

Why won't you listen to me?

Measuring receptiveness to opposing views

### Abstract

We develop an 18-item self-report measure of receptiveness to opposing views. Studies 1a and 1b present the scale and report measures of internal, convergent, and discriminant validity. The scale consists of four factors, and is distinct from related measures. In Study 2, more receptive individuals (as measured by our scale) were more willing to consume information from US Senators representing the opposing party. In Study 3, more receptive individuals reported less mind wandering when viewing a speech with which they disagreed. In Study 4, more receptive individuals evaluated supporting and opposing policy arguments more impartially. In Study 5, more receptive liberal voters were more likely to watch President Trump's inaugural address, evaluated the address in a more balanced manner, and were willing to consider a more heterogeneous selection of relevant news coverage. We discuss the scale as a tool to investigate the role of receptiveness for conflict, decision-making, and collaboration. (150 words)

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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.

~ [John Stuart Mill](#)

Despite 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 (Baron, 1995; Eagly, 1999; Frey, 1986; Hart et al., 2009; Lord, Ross & Lepper, 1979; Nickerson, 1998; Perkins, 1985; Ross & Ward, 1995, 1996). 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 belittle or disparage those whose views differ from our own (Ferbach, Rogers, Fox & Sloman, 2013; Krosnick, 1988; Lord et al., 1979; Pronin, Gilovich, & Ross, 2004).

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 lab and the field. We hope that our measure will allow future

researchers to empirically test 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 process antagonistic perspectives to provide a deeper theoretical structure connecting the cognitive biases that impact these processes. Conceptually, receptiveness can be thought of as a higher order construct, wherein the aforementioned biases serve as behavioral manifestations of low receptiveness.

We theorize that the more receptive someone is, the more he or she will evaluate both supportive and opposing statements and evidence in an equitable and impartial manner. However, attitude change is not required as evidence of genuine receptiveness to opposing views. 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 2-4 demonstrate the predictive validity of the scale for participants reacting to public policy initiatives (such as healthcare and immigration policies) presented to them in a controlled laboratory environment. Study 5 takes advantage of a naturally-occurring political event (the Presidential election and its aftermath) to predict how people with opposing views will react to the President-elect's inauguration speech.

### **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 attitude—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 & Ward, 1995, 1996) making it easy to dismiss any new considerations.

In the present research, we propose the presence of an underlying latent 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. We consider the biases that have been documented by prior scholars at different stages of information processing as symptomatic of this unifying construct. Whereas prior research has treated such biases as separate phenomena, we theorize some co-occurrence as attributable to an individual's underlying level of receptiveness. Specifically, we believe that biases at three major stages of information processing: (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 enables a more complete and unifying explanation of the 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 predict that more receptive individuals will show more equal interest in reading, listening to, or viewing arguments for both their own and opposing viewpoints than their less receptive counterparts.

However, many individuals often skillfully “tune out” arguments for the other side even while being physically exposed to them. Thus, we hypothesize that in addition to being more willing to expose themselves to opposing views, highly receptive people are also willing to process information more thoroughly and thoughtfully, avoiding the temptation to dismiss 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 (Baron, 1995; Perkins, 1985; Stanovich, West, & Toplak, 2013). We propose that more receptive individuals should demonstrate a more equitable processing of both attitude-confirming and attitude-disconfirming information.

Finally, research on the phenomenon of naïve realism (Ross & Ward, 1995, 1996) shows that people often attribute disagreement on important issues to misinformation, stupidity, bias, or malevolence on the part others. Evidence is evaluated more favorably and has greater impact on attitudes if it happens to support one’s own prior viewpoint (Lord, Lepper, & Preston, 1984; Lord et al., 1979). Thus, even after having been exposed to and having considered opposing views, individuals still find ways to banish the undesirable evidence from their minds on the grounds that it is inferior or irrelevant. 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 believe that the underlying cognitive tendency of receptiveness toward opposing views operates at three distinct stages of information processing: (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.

