



# Perceptions of charisma from thin slices of behavior predict leadership prototypicality judgments

Konstantin O. Tskhay\*, Rebecca Zhu, Nicholas O. Rule

University of Toronto, Canada

## ARTICLE INFO

### Article history:

Received 29 September 2015

Received in revised form 6 March 2017

Accepted 7 March 2017

Available online 13 March 2017

### Keywords:

Charisma

Leadership prototypes

Nonverbal behavior

Social perception

Thin slices

## ABSTRACT

Signaling theory suggests that people use cues transmitted by leaders to form impressions of charisma but the validity of these impressions remains unexplored. Here, we examined whether perceptions of charisma from thin slices of nonverbal behavior relate to inferences based on more information. We tested whether ratings of charisma from 5-, 15-, and 30-s clips (with no audio) of speakers delivering a message predicted evaluations of vision articulation and leadership prototypicality made from 60-s multimedia clips (with audio). The results indicated that thin-slice charisma judgments predicted the criterion scores for leadership prototypicality but not vision articulation from all of the 5-, 15-, and 30-s silent clips. The current data therefore suggest that thin slices of charisma can be valid indicators of leadership.

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## Introduction

Charisma has a potential to make a tremendous impact on people and society. Indeed, we make inferences about charisma on a daily basis and in a matter of seconds and often chose to follow individuals we consider charismatic as leaders. Considering the impacts of charisma, however, it is critical to understand whether charisma can be adequately gauged from simply observing other people's behavior. Despite a long history of exploring charisma from a variety of perspectives (Avolio & Bass, 1988; Bass, 1985; House, 1977; Potts, 2009; Weber, 1978; see also Van Knippenberg & Sitkin, 2013), there is currently little exploration of whether the signals and behaviors that people consider charismatic indeed adequately “advertise” leadership, or in other words, whether they accurately trace charisma from behavior. We examine this question in the current work by integrating the signaling perspective on charisma with the research on the accuracy of the thin slices of nonverbal behavior.

### Signaling perspective of charisma

Recognizing the lack of a holistic definition, Antonakis, Bastardo, Jacquart, and Shamir (2016) re-defined charisma using signaling theory, viewing charisma as an outcome of a “value-based, symbolic, and emotion-laden” communication style. According to the signaling perspective, leaders emit cues or signals that followers integrate when inferring charisma to leaders (House, 1977; see also Tskhay & Rule, *in press*, for a review). These signals manifest as leaders' nonverbal expressions (Conger & Kanungo, 1987), as emotions that inspire followers (e.g., Bono & Ilies, 2006; Den Hartog & Verburg, 1998; Newcombe & Ashkanasy, 2002; Offermann, Kennedy, & Wirtz, 1994; Shamir, House, & Arthur, 1993), and as metaphors that leaders use to illustrate

\* Corresponding author at: University of Toronto, Department of Psychology, 100 St. George Street, Toronto, ON M5V 3T5, Canada.

E-mail address: [konstantin.tskhay@gmail.com](mailto:konstantin.tskhay@gmail.com) (K.O. Tskhay).

their visions of the future (e.g., Mio, Riggio, Levin, & Reese, 2005). More broadly, these cues act as shared experiences between leaders and followers and result in an alignment between people towards common goals and actions (Antonakis et al., 2016). Critically, followers process these emitted signals, implicitly compare them to their cognitive templates of leadership, and ultimately decide whether to recognize the individual as a leader (see Lord, Brown, Harvey, & Hall, 2001; Lord, Foti, & De Vader, 1984; Tskhay, Xu, & Rule, 2014). By focusing on the expressive signals that promote its inference, charisma is disentangled from other constructs otherwise considered to be core elements of its definition (e.g., influence; Bass, 1985). Critically, thinking about charisma as a symbolic language allows researchers to identify specific behaviors that directly lead to perceptions of charismatic leadership.

