38.39)	(38.62)	(26.82)
Target Sentence (s)	3.39	4.93	3.43	4.14
	(3.02)	(5.60)	(2.39)	(2.96)
Effort	3.21	3.25	3.28	3.21
	(1.10)	(1.10)	(1.12)	(1.13)
Convincingness	4.14	3.96	4.15	3.94
	(0.73)	(0.83)	(0.74)	(0.81)
Extra Task	0.76	0.73	0.81	0.79
	(0.43)	(0.44)	(0.39)	(0.41)

Note. The table shows means with standard deviations in parentheses. Charismatic attributes are the mean sum score for ratings of the leader on *charismatic, likable, enthusiastic, inspiring,* and *warm* (1 = *Strongly disagree*, 5 = *Strongly agree*). Verbal CLTs are the mean sum score for usage of verbal CLTs (1 = *Never*, 5 = *A lot*). Nonverbal CLTs are the mean sum score for the usage of nonverbal CLTs (1 = *Very poor*, 5 = *Excellent*). Reading time is the average reading time in seconds for a message. Target sentence is the average reading time in seconds for target sentences. Effort is coded 1–5 (1 = *No effort at all*, 5 = *A lot of effort)*. Convincingness is coded 1–5 (1 = *Not at all*, 5 = *Very convincing)*. Extra task is coded 0 = *No; 1* = *Yes*.

factors on the effect of charisma, we analyzed an exploratory three-way interaction between charisma, message inconsistency, and individual reading pace. Participants' reading time for the practice passage was used to calculate individual reading pace (i.e., read words per minute without the influence of the experimental conditions). The three-way interaction was significant for total reading times (Table 9, Model 4, $p = .043$). In the high charisma condition, participants with a slower individual reading speed paid more attention to the inconsistent compared to the consistent message than faster reading participants. The pattern was reversed for messages in the low charisma condition (online supplementary material). However, the effect is small. The three-way interaction was nonsignificant for target sentence reading times (Table 9, Model 10, $p = .063$).

Robustness checks. Participants' English proficiency, environmental concerns, and individual reading pace are potentially endogenous. We, therefore, conducted additional robustness checks and computed the statistical models for our dependent measures without these variables. There was no significant interaction between charisma and inconsistency for total reading times (Table 9, $p = .093$). We found a significant interaction between charisma and inconsistency for target sentence reading times ($p = .029$). Fig. 1 displays the nature of the interaction between the experimental manipulations. There was no significant difference between the low and high charisma conditions in reading consistent target sentences ($b = 0.01$, $z = 0.203$, $SE = 0.04$, $p = .997$). However, there was a significant difference between the low and high charisma conditions for the inconsistent condition ($b = -0.17$, $z = -5.395$, $SE = 0.03$, $p < .001$). The interaction effect remains significant when excluding participants who failed the attention check or reported technical problems. However, the effect is not robust against removing preregistered outliers for total reading times or excluding participants who reported *neutral* or *no concern* with the environment.

Self-Reports and Extra Task Decision. We computed ordinal regression models and did not find significant effects of high charisma (Table 10, Model 1, $p = .764$) and inconsistency ($p = .812$) on reported reading effort. Message inconsistency significantly decreased message convincingness (Model 5, $p < .001$). High leader charisma did not predict message convincingness ($p = .711$). Using a logit regression analysis, we found that participants in the high charisma condition were significantly less likely to choose to read an additional text than participants in the low charisma condition (Model 9, $p = .007$). Inconsistency did not significantly predict the decision to read an additional message ($p = .115$). We did not find significant interaction effects of the experimental manipulations on the self-reported dependent measures or the extra task decision.

