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# Why Won't You Listen to Me? Measuring Receptiveness to Opposing Views

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**Abstract.** We develop an 18-item self-report measure of receptiveness to opposing views. Studies 1a and 1b present the four-factor scale and report measures of internal, convergent, and discriminant validity. In study 2, more receptive individuals chose to consume proportionally more information from U.S. senators representing the opposing party than from their own party. In study 3, more receptive individuals reported less mind wandering when viewing a speech with which they disagreed, relative to one with which they agreed. In study 4, more receptive individuals evaluated supporting and opposing policy arguments more impartially. In study 5, we find that voters who opposed Donald Trump but reported being more receptive at the time of the election were more likely to watch the inauguration, evaluate the content of the inauguration speech in a more even-handed manner, and select a more balanced portfolio of news outlets for later consumption than their less receptive counterparts. We discuss the scale as a tool to investigate the role of receptiveness for conflict, decision making, and collaboration.

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However unwillingly a person who has a strong opinion may admit the possibility that his opinion may be false, he ought to be moved by the consideration that, however true it may be, if it is not fully, frequently, and fearlessly discussed, it will be held as a dead dogma, not a living truth.  
(Mill 1859, p. 44)

Despite John Stuart Mill's eloquence, balanced, thoughtful, and "fearless" discussion of opposing views is rare, especially when parties find their own views to be self-evidently correct. Indeed, the research literatures in social psychology, judgment and decision making, behavioral economics, and marketing document a litany of cognitive biases that prevent individuals from exposing themselves to, thoughtfully considering, and fairly evaluating the opposing views of others (Lord et al. 1979; Perkins 1985; Frey 1986; Baron 1995; Ross and Ward 1995, 1996; Nickerson 1998; Eagly 1999; Hart et al. 2009). Yet, many social endeavors, ranging from democratic governance, to effective management, to congenial personal relationships, require individuals to engage with contrasting or even seemingly offensive ideas. Reluctance or inability to consider opposing views with the same level of

tolerance and effort as we afford to views that echo our own perpetuates attitude conflict (Judd 1978) and can exacerbate social group boundaries as we discount or disparage those whose views differ from our own (Lord et al. 1979, Krosnick 1988, Pronin et al. 2004, Fernbach et al. 2013).

Given the scope of interdependent situations in which attitude conflict arises and threatens to divide us, understanding parties' willingness to psychologically engage with opposing views is vital to social functioning. Such understanding, in turn, requires being able to measure this willingness, a construct we will refer to as *receptiveness to opposing views*. In the present research, we construct and validate such a measure, and demonstrate that our scale predicts behavior in both the laboratory and the field, above and beyond the predictive power of related measures. We hope that our measure will allow future researchers to investigate precursors or moderators of receptiveness and provide insights into likely barriers.

We define *receptiveness* as a willingness to access, consider, and evaluate opposing views in an impartial manner. We synthesize and build on prior work

demonstrating people's disinclination to seek, attend to, and impartially evaluate antagonistic perspectives, and we advance a deeper theoretical structure connecting the cognitive biases that impact these processes.

We theorize that the more receptive someone is, the more that individual will seek, attend to, and evaluate both supportive and opposing statements and evidence equitably. However, attitude change is not required as evidence of receptiveness. Nor do we intend to prescribe that receptiveness to opposing views is always desirable. There may be instances when simply granting an audience to offensive views (say, justifying child pornography) gives these perspectives an undeserved legitimacy. Yet, we believe these instances are rare relative to situations where receptiveness can be socially constructive, particularly in highly polarized political and social environments.

In the remainder of the paper we explain the construct of receptiveness to opposing views and detail how it relates to, unifies, and extends prior work. We then report the results of five studies. Study 1 develops and validates an 18-item measure of individuals' receptiveness to opposing views, including its psychometric properties and discriminant validity from other conceptually related scales. Studies 2 through 4 demonstrate the predictive validity of the scale for participants reacting to public policy initiatives (such as healthcare and immigration policies) and the incremental validity of our scale controlling for conceptually similar extant scales. Study 5 takes advantage of a naturally occurring political event (the presidential election and its aftermath) to demonstrate the predictive and incremental validity of our scale in an emotionally charged field setting.

## What Is Receptiveness?

Most of us can readily recall a specific instance when a discussion partner with an opposing viewpoint listened to our arguments thoughtfully, seemingly considering the proffered information, and asked follow-up questions suggesting genuine curiosity and a desire to understand. Such experiences are memorable in part because they are rare. Extensive research demonstrates that when the issue at hand is a deeply held, identity-relevant conviction—as may be the case in many social, political, or international conflicts—disputants rarely display a willingness to even-handedly consider arguments for both sides of the issue. Instead, they selectively seek out (Frey 1986, Hart et al. 2009), attend to (Nickerson 1998), and preferentially process (Lord et al. 1979) information that supports their prior opinions. Even when exposed to opposing arguments, partisans often attribute disagreement to ignorance, bias, or malevolence on the part of the disagreeing other (Ross and Ward 1995, 1996), making their arguments easy to dismiss.

In the present research, we propose the presence of a unifying construct, receptiveness to opposing views,

that influences individuals' willingness to expose themselves to, thoughtfully consider, and fairly evaluate information that contradicts their strongly held beliefs. Whereas prior research has generally treated such biases as separate phenomena, we theorize some co-occurrence as attributable to an individual's underlying level of receptiveness. Specifically, we theorize that the biases that occur at three major stages of consuming counterattitudinal information, namely (1) information seeking, (2) information attention, and (3) information evaluation, covary as a function of an individual's level of receptiveness. Conceptually connecting these robust research streams enriches our understanding of past behavioral findings.

First and foremost, we theorize that more receptive individuals are more willing to physically expose themselves to the opposing views of others. In everyday life, this might mean not changing the television channel when a political candidate you oppose begins to speak, or remaining in the room when your "ill-informed" uncle turns dinnertime discussion toward his views on immigration. In the laboratory, such willingness to expose oneself to opposing views should be apparent using standard measures of selective exposure (Frey 1986) or congeniality bias (Hart et al. 2009). We theorize that more receptive individuals will show more equitable interest in reading, listening to, or viewing arguments for both their own and opposing viewpoints than their less receptive counterparts.

However, people often tune out arguments for the other side even while being exposed to them. Thus, in addition to being more willing to expose themselves to opposing views, highly receptive people should also attend to the opposing arguments more thoroughly and thoughtfully, avoiding the tendency to disengage with information incongruent with their position. Research on recall of supporting versus opposing viewpoints shows that people on average are better at recalling supporting versus opposing evidence (Eagly 1999). Similarly, research on the "myside bias" shows that people are better at generating arguments consistent with their own views, even when explicitly instructed to list arguments for both sides of a controversial topic (Perkins 1985, Baron 1995, Stanovich et al. 2013). We propose that more receptive individuals should demonstrate a more equitable attentional focus on both attitude-confirming and attitude-disconfirming information.

Finally, research on the phenomenon of naïve realism (Ross and Ward 1995, 1996) shows that people often attribute disagreement on important issues to misinformation, stupidity, bias, or malevolence on the part of others. Evidence is evaluated more favorably and has greater impact if it happens to support one's own prior viewpoint (Lord et al. 1979, 1984). Thus, even after having been exposed to and having considered opposing views, individuals

still find ways to denigrate and dismiss undesirable evidence. We propose that more receptive individuals will tend to evaluate argument quality and argument sources in a manner that is less affected by whether the argument supports or opposes their prior positions.

In sum, we posit that receptiveness toward opposing views operates at three distinct stages of information consumption: (1) information seeking, (2) information attention, and (3) information evaluation. At each stage, we predict that higher receptiveness would be characterized by smaller differences in an individual's treatment of attitude-confirming versus attitude-disconfirming information.

Conceptually, receptiveness to opposing views is distinct from several prominent individual difference constructs in that receptiveness addresses how people approach opposing views specifically, as opposed to all novel information. In this way, receptiveness is distinct from Openness to Experience (John and Srivastava 1999) and various creativity measures (e.g., Gough 1979). Because we define receptiveness as an impartial approach to attitude-confirming versus disconfirming information, we expect it to predict the difference in how effortfully and thoroughly supporting and opposing views are considered, as opposed to overall depth of processing and quality of evaluation measured by prior constructs such as Need for Cognition (Cacioppo et al. 1984) and Need for Cognitive Closure (Webster and Kruglanski 1994). Finally, other relevant constructs have been conceptualized and researched in depth without the development and validation of a relevant individual difference measure (e.g., motivated reasoning (Kunda 1990) and political tolerance (Sullivan and Transue 1999)). We hope that the development of our scale can enrich and extend work in these related areas.

## Receptiveness and Attitude Change

In defining the construct of receptiveness to opposing views, it is important to consider its relationship to the voluminous body of work on attitude formation and change. Classic theorizing in the attitudes literature posits a multistep process leading from communication of new information to a decision or attitude arising from the consideration of that information (McGuire 1968, 1969; Petty and Cacioppo 1996; Eagly 1999). For example, as early as 1968, McGuire proposed a six-step attitude change process involving "communication," "attention," "comprehension," "yielding," "retention," and "action." In this formulation, new information must first be communicated, and then a recipient must attend to that communication and comprehend it. Only if those steps are in place might the recipient's prior attitude yield to new information, the new attitude come to be retained in memory, and serve to motivate future action. Extensive scholarship

has since explored the later steps in this chain dealing directly with attitude change ("yielding") and its consequences ("action"). Our present interests, however, are more closely aligned with the "attention" and "comprehension" steps that initiate the process.

In defining our construct, we emphasize that high levels of receptiveness are neither necessary nor sufficient for attitude change. Research on central versus peripheral routes to persuasion has repeatedly demonstrated that persuasion efforts following the peripheral route can lead to attitude change in absence of thoughtful exposure to, consideration, or recall of relevant arguments (e.g., Fitzsimons et al. 2002). Thus, receptiveness to opposing views is not a necessary condition for attitude change because individuals can change their attitudes with seemingly little awareness of the information that led them to do so.

More importantly, perhaps, receptiveness is also not a sufficient condition for attitude change. Individuals may hear the other side's arguments, consider them thoughtfully, and come to the conclusion that although the arguments on the other side are ones that reasonable and moral people could make, the arguments on their own side are either more weighty, more numerous, or more plausible. Thus, we propose that after thoughtful and unbiased consideration that characterizes high levels of receptiveness, individuals can decide to retain their prior attitudes and "agree to disagree."

Even in the absence of attitude change, however, receptiveness can contribute to the "subjective value" (Curhan et al. 2006) that partisans experience during an interaction (Chen et al. 2010). High subjective value (e.g., positive emotions and perceptions related to one's own behavior, the behavior of one's counterpart, and the overall interaction) predicts positive long-term consequences (Curhan et al. 2009, 2010). We posit that in situations of mutual dependence between individuals, and particularly between groups, positive (or less negative) views of the opposing parties, of their beliefs, and of prior interactions, promote conditions for a more productive interaction in the future.

## Research Overview and Open Science Statement

In the present manuscript, we report the results of five studies that develop and validate a self-report scale of receptiveness to opposing views. Study 1 describes the process of item generation and the psychometric properties of the scale. We also report convergent and discriminant validity measures between our new measure and conceptually related self-report scales. Then, we go on to show how scale responses predict behavior at three stages of information consumption: seeking, attention, and evaluation. In study 2 (information seeking), we demonstrate

that the scores on the scale moderate individuals' willingness to expose themselves to opposing political viewpoints. In study 3 (information attention), we show that the responses on the scale predict the balance of participants' attention to arguments that support versus oppose one's position on healthcare policy. In study 4 (information evaluation), we demonstrate that scale scores moderate participants' tendency to evaluate opposing arguments more negatively than supporting arguments in the context of the border security debate. Studies 2 through 4 also demonstrate the incremental validity of our scale vis-à-vis existing, conceptually relevant scales. Finally, in study 5 we take advantage of the U.S. presidential election to test the stability of the construct measured by our scale in an emotionally charged field setting. We find that voters who opposed Donald Trump but reported being more receptive at the time of the election were more likely than their less receptive counterparts to watch the inauguration, evaluate the content of the inauguration speech in a more evenhanded manner, and select a more balanced portfolio of news outlets for later consumption.

In all our studies, we employed large samples and report all completed observations, exclusions (if any), measures, and manipulations. All of our materials, data, and analyses are posted on the Open Science Framework ([https://osf.io/xcg6e/?view\\_only=d0fcbb73fb4648ad6e3da300505f65](https://osf.io/xcg6e/?view_only=d0fcbb73fb4648ad6e3da300505f65)). When we began working on this research, preregistration of procedures and predictions was not yet a common practice. However, several of our later studies are preregistered.

## Study 1: Scale Development

In study 1, we develop a measure of receptiveness to opposing views. To generate an initial pool of items, in a between-subjects design, we presented participants on Amazon Mechanical Turk (MTurk) with two scenarios wherein they imagined either (a) attending a family gathering where a family member expressed a view with which they strongly disagree or (b) watching a television program featuring a politician with whom they strongly disagree. After imagining the scenario, participants described what they would think and feel in this situation and reported their like or dislike of the situation on a seven-point Likert scale, from -3 (dislike) to +3 (like).

Participants' open-ended descriptions of their reactions to disagreement were illuminating in that they provided rich, first-person insight into why individuals find exposure to opposing views aversive. The responses frequently mentioned negative emotions such as anger, frustration, and disgust. Furthermore, participants often alluded to the intellectual and moral shortcomings that might lead others to hold views different from their own. Only a small

minority of respondents mentioned any positive aspects of being exposed to opposing views, such as empathizing with different perspectives or satisfying curiosity.

We used the responses from this pilot study and related prior theorizing (Chen et al. 2010, 2013) to generate an initial pool of items for our scale. The items broadly reflected the themes touched on in the open-ended responses, including negative emotional reactions toward disagreement, derogation of those holding opposing views, intellectual curiosity regarding opposing views, and a belief that it is inappropriate to debate certain issues.

We then used four participant samples from MTurk to generate and refine the items in the scale. We removed items with factor loadings of less than 0.40, and any that may have been open to multiple interpretations. The following sections present the method and results of the third and fourth rounds of data collection.

In addition to examining the internal validity and reliability of our scale, the multiple waves of data collection also enabled us to examine the relationships between our scale and related measures. Several diverse streams of research have previously addressed constructs related to receptiveness. Broadly, these fall into measures dealing with one's propensity toward (a) openness and creativity, (b) enjoyment of contemplation and cognitive effort, and (c) reactions to persuasion. In each wave of data collection we included several scales that are conceptually and theoretically related to receptiveness to opposing views.

### Study 1a: Method

**Participants.** Participants were workers on Amazon Mechanical Turk (MTurk) ( $n = 205$ , 57% male, mean age [ $M_{age}$ ] = 34).

**Procedure.** Participants responded to 22 items, presented in random order, that we hypothesized would measure receptiveness to opposing views. We presented each item in the form of a statement and asked participants to indicate their agreement or disagreement with each statement using a scale anchored at -3 (strongly disagree) and +3 (strongly agree).