Prior work supports a multifaceted view of charisma and shows that leaders indeed emit a number of cues that people consider charismatic. For example, charismatic leaders use metaphors and other linguistic structures to convince their followers of their idealized vision (e.g., Den Hartog & Verburg, 1998). Furthermore, expressive nonverbal behaviors promote perceptions of charismatic leadership by allowing leaders to share their emotions with their followers. For example, cues like eye contact, facial behavior, and body movement affect perceptions of success and power (e.g., Brooks, Church, & Fraser, 1986; Conger & Kanungo, 1987; Friedman, Riggio, & Casella, 1988; Hall, Coats, & LeBeau, 2005; House & Howell, 1992; House, Spangler, & Woycke, 1991; Newcombe & Ashkanasy, 2002; Shamir et al., 1993). Thus, research demonstrates that leaders generate cues that trigger perceptions of charismatic leadership in their followers. Together, the evidence suggests that charisma can indeed be conceptualized from a signaling perspective.

### *Thin slices and perceptions of charisma*

The notion of charisma as a composition of signals emitted by leaders opens a number of new questions and related avenues of research. In the current work, we examined whether perceptions of charisma from thin slices reflect an informed assessments of a person's vision articulation (a hallmark of charismatic leadership; Podsakoff, MacKenzie, Moorman, & Fetter, 1990) and leadership prototypicality (Lord et al., 1984). Some previous work has begun exploring how people arrive at their perceptions of charisma and whether these impressions predict inferences of leadership, showing that the display of nonverbal charismatic signals indeed results in perceptions of charisma (Benjamin & Shapiro, 2009; Friedman, Prince, Riggio, & DiMatteo, 1980; Masters, Sullivan, Feola, & McHugo, 1987; Mio et al., 2005). However, it remains unclear whether perceptions of charisma from thin slices predict leadership.

Research in person perception posits that perceptions made from thin slices of nonverbal behavior are often accurate (Tskhay & Rule, 2013). People can extract information about each other from very brief observations of appearance and behavior for some traits and characteristics (see Rule, Krendl, Ivcevic, & Ambady, 2013). For instance, a large body of research demonstrates that people can perceive each other's personalities (e.g., Borkenau & Liebler, 1993), group memberships (Tskhay & Rule, 2013), and leadership success after only brief observations of their nonverbal behavior (Antonakis & Dalgas, 2009; Benjamin & Shapiro, 2009; Rule & Ambady, 2008; Tskhay et al., 2014). Consistent with signaling theory, social cognition research further suggests that people rapidly and relatively automatically grasp the information from signals emitted by targets (Freeman & Ambady, 2011; Macrae & Quadflieg, 2010). Specifically, people perceive the signals and process them to form a mental representation that continuously adapts as they perceive new signals that eventually settle on an ultimate (but still flexible) impression (Freeman & Ambady, 2011; Gilbert, Pelham, & Krull, 1988; Rule, Tskhay, Freeman, & Ambady, 2014).

Of course, not all information is available or accurately perceived. For example, whereas people intuitively believe that they can perceive others' trustworthiness, and show strong consensus in their opinions, these perceptions often do not predict how trustworthy individuals behave (see Wilson & Rule, *in press*, for review). The said heterogeneity prompted us to investigate whether perceivers can detect individuals' charisma (measured through perceptions of their vision articulation and leadership) from thin slices of their behavior. Supporting this position, the ecological theory of social perception also suggests that charisma should be easily read from cues and signals due to its functional relevance to identifying leaders in the surrounding environment (Tskhay & Rule, *in press*). In other words, from an evolutionary perspectives, charisma may act as a cue to identifying leadership, thereby attuning individuals to the signals that people associate with this trait.