General discussion

Study 1 showed that high leader charisma increased the reading time for messages averaged across consistent and inconsistent text conditions. However, the effect is nonsignificant when looking only at the effect of charisma on consistent messages. In Study 2, we found a main effect of charisma on the reading times – averaged across consistent and inconsistent conditions – for target sentences only but not for the complete text passage reading times. The effect of charisma on reading times for target sentences turns nonsignificant in the interaction model, indicating that the main effect of charisma seems to be driven by inconsistent sentences. This was further qualified by a significant interaction between the high charisma and inconsistency factors when excluding potentially endogenous variables. Reading times in the inconsistent sentence condition were longer in the high versus low charisma group. The reading patterns observed in Studies 1 and 2 partially align with the notion that charismatic leaders have attention-holding capacity (Gilbert et al., 1995). Followers generally gaze longer at group leaders and high-status individuals (Foulsham et al., 2010; Gerpott et al., 2018). Our research shows that participants generally spent longer reading the information they received from charismatic leaders. However, the effects of charismatic signals on reading times were relatively small, raising the question of whether these effects are meaningful. On the one hand, relatively small effects can have an accumulative influence over time. How such accumulative effects play out in organizational or societal settings remains unclear. We further found effects of message inconsistencies, which increased fixation times for words (i.e., AOIs in Study 1), increased reading times for target sentences (Study 2), and reduced the convincingness of a message (Studies 1 & 2) across high and low charisma conditions. These findings align with the cognitive literature and confirm the aversive arousal created by conflicting information (Botvinick & Braver, 2015; Proulx et al., 2012). The results are a proof of concept that both the eye-tracking and reading paradigms reliably measured the processing of conflicting information. Using CLTs likely results in a top-down effect on processing messages – voluntarily paying more attention to information – from a leader, evidenced by longer reading times across consistent and inconsistent text passages in Study 1 and sentences in Study 2. The effects of message inconsistencies on longer reading times and re-reading of messages, however, are likely more bottom-up driven (i.e., they automatically draw attention) because these inconsistencies were spotted by the participants in the text messages, reflected in longer reading times, fixation times, or re-reading of inconsistent message parts. Leader charisma and message inconsistency may operate via different attentional processes (top-down vs. bottom-up), which could explain why we do not find robust evidence for an interaction effect.

When excluding the potentially endogenous variables of English language proficiency, environmental concern, and individual reading speed, we found an interaction effect of charisma and inconsistency on reading times for the target sentence in Study 2. Whether participants in the high charisma condition spent longer reading inconsistent information to resolve the conflict or whether such inconsistencies are more noticeable when originating from a highly charismatic leader remains unclear and is subject to further research. Notably, the interaction effect on target sentence reading times is robust against excluding participants who failed the attention check and reported technical problems but not against removing preregistered outliers or excluding participants who

Table 8
Means, Standard Deviations, and Correlations Study 2.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Charisma	0.50	0.50																	
2. Inconsistency	0.49	0.50	.00																
3. Charisma x Inconsistency	0.25	0.43	**.57****	**.58****															
4. Sample	0.57	0.50	.00	−.00	.00														
5. Sex [*male*]	0.47	0.50	−.01	**.04**†	.04	**.07****													
6. Sex [*female*]	0.51	0.50	.01	**−.05***	−.04	**−.07****	**−.96****												
7. Age	29.99	5.70	−.01	−.00	−.01	**.66****	.03	−.02											
8. Concern	4.25	0.71	−.02	.02	.03	**−.05***	−.04	.02	−.02										
9. English	3.97	0.19	.02	−.04	.01	−.02	**−.04**†	.03	−.02	.02									
10. Reading Time	58.10	33.84	−.02	.02	.02	.02	.01	−.01	**.09****	−.01	**−.04**†								
11. Target Sentence	3.97	3.74	**.05***	**.15****	**.15****	**.10****	.03	−.03	**.11****	−.02	−.04	**.54****							
12. Baseline WPM	303.89	135.62	.02	.01	−.01	−.01	−.02	.01	**−.06***	**.05***	**.09****	**−.46****	**−.29****						
13. Effort	3.24	1.11	−.01	−.01	.01	−.04	−.01	.01	.03	−.02	−.02	**.09****	.01	−.02					
14. Convincingness	4.05	0.78	.00	**−.12****	**−.06***	−.03	**−.06***	**.05***	**−.05***	**.19****	.02	.01	**−.05**†**	−.01	**−.04**†				
15. Extra Task	0.77	0.42	**−.07***	−.03	**−.06***	**.12****	−.02	.01	**.11****	**.05***	**−.05***	−.01	.02	**−.07****	**−.08****	−.02			
16. Charismatic Attributes	3.64	0.70	**.19****	−.02	**.13****	−.03	.03	−.02	−.04	**.09****	−.02	**.10****	.04	**−.06***	−.02	**.33****	−.01		
17. Verbal CLTs	2.84	0.68	**.43****	**−.05***	**.23****	−.03	−.03	**.04**†	−.02	.03	−.03	**.06***	−.00	−.03	**.07****	**.15****	**−.10****	**.33****	
18. Nonverbal CLTs	3.80	0.80	**.23****	**−.04**†	**.13****	−.00	.03	−.02	−.00	**.06****	−.01	**.07****	.02	−.04	−.03	**.24****	.02	**.69****	**.32****