We also asked participants to respond to the Big Five Personality Inventory (John and Srivastava 1999), the Need for Closure scale (Roets and Van Hiel 2011), the Need to Evaluate scale (Jarvis and Petty 1996), the Perspective Taking subscale of the Davis Interpersonal Reactivity Index (Davis 1980), the Resistance to Persuasion scale (Briñol et al. 2004), and the Bolster-Counterargue scale (Briñol et al. 2004). To reduce the effect of participant fatigue on the quality of responses for any individual scale, the order of the scales was randomized for each participant.

### Study 1a: Results

We conducted an exploratory principal components factor analysis on the 22 items in our questionnaire. We retained four factors with eigenvalues greater than 1. We eliminated four items that loaded on multiple factors or lacked sufficient clarity in wording. We refit an exploratory principal components factor analysis on the 18 remaining items, including varimax rotation. The factor loadings for each of the remaining 18 items are presented in Table 1a. We repeated our factor analysis using oblique rotation to allow the factors to be correlated. These factor loadings are presented in Table 1b. The wording of the final 18 items used in future analyses and studies are presented in the appendix.

The final scale contains four factors and has a high overall scale reliability ( $\alpha = 0.87$ ). The first factor ( $\alpha = 0.86$ ) conceptually corresponds to emotional reactions to attitude-incongruent views—these views can elicit negative emotions such as anger and frustration. The second factor ( $\alpha = 0.85$ ) reflects a curiosity one might have for antithetical views—a desire for greater insight and information about the beliefs of others. The third factor ( $\alpha = 0.80$ ) reveals a derogatory orientation toward holders of opposing views. Finally, the fourth factor ( $\alpha = 0.78$ ) corresponds to a set of beliefs that some topics are simply off limits and are not subject to debate.<sup>1</sup> The correlations between the four factors are presented in Table 2.

Our new scale and its individual factors possess appropriate levels of discriminant validity relative to other conceptually related constructs. Table 3 presents the correlations with and discriminant validities between the new scale and related measures

**Table 1a.** Exploratory Factor Analysis with Varimax Rotation (Study 1a)

Scale item	Factor 1	Factor 2	Factor 3	Factor 4
Angry	0.2194	0.8206	0.1438	0.1144
Disgusted	0.0533	0.6988	0.2932	0.1266
Frustrated	0.1119	0.8244	0.2247	-0.0307
Annoyed	0.1860	0.8270	0.1734	0.1072
Conversations	0.6838	0.2257	-0.0572	0.1018
Reading	0.8318	0.1267	0.0202	0.1163
Listening	0.7777	0.0969	0.2364	0.0451
Value interactions	0.7322	0.2137	0.1393	0.1352
Curious	0.8069	0.0941	0.0662	0.0740
Views too extreme	0.2107	0.3111	0.5775	0.2150
Uncompelling arguments	0.2393	0.2081	0.7563	0.0189
Designed to mislead	0.1276	0.3768	0.6582	-0.0311
Opponents biased	0.0292	0.3568	0.5356	0.1738
Emotional arguments	-0.0343	0.2189	0.7641	0.0673
Too offensive	0.0833	0.1835	-0.0360	0.7588
Not debatable	0.1526	0.0248	0.1032	0.7878
Ideas dangerous	0.1443	0.1127	-0.0340	0.8138
Sacred issues	-0.0140	-0.0536	0.3034	0.6712

**Table 1b.** Exploratory Factor Analysis with Oblique Rotation (Study 1a)

Scale item	Factor 1	Factor 2	Factor 3	Factor 4
Angry	0.8377	0.0820	-0.0231	0.0470
Disgusted	0.6887	-0.0802	0.1723	0.0747
Frustrated	0.8462	-0.0213	0.0775	-0.0961
Annoyed	0.8428	0.0452	0.0102	0.0410
Conversations	0.1575	0.6796	-0.1516	0.0338
Reading	0.0052	0.8487	-0.0575	0.0377
Listening	-0.0699	0.7957	0.1898	-0.0381
Value interactions	0.0858	0.7230	0.0597	0.0562
Curious	-0.0364	0.8301	0.0024	-0.0037
Views too extreme	0.1575	0.1320	0.5434	0.1609
Uncompelling arguments	0.0053	0.1920	0.7659	-0.0451
Designed to mislead	0.2372	0.0541	0.6352	-0.0916
Opponents biased	0.2483	-0.0624	0.5017	0.1339
Emotional arguments	0.0534	-0.1045	0.7859	0.0281
Too offensive	0.1564	-0.0137	-0.1174	0.7638
Not debatable	-0.0672	0.0782	0.0595	0.7903
Ideas dangerous	0.0648	0.0572	-0.1076	0.8187
Sacred issues	-0.1729	-0.0810	0.3079	0.6812

using the correction for attenuation formula of the multitrait-multimethod matrix (Campbell and Fiske 1959). The absolute value of the correlations for the overall scale ranged from  $r(203) = 0.02$  (Need to Evaluate), to  $r(203) = 0.42$  (Perspective Taking). The absolute values of discriminant validities for the overall scale ranged from 0.02 (Need to Evaluate), to 0.49 (Perspective Taking). These values are substantially lower than the standard benchmark of around 0.80 that is used to determine that two scales are measuring the same construct (Campbell and Fiske 1959).

### Study 1b: Method

**Participants.** Participants were workers on MTurk ( $n = 202$ , 49% male,  $M_{age} = 36$ ).

**Procedure.** Participants responded to the 18 items of the new Receptiveness to Opposing Views scale presented in random order. To further establish how our new scale relates to established measures, participants also responded to the Bias Blindspot scale (Scopelliti et al. 2015), the Thomas-Killman Inventory (Kilmann and Thomas 1977), the Narcissistic Personality scale (Raskin and Hall 1981), and the Individual and Group Loyalty scale (Beer and Watson 2009). To avoid confounds due to participant fatigue, all scales were presented in random order.

### Study 1b: Results

The second administration of our scale revealed that the reliability of the scale remained high with an alpha of 0.88, which is well above the traditional threshold of 0.70 (Nunnally 1978). Furthermore, when we correlated each individual item with the overall

**Table 2.** Correlations Among Factor Scores with Oblique Rotation (Study 1a)

N = 205 (study 1a)	Factor 1: Negative emotions	Factor 2: Intellectual curiosity	Factor 3: Derogation of opponents	Factor 4: Taboo issues
Factor 1: Negative emotions	1.00			
Factor 2: Intellectual curiosity	0.33	1.00		
Factor 3: Derogation of opponents	0.42	0.19	1.00	
Factor 4: Taboo issues	0.18	0.22	0.15	1.00

scale, the average item-to-total correlation equaled 0.57, suggesting that each individual item was highly correlated with the overall construct. The average pairwise correlation between the items was  $M_r = 0.32$ . Of the 171 possible pairwise correlations, 140 were positive and significant, 25 were positive but did not reach significance, and six were negative and nonsignificant.

Prior to conducting confirmatory factor analysis to evaluate how well our study 1b data fit the model identified in study 1a, we evaluated the assumption of multivariate normality by conducting Mardia's (1980) test of multivariate skewness. The test returned a significant Chi skew statistic ( $\chi^2 = 1,885$ ,  $p < 0.001$ ), suggesting that the data are not normally distributed. For this reason, we used a robust maximum likelihood estimation procedure. Our results suggest that the hypothesized factor structure that emerged in study 1a adequately explains the data in study 1b. We obtained a root mean square error of approximation (RMSEA) statistic of 0.06, and a Tucker-Lewis index of 0.91, indicating a good model fit (MacCallum et al. 1996).

To further test the robustness of our proposed model, we tested two alternative approaches. The relevant statistics are presented in Tables 4 and 5. The first model is composed of the four factors and 18 items described earlier. Model 2 eliminates the "taboo issues" factor because this factor attained the lowest eigenvalue in our exploratory factor analysis. Model 3 retains all four factors but eliminates the "sacred issues" item from the fourth factor because this item had the lowest loadings on that factor. Model 3 returns the best fit statistics, whereas Model 2 returns the worst ones. However, the difference between Model 1 and Model 3 appears trivial (although statistically significant). Conceptually, the "sacred issues" question may be of interest to future researchers working with populations in which sacredness is a more primary concern than among our Western and largely politically liberal sample. For this reason, we retain the item in the final scale. Additionally, in Model 4 we fit a second order completely standardized parameter with all four factors in which an underlying latent receptiveness factor causes the four subfactors. Table 6a and Table 6b present the correlations between the four factors as well as the

correlations between the unweighted items that load onto each factor.

We further observed that our scale possesses appropriate levels of convergent and discriminant validity in relation to the additional measures used in study 1b (see Table 3). Thus, receptiveness was positively correlated with the Individual and Group Loyalty scale (Beer and Watson 2009) and the Cooperation subscale of the Thomas-Kilmann inventory (Kilmann and Thomas 1977). However, these correlations were modest, once again suggesting that the new scale is measuring a distinct construct.

### Study 1: Discussion

In study 1, we developed and validated a new self-report measure of individuals' receptiveness to opposing views. We identified 18 items that load on four conceptually distinct, yet related factors that emerge when individuals consider interacting with people who hold opposing views. The four identified factors were negative emotions, intellectual curiosity, derogation of opponents, and taboo issues. The confirmatory factor analysis in study 1b replicated the factor structure identified in study 1a. Furthermore, we established the fact that although responses on the new scale are correlated with responses on 13 conceptually related scales, the new scale possesses appropriate levels of discriminant validity.

Our scale touches on concepts explored by a wide variety of prior individual difference measures. To further ensure that we are proposing a novel and unique construct, we collected two additional waves of data (study 1c,  $n = 254$ ; and study 1d,  $n = 201$ ) to test convergent and discriminant validities with another set of previously developed and conceptually related scales. Participants responded to our Receptiveness scale along with the following set of scales: Need for Cognition (Cacioppo et al. 1984), Epistemic Curiosity (Litman 2008), Resistance to Change (Oreg 2003), Dogmatism (Troldahl and Powell 1965), Defensive Confidence (Albarracín and Mitchell 2004), Right Wing Authoritarianism (Altemeyer 2006), Creative Personality (Gough 1979), and Multidimensional Attitude Toward Ambiguity (Lauriola et al. 2016). We report the results of this additional wave of data collection in Table 2. Although our list of possibly

**Table 3.** Correlations and Discriminant Validity Measures Between Receptiveness to Opposing Views and Related Measures

Related measures	Factor 1: Negative emotions		Factor 2: Intellectual curiosity		Factor 3: Derogation of opponents		Factor 4: Taboo issues		Overall scale	
	Corr. coefficient	Disc. validity	Corr. coefficient	Disc. validity	Corr. coefficient	Disc. validity	Corr. coefficient	Disc. validity	Corr. coefficient	Disc. validity
Big Five Personality										
Extraversion	0.23**	0.26	0.09	0.10	0.10	0.12	-0.08	-0.09	0.12	0.13
Agreeableness	0.28**	0.33	0.17*	0.20	0.24**	0.29	-0.13	-0.16	0.19*	0.22
Conscientiousness	0.16*	0.18	0.13	0.15	0.08	0.10	-0.11	-0.13	0.09	0.10
Emotional reactivity	-0.34**	-0.38	-0.06	-0.07	-0.10	-0.12	-0.03	-0.04	-0.19*	-0.21
Openness to Experience	0.01	0.01	0.23**	0.27	-0.23**	-0.28	0.09	0.11	0.03	0.03
Need for Closure	-0.21*	-0.24	-0.09	-0.10	-0.03	-0.04	-0.29**	-0.35	-0.22*	-0.25
Need to Evaluate	-0.07	-0.08	0.24**	0.28	-0.19**	-0.23	-0.02	-0.02	-0.02	-0.02
Perspective Taking	0.31**	0.36	0.52**	0.61	0.29**	0.35	0.09	0.11	0.42**	0.49
Resistance to Persuasion	-0.16*	-0.18	-0.19**	-0.22	-0.24**	-0.28	-0.31**	-0.37	-0.32**	-0.36
Bolster-Counterargue	-0.03	-0.04	0.30**	0.36	-0.10	-0.12	0.03	0.04	0.07	0.08
Bias Blind Spot	-0.11	-0.13	0.21*	0.23	-0.17*	-0.19	0.01	0.02	-0.02	-0.02
Thomas-Kilmann Inventory										
Competing	-0.08	-0.10	-0.27**	-0.32	-0.18*	-0.22	-0.02	-0.03	-0.20	-0.23
Avoiding	-0.16*	-0.27	-0.14*	-0.24	-0.01	-0.01	-0.06	-0.11	-0.12	-0.21
Compromising	0.05	0.07	0.25**	0.35	0.11	0.15	-0.01	-0.02	0.14*	0.19
Cooperating	0.14*	0.23	0.13	0.21	0.03	0.05	0.16*	0.29	0.16*	0.25
Accommodating	0.01	0.02	0.27**	0.38	-0.07	-0.10	0.06	0.10	0.10	0.14
Narcissistic Personality	0.12	0.14	-0.12	-0.13	-0.03	-0.03	-0.05	-0.06	-0.03	-0.03
Individual and Group Loyalty										
Individual Loyalty	0.11	0.13	0.46**	0.51	0.07	0.09	-0.13	-0.16	0.19*	0.21
Group Loyalty	0.29**	0.32	0.25**	0.27	0.15*	0.18	-0.23**	-0.28	0.13	0.14
Need for Cognition	0.25**	0.27	0.29**	0.32	0.17*	0.19	0.24**	0.28	0.30**	0.32
Epistemic Curiosity										
Interest-Type Epistemic Curiosity	0.17*	0.19	0.42**	0.48	0.10	0.12	0.09	0.11	0.25**	0.28
Deprivation-Type Epistemic Curiosity	-0.04	-0.05	0.24**	0.28	-0.01	-0.01	-0.08	-0.10	0.04	0.05
Resistance to Change	-0.53**	-0.59	-0.39**	-0.44	-0.39**	-0.45	-0.38**	-0.46	-0.53**	-0.58
Routine Seeking	-0.44**	-0.51	-0.37**	-0.44	-0.36**	-0.44	-0.27**	-0.34	-0.45**	-0.52
Emotional Reaction	-0.51**	-0.58	-0.27**	-0.31	-0.27**	-0.32	-0.34**	-0.42	-0.44**	-0.49
Short-term Focus	-0.42**	-0.50	-0.28**	-0.34	-0.23**	-0.28	-0.31**	-0.40	-0.38**	-0.44
Cognitive Rigidity	-0.32**	-0.38	-0.29**	-0.35	-0.39**	-0.48	-0.27**	-0.35	-0.40**	-0.47
Dogmatism	-0.20**	-0.29	-0.08	-0.12	-0.23**	-0.34	-0.32**	-0.50	-0.26**	-0.37
Defensive Confidence	0.08	0.09	0.27**	0.30	-0.07	-0.08	0.11	0.13	0.11	0.12
Right-Wing Authoritarianism	0.04	0.04	0.18*	0.22	0.16*	0.20	0.24**	0.31	0.20*	0.24
Creative Personality	0.03	0.04	0.20*	0.26	-0.01	-0.02	0.22*	0.31	0.14*	0.18
Multidimensional Attitude Toward Ambiguity										
Discomfort with Ambiguity	-0.38**	-0.43	-0.01	-0.01	-0.20**	-0.24	-0.17*	-0.20	-0.24**	-0.27
Moral Absolutism/Splitting	-0.09	-0.10	-0.18*	-0.21	-0.21**	-0.26	-0.36**	-0.45	-0.27**	-0.31
Need for Complexity and Novelty	0.11	0.13	0.36**	0.40	0.11	0.13	0.12	0.15	0.22*	0.24

\* $p < 0.05$ , \*\* $p < 0.001$ .