### *Current study and hypotheses*

In the current study, we specifically wanted to know whether impressions of charisma made from snippets of nonverbal behavior correspond to perceptions made in a more information-rich context. We therefore examined how perceptions of charisma from thin slices related to indicators of leadership (i.e., perceptions of vision articulation and leadership prototypicality), as suggested in previous research (see Tskhay & Rule, *in press* for a review). Here, we obtained short video clips from a sample of participants, reduced them to 5-, 15-, and 30-s segments of nonverbal behavior (thin slices), and asked multiple independent groups of participants to evaluate the charisma of the people in the slices. Our criteria for these judgments consisted of evaluations of vision articulation and leadership prototypicality made from longer multimedia segments (i.e., vision plus voice) using validated scales. A significant relationship between perceptions of charisma from thin slices and the criteria would therefore suggest that the clips may represent the target person's actual leadership ability.

Considering the signaling perspective of charisma, we implemented an instrumental variable model to purge the bias from the thin-slice perceptions via six instruments: the target individuals' sex, race, attractiveness, wearing glasses, frequency of eye contact with the camera, and the (experimentally manipulated) strength of the argument that they read in the clip. Given that sex,

race, and attractiveness exhibit strong influence on leadership, and potentially on charisma (e.g., Livingston & Pearce, 2009; Zebrowitz & Montepare, 2005), we expected that all of these instruments would predict perceptions of charisma in the model. Specifically, we expected that our participants would evaluate white, male, and attractive targets as more charismatic, consistent with previous research suggesting that these characteristics predict leadership (e.g., Goktepe & Schneier, 1989; Livingston & Pearce, 2009; Zebrowitz & Montepare, 2005). Furthermore, considering that people typically infer charisma and leadership to individuals who display more frequent eye contact (Friedman et al., 1980), we expected that participants who made more eye contact with the camera would be perceived as more charismatic. Next, given that people generally associate wearing glasses with introversion (Zebrowitz, 1997) but associate charisma with extraversion (Riggio & Friedman, 1986), we expected that participants would evaluate people wearing glasses as less charismatic. Finally, because an argument's strength can communicate conviction and confidence, and people expect charismatic leaders to deliver strong arguments (consistent with conceptions of charisma as idealized influence; Bass, 1985), we manipulated argument strength with the expectation that people delivering strong arguments would be perceived as more charismatic than people delivering weak arguments. Modeling these parameters constituted the first stage of the model.

In the second stage of the model, we examined the validity of the participants' impressions of charisma by simultaneously regressing Vision Articulation (Podsakoff et al., 1990) and leadership prototypicality (Lord et al., 1984) on perceptions of charisma from thin slices, covarying all residual variances to guard against endogeneity (Antonakis, Bendahan, Jacquart, & Lalive, 2010). Although thin slices consist of only small bits of information, their consistency and accuracy suggests that they can actually be quite information-rich (e.g., Tskhay & Rule, 2013). We therefore expected to observe positive and significant relationships between thin-slice perceptions of charisma and our criterion variables (i.e., vision articulation and leadership prototypicality). If so, we would conclude that perceptions of charisma from thin slices of nonverbal behavior might reliably predict inferences of leadership. We summarize our hypotheses as follows:

**Hypothesis 1.** Participants will perceive white, male, and attractive targets as more charismatic.

**Hypothesis 2.** Participants will perceive targets wearing glasses as less charismatic.

**Hypothesis 3.** Participants will perceive targets who make more eye contact with the camera as more charismatic.

**Hypothesis 4.** Participants will perceive targets delivering strong arguments as more charismatic.

**Hypothesis 5.** Perceptions of charisma from thin slices will predict vision articulation and leadership prototypicality.

Importantly, we manipulated the duration of the clips to test whether judgments from the thin slices would predict charisma regardless of their length, consistent with previous research showing that exposure time has little effect on perception so long as the relevant cues can be perceived at all (e.g., exceed subliminality; Rule & Ambady, 2008). As such, we formally predicted:

**Hypothesis 6.** Perceptions of charisma from thin slices will predict vision articulation and leadership prototypicality regardless of slice duration.

## Method

### Stimuli

Using a web camera, we recorded videos of 98 undergraduate students (59 female) seated in front of a computer while reading one of two persuasive messages in favor of wind power (see Appendix A). Each speaker spent 5 min practicing the speech before recording. We instructed the speakers to deliver the message as if they were trying to persuade their friends and classmates (without further instruction). The speeches lasted an average of 1.02 min ( $SD = 0.13$ ). We then debriefed the speakers about the full purpose of the study and obtained their consent to use the video clips for research purposes.