Notes. $N = 1729$. Charisma: high charisma (1); low charisma condition (0). Inconsistency: inconsistent (1); consistent (0). Sample: data from the second (1 = age 18–40) or the first sampling (0 = age 18–30) round. Sex [*male*]: female and other (0); male (1). Sex [*female*]: male and other (0); female (1). Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor,* 4 = *Excellent*). Total and target sentence reading times are displayed in seconds. Baseline WPM: Participants' reading pace for the practice passages, depicted in words per minute (wpm). Effort: Participants' self-reported effort for reading the text message (1 = *No effort at all*, 5 = *A lot of effort*). Convincingness describes how convinced participants were by the information in the text messages (1 = *Not at all convincing*, 5 = *Very convincing*). Extra task describes participants' decision to read an additional text passage (1 = *Yes*, 0 = *No*). Charismatic attributes are the mean sum score for ratings of the leader on *charismatic, likable, enthusiastic, inspiring*, and *warm* (1 = *Strongly disagree*, 5 = *Strongly agree*). Verbal CLTs are the mean sum score for the usage of verbal CLTs (1 = *Never*, 5 = *A lot*). Nonverbal CLTs are the mean sum score for the usage of nonverbal CLTs (1 = *Very poor*, 5 = *Excellent*). $^{**}p < .01$, $^{*}p < .05$, †$p < .10$.

Table 9
Statistical Models Reading Measurements Study 2.