**Table 4.** Factor Loadings and Completely Standardized Parameters (Study 1b)

Factor	Scale item	Completely standardized parameter
Factor 1: Negative emotions	Angry	0.75
	Disgusted	0.66
	Frustrated	0.85
	Annoyed	0.83
Factor 2: Intellectual curiosity	Conversations	0.79
	Reading	0.64
	Listening	0.81
	Value interactions	0.80
Factor 3: Derogation of opponents	Curious	0.80
	Views too extreme	0.73
	Uncompelling arguments	0.71
	Designed to mislead	0.79
Factor 4: Taboo issues	Opponents biased	0.59
	Emotional arguments	0.70
	Too offensive	0.71
	Not debatable	0.66
Factor 4: Taboo issues	Ideas dangerous	0.80
	Taboo issues	0.34

overlapping scales is by no means exhaustive, the results in Table 2 strongly suggest that receptiveness to opposing views is a distinct construct.

In studies 2 through 5, we turn to testing whether our scale predicts behaviors that we theorized to be associated with receptiveness to opposing views. Studies 2 through 4 use a set of well-established laboratory paradigms to demonstrate that the scores on the Receptiveness scale moderate the magnitude of several distinct biases at three important stages of consuming counterattitudinal information: exposure, attention, and evaluation. In study 5, we use a natural setting to test how well the scale accounts for variance in voters' reactions in the aftermath of the hotly contested 2016 U.S. presidential election. In each of the studies, we also test whether our measure predicts behavior, controlling for other conceptually related or empirically correlated measures.

## Study 2: Exposure to Supporting and Opposing Views

In study 2, we test whether receptiveness to opposing views, first and foremost, predicts people's willingness to expose themselves to counterattitudinal information. Extensive research on the phenomenon of selective exposure predicts that people will be more willing to consume content they agree with rather

than disagree with (Frey 1986, Jonas et al. 2001, Hart et al. 2009). However, we hypothesize that this overall tendency will be moderated by individuals' responses on the Receptiveness scale. We also test whether receptiveness can predict a more balanced viewing of political content above and beyond scores on the Resistance to Change scale (Oreg 2003), and the Perspective Taking scale (Davis 1980). Specifically, we presented participants with the official press pages of prominent members of the United States Senate, expecting that individuals who score more highly on the Receptiveness scale would choose a greater proportion of content from senators representing the opposing political party.

### Study 2: Method

**Participants.** Participants were workers on MTurk ( $n = 400$ , 52% male,  $M_{age} = 35$ ).

**Procedure.** Participants viewed a list of 20 members of the 115th U.S. Senate. To identify senators familiar to participants, we used the Google search engine and ordered senators by the number of hits that a search for their name returned. We selected 10 Republican senators and nine Democratic senators (plus Senator Bernie Sanders, Independent of Vermont) with the most hits. Participants saw each senator's name, state, and

**Table 5.** Fit Statistics for Three Alternative Confirmatory Factor Analysis Models (Study 1b)

Model	Model 1	Model 2	Model 3	Model 4
RMSEA	0.06	0.07	0.06	0.07
Tucker-Lewis Index	0.941	0.918	0.92	0.911
Bayesian Information Criterion	12433.363	9328.163	11647.524	12425.698

**Table 6a.** Correlations Among Factors from Confirmatory Factor Analysis (Study 1b).

N = 202 (Study 1b)	Factor 1: Negative emotions	Factor 2: Intellectual curiosity	Factor 3: Derogation of opponents	Factor 4: Taboo issues
Factor 1: negative emotions	1.00			
Factor 2: intellectual curiosity	0.53	1.00		
Factor 3: derogation of opponents	0.71	0.42	1.00	
Factor 4: taboo issues	0.29	0.23	0.36	1.00

political party. We also provided participants with each senator's dynamic, weighted (DW)-Nominate score (Poole and Rosenthal 1985, 2000) and explained to them that this is a measure of how liberal or conservative a senator's voting history is, ranging from -1 (extremely liberal) to +1 (extremely conservative). Between subjects, we counterbalanced the order of the list such that some participants saw senators listed from most liberal to most conservative, and some saw the reverse order.

We truthfully told participants that on subsequent pages of the survey they would have the opportunity to view the press pages of some of the senators on the list. We instructed them to select at least five senators whose press pages they wished to view. After participants made their selections, the following page of the survey presented them with hyperlinks to the press pages of the senators they had selected.

Participants then filled out our new Receptiveness scale, the Resistance to Change scale (Oreg 2003), and the Perspective Taking scale (Davis 1980). We selected these two latter scales because of their conceptual relevance to our dependent variable and because our study 1 results showed that these constructs were among the most highly correlated with receptiveness. Finally, participants reported demographic information including age, gender, and their own political orientation on a seven-point scale anchored at -3 (extremely liberal) and +3 (extremely conservative).

## Study 2: Results

Among the 20 senators that we included in our study, the conservative senators had more extreme DW-Nominate scores than the liberal ones. Thus if we used raw DW-Nominate scores, our conservative

participants might score higher on levels of selective exposure, simply because of the choice set with which they were presented. To overcome this methodological artifact, we recoded participants' choices to be +1 if they had chosen to view the web page of a senator in their own political party, and 0 if they had selected a web page of a senator from the opposite party. We had to exclude 73 participants who self-identified as "middle of the road" politically (because the target senators could not be meaningfully categorized as belonging to the participant's own versus opposing party). We used this binary variable as our primary measure of selective exposure. Thus, if a participant selected an equal number of same-party and opposite-party senators, their score on this measure would be 0.5.

On average, our participants demonstrated a considerable level of selective exposure. Participants' selective exposure scores had a mean = 0.69, SD = 0.24, a value significantly different from 0.5, which would indicate the absence of selective exposure  $t(326) = 14.4$ ,  $p < 0.01$ . Importantly, though, receptiveness attenuated individuals' selective exposure (i.e., their preference to engage with own-party versus opposite-party political content). We used logistic regression, regressing participants' choices of senators on their standardized Receptiveness score, as well as participants' standardized scores on the Resistance to Change and Perspective Taking measures. Because each of our participants chose between five and 20 senator web pages to view, our data had a nested structure and we clustered observations at the level of participant.

We observed a significant relationship between receptiveness and selective exposure ( $b = -0.27$ ,  $SE = 0.08$ ,  $z = -3.29$ ,  $p < 0.01$ ). Thus increased receptiveness

**Table 6b.** Correlations Among Clusters of Unweighted Items That Load onto Each Factor (Study 1b)

N = 202 (Study 1b)	Factor 1: Negative emotions	Factor 2: Intellectual curiosity	Factor 3: Derogation of opponents	Factor 4: Taboo issues
Factor 1: Negative emotions	1.00			
Factor 2: Intellectual curiosity	0.45	1.00		
Factor 3: Derogation of opponents	0.61	0.35	1.00	
Factor 4: Taboo issues	0.28	0.15	0.32	1.00

substantially decreased participants' odds of choosing a same-party versus opposing-party senator. In contrast, neither participants' scores on the Resistance to Change scale, nor their scores on the Perspective Taking scale included in the same logistic regression, predicted selective exposure (Resistance to Change:  $b = -0.03$ ,  $SE = 0.07$ ,  $z = -0.46$ ,  $p = 0.65$ ; Perspective Taking:  $b = 0.08$ ,  $SE = 0.08$ ,  $z = 1.06$ ,  $p = 0.29$ ).

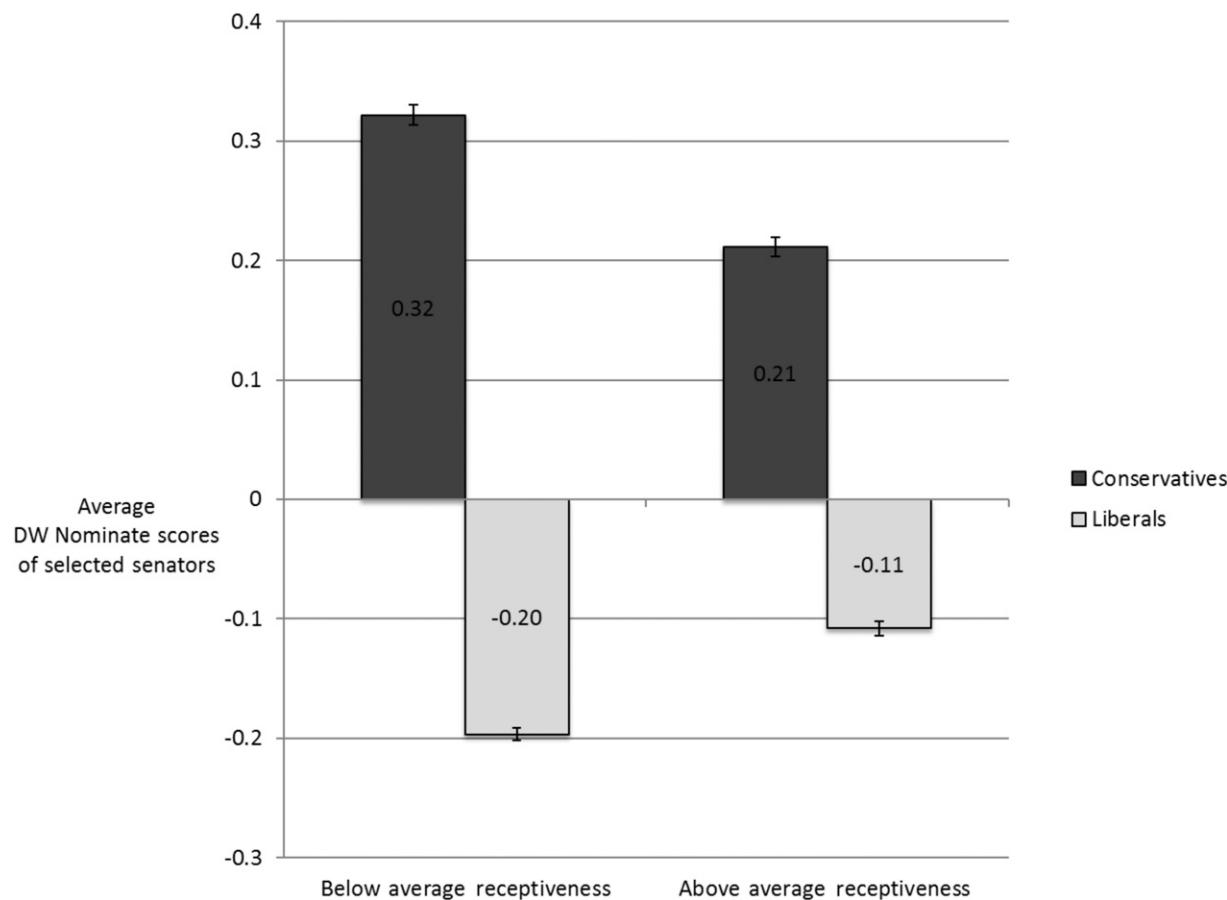
To further examine the nature of the relationship between selective exposure and receptiveness, we divided our sample into participants who reported higher or lower than average receptiveness, by conducting a mean split on the standardized receptiveness variable. Participants who reported a lower than average level of receptiveness demonstrated a strong and significant level of selective exposure ( $M = 0.73$ ,  $SD = 0.23$ ,  $t(173) = 41.55$ ,  $p < 0.01$ ). This relationship was still present but attenuated for participants who reported higher levels of receptiveness to opposing views ( $M = 0.65$ ,  $SD = 0.24$ ,  $t(152) = 33.43$ ,  $p < 0.01$ ). Thus, although participants in both the higher and the lower half of our receptiveness distribution preferred to consume content that was more likely to be in line with their own political beliefs, this pattern

was attenuated for those who scored higher on the scale (Figure 1).

Our measure of political ideology from  $-3$  (very liberal) to  $+3$  (very conservative) can be recoded to construct a measure of strength of partisan identification, from  $+3$  (strong partisan) to  $0$  (middle of the road). When we regress receptiveness on this measure, we find, not surprisingly, that there is a strong negative relationship: less partisan participants report being more receptive ( $b = -0.21$ ,  $SE = 0.05$ ,  $t = -4.57$ ,  $p < 0.01$ ). With this in mind, we repeated our logistic regression earlier, predicting participants' choice of senators' web pages to view on receptiveness, resistance to change, perspective taking, and strength of partisanship. We find that partisanship predicts a higher level of selective exposure ( $b = 0.37$ ,  $SE = 0.08$ ,  $t = 4.35$ ,  $p < 0.01$ ). However, even controlling for strength of partisanship and the other two scales, receptiveness remains a significant predictor ( $b = -0.19$ ,  $SE = 0.08$ ,  $t = -2.34$ ,  $p = 0.02$ ).

In the prior analyses, we operationalize selective exposure using the DW-Nominate scores of senators chosen by each participant. However, we can also examine the variability of these choices, as an index of

**Figure 1.** DW-Nominate Scores of Selected Senators by Participant's Political Ideology and Level of Receptiveness (Study 2)



whether participants are willing to view information from a broad ideological spectrum. To do this, we calculated the standard deviation of the DW-Nominate scores of the senators chosen by each participant. We then again regressed this standard deviation on each participant's score on the Receptiveness scale, the Resistance to Change scale, and the Perspective Taking scale (all z-scored). We observed a statistically significant and positive relationship between Receptiveness and the standard deviation of the DW-Nominate scores of the senators chosen by each participant ( $b = 0.03$ ,  $SE = 0.01$ ,  $t = 2.06$ ,  $p = 0.04$ ). There was no significant relationship between our standard deviation measure and the Resistance to Change scale ( $b = 0.01$ ,  $SE = 0.01$ ,  $t = 0.71$ ,  $p = 0.48$ ), and no significant relationship between our measure and Perspective Taking ( $b = 0.003$ ,  $SE = 0.01$ ,  $t = 0.19$ ,  $p = 0.85$ ). Thus, participants who scored higher on the Receptiveness scale selected to view press pages from a more ideologically varied group of senators.

## Study 2: Discussion

Study 2 demonstrates that responses on our new scale are related to individuals' willingness to choose content that opposes their prior views. Whereas, on average, people preferred to view the press pages of senators whose voting records aligned with their own ideology, our scale significantly attenuated this affinity. Individuals who reported being receptive to the opposing views of others chose to engage with more content that opposed their views, and a more varied set of content. Importantly, this effect emerged when controlling for ideological extremity and across different levels of ideological extremity, suggesting that being receptive does not simply mean having a weak attitude on the topic in question. Our data also demonstrate incremental validity for our scale, in that it predicts (lower) selective exposure after controlling for scores on the Resistance to Change and Perspective Taking scales.