We generated thin slices of nonverbal behavior by extracting the first 5, 15, and 30 s from each speech after removing the audio track from the videos, converting them to grayscale, and standardizing them in size to show only the speaker's body. To estimate effects of attractiveness independent from nonverbal behavior, we additionally photographed the participants posing a neutral expression using a high-resolution camera against a white background.<sup>1</sup> We cropped the photos to show only the speakers' faces and standardized them to the same height, but retained the color information.

### Raters

A total of 1307 Mechanical Turk Workers (635 female, 670 male, 1 transgender;  $M_{Age} = 37.88$  years,  $SD = 11.93$ ) rated the stimuli for monetary compensation.

<sup>1</sup> We could not photograph 12 of the participants and therefore instead extracted a still frame from their videos by selecting the frame in which the first author thought each speaker appeared most neutral.

## Measures

### Vision articulation

Podsakoff et al. (1990) developed the Vision Articulation scale to measure the charismatic aspect of transformational leadership. The scale consists of five items (see Appendix B for the questionnaire items) that raters used to evaluate each participant using a 7-point scale (1 = *strongly agree*, 7 = *strongly disagree*). We adapted the scale to represent a more general context by removing any reference to organizational settings. Inter-rater reliability: ICC = 0.10,  $F(97, 405) = 1.58$ ,  $p = 0.001$ .

### Leadership prototypicality

We used the items from Cronshaw and Lord's (1987) measure of leadership prototypicality. The scale consisted of five items (see Appendix B for the questionnaire items) that raters used to evaluate participants in the videos using a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The ICC for this scale was low, only marginally reaching the levels of statistical significance: ICC = 0.04,  $F(96, 505) = 1.28$ ,  $p = 0.052$ .

### Procedure

We randomly assigned raters to conditions that differed as a function of duration and judgment type. We asked 503 raters to evaluate one randomly selected full-color video with the audio track using the Vision Articulation scale and 604 other participants to rate the targets for Leadership Prototypicality. Another 170 raters judged randomly selected 5-s, 15-s, and 30-s clips<sup>2</sup> for charisma using the prompt "How charismatic is this person?" using a 7-point scale (1 = *Not at all charismatic*, 7 = *Very charismatic*). The ICCs for all scales were acceptable: all ICCs > 0.25,  $F_s > 4.11$ ,  $p_s < 0.001$ . Finally, a group of 30 raters evaluated all 98 photographs for attractiveness using a 7-point scale (1 = *Very unattractive*, 7 = *Very attractive*; ICC = 0.19,  $F(97, 2813) = 13.60$ ,  $p < 0.001$ ).

### Analytic strategy

We first aggregated the ratings for each participant according to clip duration and judgment type (see Bliese, 2000) and analyzed these mean scores using an instrumental variable model estimated as a multiple groups structural equation model in STATA. In specifying the model, we treated clip duration as a grouping factor, accounting for repeated measures by estimating cluster-robust standard errors. We first regressed the ratings of charisma on a set of our instruments: the strength of the argument (0 = *weak*, 1 = *strong*), frequency of eye contact, whether the target was wearing glasses (0 = *no glasses*, 1 = *target wears glasses*), target race (0 = *not White*, 1 = *White*), target sex (0 = *woman*, 1 = *man*), and target attractiveness. In the next stage of the model, we regressed both Vision Articulation and Leadership Prototypicality ratings on perceptions of charisma, correlating all of the endogenous variables' disturbances (Antonakis et al., 2010). Though we initially estimated a model that allowed all of the parameters to vary freely between groups, we checked if the patterns of relationships were the same regardless of clip duration, as predicted and increasing statistical power. Thus, we constrained all model parameters to be the same across the groups and evaluated the model fit using the Score Test (Bera & Bilias, 2001). We present the final model below and evaluate significance levels by referring to the 95% confidence intervals (CIs).