DV	Total Reading Time						Target Sentence Reading Time					
Model	1	2	3	4	5	6	7	8	9	10	11	12
Intercept	**4.07*****	**4.41*****	**4.43*****	**4.45*****	**3.70*****	**3.72*****	**1.18*****	**1.50*****	**1.57*****	**1.50*****	**0.70*****	**0.75*****
	(0.03)	(0.22)	(0.23)	(0.26)	(0.08)	(0.08)	(0.03)	(0.33)	(0.34)	(0.35)	(0.13)	(0.13)
Charisma	−0.03	−0.01	−0.03	−0.15	−0.02	**−0.07**†	**0.09***	**0.10***	0.03	−0.20	**0.09***	−0.01
	(0.03)	(0.02)	(0.03)	(0.15)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)	(0.14)	(0.04)	(0.05)
Inconsistency	0.02	0.02	0.00	−0.10	0.02	−0.03	**0.28*****	**0.28*****	**0.22*****	**0.24**†	**0.28*****	**0.19*****
	(0.03)	(0.02)	(0.03)	(0.15)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.14)	(0.04)	(0.05)
Charisma x Inconsistency			0.04	**0.38***		**0.09**†			**0.13**†	**0.53***		**0.18***
			(0.05)	(0.19)		(0.06)			(0.08)	(0.25)		(0.08)
Baseline WPM		**−0.00*****	**−0.00*****	**−0.00*****				**−0.00*****	**−0.00*****	**−0.00*****		
		(0.00)	(0.00)	(0.00)				(0.00)	(0.00)	(0.00)		
Charisma x Baseline WPM				0.00						**0.00**†		
				(0.00)						(0.00)		
Inconsistency x Baseline WPM				0.00						−0.00		
				(0.00)						(0.00)		
Charisma x Inconsistency x Baseline WPM				**−0.00***						**−0.00**†		
				(0.00)						(0.00)		
Concern		0.01	0.01	0.01				−0.02	−0.02	−0.02		
		(0.02)	(0.02)	(0.02)				(0.03)	(0.04)	(0.04)		
Age		**0.01****	**0.01****	**0.01****	**0.01*****	**0.01*****		**0.01***	**0.01***	**0.01***	**0.01****	**0.01****
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
English		0.03	0.03	0.03				0.03	0.02	0.04		
		(0.05)	(0.05)	(0.05)				(0.08)	(0.08)	(0.08)		
Sample		−0.04	−0.04	−0.04	**−0.08***	**−0.08***		**0.11***	**0.11***	**0.11***	0.08	0.08
		(0.03)	(0.03)	(0.03)	(0.04)	(0.04)		(0.05)	(0.05)	(0.05)	(0.06)	(0.06)
Sex [*male*]		−0.01	−0.01	−0.01	0.01	0.01		0.02	0.02	0.02	0.04	0.04
		(0.02)	(0.02)	(0.02)	(0.03)	(0.03)		(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Sex [*other*]		−0.06	−0.06	−0.06	−0.10	−0.09		−0.06	−0.05	−0.05	−0.11	−0.10
		(0.06)	(0.06)	(0.06)	(0.07)	(0.07)		(0.12)	(0.12)	(0.12)	(0.14)	(0.14)
R^2	0.01	0.99	0.99	1.00	0.20	0.23	0.10	0.43	0.44	0.45	0.15	0.16
AIC	35860.62	27067.51	27059.61	26904.24	35502.41	35451.15	8813.78	8159.46	8154.51	8133.38	8737.33	8726.10

Note. $N = 1729$. The table reports estimation results for regressions using a Poisson distribution. Robust standard errors are reported in parentheses. Results for regressions with a negative binomial distribution corroborate these results. Charisma: high charisma (1); low charisma condition (0). Consistency: inconsistent (1); consistent (0). Baseline WPM: Participants' reading pace for the practice passages, depicted in words per minute (wpm). Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor*, 4 = *Excellent*). Sample: data from the second (1 = age 18–40) or the first sampling (0 = age 18–30) round. Sex [*male*]: female and other (0); male (1). Sex [*other*]: male and female (0); other (1). We conducted several robustness checks that are reported in the online supplementary material. 1) Analyses in which participants who reported technical problems ($n = 36$) and failed the attention check ($n = 15$) are excluded (total $n = 50$) largely corroborate the main analyses. We found no charisma x inconsistency x individual reading pace interaction on total reading times in this sample. 2) When excluding participants who reported neutral or no concern with the environment, do not believe in climate change, or for whom there was no response collected on this question ($n = 239$), we do not find an interaction effect of charisma x inconsistency x individual reading pace interaction on total reading times and between charisma and inconsistency for target sentence reading times. 3) Analyses in which (preregistered) outliers are excluded ($n = 28$) − defined as reading times for the whole text passage that are < 5 s or 3+/-SD from the condition mean show some evidence for a main effect of charisma on decreasing total reading times. In this sample, we do not find an interaction between charisma and inconsistency on target sentence reading times ($p = .056$). ***$p < .001$, **$p < .01$,*$p < .05$, †$p < .10$.

Table 10
Statistical Models Self-report Measures Study 2.