### **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 multi-step process leading from communication of new information to a decision or attitude arising from the consideration of that information (Eagly, 1999; McGuire, 1968, 1969; Petty & Cacioppo, 1996). For example, as early as 1968, McGuire proposed a six-step attitude change process involving "communication," "attention," "comprehension," "yielding," "retention," and "action." In this process, 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 (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, Elfenbein, & Xu, 2006) that partisans experience during an interaction (Chen, Minson & Tormala, 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 process of a negotiation) predicts positive long-term consequences that extend beyond a single interaction (Curhan, Elfenbein, & Eisenkraft, 2010; Curhan, Elfenbein, & Kilduff, 2009). 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**

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 processing: 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 participants' attention to arguments that oppose, rather than support, 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. Finally, in Study 5 we take advantage of the U.S. Presidential election to demonstrate that more receptive individuals who opposed the President-elect were more likely to watch the inauguration and attendant activities, recall more content from the inauguration speech, evaluate the arguments in a more even-handed manner, and select a more balanced portfolio of news outlets for later consumption. Because Study 5 took place over the course of three months, it also allowed us to document the test-retest reliability of our scale.

### **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 7-pt 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, Minson, Schöne, & Heinrichs, 2013; Chen, Minson, & Tormala, 2010) 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 .40, and any that may have been open to multiple interpretations. The sections below 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 towards: (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 MTurk ( $N = 205$ , 57% male;  $M_{\text{age}} = 34$ ).

**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."

In order to evaluate the extent to which receptiveness to opposing views is a unique construct, distinguishable from related constructs measured by existing scales, we also asked participants to respond to the Big Five Personality Inventory (John & Srivastava, 1999), the Need

for Closure Scale (Roets & Van Hiel, 2011), the Need to Evaluate Scale (Jarvis & Petty, 1996), the Perspective Taking subscale of the Davis Interpersonal Reactivity Index (Davis, 1980), the Resistance to Persuasion Scale, and the Bolster-Counterargue Scale (Briñol, Rucker, Tormala, & Petty, 2004). In order 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 ( $\alpha = .86$ ) conceptually corresponds to emotional reactions to attitude-incongruent views — these views can elicit negative emotions such as anger and frustration. The second factor ( $\alpha = .85$ ) reflects a curiosity one might have for antithetical views — a desire for greater insight and information about the beliefs of others. The third factor ( $\alpha = .80$ ) reveals a derogatory orientation towards holders of opposing views. Finally, the fourth factor ( $\alpha = .78$ ) belies a set of beliefs that some topics are simply off limits and are not subjects 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

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<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.

and discriminant validities between the new scale and related measures using the correction for attenuation formula of the Multitrait-Multimethod Matrix (Campbell & Fiske, 1959). The absolute value of the correlations for the overall scale ranged from  $r(203) = .02$  (Need to Evaluate) to  $r(203) = .42$  (Perspective Taking). The absolute values of discriminant validities for the overall scale ranged from .02 (Need to Evaluate) to .49 (Perspective Taking). These values are substantially lower than the standard benchmark of around .80 that is used to determine that two scales are measuring the same construct (Campbell & Fiske, 1959).

### **Study 1b: Method**

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

**Procedure.** Participants responded to the 18 items of the new receptiveness to opposing views scale presented in random order. In 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 & Thomas, 1977), the Narcissistic Personality Scale (Raskin & Hall, 1981), and the Individual and Group Loyalty scale (Beer & 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 .88, which is well above the traditional threshold of .70 (Nunnally, 1978). Furthermore, when we correlated each individual item with the overall scale the average item-to-total correlation equaled .57, suggesting that each individual item was highly correlated with the overall construct. The average pairwise correlation between the items was  $M_r = .32$ . Of the 171 possible pairwise correlations, 140 were positive and significant, 25 were positive but did not reach significance, and 6 were negative and non-significant.

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 ( $\chi^2 = 1885$ ,  $p < .001$ ) for skewness, 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, Browne, & Sugawara, 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 comprised of the four factors and 18 items described above. 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, while 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 Liberal sample. For this reason, we retain the item in the final scale. Additionally, in Model 4 we fit a 2nd order CFA with all four factors in which an underlying latent receptiveness factors causes the four sub-factors. Tables 6a and 6b present the correlations between the four factors as well as the correlations between the un-weighted 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 & Watson, 2009) and the Cooperation subscale of the Thomas-Kilmann Inventory (Kilmann & 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 holders of 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 ( $N = 254$ ,  $N = 201$ ) 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, Petty & Kao, 1984), Epistemic Curiosity (Litman, 2008), Resistance to Change (Oreg, 2003), Dogmatism (Troidahl & Powell, 1965), Defensive Confidence (Albarracín & Mitchell, 2004), Right Wing Authoritarianism (Altemeyer, 2006), Creative Personality (Gough, 1979), and Multidimensional Attitude Toward Ambiguity (Lauriola, Foschi, Mosca & Weller, 2016). We report the results of this additional wave of data collection in Table 2. Although our list of possibly 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 2-5, we turn to testing whether our scale predicts behaviors that we theorized to be correlated with receptiveness to opposing views. Studies 2-4 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 information processing: 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 U.S. Presidential election. In each of the studies, we also test whether a conceptually-related prior measure that reached high levels of convergent validity with our new scale also predicts the construct in question.