## Results

The bivariate correlations between different variables can be found in Table 1.

Overall, the model showed acceptable fit: all  $\chi^2(1)$  values fell below 3.84 ( $p_s > 0.05$ ), suggesting that the applied constraints were appropriate. As can be seen in Table 2, attractive and White participants who did not wear glasses, displayed more eye contact, and recited stronger arguments were rated as more charismatic. Male and female participants seemed to receive similar charisma ratings. Furthermore, although the participants rated as more charismatic in the thin slices were not perceived as articulating their vision better in the longer multimedia clips, they were perceived as more prototypical leaders compared to their less charismatic counterparts.

## Discussion

Here, we found that perceptions of charisma made from thin slices predict judgments of leadership prototypicality, but not vision articulation, from longer multimedia segments. These relationships were consistent regardless of the clip duration, suggesting that impressions of charisma from 5-s clips predicted leadership prototypicality just as well as impressions based on 30-s clips. Finally, we found that the participants' characteristics (such as their race, attractiveness, amount of eye contact, whether they wore glasses, and the strength of the argument they delivered) facilitated perceptions of their charisma from thin slices,

<sup>2</sup> To avoid rater fatigue, we varied the number of participants judged in each condition such that the number of participants inversely related to the length of the clips, assuring that multiple raters (5 s:  $M = 18.06$ ,  $SD = 1.07$ ; 15 s:  $M = 12.86$ ,  $SD = 0.43$ ; 30 s:  $M = 9.18$ ,  $SD = 0.83$ ) evaluated each participant to optimize inter-rater reliability for aggregation (all ICCs  $\geq 0.03$ ).

**Table 1**

Means, standard deviations, and bivariate correlations for the variables of interest.

Variable	<i>M</i> ( <i>SD</i> )	2	3	4	5	6	7	8	9	10	11
1 Argument strength	0.46 (0.50)	−0.12	0.14	−0.28**	0.00	−0.04	−0.05	−0.01	−0.06	−0.03	0.03
2 Eye contact	9.36 (4.31)		−0.09	0.01	−0.29***	−0.02	0.47***	0.50***	0.47***	0.08	0.04
3 Glasses	0.29 (0.46)			−0.07	0.03	−0.19†	−0.22*	−0.21*	−0.18	0.04	0.00
4 Race	0.41 (0.49)				0.25**	0.29***	0.09	0.10	0.20†	0.18	0.09
5 Sex	0.40 (0.49)					0.17	−0.13	−0.12	−0.17	−0.07	−0.27
6 Attractiveness	3.20 (0.62)						0.12	0.20†	0.17	0.08	0.13
7 Charisma (5s)	3.71 (0.94)							0.83***	0.75***	0.03	0.05
8 Charisma (15s)	3.90 (0.99)								0.82***	0.00	0.04
9 Charisma (30s)	3.86 (0.97)									0.19†	0.22*
10 Leadership prototypicality	3.10 (0.65)										0.46***
11 Vision articulation	4.64 (0.66)										

Note. † $p \leq 0.10$ ; \* $p \leq 0.05$ ; \*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$ . Argument strength: 0 = Weak argument, 1 = Strong argument; Glasses: 0 = No glasses, 1 = glasses; Race: 0 = Non-white, 1 = White; Sex: 0 = female, 1 = male.  $N = 97$ .

consistent with our proposed hypotheses. Contrary to our hypothesis, however, participants' sex did not influence the thin slice judgments—raters viewed the men and women as similarly charismatic.

These data contribute to the signaling perspective of charisma (Antonakis et al., 2016), whereby multiple cues aggregate to promote perceptions of charisma. Here, we observed that individuals' stable characteristics and nonverbal behaviors predicted how charismatic they appeared to others in thin slices. Because we only examined a limited set of factors, however, further research would benefit from exploring other cues and behaviors to account for additional meaningful variance in perceptions of charisma. Future researchers should thus seek to isolate the degree of influence that various cues have on perceptions of charisma and how they combine to recruit, motivate, and influence potential followers.