Study 2 raises the question of whether participants' receptiveness scores simply reflected their desire to appear consistent with the choices they had made minutes earlier during the choice task. To address this possibility, we reran a preregistered version of the study (detailed in the supplemental online materials), administering the personality scales before the choice task, rather than after. To extend our investigation of the incremental validity of our scale, we also asked participants to respond to the Need for Cognition scale (Cacioppo et al. 1984) before they selected the web pages of the senators that they would like to view. We presented them with a slightly different set of senators (chosen based on number of Twitter followers, rather than Google hits).

Importantly, after controlling for Need for Cognition, we again found that receptiveness predicted lower selective exposure and higher political variability of the senators that participants chose to view.

Study 2 suggests that receptive individuals are more likely to engage with others who hold opposing views on important issues. However, such receptiveness may be only skin deep. It is possible that even when physically exposed to opposing views, receptive and unreceptive individuals would be similarly likely to tune out or disparage the information presented to them. Our next studies address whether receptive individuals actually attend to (study 3) and evaluate (study 4) opposing views differently than unreceptive individuals.

## Study 3: Attention to Supporting and Opposing Arguments

In study 3, we test whether self-reported receptiveness predicts how intently one considers belief-confirming and -disconfirming arguments. We use mind wandering as a measure of attention and contemplation (Smallwood and Schooler 2006). Prior research has extensively documented people's propensity to mind-wander when engaged in repetitive or tedious tasks (Giambra 1995, Smallwood et al. 2004) and has shown that mind wandering predicts decreased information recall (Risko et al. 2012). Measuring mind wandering allows us to cleanly distinguish attentiveness when exposed to particular types of information, from one's willingness to be exposed to it, as well as from one's evaluation of the content.

## Study 3: Method

**Participants.** In line with our preregistration, we recruited workers on MTurk to participate in a study on political speech. A total of 467 participants completed the entire study (49.5% male,  $M_{age} = 38$ ).

**Procedure.** Participants began the survey by reporting basic demographic information including their age and gender. We also measured political affiliation using a seven-point scale from "very liberal" to "very conservative," with the midpoint labeled "middle of the road." Participants then read a brief description of mind wandering, which explained the difference between intentional and unintentional mind wandering and assured participants that both types are common. They then answered a comprehension question that also served as our attention check. Participants had to answer the question correctly in order to proceed through the survey.

All participants then viewed two Senate floor speeches, one by Senator Bernie Sanders and another by Senator Mitch McConnell regarding a piece of hotly contested legislation to replace the Affordable

Care Act. The order of the speeches was counterbalanced between participants. Both speeches were delivered by senior U.S. senators on the floor of the U.S. Senate, were of approximately equal length, and addressed the same topic. The most prominent difference between the two speeches was in their assessment of the new legislation: Senator McConnell strongly supported it, whereas Senator Sanders strongly opposed it.

We inserted four mind wandering probes into each speech to assess participants' tendency to experience task unrelated thoughts while attending to attitude-congruent versus attitude-incongruent content (e.g., Seli et al. 2016). The probes were inserted at near-identical time intervals in both speeches, with slight timing adjustments made to ensure that the probe did not interrupt the speaker midsentence. Each probe asked the participants to recall whether in the moment directly preceding the appearance of the probe they were (a) intentionally mind wandering, (b) unintentionally mind wandering, or (c) completely focused on the content of the video.<sup>2</sup> Our primary dependent variable is the number of times (out of four) that each participant reported mind wandering while watching the speech. After the videos ended, participants filled out the Receptiveness scale and the Need for Cognition scale (Cacioppo et al. 1984).

### Study 3: Results

We first examine mind wandering in response to a speech by a same-party versus an opposing-party senator. In line with our preregistration, for this analysis as well as future ones, we dropped 95 participants who reported their political orientation to be middle of the road. Our remaining sample thus consists of 372 participants.

On average, participants reported mind wandering in response to 39.52% of the probes ( $SD = 33.71\%$ ) during the speech by a same-party senator, and in response to 53.83% of the probes ( $SD = 36.07\%$ ) during the speech by an opposing-party senator. This difference proved to be highly significant, suggesting that even when individuals are exposed to an evenly balanced set of pro- and counterattitudinal information, they divert their attention away from ideas they disagree with,  $t(371) = -8.48, p < 0.001$ .

We next calculated the difference between each participant's rate of mind wandering for the attitude-incongruent and attitude-congruent speech ( $M = 14.31\%, SD = 32.55\%$ ). We then regressed this difference on each participant's standardized Receptiveness score, as well as the standardized Need for Cognition score. Self-reported receptiveness was a strong predictor of the difference in mind wandering that participants reported while viewing an attitude-congruent versus attitude-incongruent speech ( $b = -4.80\%, SE = 1.68\%, t = -2.86, p = 0.004$ ). Need for Cognition, entered in the

same regression as Receptiveness, did not predict this difference ( $b = -1.46\%, SE = 1.64\%, t = -0.89, p = 0.37$ ).

We can again calculate a measure of participants' political attitude extremity by recoding our political affiliation scale such that participants who selected "very liberal" or "very conservative" are coded as +3 on attitude extremity, and those who selected "slightly liberal" or "slightly conservative" are coded as +1. Controlling for this variable produces nearly identical results. Receptiveness continues to strongly predict the difference in mind wandering for attitude-congruent versus attitude-incongruent content ( $b = -4.27\%, SE = 1.73\%, t = -2.46, p = 0.01$ ), and Need for Cognition does not ( $b = -1.68\%, SE = 1.65\%, t = -1.02, p = 0.31$ ).

Finally, our measure of mind wandering allows us to examine the relationship between receptiveness and intentional versus unintentional mind wandering. Our participants reported intentionally mind wandering in response to 10.22% of the probes when viewing a video with which they agreed and 24.46% of the probes while viewing a video with which they disagreed. Similarly, they reported mind wandering unintentionally to 29.30% of the probes that appeared during the attitude-congruent video and 29.37% of the probes that appeared during the attitude-incongruent video.

When we regressed the difference between intentional mind wandering in response to proattitudinal video versus counterattitudinal video on standardized Receptiveness and Need for Cognition, we observed a significant effect of Receptiveness ( $b = -4.58\%, SE = 1.43\%, t = -3.20, p = 0.001$ ). Interestingly, Need for Cognition was also significantly predictive ( $b = -2.91\%, SE = 1.40\%, t = -2.09, p = 0.04$ ), such that participants lower on Need for Cognition were more likely to intentionally mind-wander in response to an attitude-incongruent video than an attitude-congruent video. When we repeated the same analysis for the difference in unintentional mind wandering, neither scale emerged as significantly predictive (Receptiveness:  $b = -0.22\%, SE = 1.54\%, t = -0.15, p = 0.89$ ; Need for Cognition:  $b = 1.45\%, SE = 1.50\%, t = 0.97, p = 0.34$ ). Thus, it appears that more receptive individuals are more likely to make a conscious effort to pay attention to attitude-incongruent information along with attitude-congruent information, but this difference does not extend to a less conscious process.

### Study 3: Discussion

Study 3 demonstrates that beyond simply being more willing to expose themselves to opposing views, people higher in self-reported receptiveness also sustain attention to opposing views more consistently. Participants mind-wandered more while viewing a speech they

disagreed with rather than one they agreed with, but this tendency was diminished for participants who reported higher receptiveness. This difference remained significant when controlling for participants' strength of partisan affiliation and their Need for Cognition, and was primarily driven by intentional (rather than unintentional) mind wandering.

To the extent that individuals mind-wander more in response to opposing information, well-intentioned efforts based on simply exposing partisans to opposing views may prove futile for persuasion or increasing mutual understanding. Yet, the fact that our scale predicts mind wandering suggests that there is individual-level variance in people's propensity to tune into counterattitudinal information. Our measure thus enables a priori identification of those who are more likely to be attentive.

Studies 2 and 3 show that receptiveness predicts individuals' willingness to expose themselves and attend to opposing views. In study 4 we turn toward participants' evaluation of arguments that support versus oppose their prior beliefs, to examine whether more receptive individuals carry out this task in a more balanced manner.

#### Study 4: Evaluation of Supporting and Opposing Arguments

Study 4 examines the manner in which people evaluate arguments for versus against their viewpoint as a function of their level of receptiveness. Extensive prior research demonstrates that people readily derogate the holders of opposing views and the arguments they put forth (Lord et al. 1979, Pronin et al. 2004). Thus, it is possible that although more receptive individuals are more willing to interact with disagreeing others and demonstrate greater attention to both supporting and opposing information, they continue to derogate holders of opposing views and their arguments. If such derogation then allows them to dismiss those arguments as inferior or irrelevant, receptive individuals may fare no better at constructive dialogue than their less receptive peers. Thus, study 4 examines the extent to which greater receptiveness is correlated with more even-handed evaluation of arguments irrespective of one's prior position.

#### Study 4: Method

**Participants.** We recruited participants ( $n = 258$ , 49% male,  $M_{age} = 38$ ) through MTurk. Our target sample size was  $n = 200$ , and we preregistered excluding data from participants who failed an attention check (described later) in the middle of the task ( $n = 25$ ) and those who reported no opinion regarding the focal issue in the study (border security,  $n = 21$ ). Our

analyses below are based on the remaining 214 participants.

**Procedure.** Participants began the questionnaire by completing the Receptiveness scale, the Need for Cognition scale (Cacioppo et al. 1984), and the Resistance to Change scale (Oreg 2003). They then stated their level of agreement or disagreement with the following statement, "The United States should expend greater human and financial resources to prevent illegal workers from crossing the border" on a seven-point scale anchored at -3 (strongly disagree) and +3 (strongly agree). Participants then viewed a series of 10 arguments that supported or opposed this statement. To ensure that any findings were not due to the specific arguments we used, we created two versions of the survey using 10 different arguments in each, and randomly assigned participants to one of the two argument sets.

The order of the arguments that each participant saw was counterbalanced such that half of the participants viewed five arguments that supported the statement, followed by five arguments that opposed the statement; the other half of the participants viewed the two blocks of five arguments in the opposite order. To alleviate participant fatigue and check for lapses in attention, participants answered five easy mental arithmetic questions between the two sets of arguments. We decided a priori to drop the data from any participant that entered an incorrect answer to more than one of these five arithmetic problems.

After each of the 10 arguments, participants answered six items evaluating the argument and the individuals who would agree with the argument. Specifically, participants stated the extent to which the argument was persuasive, true, and relevant to the issue at hand using five-point Likert scales anchored at 1 (not at all) and 5 (very much). They also stated the extent to which people who would put forth each of the arguments are moral, intelligent, and objective using seven-point scales anchored at -3 (completely immoral/unintelligent/biased) and +3 (completely moral/intelligent/objective). After answering questions about all 10 arguments, participants provided demographic information.

#### Study 4: Results

We collapse our data across the two sets of arguments and the two orders of argument presentation because neither factor moderated any of our results. We collapsed the three measures evaluating arguments (persuasiveness, truthfulness, and relevance), and the three measures evaluating individuals who would endorse those arguments (morality, intelligence, and objectivity), into two measures evaluating the arguments themselves and evaluating individuals who support a particular argument.

In line with prior findings, participants drew a sharp distinction between arguments supporting versus opposing their stated position. Participants evaluated arguments supporting their views more positively than arguments opposing their views ( $M = 3.65$ ,  $SD = 0.85$  and  $M = 2.50$ ,  $SD = 0.81$ , respectively,  $t(213) = 14.10$ ,  $p < 0.001$ ). Similarly, participants evaluated individuals who agree with arguments that supported the participant's position more positively than individuals who agreed with arguments that opposed the participant's position ( $M = 0.89$ ,  $SD = 1.07$  and  $M = -0.32$ ,  $SD = 1.13$ , respectively,  $t(213) = 11.07$ ,  $p < 0.001$ ).

Both of these effects, however, were tempered by the participants' self-reported level of receptiveness to opposing views. For each participant, we calculated a difference score by subtracting their evaluation of attitude-incongruent from their evaluation of attitude-congruent statements. We created a similar variable for participants' evaluations of supporters of attitude-congruent arguments versus supporters of attitude-incongruent arguments. We then regressed the difference in participants' evaluations of attitude-congruent and attitude-incongruent arguments on their standardized scores on the Receptiveness scale, Need for Cognition scale, and the Resistance to Change scale. Receptiveness significantly predicted the extent to which attitude-congruent and attitude-incongruent arguments were evaluated more similarly (notice the negative regression coefficient for the difference score,  $b = -0.25$ ,  $SE = 0.010$ ,  $t = 2.57$ ,  $p < 0.02$ ). In the same regression, neither Need for Cognition nor Resistance to Change were significantly predictive (Need for Cognition:  $b = 0.14$ ,  $SE = 0.09$ ,  $t = 1.58$ ,  $p = 0.12$ ; Resistance to Change:  $b = -0.07$ ,  $SE = 0.10$ ,  $t = 0.73$ ,  $p = 0.47$ ).

We obtained similar results when we regressed participants' evaluations of individuals who support attitude-congruent versus attitude-incongruent arguments. Again, Receptiveness was a significant predictor of this difference:  $b = -0.43$ ,  $SE = 0.13$ ,  $t = 3.42$ ,  $p < 0.01$ . Need for Cognition and Resistance to Change, again were not significantly predictive (Need for Cognition:  $b = 0.19$ ,  $SE = 0.12$ ,  $t = 1.58$ ,  $p = 0.12$ ; Resistance to Change:  $b = -0.16$ ,  $SE = 0.13$ ,  $t = 1.18$ ,  $p = 0.24$ ).

To visualize these interaction results, we categorized participants as being either below average or above average on receptiveness. Figure 2 shows their mind wandering while viewing attitude-congruent versus attitude-incongruent speeches. Figure 3 graphs their evaluation of argument quality (Figure 3a) and evaluation of argument supporters (Figure 3b) for proattitudinal and counterattitudinal arguments. The evaluation difference between proattitudinal and counterattitudinal arguments is smaller for parti-

pants with above average receptiveness than the difference is for those with below average receptiveness.

When we include a measure of attitude extremity in the two previous regressions, we obtain results that are largely similar. The difference between the evaluation of supporting versus opposing arguments is marginally predicted by Receptiveness ( $b = -0.15$ ,  $SE = 0.09$ ,  $t = -1.80$ ,  $p = 0.07$ ). Neither of the other two scales predict the difference (Need for Cognition:  $b = 0.10$ ,  $SE = 0.08$ ,  $t = 1.27$ ,  $p = 0.21$ ; Resistance to Change:  $b = -0.12$ ,  $SE = 0.09$ ,  $t = -1.33$ ,  $p = 0.19$ ). The difference between the evaluation of individuals who support versus oppose one's stated position was significantly predicted by Receptiveness ( $b = -0.31$ ,  $SE = 0.11$ ,  $t = -2.75$ ,  $p = 0.01$ ), when controlling for attitude extremity. Resistance to Change also marginally predicted this difference ( $b = -0.21$ ,  $SE = 0.12$ ,  $t = -1.81$ ,  $p = 0.07$ ). Need for Cognition was not significantly predictive ( $b = 0.13$ ,  $SE = 0.11$ ,  $t = 1.27$ ,  $p = 0.21$ ).

#### Study 4: Discussion

Study 4 demonstrates that individuals who score higher on our scale evaluate arguments supporting and opposing their point of view in a more balanced way than less receptive individuals. In line with prior research, participants strongly favored arguments that supported their views and evaluated individuals who put forth those arguments more positively. However, this pattern was attenuated by individuals' self-reported level of receptiveness, even when controlling for participants' attitude extremity. Two related scales, Need for Cognition and Resistance to Change, were not similarly predictive of this difference.