### **Study 2: Exposure to Supporting and Opposing Views**

In Study 2, we begin to test whether our new scale predicts behaviors conceptually associated with receptiveness to opposing views. We theorized that receptiveness to opposing views should, first and foremost, make people willing to expose themselves to counter-attitudinal opinions by engaging with disagreeing others. Thus, in Study 2 we ask individuals to select political content for future viewing and test whether the receptiveness scale, as well as two other conceptually-related scales, predict their choices of content.

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; Hart et al., 2009; Jonas, Schulz-Hardt, Frey, & Thelen, 2001). However, we hypothesize that this overall tendency will be moderated by individuals' responses on the receptiveness scale. In our study, we presented participants with the official press pages of prominent members of the United States Senate. We predicted 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;  $M_{age} = 35.0$ ), who were compensated \$1.50 for 15-minute study.

**Procedure.** Participants viewed a list of 20 members of the 115<sup>th</sup> United States Senate. In order 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 ten Republican Senators and nine Democratic Senators (plus Senator Bernie Sanders, Independent of Vermont) with the largest number of hits. Participants saw each Senator's name, state, and political party.

We also provided participants with each Senator's DW Nominate Score (Poole & 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 counter-balanced 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 our Study 1 results showing these constructs are highly correlated with receptiveness. Finally, participants reported demographic information including age, gender, and their own political orientation on a 7-pt scale anchored at -3: "Extremely Liberal" and +3: "Extremely Conservative."

## **Study 2: Results**

Our data provide clear evidence of selective exposure. Participants' self-reported political orientation strongly predicted the selection of senators whose press pages they chose to see. When we regressed the average DW Nominate score of the senators selected by each participant on the participant's own political orientation, we observed a strong relationship ( $b = 0.11$ ,  $SE = .008$ ,  $t = 14.4$ ,  $p < .001$ ). Participants who self-identified as Liberals selected to view the press pages of senators whose voting records were, on average, liberal ( $M = -0.15$ ,  $SD = 0.27$ ). By contrast, participants who self-identified as Conservatives selected to view the press pages of



senators whose voting records were, on average, correspondingly conservative ( $M = 0.29$ ,  $SD = 0.30$ ).

To test whether the responses to the receptiveness scale moderate individuals' preference for engaging with agreeing versus disagreeing political content, we regressed the average DW Nominat scores of the selected senators on participants' political orientation, their standardized scores on the receptiveness scale and the interaction of these two factors. We observed a significant interaction between political orientation and receptiveness ( $b = -0.021$ ,  $SE = .007$ ,  $t = 2.79$ ,  $p < .01$ ).

To further examine the nature of this interaction we divided our sample into participants who reported higher or lower than average receptiveness. Participants who reported a lower than average level of receptiveness demonstrated a strong and significant relationship between their own level of conservatism and the conservatism of the senators they selected ( $b = 0.12$ ,  $SE = .01$ ,  $t = 12.09$ ,  $p < .001$ ; Figure 1). This relationship was still present, but significantly attenuated for participants who reported higher levels of receptiveness to opposing views ( $b = 0.09$ ,  $SE = .01$ ,  $t = 7.69$ ,  $p < .01$ ; Figure 1). Thus, although participants both in the higher and 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).

In addition to examining the average DW Nominat scores of the senators selected by each participant, we can also examine the variability of these scores. To do this we calculated the standard deviation of the DW Nominat scores of the senators chosen by each participant. We then regressed this standard deviation on each participant's score on the receptiveness scale and observed a statistically significant and positive relationship ( $b = .027$ ,  $SE = .01$ ,  $t = 2.46$ ,  $p < .02$ ). Participants who scored higher on the receptiveness scale selected to view press pages from a more ideologically varied group of senators.