Another critical theoretical contribution of the current work is the validation of perceptions of charisma from thin slices. Although previous research has demonstrated that thin slices can predict various outcomes, no work has yet explored whether thin-slice perceptions of charisma support perceptions of leadership. Here, we found that thin slices of charisma predict leadership

**Table 2**

The summary of the model examined in the current work, including all individual coefficients, cluster robust standard errors, statistical significance tests, and probability levels.

	<i>b</i>	<i>SE</i>	<i>Z</i>	<i>p</i>	95% CI	
					LL	UL
Predictors	Dependent variable: Charisma $R^2 = 0.28$ , Wald's $\chi^2(6) = 135.07$ , $p < 0.001$					
Argument strength	0.14	0.10	1.43	0.15	−0.05	0.34
Eye contact	0.10	0.02	6.27	0.00	0.07	0.13
Glasses	−0.25	0.11	−2.14	0.03	−0.47	−0.02
Race	0.29	0.10	2.78	0.01	0.09	0.49
Sex	−0.17	0.17	−0.98	0.33	−0.51	0.17
Attractiveness	0.22	0.09	2.34	0.02	0.03	0.40
Constant	2.16	0.30	7.30	0.00	1.58	2.74
	Dependent variable: Prototypicality $R^2 = 0.005$ , Wald's $\chi^2(1) = 5.52$ , $p = 0.02$					
Charisma	0.17	0.07	2.35	0.02	0.03	0.31
Constant	2.45	0.28	8.74	0.00	1.90	2.99
	Dependent variable: Vision $R^2 = 0.01$ , Wald's $\chi^2(1) = 2.10$ , $p = 0.15$					
Charisma	0.17	0.12	1.45	0.15	−0.06	0.41
Constant	3.98	0.45	8.93	0.00	3.11	4.85
Variances						
Charisma	0.67	0.05	–	–	0.58	0.78
Prototypicality	0.43	0.04	–	–	0.35	0.51
Vision	0.44	0.04	–	–	0.36	0.52
Covariances						
Charisma - prototypicality	−0.12	0.06	−1.90	0.06	−0.23	0.00
Charisma - vision	−0.1	0.1	−1.00	0.32	−0.28	0.09
Prototypicality - vision	0.2	0.03	7.19	0.00	0.15	0.26

Note. Argument strength: 0 = Weak argument, 1 = Strong argument; Glasses: 0 = No glasses, 1 = glasses; Race: 0 = Non-white, 1 = White; Sex: 0 = female, 1 = male.  $N = 97$ . *Z*-statistics are cluster robust. Estimates of charisma are constrained to be equal across the three time periods of 5, 15, and 30 s. Vision = Vision articulation. Prototypicality = Leadership prototypicality. LL = Lower limit; UL = Upper limit.

prototypicality, demonstrating charisma's role in identifying leaders. This finding is consistent with the ecological view of perception (McArthur & Baron, 1983) which suggests that individuals will accurately extract the functionally relevant information from the environment. That is, here, we showed that perceptions of charisma accurately advertised leadership, meaning that perceptions of charisma may indeed serve a functional purpose.

That said, we did not observe that the thin slice judgments related to vision articulation, perhaps because vision articulation's elements tend to focus on verbal content, rather than nonverbal behavior. Furthermore, it is important to mention that the ICC for this latter scale was relatively low, suggesting that the raters may not have entirely agreed on whether the targets were articulating the vision well. Therefore, it may be important to note that the exploration of vision articulation is further warranted. Indeed, the apparent discrepancy opens a new question about the differentiated influence of verbal and nonverbal information on perceptions of charisma, which some researchers have begun to explore in greater detail (Tskhay et al., 2014). Future research can certainly add to the current investigation.