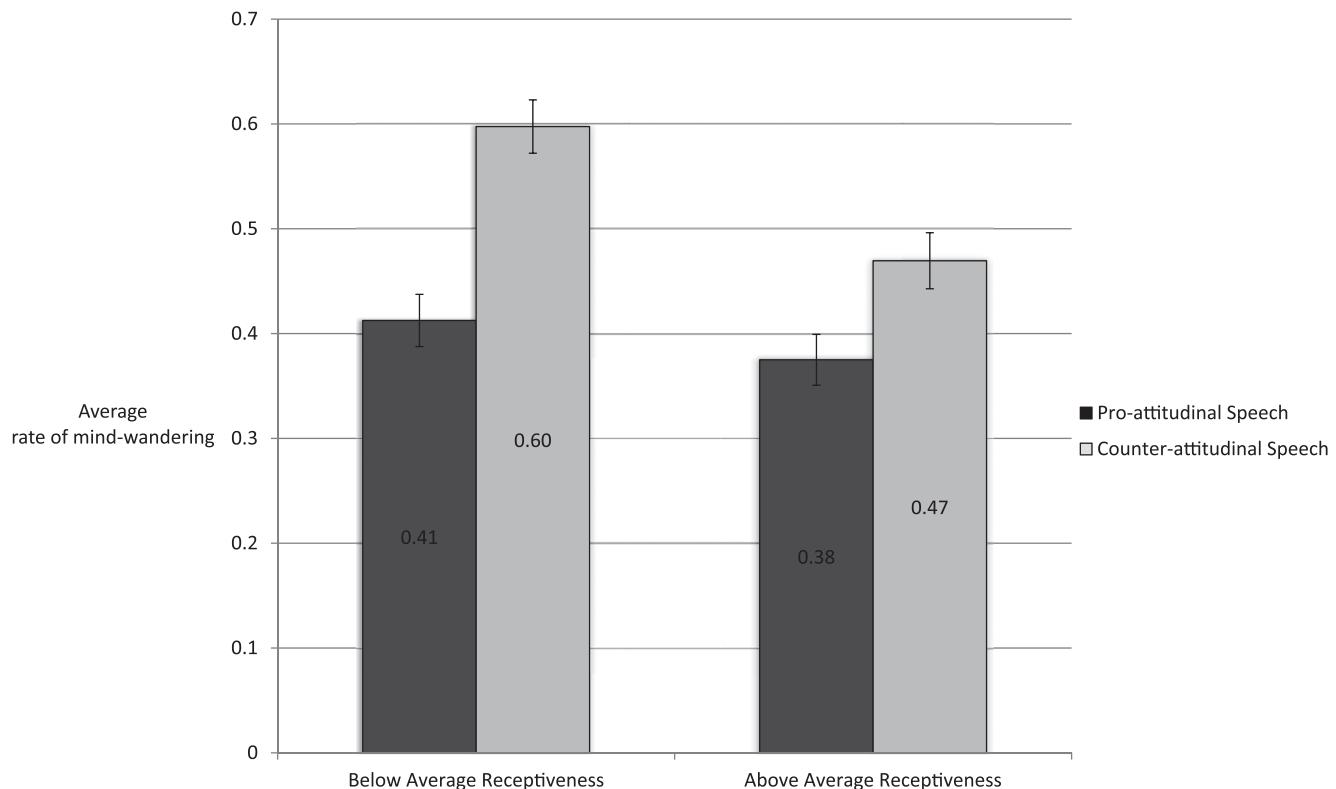
Together with studies 2 and 3, study 4 presents a picture of receptiveness as a tendency toward more even-handed treatment of belief-confirming and -disconfirming arguments across various stages of information consumption. Using several laboratory measures that have previously established bias in treatment of belief-confirming versus -disconfirming information, we demonstrate that receptiveness predictably mitigates these biases, even controlling for attitude extremity.

In study 5, we examine whether receptiveness is correlated with behavior outside of the laboratory. This transition into a field setting also allowed us to test whether our scale predicts behavior over the span of several months, rather than within a single testing session.

#### Study 5: Receptiveness and Political Engagement

Our final study examines the relationship between receptiveness and an important feature of civic life: engagement with a newly elected president of the

**Figure 2.** Rates of Mind Wandering as a Function of Disagreement with the Speaker and Level of Receptiveness (Study 3)



United States. We test whether voters' responses on the scale filled out in the final days of the 2016 presidential election predicted their engagement with the president's inaugural address broadcast in late January 2017. Study 5 included measures of information seeking, information attention, and information evaluation, thus also allowing us to examine covariance patterns in participants' behavior relative to these three components of receptiveness.

### Study 5: Method

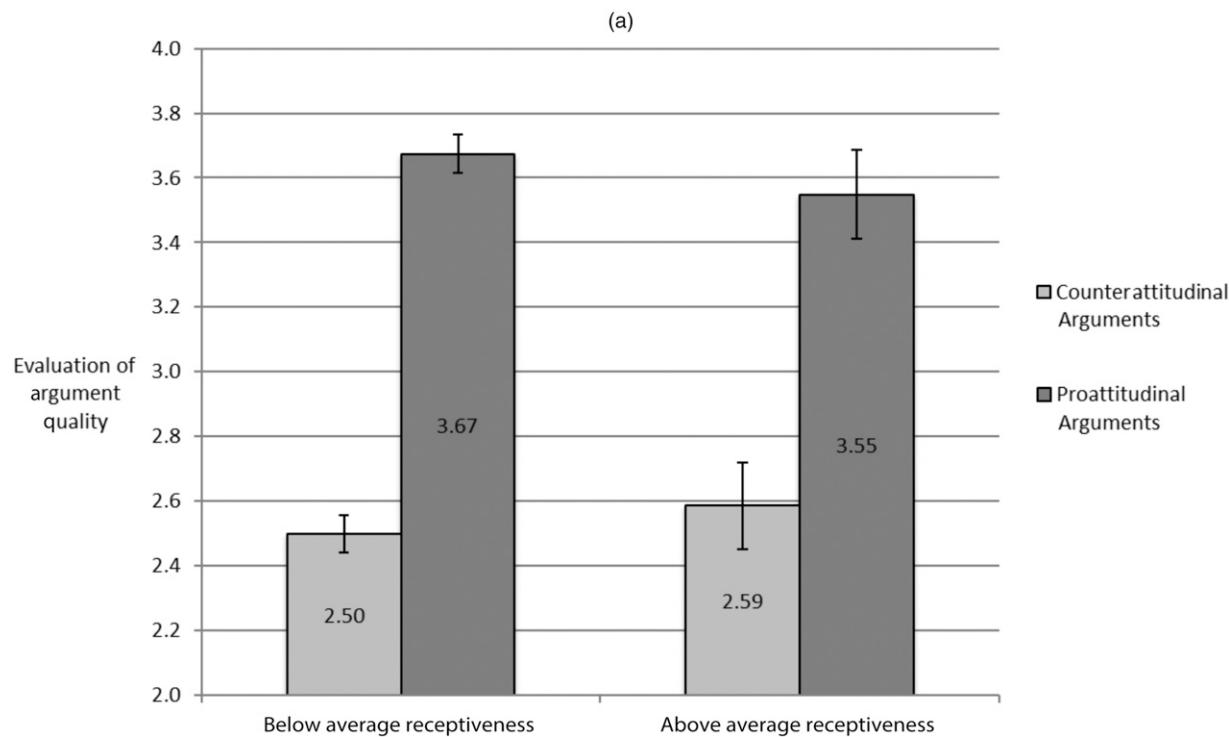
**Participants.** We recruited our initial sample of participants ( $n = 2,239$ , 46% male,  $M_{age} = 34$ ) through MTurk. We were hoping to collect data from roughly 1,000 participants in the second wave of the survey and estimated that recruiting twice that many in the first wave would allow us to obtain our target sample size in the second wave.

**Procedure.** We carried out the study in two waves of data collection, during October 2016 and January 2017. During the first wave, participants reported their demographic characteristics, several measures of political ideology, and answered three personality scales. During the second wave, which was launched immediately after the 2017 presidential inauguration, participants reported their exposure and reactions to the inaugural address.

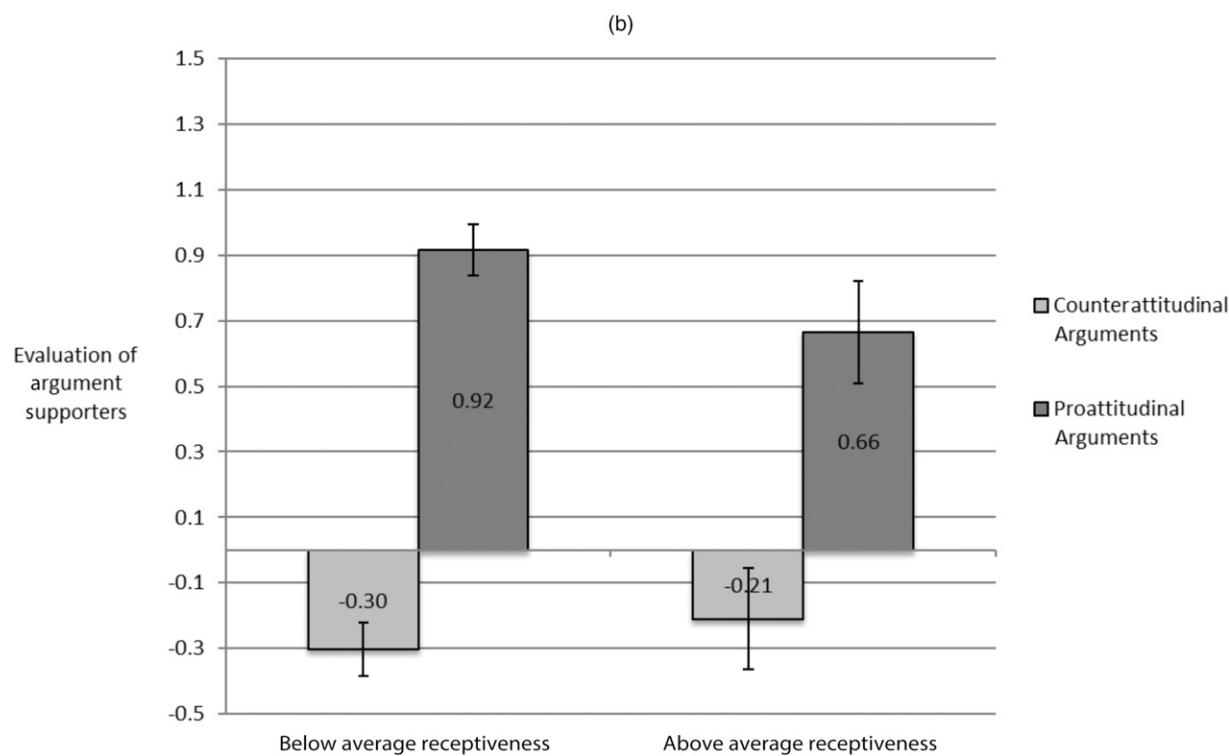
**Prescreening.** During an initial prescreen, participants reported their age, gender, income level, educational level, religious affiliation, state of residence, and whether they resided in an urban or rural area. Participants then reported their political ideology on a seven-point scale ranging from "extremely liberal" to "extremely conservative," with a midpoint labeled "moderate, middle of the road," and an additional option to state "not sure." Participants also stated their level of affiliation with the two major political parties on a seven-point scale from "strong Democrat" to "strong Republican" as well as whether they were registered to vote. Participants who reported being registered voters ( $n = 2,043$ ) were allowed to continue to the next part of the study.

**Wave 1.** During the first wave of the study, participants filled out the Need for Closure scale (Roets and Van Hiel 2011), the Actively Open-Minded Thinking (AOT) scale (Gürçay-Morris 2016), and our measure of Receptiveness. Participants then elaborated on their political beliefs and level of engagement by stating their level of trust in a variety of American institutions, reporting whether they voted in the last presidential and last congressional elections and reporting whether they intended to vote in the upcoming 2016 presidential election. Additionally, we asked how many of the three televised presidential

**Figure 3a.** Evaluation of Pro- and Counterattitudinal Arguments by Participants High and Low in Receptiveness (Study 4)



**Figure 3b.** Evaluation of Pro- and Counterattitudinal Argument Supporters by Participants High and Low in Receptiveness (Study 4)



debates they had watched and how often in the course of the last month they had watched, read, listened to, and discussed news pertaining to the election. Furthermore, we asked participants how important the outcome of the election was to them and how happy (or upset) they would be if their preferred candidate won (or lost).

We then asked participants to state their support for each of the four candidates for president of the United States, listed in alphabetical order along with party affiliation on a scale from  $-3$  (strongly oppose) to  $+3$  (strongly support). Finally, participants reported the relative importance of specific issues in determining their vote (e.g., the economy, healthcare, terrorism, etc.). A total of 2,009 participants completed all items. All measures, including exact wording and scale labels, are available online.

**Wave 2.** The second part of the study was launched approximately three months after wave 1, and 24 hours after the completion of the inaugural activities in January 2017. We contacted participants from the first wave and offered them \$1.00 to complete a 15-minute-long questionnaire. We intended to recruit 1,000 participants from our original sample, but stopped data collection after five days because the dramatic unfolding of political events in the early days of the Trump presidency made us concerned that participants' views of the inaugural address would be colored by more recent news. Thus, our final sample consisted of 986 participants from our original sample collected over the course of five days following the launch of the second wave.

Given that our sample skewed liberal and that establishment conservatives were not uniformly aligned with Donald Trump, it is perhaps not surprising that most in our sample did not support Donald Trump for president. Indeed, 611 of our participants reported "strongly opposing" Trump at the time of the election, as opposed to only 86 who reported "strongly supporting" him. Thus, our question was, does receptiveness moderate participants' engagement with the new president at the time of the inauguration, enhancing engagement for those who did not support him in the election?

To test participants' willingness to expose themselves to opposing views, we asked them whether they had watched the televised inaugural address (yes, no, partially), and whether they had watched other parts of the inaugural celebration (i.e., the wreath laying, the procession, etc.). To gauge the familiarity of participants with the address, we also provided participants with a list of major news outlets and asked them to check the ones whose coverage of the inauguration they had watched or read.

To test information attention, we asked participants to free-recall as many thoughts, points, and

ideas that the president had communicated during the speech and list them in separate text boxes. To ensure that the questionnaire did not influence the number of thoughts that participants listed, a new textbox appeared every time a participant entered a thought, up to a maximum of 10. On the following page of the questionnaire, we presented participants with each thought they had listed on the previous page and asked them to state their agreement or disagreement with the listed thought on a scale from  $-3$  (strongly disagree) to  $+3$  (strongly agree).

To test information evaluation, we asked participants to rate the speech on a number of dimensions. We specifically instructed participants to evaluate the speech itself, rather than report their opinion of the president. Thus, participants rated the extent to which they perceived the speech to be competent, intelligent, well-informed, coercive, frightening, caring, respectful, naïve, accommodating, weak, unethical, and deceptive on a five-point scale from 1 (not at all) to 5 (extremely).