We further examined whether participants' choices of content were predicted by their score on the Resistance to Change Scale (Oreg, 2003), and/or their score on the Perspective Taking Scale (Davis, 1980). When we regressed the conservatism of the chosen senators on participants' own political orientation and their score on the Resistance to Change Scale, as well as the interaction of those two predictors, we did not observe a significant interaction effect ( $b = .006$ ,  $SE = .007$ ,  $t = 0.85$ ,  $p = .40$ ). We obtained a similar null interaction with the Perspective Taking Scale ( $b = -.002$ ,  $SE = .008$ ,  $t = .28$ ,  $p = .78$ ). Thus, of the three scales we included in this study, only the receptiveness to opposing views scale predicted participants' willingness to engage with opposing political content.

### **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 strongly preferred to view the press pages of senators whose voting records aligned with the participants' ideology, our scale moderated this tendency significantly. 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 across different levels of ideological extremity, suggesting that being receptive does not simply mean having a weak attitude on the topic in question.

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. Studies 3 and 4 begin to address whether receptive individuals actually process and evaluate opposing views differently than unreceptive individuals.

### Study 3: Attention to Supporting and Opposing Arguments

In Study 3, we test whether self-reported receptiveness predicts processing of belief confirming and disconfirming arguments. We use mind wandering as a measure of attention and processing (Smallwood & Schooler, 2006). Prior research has extensively documented people's propensity to mind wander when engaged in repetitive or tedious tasks (Giambra, 1995; Smallwood, O'Connor, Sudberry, Haskell & Ballantyne, 2004), and has shown that mind wandering predicts decreased information recall (Risko, Anderson, Sarwal, Engelhardt & Kingstone, 2012). Measuring mind wandering allows us to cleanly distinguish attention to particular types of information from one's willingness to be exposed to it, or one's evaluation of the content. Thus, mind wandering presents an ideal measure to test whether individuals who are high in receptiveness attend to opposing views differently than those low in receptiveness.

#### Study 3: Method

**Participants.** We recruited 598 workers on MTurk to participate in a study on political speech. We paid participants \$1.75 for a 15-minute long study. After eliminating participants who failed the attention check and four whose data was not recorded correctly by the experimental software, we analyzed data from 553 participants (50.4% male;  $M_{age} = 35.1$ ).

**Procedure.** Participants began the survey by reporting basic demographic information including their age, gender, and political affiliation. They then reported their support for two prominent US Senators: Senator Bernie Sanders of Vermont, and Senator Mitch McConnell of Kentucky. Participants then read a brief description of mind wandering and answered a comprehension question that also served as our attention check.

We then randomly assigned all participants to view a Senate floor speech by either Senator Sanders or Senator McConnell on the topic of recently proposed legislation to replace the Affordable Care Act. Both speeches were delivered by senior US Senators on the floor of the US Senate, were of approximately equal length, and addressed the same topic. The most prominent

difference of the two speeches was in their assessment of the new bill: 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 (TUTs) while attending to attitude-congruent vs. incongruent content (e.g. Seli, Risko & Smilek, 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 mid-sentence. Each probe asked participant 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, Petty & Kao, 1984). Out of the scales that we found to be significantly correlated with receptiveness in Study 1, the Need for Cognition Scale seemed the most relevant to one's ability to exert concentrated attention.

### Study 3: Results

On average, participants reported mind wandering in response to 33.1% of the probes ( $SD = 31.0\%$ ). Furthermore, participants reported a marginally smaller rate of mind wandering in response to the speech by Senator Sanders ( $M = 30.7\%$ ,  $SD = 29.8\%$ ) versus the speech by Senator McConnell ( $M = 35.7\%$ ,  $SD = 32.0\%$ ),  $t(551) = 1.89$ ,  $p = .06$ .

We next calculated the difference between each participant's political affiliation and the position represented by each senator with regard to the healthcare legislation in question (e.g. "Strongly liberal" for Sanders and "Strongly conservative" for McConnell). We then regressed the reported rate of mind wandering on the participants' z-scored disagreement with each senator. Participants reported more mind wandering when watching a speech with which they disagreed

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<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 analysis.

rather than one with which they agreed ( $b = -1.6\%$ ,  $SE = 0.67\%$ ,  $t = 2.36$ ,  $p < .02$ ). Translating this result back to our 7-pt scale of agreement with the target politician means that whereas participants reported mind wandering on 31.6% of the probes when viewing a speech by a politician they strongly agreed with, they reported mind wandering on 41.4% of the probes when viewing a speech by a politician they strongly disagreed with.