DV	Effort				Convincingness				Extra task			
Model	1	2	3	4	5	6	7	8	9	10	11	12
Intercept	–	–	–	–	–	–	–	–	**3.54***	**3.54***	**0.66†**	**0.66†**
	–	–	–	–	–	–	–	–	(1.73)	(1.73)	(0.38)	(0.39)
Charisma	−0.03	−0.13	−0.02	−0.12	0.04	−0.00	0.02	−0.06	**−0.31****	**−0.32†**	**−0.32****	**−0.34***
	(0.09)	(0.12)	(0.09)	(0.12)	(0.09)	(0.13)	(0.09)	(0.13)	(0.12)	(0.17)	(0.12)	(0.17)
Inconsistency	−0.02	−0.12	−0.02	−0.11	**−0.51*****	**−0.54*****	**−0.48*****	**−0.56*****	−0.18	−0.19	−0.17	−0.18
	(0.09)	(0.13)	(0.09)	(0.12)	(0.10)	(0.14)	(0.10)	(0.13)	(0.12)	(0.17)	(0.12)	(0.17)
Charisma x Inconsistency		0.21		0.19		0.08		0.15		0.02		0.02
		(0.17)		(0.17)		(0.19)		(0.19)		(0.24)		(0.23)
Concern	−0.05	−0.06			**0.57*****	**0.57*****			**0.19***	**0.18***		
	(0.06)	(0.07)			(0.07)	(0.07)			(0.08)	(0.08)		
Age	**0.03****	**0.03****	**0.03****	**0.03****	**−0.02***	**−0.02***	**−0.02†**	**−0.02†**	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
English	−0.20	−0.21			0.15	0.15			**−0.91***	**−0.91***		
	(0.28)	(0.28)			(0.23)	(0.23)			(0.43)	(0.43)		
Sample	**−0.37****	**−0.37****	**−0.36****	**−0.36****	0.08	0.08	0.01	0.01	**0.47****	**0.47****	**0.45****	**0.45****
	(0.12)	(0.12)	(0.11)	(0.11)	(0.13)	(0.13)	(0.13)	(0.13)	(0.16)	(0.16)	(0.15)	(0.15)
Sex [*male*]	−0.03	−0.03	−0.03	−0.03	**−0.17†**	**−0.17†**	**−0.20***	**−0.20***	−0.14	−0.14	−0.13	−0.14
	(0.09)	(0.09)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)	(0.12)	(0.12)	(0.12)	(0.12)
Sex [*other*]	0.05	0.06	0.03	0.04	−0.16	−0.15	−0.00	0.01	0.76	0.76	0.79	0.79
	(0.33)	(0.33)	(0.33)	(0.33)	(0.36)	(0.36)	(0.36)	(0.37)	(0.55)	(0.55)	(0.54)	(0.54)
R^2	0.00	0.00	0.00	0.00	0.03	0.03	0.01	0.01	0.03	0.03	0.03	0.03
AIC	4992.20	4992.80	4989.67	4990.46	3637.72	3639.56	3705.37	3706.71	1815.11	1817.11	1821.95	1823.94

Note. $N = 1729$. The table reports the estimations results of ordinal (Models 1–4) and logistic (Models 5–6) linear regressions with robust standard errors in parentheses. Robust standard errors for Models 1–8 were computed in Stata 18 (StataCorp., 2023) using the vce(robust) command. Effort: Participants' self-reported effort for reading the text message (1 = *No effort at all*, 5 = *A lot of effort*). Convincingness describes how convinced participants were by the information in the text messages (1 = *Not at all convincing*, 5 = *Very convincing*). Extra task describes participants' decision to read an additional text passage (1 = *Yes*, 0 = *No*). Charisma: high charisma (1) or low charisma condition (0). Consistency: inconsistent (1) or consistent (0) target sentence. Concern was coded as a continuous variable (1 = *Not concerned at all*, 5 = *Very concerned*). English was coded as a continuous variable (1 = *Poor*, 4 = *Excellent*). Sample: data from the second (1 = age 18–40) or the first sampling (0 = age 18–30) round. Sex [*male*]: female and other (0); male (1). Sex [*other*]: male and female (0); other (1). We conducted several robustness checks that are reported in the online supplementary material. Analyses in which we excluded 1) participants who reported technical problems ($n = 36$) or failed the attention check ($n = 15$), or 2) who reported neutral or no concern with the environment, do not believe in climate change, or for whom there was no response collected on this question ($n = 239$), or 3) preregistered outliers for reading times ($n = 28$) corroborate the main analyses and are reported in the online supplementary material. ***$p < .001$, **$p < .01$,*$p < .05$, †$p < .10$.