Finally, as a second measure of willingness to expose oneself to opposing opinions, we again presented participants with a diverse list of news outlets (*CNN, Drudge, Fox News, NPR, Slate, New York Times, Rush Limbaugh Show, Sean Hannity Show, Wall Street Journal, Washington Post*) that had covered the inaugural address. We then asked participants to choose which coverage they would like to read on the next page.

At the conclusion of the study, participants again completed the receptiveness scale.

## Study 5: Results

We first examined any differences between our initial pool of participants who participated in wave 1 and those we were able to recruit for wave 2. Among all the measures we collected in wave 1, participants who returned for the second part of the survey differed from those that did not on two dimensions: they reported being slightly older ( $M = 32.8$ ,  $SD = 10.3$  versus  $M = 36.3$ ,  $SD = 11.7$ ,  $t(2007) = 7.07$ ,  $p < 0.001$ ) and slightly more educated ( $M = 4.11$ ,  $SD = 1.29$  versus  $M = 4.44$ ,  $SD = 1.35$ ,  $t(2007) = 5.6$ ,  $p < 0.001$ ). Importantly, the two groups of participants were not different in their political orientation, interest in politics, support of the various candidates, responses on the three personality scales, and so forth.

**Watching the Inaugural Address (Information Seeking).** Our primary research question was whether self-reported receptiveness predicted real-world willingness to engage with opposing views after a lengthy delay (approximately three months) from the time of scale administration. To begin addressing this question, we regressed the inauguration watching behavior

of our participants—coded as 0 (did not watch) 0.5 (watched partially), and 1.0 (watched)—on their support of Donald Trump as a presidential candidate, their Receptiveness scale score, and the interaction of support of Trump and Receptiveness. We also included participants' scores on the AOT, and its interaction with support of Donald Trump, as well as the participants' scores on Need for Closure, and again the relevant interaction. We z-scored all of our independent variables.

Not surprisingly, participants who reported higher support of Trump prior to the election were also more likely to report having viewed the inauguration speech three months later ( $b = 0.12$ ,  $SE = 0.01$ ,  $t = 8.86$ ,  $p < 0.001$ ). Receptiveness was also associated with a greater likelihood of watching the speech ( $b = 0.05$ ,  $SE = 0.01$ ,  $t = 3.99$ ,  $p < 0.005$ ). Most importantly, Receptiveness significantly interacted with support of Trump to predict inauguration watching behavior ( $b = -0.04$ ,  $SE = 0.01$ ,  $t = -3.34$ ,  $p < 0.002$ ). That is to say, participants who opposed Trump but who reported higher levels of receptiveness prior to the 2016 presidential election were more likely to watch President Trump's inaugural address than those who opposed him but reported lower levels of receptiveness.<sup>3</sup> Figure 4 shows this relationship.

In the same regression, the AOT scale also predicted participants' watching the inaugural address ( $b = -0.03$ ,  $SE = 0.01$ ,  $t = 2.22$ ,  $p < 0.03$ ). However, this relationship was in the opposite direction than would be predicted if AOT and Receptiveness were overlapping constructs: participants who scored higher on the AOT were less likely to report having watched the speech. Furthermore, the interaction between AOT and support of Trump marginally predicted speech watching ( $b = 0.03$ ,  $SE = 0.01$ ,  $t = 1.81$ ,  $p = 0.07$ ). Finally, the Need for Closure scale did not significantly predict speech watching ( $b = 0.02$ ,  $SE = 0.03$ ,  $t = 1.43$ ,  $p = 0.15$ ), and the interaction between Need for Closure and support of Trump as a candidate did not reach statistical significance ( $b = -0.02$ ,  $SE = 0.01$ ,  $t = 1.66$ ,  $p = 0.10$ ). In sum, of the three scales included in the study, only Receptiveness significantly moderated participants' attitudes toward the president in predicting viewing the inaugural speech.

**Recalling Content from the Inaugural Address (Information Attention).** Our free-recall measure of engagement with the inauguration speech did not yield usable data. Over a quarter of participants did not follow directions and either entered nonsense characters or described their own reactions to the speech, rather than reporting their recollection of speech content. The remaining participants wrote extremely short responses (an average of 29 characters each). Different methods of analyzing these data yield

dramatically and directionally different results with respect to all the scales we administered.

#### Overall Evaluations of Speech (Information Evaluation).

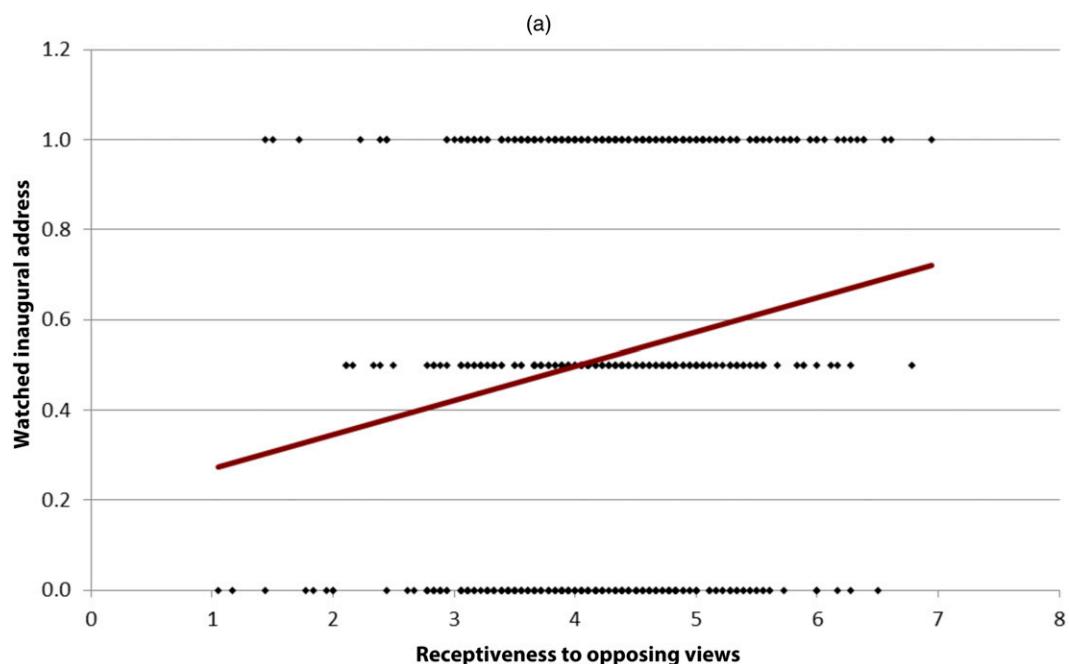
When we asked participants to report their impressions of the overall speech, we observed a clear effect of pre-election support of Donald Trump, as well as an effect of Receptiveness (also measured approximately three months prior, pre-election).

We created indices of positivity and negativity by averaging the ratings on each of the characteristics (positivity: competent, intelligent, well-informed, caring, respectful, accommodating; negativity: coercive, frightening, naïve, weak, unethical, and deceptive) that we measured. We then subtracted the evaluation on the negative characteristics from the evaluation on the positive characteristics, to create a single measure of speech evaluation. As with prior analyses, we regressed the evaluations of the speech on participants' support of Trump and their Receptiveness scale score, and the interaction between support of Trump and Receptiveness. We also included participants' scores on the AOT, and its interaction with support of Trump as a candidate, as well as the participants' scores on Need for Closure, and again the relevant interaction. We z-scored all of our independent variables.

Not surprisingly, support of Trump strongly predicted the evaluations of the speech ( $b = 0.68$ ,  $SE = 0.02$ ,  $t = 27.58$ ,  $p < 0.001$ ). Similarly, we observed a main effect of self-reported receptiveness such that more receptive participants evaluated the speech more positively ( $b = 0.10$ ,  $SE = 0.03$ ,  $t = 3.84$ ,  $p < 0.001$ ). Most importantly, Receptiveness significantly moderated the effect of support of Trump on the evaluations of the speech ( $b = -0.07$ ,  $SE = 0.02$ ,  $t = -2.66$ ,  $p < 0.01$ ). Neither Need for Closure ( $b = 0.04$ ,  $SE = 0.02$ ,  $t = 1.60$ ,  $p = 0.11$ ), nor AOT ( $b = -0.03$ ,  $SE = 0.02$ ,  $t = -1.34$ ,  $p = 0.18$ ), nor their interactions with presidential support predicted speech evaluations (Need for Closure interaction:  $b = -0.03$ ,  $SE = 0.02$ ,  $t = -1.39$ ,  $p = 0.17$ ; AOT interaction:  $b = 0.04$ ,  $SE = 0.03$ ,  $t = 1.37$ ,  $p = 0.17$ ).

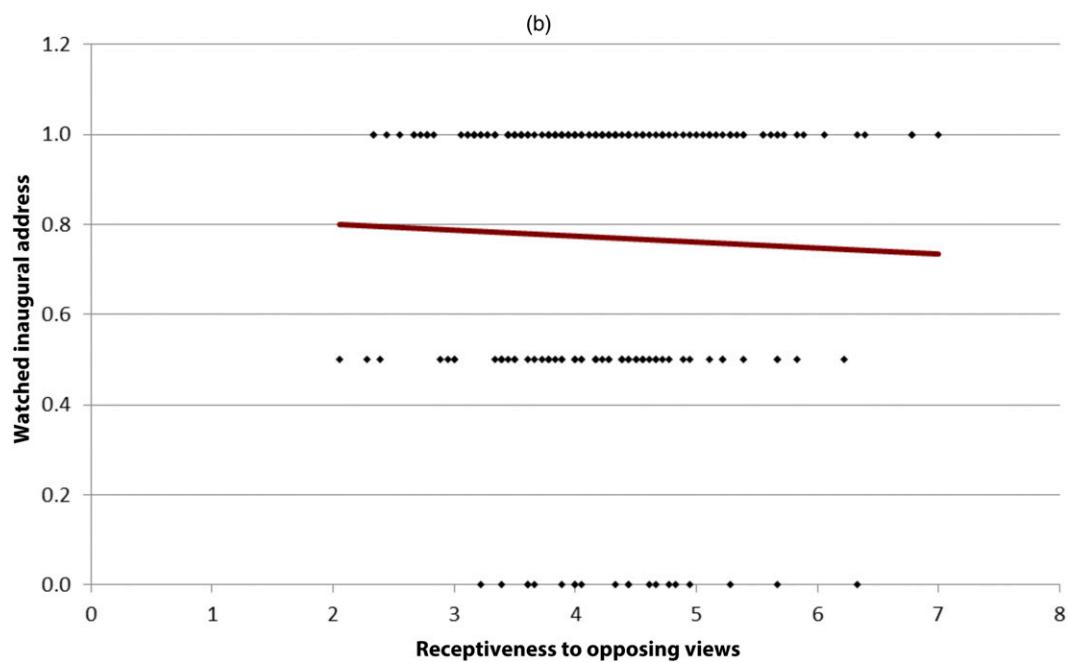
**Use of News Sources (Information Seeking).** Participants selected an average of 2.36 ( $SD = 1.64$ ) news sources for additional information about the inaugural address. We used the Pew Research Center's measure of the Ideological Placement of Media Outlets (Pew Research Center 2014) to establish the ideological slant of each news source. Pew uses a scale from  $-10$  to  $+10$ , where higher numbers denote that the audience of a particular news outlet is more ideologically conservative. For example, using this scale, the *New York Times* receives a score of  $-4.8$ , whereas Fox News receives a score of  $+2.0$ .

**Figure 4a.** (Color online) Relationship Between Participant Receptiveness and Whether They Watched the Inaugural Address Among Those Who Did Not Support Trump



Note. Calculated as 0 = no, 0.5 = partially, 1 = yes.

**Figure 4b.** (Color online) Relationship Between Participant Receptiveness and Whether They Watched the Inaugural Address Among Those Who Supported Trump



Note. Calculated as 0 = no, 0.5 = partially, 1 = yes

To calculate the conservatism of the news selected by each participant in our study, we averaged the Pew ratings of each news source selected by each participant. Following the same analytical strategy as for the earlier dependent variables, we found that the conservatism of the selected news sources was predicted by the participant's pre-election support of Trump ( $b = 0.54$ ,  $SE = 0.03$ ,  $t = 18.94$ ,  $p < 0.001$ ). There was no main effect of self-reported receptiveness on the conservatism of selected news sources ( $b = 0.03$ ,  $SE = 0.03$ ,  $t = 0.99$ ,  $p = 0.33$ ). However, receptiveness again significantly moderated the effect of support of Trump on the selection of news sources ( $b = -0.07$ ,  $SE = 0.03$ ,  $t = -2.58$ ,  $p < 0.01$ ). Similarly, although AOT did not predict the overall conservatism of the selections ( $b = -0.03$ ,  $SE = 0.03$ ,  $t = -1.39$ ,  $p = 0.16$ ), it also significantly moderated the effect of presidential support on the chosen news sources ( $b = 0.08$ ,  $SE = 0.03$ ,  $t = 2.72$ ,  $p = 0.01$ ). Importantly, this AOT moderation was in the opposite direction of what one would theoretically predict if AOT and Receptiveness were overlapping constructs: participants who were not supportive of Trump and were higher on AOT were less willing to gather news from additional conservative news sources than those lower on AOT. Neither Need for Closure ( $b = 0.04$ ,  $SE = 0.03$ ,  $t = 1.43$ ,  $p = 0.15$ ) nor its interaction with support of Trump ( $b = -0.03$ ,  $SE = 0.03$ ,  $t = -1.19$ ,  $p = 0.24$ ) significantly predicted participants' choices.

**Receptiveness over Time.** Finally, our data allow us to address the extent to which individuals' self-reported level of receptiveness remains stable over time. To examine this question, we correlated Receptiveness scores obtained during the administration of the survey in October 2016 with the scores obtained during the second administration in January 2017. When we performed a simple correlation between the Receptiveness scores collected at time 1 and time 2, the correlation was highly significant,  $r(984) = 0.67$ ,  $p < 0.001$ .

When we calculate a simple change score by subtracting time 1 Receptiveness scores from time 2 Receptiveness scores, we observe a significant positive change in our participants' receptiveness over time ( $M = 0.18$ ,  $SD = 0.75$ ),  $t(985) = 7.39$ ,  $p < 0.001$ . Interestingly, this change was primarily driven by the Trump opposers in the sample. Whereas the self-reported Trump supporters remained at roughly the same average level of receptiveness ( $M_{change} = 0.05$ ,  $SD = 0.81$ ),  $t(22) = 0.87$ , nonsignificant, the Trump-opposing participants reported significantly higher levels of receptiveness at time 2 ( $M_{change} = 0.21$ ,  $SD = 0.74$ ),  $t(728) = 7.88$ ,  $p < 0.01$ . We speculate that this difference may be driven by the fact that Trump-opposing and Trump-supporting participants were facing a

different situation after the election of President Trump. Specifically, Trump opposers may have been more motivated to be receptive following Trump's inauguration, as a means of coping with what was, to them, a disturbing new reality (Laurin 2018). Like many dispositional traits, therefore, receptiveness appears to be both stable over time and sensitive to the situation, perhaps more activated when needed. Our observation of a distinction between supporters and opposers of the president in study 5 provides some intriguing insight into a potential situational moderator of dispositional receptiveness.