To examine whether the above relationship is moderated by participants' responses on the receptiveness scale, we regressed the level of reported mind wandering on the participants' political alignment with the target speaker, their score on the receptiveness scale, and the interaction of those two measures. We observed two main effects, such that participants who were more receptive reported a lower level of mind wandering ( $b = -3.5\%$ ,  $SE = 1.3\%$ ,  $t = 2.73$ ,  $p < 0.01$ ). Participants who disagreed with the speaker again reported a somewhat greater level of mind wandering ( $b = -1.3\%$ ,  $SE = 0.69\%$ ,  $t = 1.84$ ,  $p = .07$ ). Most importantly however, we observed a significant interaction, such that the effect of disagreement on mind wandering was moderated by participants' receptiveness score ( $b = 1.4\%$ ,  $SE = .65\%$ ,  $t = 2.16$ ,  $p = 0.03$ ). In other words, participants who reported a higher-level of receptiveness mind wandered less in response to a speech with which they disagreed (Figures 2a and 2b).

Finally, we repeated this analysis to examine the effect of Need for Cognition (NFC) on mind wandering. Similar to our receptiveness scale, participants high on NFC reported a significantly lower level of mind wandering ( $b = 3.6\%$ ,  $SE = 1.3\%$ ,  $t = 2.77$ ,  $p < 0.01$ ). However, NFC did not moderate the relationship between agreement and mind wandering ( $b = 0.0\%$ ,  $SE = 0.6\%$ ,  $t = 0.03$ ,  $p = 0.98$ ).

### **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' minds 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.

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 undesirable information. Our scale enables an a priori identification of those who are more likely to be attentive.

Studies 2 and 3 have shown that receptiveness predicts individuals' willingness to expose themselves to, and pay attention to, opposing views. In Study 4 we turn toward participants' evaluation of arguments that support versus oppose their prior beliefs, to evaluate whether more receptive individuals carry out this task in a more even-handed 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 (Pronin, Gilovich, & Ross, 2004; Lord et al., 1979). 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 one 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 ( $N = 200$ , 56% male;  $M_{age} = 36.9$ ) through MTurk.

**Procedure.** Participants began the questionnaire by stating 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 7-point scale anchored at -3: “Strongly Disagree” and +3: “Strongly Agree.” Participants then viewed a series of ten arguments that supported or opposed this statement. In order to ensure that any findings were not due to the specific arguments we used, we created two versions of the survey using ten 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. In 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 problems.

After each of the ten 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 5-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 7-pt scales anchored from -3: “Completely immoral/unintelligent/biased” to +3: “Completely moral/intelligent/objective.” After answering questions about all ten arguments, participants responded to the receptiveness scale and 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;  $\alpha = .89$ ) and the three

measures evaluating individuals who would agree with those arguments (morality, intelligence, and objectivity;  $\alpha = .83$ ) into two measures evaluating the arguments themselves and evaluating individuals who support a particular argument. We dropped data from eight participants who entered incorrect responses to more than one of the arithmetic attention check problems.

Furthermore, 15 participants reported having no opinion on the focal statement regarding border security. The below analyses are based on the remaining 177 participants.

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 ( $M = 3.65$  and  $M = 2.50$ , respectively;  $b = 0.58$ ,  $SE = .05$ ,  $t = 12.53$ ,  $p < .001$ ). 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 ( $M = 1.91$  and  $M = 0.80$ , respectively;  $b = 0.56$ ,  $SE = .06$ ,  $t = 9.90$ ,  $p < .001$ ). Both of these effects, however, were moderated by the participants' self-reported level of receptiveness to opposing views.

Specifically, more receptive participants judged disagreeing arguments and agreeing arguments more similarly relative to less receptive participants ( $b = -.21$ ,  $SE = .043$ ,  $t = 4.87$ ,  $p < .001$ ; Figure 3a). This was due to the fact that more receptive participants evaluated disagreeing arguments less negatively than their less receptive counterparts ( $b = .15$ ,  $SE = .055$ ,  $t = 2.81$ ,  $p < .01$ ), and also evaluated agreeing arguments less positively than their less receptive counterparts ( $b = -.26$ ,  $SE = .056$ ,  $t = -4.66$ ,  $p < .001$ ).