The current work also adds to previous research showing that appearance and behavioral cues can predict charisma and leadership. The finding is important because it is truly the first to show that individuals on average need only 5 s of exposure to an individual to form a firm impression of the person's charismatic presence and leadership ability. Future work may wish to extend upon our finding by, for example, assessing whether different types of behavior (e.g., giving a speech vs. interacting with a colleague) can affect the predictive relationship between charisma and leadership. Moreover, although perceptions of charisma from thin slices correlated with measures of leadership regardless of viewing time, it may still be reasonable to suspect that these initial impressions lose value as perceivers integrate new information over the course of learning about a particular person (see Freeman & Ambady, 2011). Indeed, certain behaviors may become less effective for particular viewing durations in different contexts. For instance, might individuals infer charisma to someone who is warm or someone who is powerful in a time of economic crisis or war (e.g., Little, Burris, Jones, & Roberts, 2007)? These questions require further attention.

Critically, the current work also reveals a contribution of attractiveness to perceptions of charisma. In the current work, we found that attractive people were perceived as more charismatic than their less charismatic counterparts. Moreover, the observed relationship was independent from the amount of time people observed the targets. Although this effect may not be surprising to researchers studying the attractiveness halo bias (Dion, Berscheid, & Walster, 1972), it is fascinating to researchers examining charisma. Indeed, one can easily presume that charismatic individuals would be charming and attractive *following* an interaction, rather than before it. Here, we asked *independent* samples of participants to evaluate charisma and attractiveness, and further, people who evaluated attractiveness were judging photographs of faces and were not exposed to any behavioral indicators, thereby methodologically disentangling the two constructs. Even doing so, we found that physical attractiveness served to inform subsequent judgments of charisma, presenting the first formal demonstration of the effect in the literature. Naturally, the current finding does not suggest that charisma may not inform attractiveness. Indeed, people who are charismatic may become more attractive after interaction—a curious question warranting further exploration.

Additionally, the current work tested whether perceptions of charisma from thin slices of nonverbal behavior predicted impressions made in a richer information context (i.e., longer multimedia clips). Specifically, we found that the thin-slice judgments correlated with leadership prototypicality ratings made when more information was available, suggesting that first impressions may produce inferences that are consistent across various informational contexts (see also Rule et al., 2014). In other words, perceivers' impressions of charisma from thin slices will likely resemble those made when more information (such as verbal content) is available (see also Tskhay & Rule, 2013, for similar findings), consistent with information processing perspectives that propose people correct their impressions as new information becomes available (e.g., Freeman & Ambady, 2011; Gilbert et al., 1988). Indeed, although people's behaviors may seem charismatic at first, what they say may reinforce or undermine perceptions of their charisma to a great degree (see Mio et al., 2005).

Practically, the current work suggests implications for leadership selection and development, both outcomes related to leadership perceptions (Tskhay & Rule, *in press*). Because we considered the data in aggregate, we can surmise that an average organizational stakeholder will likely perceive his or her leader as would other stakeholders. Furthermore, the current data suggest a new means of assessing charisma that to some extent predicts leadership prototypicality, showing that impressions made by answering one simple question about an individual (how charismatic the person is) is likely to be a fair indicator of one's perceived leadership potential, likely influencing the person's candidacy for promotion to leadership roles. However, the current work does not presume that organizations should move away from leadership assessments as they stand but, rather, that the information gleaned from typical 360-degree feedback may actually tap into leadership more broadly. Thus, organizations should exercise care in assessing their senior leaders, as the current work shows that first impressions can yield leadership prototypicality perceptions that may or may not reflect one's actual ability. In other words, leadership is more than a simply looking like a leader, though one's appearance and nonverbal behaviors may significantly guide that perception.