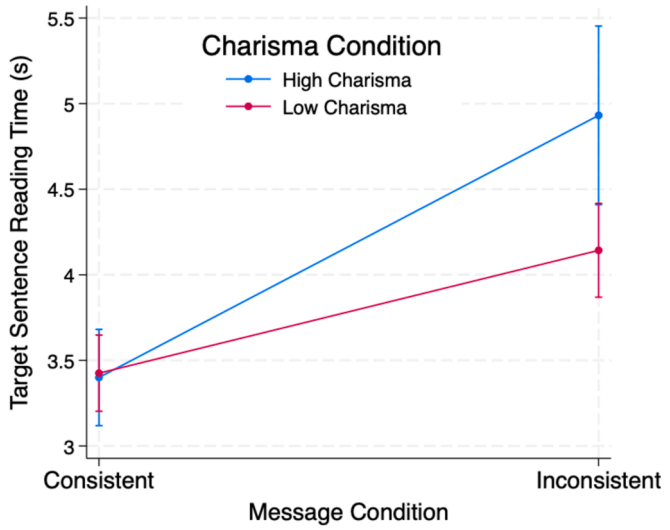

Fig. 1. Estimated Marginal Means and Confidence Intervals Charisma x Inconsistency (Study 2). *Note*: Confidence intervals are based on robust standard errors for Model 12 (Table 9). This model excluded the potentially endogenous variables English proficiency, environmental concern, and individual reading pace. The plot was created in Stata 18 (StataCorp., 2023), based on the margins function.

are *not concerned* with the environment (additional analyses are reported in the online supplementary material). We further found tentative evidence that participants' individual reading speed – measured in a text message presented prior to the experimental manipulations in Study 2 – moderated the effect of charisma on total reading times. Participants with a slow reading pace – measured in a practice text – spent more time reading the inconsistent message from a highly charismatic leader than participants who generally read fast during the practice block. This pattern was reversed for the low charisma condition. Although the effect is small, the finding points towards interesting new hypotheses. For example, charisma may reinforce individuals' default strategies (i.e., reading slowly vs. reading fast) under situations of uncertainty (i.e., when an otherwise charismatic leader presents inconsistent information). However, whether followers' default reading speed modulates the charisma x inconsistency effect is a novel hypothesis that needs to be confirmed and further explored in future research. Additionally, the baseline reading time assessment in our study is potentially endogenous, i.e., the measurement may have been driven by factors such as intelligence or personality characteristics such as conscientiousness. Therefore, the models that include this variable should be interpreted with caution.

Study 2 included two additional measurements of self-reported effort invested in reading the leader's message and deciding whether or not to read an additional message. No effects of high or low charisma were found on self-reported effort. Surprisingly, high leader charisma significantly reduced participants' decision to read an additional text. Participants were significantly more likely to decide to read an additional message in the low than the high charisma condition. Although the results of previous research are mixed, with CLTs sometimes significantly increasing extra task engagement while remaining ineffective in other experiments, our finding remains puzzling. One possible explanation for why high charisma reduced the willingness to engage in an extra task is that the study context differed from the organizational and economic settings in which charismatic leadership is usually studied (e.g., Ernst et al., 2021; Fest et al., 2021). Economic settings are characterized by monetary incentives, motivating workers to engage in tasks with observable task outcomes (e.g., transcribing documents; Ernst et al., 2021; Fest et al., 2021). Although engaging in extra tasks was not incentivized in some of these studies (e.g., producing more output, Antonakis et al., 2022; Meslec et al., 2020), participants were unaware of the baseline performance. In contrast, in our study, participants were notified that deciding to read another message would be an additional task they would complete. Thus, the decision participants made in our study is qualitatively different from earlier studies in which charisma increased extra task engagement. Participants may have also had no intrinsic motivation to read a second message in our study. The underlying reason could be that high leader charisma signals the competence and capability to craft effective messages on climate change. Then, followers should be less inclined to read and evaluate a second message because they think the leader is competent enough to craft such messages without their help. In contrast, a leader who signals low charisma potentially provides an intrinsic motivation (helping the sustainability movement) to check and evaluate an additional message on climate change because, to the follower, this leader is a less capable leader for the cause (i.e., environmentalism). Future research should explore the mechanisms underlying the willingness to conduct extra work in societal settings (e.g., climate change and environmental movements) versus economic contexts.