### Study 5: Discussion

Study 5 provided initial evidence that receptiveness to opposing views predicts important behaviors outside of the laboratory, namely voter engagement with a new president at the conclusion of a bitterly contested election. Participants who reported higher levels of receptiveness prior to the 2016 presidential election showed higher information seeking (more willingness to watch President Trump's inaugural address and more interest in obtaining additional information related to the speech from diverse news sources), and more balanced information evaluation (rating it in a less negative manner), even if they opposed the newly inaugurated president.

Furthermore, these findings allow us to begin examining both the persistence and malleability of receptiveness over time. Our scale predicted important behaviors after the passage of three months and did so better than two other well-established and conceptually related measures. By the same token, we observed significant change over time for the non-Trump supporters in our sample. Although we did not predict this final result, it is suggestive of the malleability of this trait and possible avenues for changing receptiveness.

### General Discussion

We develop and validate a questionnaire measure of receptiveness to opposing views, conceptualized as an individual's willingness to expose oneself to, thoughtfully consider, and fairly evaluate arguments both for and against their point of view on important, personally relevant issues. Our measure is made up of 18 items that load onto four conceptually distinct, but correlated, factors that emerge both in exploratory and confirmatory factor analysis.

Studies 1a and 1b demonstrate that the scale possesses appropriate levels of internal, convergent, and discriminant validity. Studies 2 through 4 demonstrate predictive validity by showing that individuals' scores on the scale are correlated with their tendency to exhibit less bias in information selection, attention, and evaluation. Additionally, these studies show the

incremental benefit that our scale offers in predicting behavior, controlling for conceptually similar extant scales.

Specifically, in study 2, more receptive individuals proactively chose exposure to political figures representing opposing perspectives, as well as a wider range of political content, controlling for Resistance to Change, Perspective Taking, and Need for Cognition. In study 3, more receptive individuals exhibited less mind wandering when listening to a political speech that opposed their views, controlling for Need for Cognition. In study 4, more receptive individuals evaluated attitude-confirming and attitude-disconfirming arguments in a more even-handed manner than less receptive individuals, controlling for Resistance to Change and Need for Cognition. Finally, study 5 demonstrated that scores on the Receptiveness scale are correlated with behavior outside of the laboratory, including exposure to a politician holding opposing views and subsequent willingness to seek out information from a more balanced set of news outlets, as well as a more balanced evaluation of the arguments presented. Study 5 results also controlled for Need for Closure and AOT.

Across our studies, we document that receptiveness continues to predict behavior when we control for extremity of political attitudes, irrespective of whether the scale is administered before or after the relevant behavior. Furthermore, study 5 demonstrated that receptiveness predicts behavior that occurs months after scale administration, further attesting to robustness of the construct.

### Receptiveness and Related Constructs

Our new scale is both conceptually and empirically different from prior constructs. We expect receptiveness to opposing views to drive behavior in a specific social/cognitive context, i.e., one in which an individual has formulated an opinion and is confronted with an opposing perspective. Although this context is quite specific, it is also common in daily life, especially in today's information-rich environment. Conceptually, this makes the new scale distinct from prior work that measured individual differences in emotions and behavioral and cognitive tendencies across the board, not specifically in the context of exposure to opposing views.

For example, the Emotional Reactivity subscale of the Big Five Personality Inventory measures one's propensity to experience negative affect. However, this subscale (as well as the rest of the Big Five) is not designed to measure the difference in one's reactions to attitude-congruent versus attitude-incongruent information. Similarly, although measures such as Need for Cognition assess one's preference for

engaging in cognitive effort, Need for Cognition does not distinguish cognitive effort around closely held beliefs versus information that challenges those beliefs. Given the prevalence of partisan conflict and its consequences on society, we believe this distinction is important.

Our data offer empirical support for this conceptual distinction. In study 1, we find that receptiveness is positively, but only moderately, correlated with the Agreeableness and Emotional Reactivity subscales of the Big Five, as well as other well-established measures such as Need for Cognition. Furthermore, receptiveness appears to be entirely distinct from Openness to Experience, and only modestly related to Need for Closure. Receptiveness is most related to Perspective Taking and Resistance to Persuasion. However, even the correlations with these scales fall well below the standard cut-offs for discriminant validity (Campbell and Fiske 1959). Importantly, self-reported political affiliation was not correlated with receptiveness scores, which makes this scale less politically biased than other measures.

In examining the predictive validity of the Receptiveness scale, we controlled for conceptually similar scales (such as Resistance to Change, Perspective Taking, Need for Cognition, Need for Closure, and AOT), and obtained evidence of incremental predictive value. Across various laboratory tasks as well as in the field, we find that receptiveness continues to be predictive of behavior even when controlling for other measures. In each case, we attempted to construct a conservative test of the hypothesis that receptiveness would predict behavior above and beyond existing scales by choosing those scales that closely related to our dependent behavior of interest, as well as based on the correlations observed in study 1.

Importantly, our data show that receptiveness is distinct from three well-established, and seemingly related, constructs: the Openness subscale of the Big Five, Need for Cognition, and AOT. Examining the content of the items of these scales offers some insight into the distinctions measured by each. For example, many of the items used to measure openness reflect an enthusiasm for creativity and a lively mental life (e.g., "I have a rich vocabulary" or "I am full of ideas"). None of the items address one's attitudes toward disagreement or conflict, which is the primary focus of our new scale. In a similar vein, whereas Need for Cognition has been shown for decades to reliably measure preference for engaging in intellectual activity, the scale does not distinguish between thinking about attitude-congruent versus attitude-incongruent thoughts.

The AOT scale comes closest to directly addressing how individuals approach conflicting ideas. However, examining the scale items makes it clear that it measures a set of normative beliefs that respondents hold, not the behavior they actually engage in. For example, many of the items are phrased in terms of “shoulds” (e.g., “People should search actively for reasons why their beliefs might be wrong”). By contrast, our scale asks participants to reflect on what they actually do. Although AOT has been used to predict behavior associated with sound logical reasoning (e.g., Stanovich and West 1997), it may be the case that on topics laden with ideological conflict individuals have a difficult time living up to their aspirations. Thus, in contexts of attitude conflict, receptiveness emerges as a stronger predictor of behavior.

### Receptiveness and Motivated Reasoning

Our theorizing regarding people’s willingness to expose themselves to and thoughtfully consider the opposing views of others is related to the extensive prior literature on motivated reasoning (Kunda 1990). Despite a host of scholarly challenges mounted in the 1970s and 1980s, considerable research now demonstrates that, at least in some situations, individuals’ decisions are driven by their desire to believe in a certain state of the world (e.g., Dawson et al. 2002).

Receptiveness (or lack thereof) is distinct from motivated reasoning, however, in two important ways. First, similar to work on attitude change, which addresses the attitude of the individual after exposure to a communication, the work on motivated reasoning primarily addresses the final decision or judgment that emerges as the outcome of a reasoning process. From this perspective, lack of receptiveness can be seen as a precursor to motivated reasoning, to the extent that faulty reasoning might emerge as a result of a failure to sufficiently engage with evidence for an opposing point of view. Whereas the motivated reasoning literature is concerned with the final decision resulting from a consideration of evidence, we are primarily concerned with the willingness to consider the evidence in the first place.

Secondly, it is easy to envision a number of contexts wherein individuals’ reluctance to expose themselves to views they disagree with is in direct opposition to what they would like to believe. For example, most individuals who believe in the deleterious effects of climate change would like to believe that the threat to the planet is less severe than the data suggest. However, they would still be reluctant to engage in discussion with individuals who consider climate change to be a hoax. Future research can explore circumstances under which motivated reasoning enhances versus undermines receptiveness.

### Situational vs. Dispositional Receptiveness

An important question regarding our construct deals with whether one’s level of receptiveness should be considered an individual difference or a function of the situation. In the current investigation, we have treated receptiveness as an individual difference, prompting scale respondents to consider how they typically react to expressions of disagreement. However, as apparent from study 5, an individual’s level of receptiveness might vary over time in response to situational demands. Thus, we propose a contingency model (e.g., Dweck and Leggett 1988, Mischel and Shoda 1995) wherein receptiveness varies both between individuals and within a single individual across situations. In this aspect of our theorizing, we follow prior classic models that have demonstrated that particular psychological tendencies (e.g., moral identity centrality, capacity for self-control, implicit theories regarding intelligence) can vary both between people and within the same person from context to context (Muraven and Baumeister 2000, Aquino and Reed 2002).

More specifically, we consider one’s level of receptiveness as a habitual tendency with which individuals approach interaction with disagreeing others. As is the case with any other habit, we predict that certain individuals will consider opposing views with greater ease and frequency. Thus, we expect that the same individual will demonstrate consistent levels of receptiveness across multiple measurements and with respect to multiple topics of disagreement.

However, it also seems likely that an individual’s level of receptiveness will vary across situations. For example, people may be less receptive when confronted with contrary views that assail their basic values (Tetlock 1986). Similarly, people may be less receptive when experiencing emotions high in certainty, such as anger or pride (Lerner and Keltner 2001). On the other hand, the finding that Trump opposers increased their receptiveness levels after the election (study 5) suggests that, in certain situations, people may exhibit more receptiveness to opposing views when it serves other important psychological goals, at least in the short term.

Although the present research focuses on an individual difference version of the scale, identifying manipulations that affect individuals’ receptiveness to opposing views will be important to both furthering our understanding of the underlying psychology as well as improving dialogue across a variety of contexts. Future studies could systematically address the extent to which receptiveness remains stable or varies over the lifetime, across topics, and across social contexts, and hence, where and how it can be most effectively manipulated. A closer examination of

the scale and its four components offers some initial ideas, described below.

### Implications of Scale Structure

Our scale consists of four factors. The first factor focuses on the negative affective reactions that individuals experience when confronted with disagreement. The fact that this factor is correlated with the Emotional Reactivity subscale of the Big Five Personality Inventory suggests a dispositional component to receptiveness, since emotional reactivity is a personality trait whose stability is well-documented (Soldz and Vaillant 1999). However, the role of affect in our scale also suggests a number of interventions and manipulations that may be able to shift individuals' level of receptiveness (Huber et al. 2015). For example, future research could investigate whether incidental emotions induced in one situation affect receptiveness or its behavioral manifestations in future situations.

The second factor in our scale can be characterized as intellectual curiosity toward opposing views and an interest in understanding and exploring disagreement. Future research could investigate whether individuals' responses on this scale can be manipulated by making curiosity a more salient value and whether related individual difference factors, such as level of education or the need to evaluate, can affect relevant behaviors.

The third factor that consistently predicted variance in our participants' behavior was a tendency to derogate the holders of opposing views as having poor reasoning or ill intentions. This factor suggests that manipulations focused on empathy or Perspective Taking may be effective in increasing receptiveness in conflict.

Finally, our fourth factor addresses the extent to which individuals hold certain views to be taboo and beyond the pale of public discourse. Although this factor possessed the weakest psychometric properties, this could be the result of our use of hot-button social and political topics in all of our studies. Political issues are debated in public forums; thus, the issues used in our studies may not have struck our audiences as particularly taboo. Future research specifically designed to incorporate more taboo topics may be necessary to clarify the validity of this factor in broader contexts than the ones we tested.

### Scale Generalizability

Our current investigation of receptiveness was confined to political topics. We expect that similar contexts where people publicly declare an allegiance—such as for sports teams, lifestyle choices, or in the context of professional decision making—our results would look similar.

In the organizational context specifically, it may be the case that when individuals are faced with difficult problems requiring the consideration of several avenues of action, those who are more receptive may be more willing to entertain contrarian proposals and achieve better outcomes. Furthermore, decision-making teams composed of highly receptive individuals may experience lower levels of affective conflict, manage cognitive conflict more productively, and experience more satisfaction with their team experience. Management scholars should address the role of receptiveness in problem solving, decision making, and creativity. To the extent that receptiveness is characterized by a lower level of negative affect and more positive attributions toward disagreeing others, it may have important implications for the task and relationship conflict literatures (De Dreu and Weingart 2003). Generalizability outside the political domain is an important topic for future research to address.

A similar set of questions surrounds the cultural specificity or generalizability of the construct. Although we developed the scale using stimuli from the U.S. political context, it remains important to test these issues across cultures. We suspect that part of the predictive value of our scale arises from the fact that across the four factors it captures a broad variety of both antecedents of and barriers to receptiveness, which is likely to make it cross-culturally generalizable. However, it may be the case that the relative value of the factors would be dramatically different across different cultural contexts.

### Receptiveness and Social Interaction

Our initial development and validation of the receptiveness scale relied on several individual-level measures of information processing. Yet, perceptions of others' receptiveness are clearly important to social judgment, especially in contexts rife with disagreement. Thus, beyond impacting the objectivity of individual judgment, receptiveness—to the extent that it is perceived by others in intergroup settings—may also promote the management or resolution of intergroup conflict (Tajfel 1970, Tajfel and Turner 1979, Sherif et al. 1998).

Our studies provide initial evidence that people can accurately report their own levels of receptiveness to opposing views, yet it remains to be seen if they can accurately evaluate the receptiveness of others, and whether this construct (either as measured by self-report, behavior, or social perception) impacts conflict outcomes. Future work should examine whether self-reported receptiveness can be accurately detected by the “lay psychologist” (Ross 1977). We theorize that both higher levels of counterpart receptiveness and being well-calibrated in its detection should have positive effects on conflict resolution by

increasing constructive dialogue. Moreover, higher levels of receptiveness to opposing views across groups might decrease negative stereotypes and in-group bias.

Receptiveness may also emerge from social interaction in a dynamic manner. In the world outside of the laboratory, receptiveness to opposing views necessitates interacting over time with a holder of those views. When that interaction involves live back and forth (as opposed to solitary reading or video viewing), one individual's level of receptiveness is likely to affect that person's counterpart's level of receptiveness, and vice versa. Understanding this dynamic process can lead to important insights not only regarding the underlying psychology of receptiveness, but also regarding how individuals should behave if they want their own views and opinions to be heard. Recent advances in research methodology and recording technology can enable future researchers to track how receptiveness unfolds over time, affects, and is affected by, social behavior.

## Conclusion

The current work describes the development of a self-report measure of receptiveness to opposing views. We believe that our scale provides the groundwork for a multifaceted exploration of receptiveness, its antecedents, and consequences. The previous discussion has touched on questions regarding the interpersonal nature of receptiveness and whether individuals can accurately access it in others (given

how often people complain that others lack in this regard). Of similarly high concern given today's polarized political climate are interventions that might increase receptiveness and enable a deeper and more thoughtful dialogue, particularly across well-defined partisan groups. The items of our scale provide future scholars with several potentially fruitful avenues of exploration, including inducing emotions, piquing curiosity, humanizing those with opposing opinions, or reframing issues as belonging to a less taboo domain.

In closing, we believe that our new scale measures an important construct related to a variety of outcomes in information processing, conflict, and decision making. We hope that future research will further explore the tendency for individuals to willingly consider the views of others, in order to generate further insight into this important facet of social behavior.