Though informative and interesting, the current work is not without limitations. First, we only examined two signals previously associated with leadership, and presumably charisma—eye gaze and attractiveness (e.g., Brooks et al., 1986; Goktepe & Schneider, 1989). Research on charismatic leadership tactics suggests many additional cues that could be explored (Antonakis, Fenley, & Liechti, 2011). Indeed, understanding the various gestures and verbal expressions that might communicate charisma to other people could meaningfully inform leadership development in organizations. Testing this using an experimental design, where charismatic cues can be systematically manipulated, would be particularly beneficial. Although we found a degree of concordance between impressions of charisma and leadership in the present work, we did not test what happens to one's impressions of charisma, or how well they predict leadership, when challenged (or supported) by new information entering the

cognitive system. Thus, additional study as to how people accumulate information about charisma and how it revises their impressions would help to refine and build upon the current findings.

Additionally, given the rather small intervals of time used to rate charisma in the current study (fractions of a minute), testing larger intervals could be valuable. For instance, it would be interesting to see whether perceptions of charisma remain consistent between weeks, months, and even years (Shamir, 1995). Relatedly, the current work used a perception-based criterion (albeit using standardized and validated instruments). Using stronger and more objective charisma and leadership criteria thus seems necessary to validate the present findings. Indeed, one particular limitation of the current study is its ecological validity. Participants had only 5 min to practice their speech, perhaps resulting in a rather inauthentic and unnatural delivery. Future researchers should consider performing a similar study in different and more ecologically veracious conditions to develop the findings further. Moreover, our targets consisted solely of undergraduate students. Though arguably emergent leaders in the coming decades, many undergraduates have yet to refine their leadership skills, charisma, and modes of nonverbal expression (see Antonakis et al., 2011, for a discussion of charisma training). The current work may therefore benefit from replication with a larger sample of experienced professionals—particularly people in managerial positions and other leaders—to increase its generalizability and impact.

In sum, here we explored whether perceiving charisma from brief snippets of nonverbal behavior can reliably predict indicators of leadership. We found that individuals' perceptions from viewing as little as 5 s of nonverbal behavior predicted leadership prototypicality, but not vision articulation, judged in a more prolonged and information-saturated context using validated charisma and leadership scales. The current work therefore contributes to research on charisma by showing the impact of small-scale interactions on more pronounced judgments, providing a number of new research avenues and practical implications.

## Appendix A

### *Strong argument*

Wind power is a form of energy that we should be considering more seriously. It's currently the fastest-growing source of electricity production in the world. A single wind turbine can power 500 homes – and there's enough wind in Canada to power the country 10 times over.

Right now, coal power is a very popular energy source. However, the coal we rely on pollutes our atmosphere with harmful emissions such as sulfur, lead, and carbon monoxide. In contrast, wind power is environmentally friendly and doesn't release toxic chemicals into the air.

Also, unlike most forms of energy, wind power uses virtually no water, so it saves water resources. By 2030, Canadian wind power will have saved nearly 30 trillion bottles of water, and we can save even more energy if we keep building wind turbines! Think of the positive impact that wind power can have – it keeps our environment clean and saves our other resources.

### *Weak argument*

Wind power is a form of energy that we should be considering more seriously. There's a very popular novel about a futuristic society that powers its cities with only wind energy. This futuristic world is a clean, green place with lots of grass, flowers, and fresh water. It sounds like the perfect place to live in. Canada could become cleaner and greener by getting most of its electricity from wind power too.

Plus, there are more and more energy conferences every year praising the effects of wind power on the environment and the economy. Countless numbers of experts – such as scientists, professors, and technicians – at these conferences talk about how wind energy can positively impact the earth and change the world for the better. All the experts believe that wind power is good.

The world has the potential to be both technologically advanced and environmentally friendly – we just have to be open to new energy sources like wind power.

## Appendix B

### *Adapted vision articulation scale*

1. Has a clear understanding of where we are going
2. Paints and interesting picture of the future
3. Is always seeking new opportunities
4. Inspires others with his/her plans for the future
5. Is able to get others committed to his/her dream

### *Adapted leadership prototypicality scale*

1. To what degree does he/she fit your image of what a leader should be?
2. How much leadership does he/she exhibit?
3. To what extent do you think he/she is typical of a leader?
4. How much leadership did he/she engage in?
5. How willing would you be to choose him/her as the leader of your work group?

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