Limitations and future directions

Our research provides novel insights into how followers process information from charismatic leaders. However, the current study did not reveal a clear pattern in how written messages from a charismatic leader – whether consistent or inconsistent with a charismatic leader's previously expressed views – are processed. We want to point out three research directions that we consider important based on alternative interpretations of the results and limitations of our study designs. First, charismatic leaders may help followers to keep their focus. This can explain why we found an effect of charisma on increased reading times for total messages but not AOI words in Study 1 – with a long work duration (i.e., watching many videos and reading many text messages) – compared to target sentences but not complete messages in Study 2, with a relatively short task duration (i.e., one video and one text message). In particular, charismatic leaders are especially effective in motivating workers to perform better, and a growing body of literature confirms this effect (e.g., Antonakis et al., 2022; Ernst et al., 2021; Fest et al., 2021; Meslec et al., 2020). In Study 1, participants were informed that they would read many texts. Watching a charismatic leader could have motivated them to maintain their focus during the lengthy task, increasing reading times – although the effect is small. In Study 2, participants knew they were only required to read one text message, potentially priming them to pay more attention to outstanding information (i.e., the target sentence) in the high charisma condition. Second, it is not entirely clear yet what the consequences of inconsistent information are for leaders. Whether noticing and processing inconsistent information from charismatic leaders is detrimental to leadership approval is a question that was beyond the scope of our studies but has important implications for leader–follower relationships. Future studies should include assessments of leader approval and attitudes after exposure to inconsistent messages to explore the link between attentional processes and leadership effectiveness. Finally, when pursuing this line of research, leadership scholars should be sensitive to the challenges of interdisciplinary work. Implementing cross-disciplinary methods highlights crucial differences between cognitive and leadership science that researchers must overcome when designing studies (Murray & Antonakis, 2019; Waldman et al., 2019). To successfully combine cognitive and leadership approaches, researchers must carefully consider the advantages and disadvantages of the different experimental designs and methods (Waldman et al., 2011). For example, replicating the eye-tracking design (Study 1) using a between-subjects design would account for some of the major limitations of Study 1 by preventing repetition and familiarity effects due to the reoccurring presentation of the same leader.

Conclusion

We studied how much time participants spent reading consistent and inconsistent messages from a leader who exhibited either high or low levels of charisma. Averaged across consistent and inconsistent message conditions, participants spent more time reading information from a high-charisma versus a low-charisma leader. In Study 1, we found this pattern for reading times of whole messages, whereas in Study 2, we found it only for consistent and inconsistent target sentences. Furthermore, inconsistent words systematically increased eye fixation times in Study 1 and reading times for sentences in Study 2. At the same time, inconsistencies reduced the convincingness of messages in both studies across high and low charisma conditions. When excluding potentially endogenous variables from the analysis, we found some evidence for an interaction effect of charisma and message inconsistency in Study 2. Our research provides implications for how the usage of CLTs by a leader influences followers' attentional processes.

Data and online supplementary materials: https://osf.io/wabef/?view_only=ce6260225fbf4d508703d12841f3a031

CRediT authorship contribution statement

Lara H. Engelbert: Writing – review & editing, Writing – original draft, Project administration, Methodology, Formal analysis, Data curation, Conceptualization. **Michiel van Elk:** Writing – review & editing, Methodology, Conceptualization. **Jan Theeuwes:** Writing – review & editing, Methodology, Conceptualization. **Mark van Vugt:** Writing – review & editing, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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