## Appendix. Receptiveness to Opposing Views Scale

The questions below address the manner in which you deal with contrary views and opinions on social and political issues that are important to you. When answering these questions think about the hotly contested issues in current social and political discourse (for example: universal healthcare, abortion, immigration reform, gay rights, gun control, environmental regulation, etc.). Consider especially the issues that you care about the most.

### Scale

Please click the radio button below each statement to indicate the extent to which you agree or disagree with that statement.

Strongly disagree	Somewhat disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Somewhat agree	Strongly agree
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Item	Factor
1. I am willing to have conversations with individuals who hold strong views opposite to my own.	2
2. I like reading well thought-out information and arguments supporting viewpoints opposite to mine.	2
3. I find listening to opposing views informative.	2
4. I value interactions with people who hold strong views opposite to mine.	2
5. I am generally curious to find out why other people have different opinions than I do.	2
6. People who have opinions that are opposite to mine often have views which are too extreme to be taken seriously. (R)	3
7. People who have views that oppose mine rarely present compelling arguments. (R)	3
8. Information from people who have strong opinions that oppose mine is often designed to mislead less-informed listeners. (R)	3
9. Some points of view are too offensive to be equally represented in the media. (R)	4
10. Some issues are just not up for debate. (R)	4
11. Some ideas are simply too dangerous to be part of public discourse. (R)	4
12. I consider my views on some issues to be sacred. (R)	4
13. People who have views that oppose mine are often biased by what would be best for them and their group. (R)	3
14. People who have views that oppose mine often base their arguments on emotion rather than logic. (R)	3
15. Listening to people with views that strongly oppose mine tends to make me angry. (R)	1
16. I feel disgusted by some of the things that people with views that oppose mine say. (R)	1
17. I often feel frustrated when I listen to people with social and political views that oppose mine. (R)	1
18. I often get annoyed during discussions with people with views that are very different from mine. (R)	1

## Scoring

Items 6–18 are reverse coded (R). Responses on the 18 items are then averaged to create a total receptiveness index. Factor 1 (negative emotions) is comprised of items 15–18. Factor 2 (intellectual curiosity) is comprised of items 1–5. Factor 3 (derogation of opponents) is comprised of items 6, 7, 8, 13, and 14. Factor 4 (taboo issues) is comprised of items 9–12.

## Endnotes

<sup>1</sup>The fourth factor has an eigenvalue of 0.73, which is lower than the traditional cut-off of 1.0. However, we chose to retain it because it explained a relatively high proportion of variance and seemed conceptually important and distinct from the first three factors.

<sup>2</sup>Although there is a debate in the mind-wandering literature about the causes and consequences of intentional versus unintentional mind wandering, we did not predict our effect to be driven by one or the other, and thus planned a priori to combine both forms of mind wandering for the main analysis.

<sup>3</sup>Although we did not exclude the minority of participants who supported Trump prior to the election in any of these analyses, they are vastly outnumbered in our sample by participants who did not support Trump prior to the election. Therefore, for the sake of readability, we discuss our moderation effects in study 5 in terms of the opponents of the president (who, due to their numbers, are likely to be driving the observed effects).

## References

- Albaracín D, Mitchell AL (2004) The role of defensive confidence in preference for proattitudinal information: How believing that one is strong can sometimes be a defensive weakness. *Personality Soc. Psych. Bull.* 30(12):1565–1584.
- Altemeyer B (2006) *The Authoritarians*. Accessed June 4, 2019, <https://theauthoritarians.org/Downloads/TheAuthoritarians.pdf>.
- Aquino K, Reed AI (2002) The self-importance of moral identity. *J. Personality Soc. Psych.* 83(6):1423–1440.
- Baron J (1995) Myside bias in thinking about abortion. *Thinking Reasoning* 1(3):221–235.
- Bear A, Watson D (2009) The individual and group loyalty scales (IGLS): Construction and preliminary validation. *J. Personality Assessment* 91(3):277–287.
- Briñol P, Rucker DD, Tormala ZL, Petty RE (2004) Individual differences in resistance to persuasion: The role of beliefs and meta-beliefs. Knowles ES, Linn JA, eds. *Resistance and Persuasion* (Lawrence Erlbaum Associates Publishers, Mahwah, NJ), 83–104.
- Campbell DT, Fiske DW (1959) Convergent and discriminant validation by the multitrait-multimethod matrix. *Psych. Bull.* 56(2): 81–105.
- Cacioppo JT, Petty RE, Kao CF (1984) The efficient assessment of need for cognition. *J. Personality Assessment* 48(3):306–307.
- Chen FS, Minson JA, Tormala ZL (2010) Tell me more: The effects of expressed interest on receptiveness during dialog. *J. Experimental Soc. Psych.* 46(5):850–853.
- Chen FS, Minson JA, Schöne M, Heinrichs M (2013) In the eye of the beholder: Eye contact increases resistance to persuasion. *Psych. Sci.* 24(11):2254–2261.
- Curhan JR, Elfenbein HA, Eisenkraft N (2010) The objective value of subjective value: A multi-round negotiation study. *J. Appl. Soc. Psych.* 40(3):690–709.
- Curhan JR, Elfenbein HA, Kilduff GJ (2009) Getting off on the right foot: Subjective value vs. economic value in predicting longitudinal job outcomes from job offer negotiations. *J. Appl. Psych.* 94(2):524–534.
- Curhan JR, Elfenbein HA, Xu H (2006) What do people value when they negotiate? Mapping the domain of subjective value in negotiation. *J. Personality Soc. Psych.* 91(3):493–512.
- Davis MH (1980) A multidimensional approach to individual differences in empathy. *J. Personality Soc. Psych.* 10(85):85–103.
- Dawson E, Gilovich T, Regan DT (2002) Motivated reasoning and performance on the Wason selection task. *Personality Soc. Psych. Bull.* 28(10):1379–1387.
- De Dreu CK, Weingart LR (2003) Task vs. relationship conflict, team performance, and team member satisfaction: A meta-analysis. *J. Appl. Psych.* 88(4):741–749.
- Dweck CS, Leggett EL (1988) A social-cognitive approach to motivation and personality. *Psych. Rev.* 95(2):256–273.
- Eagly AH (1999) The processing of nested persuasive messages. *Psych. Inquiry* 10(2):123–127.
- Fernbach PM, Rogers T, Fox CR, Sloman SA (2013) Political extremism is supported by an illusion of understanding. *Psych. Sci.* 24(6):939–946.
- Fitzsimons GJ, Hutchinson JW, Williams P, Alba JW, Chartrand TL, Huber J, Tavassoli NT (2002) Non-conscious influences on consumer choice. *Marketing Lett.* 13(3):269–279.
- Frey D (1986) Recent research on selective exposure to information. *Adv. Experimental Soc. Psych.* 19:41–80.
- Giambra LM (1995) A laboratory method for investigating influences on switching attention to task-unrelated imagery and thought. *Consciousness Cognition* 4(1):1–21.
- Gough HG (1979) A creative personality scale for the adjective check list. *J. Personality Soc. Psych.* 37(8):1398–1405.
- Gürçay-Morris B (2016) The use of alternative reasons in predictive judgment. Doctoral dissertation, University of Pennsylvania, Philadelphia.
- Hart W, Albaracín D, Eagly AH, Brechan I, Lindberg MJ, Merrill L (2009) Feeling validated vs. being correct: A meta-analysis of selective exposure to information. *Psych. Bull.* 135(4):555–588.
- Huber M, Van Boven L, Park B, Pizzi WT (2015) Seeing red: Anger increases how much republican identification predicts partisan attitudes and perceived polarization. *PLoS One* 10(9):e0139193.
- Jarvis WBG, Petty RE (1996) The need to evaluate. *J. Personality Soc. Psych.* 70(1):172–194.
- John OP, Srivastava S (1999) The big five trait taxonomy: History, measurement, and theoretical perspectives. Pervin LA, Oliver JP, eds. *Handbook of Personality: Theory and Research*, vol. 2 (Guilford Press, New York), 102–138.
- Jonas E, Schulz-Hardt S, Frey D, Thelen N (2001) Confirmation bias in sequential information search after preliminary decisions: An expansion of dissonance theoretical research on selective exposure to information. *J. Personality Soc. Psych.* 80(4): 557–571.
- Judd CM (1978) Cognitive effects of attitude conflict resolution. *J. Conflict Resolution* 22(3):483–498.
- Kilmann RH, Thomas KW (1977) Developing a forced-choice measure of conflict-handling behavior: The “mode” instrument. *Educational Psych. Measurement* 37(2):309–325.
- Krosnick JA (1988) The role of attitude importance in social evaluation: A study of policy preferences, presidential candidate evaluations, and voting behavior. *J. Personality Soc. Psych.* 55(2):196–210.
- Kunda Z (1990) The case for motivated reasoning. *Psych. Bull.* 108(3): 480–498.
- Laurin K (2018) Inaugurating rationalization: Three field studies find increased rationalization when anticipated realities become current. *Psych. Sci.* 29(4):483–495.
- Lauriola M, Foschi R, Mosca O, Weller J (2016) Attitude toward ambiguity: Empirically robust factors in self-report personality scales. *Assessment* 23(3):353–373.
- Lerner JS, Keltner D (2001) Fear, anger, and risk. *J. Personality Soc. Psych.* 81(1):146–159.
- Litman JA (2008) Interest and deprivation factors of epistemic curiosity. *Personality Individual Differences* 44(7):1585–1595.

- Lord CG, Lepper MR, Preston E (1984) Considering the opposite: A corrective strategy for social judgment. *J. Personality Soc. Psych.* 47(6):1231–1243.
- Lord CG, Ross L, Lepper MR (1979) Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *J. Personality Soc. Psych.* 37(11): 2098–2109.
- MacCallum RC, Browne MW, Sugawara HM (1996) Power analysis and determination of sample size for covariance structure modeling. *Psych. Methods* 1(2):130–149.
- Mardia KV (1980) Tests of univariate and multivariate normality. Krishnaiah PR, ed. *Handbook of Statistics* (North-Holland, Amsterdam), 279–320.
- McGuire W (1968) Personality and attitude change: An information-processing theory. Greenwald AG, Brock TC, Ostrom TM, eds. *Psychological Foundations of Attitudes* (Academic Press, New York), 176–196.
- McGuire WJ (1969) The nature of attitudes and attitude change. Aronson E, Gardner L, eds. *The Handbook of Social Psychology*, 2nd ed. (Addison-Wesley, Boston), 136–314.
- Mill JS (1859) *On Liberty* (Savill, Edwards and Co. Printers, London).
- Mischel W, Shoda Y (1995) A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psych. Rev.* 102(2):246–268.
- Muraven M, Baumeister RF (2000) Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psych. Bull.* 126(2):247–259.
- Nickerson RS (1998) Confirmation bias: A ubiquitous phenomenon in many guises. *Rev. General Psych.* 2(2):175–220.
- Nunnally JC (1978) *Psychometric Theory* (MacGraw Hill, New York).
- Oreg S (2003) Resistance to change: Developing an individual differences measure. *J. Appl. Psych.* 88(4):680–693.
- Perkins DN (1985) Postprimary education has little impact on informal reasoning. *J. Educational Psych.* 77(5):562–571.
- Petty RE, Cacioppo JT (1996) *Attitudes and Persuasion: Classic and Contemporary Approaches* (Westview Press, New York).
- Pew Research Center (2014) Political polarization and media habits. Pew Research Center Report, Washington, DC.
- Poole KT, Rosenthal H (1985) A spatial model for legislative roll call analysis. *Am. J. Political Sci.* 29(2):357–384.
- Poole KT, Rosenthal H (2000) *Congress: A Political-Economic History of Roll Call Voting* (Oxford University Press, New York).
- Pronin E, Gilovich T, Ross L (2004) Objectivity in the eye of the beholder: Divergent perceptions of bias in self vs. others. *Psych. Rev.* 111(3):781–799.
- Raskin R, Hall CS (1981) The narcissistic personality inventory: Alternative form reliability and further evidence of construct validity. *J. Personality Assessment* 45(2):159–162.
- Risko EF, Anderson N, Sarwal A, Engelhardt M, Kingstone A (2012) Everyday attention: Variation in mind wander and memory in a lecture. *Appl. Cognitive Psych.* 26(2):234–242.
- Roets A, Van Hiel A (2011) Item selection and validation of a brief, 15-item version of the Need for Closure scale. *Personality Individual Differences* 50(1):90–94.
- Ross L (1977) The intuitive psychologist and his shortcomings: Distortions in the attribution process. *Adv. Experimental Soc. Psych.* 10:173–220.
- Ross L, Ward A (1995) Psychological barriers to dispute resolution. *Adv. Experimental Soc. Psych.* 27:255–304.
- Ross L, Ward A (1996) Naive realism in everyday life: Implications for social conflict and misunderstanding. Reed ES, Turiel E, Brown T, eds. *Values and Knowledge* (Lawrence Erlbaum Associates, Inc., Hillsdale, NJ), 103–135.
- Scopelliti I, Morewedge CK, McCormick E, Min HL, Lebrecht S, Kassam KS (2015) Bias blind spot: structure, measurement, and consequences. *Management Sci.* 61(10):2468–2486.
- Seli P, Risko EF, Smilek D (2016) On the necessity of distinguishing between unintentional and intentional mind wandering. *Psych. Sci.* 27(5):685–691.
- Sherif M, Harvey OJ, Hood W, Sherif CW, White J (1998) *The Robbers Cave Experiment: Intergroup Conflict and Cooperation* [Originally published as *Intergroup Conflict and Group Relations*] (Wesleyan University Press, Middletown, CT).
- Smallwood J, Schooler JW (2006) The restless mind. *Psych. Bull.* 132(6):946–958.
- Smallwood J, O'Connor RC, Sudberry MV, Haskell C, Ballantyne C (2004) The consequences of encoding information on the maintenance of internally generated images and thoughts: The role of meaning complexes. *Consciousness Cognition* 13(4):789–820.
- Soldz S, Vaillant GE (1999) The Big Five personality traits and the life course: A 45-year longitudinal study. *J. Res. Perspectives* 33(2): 208–232.
- Stanovich KE, West RF (1997) Reasoning independently of prior belief and individual differences in actively open-minded thinking. *J. Educational Psych.* 89(2):342–357.
- Stanovich KE, West RF, Toplak ME (2013) Myside bias, rational thinking, and intelligence. *Current Directions Psych. Sci.* 22(4): 259–264.
- Sullivan JL, Transue JE (1999) The psychological underpinnings of democracy: A selective review of research on political tolerance, interpersonal trust, and social capital. *Annual Rev. Psych.* 50(1): 625–650.
- Tajfel H (1970) Experiments in intergroup discrimination. *Sci. Am.* 223(5):96–102.
- Tajfel H, Turner J (1979) An integrative theory of intergroup conflict. Austin WG, Worcher S, eds. *The Social Psychology of Intergroup Relations* (Brooks/Cole Publishing Co., Monterey, CA), 33–47.
- Tetlock PE (1986) A value pluralism model of ideological reasoning. *J. Personality Soc. Psych.* 50(4):819–827.
- Troldahl VC, Powell FA (1965) A short-form dogmatism scale for use in field studies. *Soc. Forces* 44(2):211–214.
- Webster DM, Kruglanski AW (1994) Individual differences in need for cognitive closure. *J. Personality Soc. Psych.* 67(6):1049–1062.