Similarly, more receptive participants judged individuals who support arguments with which they personally disagree or agree more similarly than less receptive participants ( $b = -0.18$ ,  $SE = .059$ ,  $t = 3.01$ ,  $p < .01$ ; Figure 3b). More receptive participants judged others whose arguments contradicted their stance less negatively than less receptive participants ( $b = .18$ ,  $SE = .087$ ,  $t = 2.11$ ,  $p < .04$ ). Similarly, they judged others who supported arguments that agreed with



their stance more negatively than less receptive participants ( $b = -0.17$ ,  $SE = .082$ ,  $t = 2.11$ ,  $p < .04$ ).

#### **Study 4: Discussion**

Study 4 demonstrates that individuals who score higher on our scale evaluate arguments supporting and opposing their point of view more similarly 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 moderated by individuals' self-reported level of receptiveness.

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 processing. Using several laboratory measures that have previously established bias in treatment of belief-confirming versus disconfirming information, we demonstrate that receptiveness predictably moderates these biases.

In Study 5, we go on to examine whether receptiveness is correlated with behavior outside of the laboratory. This transition into a field setting allows us to test whether our scale predicts actual behavior outside the lab (as well as inside), over the span of several months (as opposed to a single testing session).

#### **Study 5: Receptiveness and Political Engagement**

Our final study extends our investigation of receptiveness to opposing views by examining the relationship between the responses on our scale and an important feature of civic life: engagement with a newly elected President of the United States. We test whether voters' responses on the scale filled out in the final days of the 2016 presidential election predicted the losing side's engagement with the inaugural address, broadcasted in January of 2017. This method enables us to examine the extent to which receptiveness can predict important behavior in a real-world setting, after a substantial time delay. 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 ( $N = 2,239$ ) through MTurk.

**Procedure.** We carried out the study in two waves of data collection, during October of 2016 and January of 2017. During the first wave, participants reported their demographic characteristics, several measures of their 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.

**Pre-screening.** During an initial pre-screen, 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, their level of affiliation with the two major political parties, as well as whether they are 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 & Van Hiel, 2011), the Actively Open-Minded Thinking Scale (Gürçay-Morris, 2016) and our new measure of receptiveness. Participants then further elaborated on their political beliefs 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 intend to vote in the upcoming 2016 presidential election. Additionally, we asked how many of the three televised presidential debates they had watched, and how often in the course of the last month had they watched, read, listened to, and discussed news pertaining to the election. Further, 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. Finally, participants reported the relative importance of specific issues in determining their vote (e.g. the economy, health care, terrorism, etc.). A total of 2,009 participants completed all items.

*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 of 2017. We intended to recruit 1,000 participants from our original sample. We contacted participants from the first wave and offered them \$1.00 to complete a 15 minute-long questionnaire. Our final sample consisted of 986 participants from our original sample collected over the course of 5 days following the launch of the second wave. Of these 986 participants, 529 self-identified as Liberal, 189 identified as neither Liberal nor Conservative, and 264 identified as Conservative.

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. In order to ensure that the questionnaire did not influence the number of thoughts 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 5-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, The New York Times, The Rush Limbaugh Show, The Sean Hannity Show, The Wall Street Journal, The 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**

**Watching the inaugural address (Information Seeking).** Our primary research question was whether the receptiveness to opposing views scale predicted real-world willingness to engage with opposing views after a lengthy delay (approximately three months) from the time of scale administration. In each of our analyses, we first examine the political ideology of the overall sample to predict the relevant behavior. We then focus on the sub-sample of 529 liberal participants to examine the effect of receptiveness only on those who were most likely to oppose the views espoused by the President.

To begin addressing this question we regressed the inauguration watching behavior of our participants (coded as 0: “didn’t watch,” 0.5: “watched partially,” and 1.0: “watched”) on their political ideology and their receptiveness scale score.

Not surprisingly, more conservative participants were more likely to report having viewed the speech ( $b = .08$ ,  $SE = .01$ ,  $t = 5.92$ ,  $p < 0.001$ ). Receptiveness was also associated with a greater likelihood of watching the speech ( $b = .04$ ,  $SE = .01$ ,  $t = 3.04$ ,  $p < 0.005$ ). Most importantly, receptiveness significantly interacted with political ideology to predict watching behavior ( $b = -.04$ ,  $SE = .01$ ,  $t = -2.95$ ,  $p < 0.005$ ). Specifically, the receptiveness scores of the

529 participants who identified as strongly, moderately or slightly liberal strongly predicted their viewing of the inaugural address ( $b = .08$ ,  $SE = .02$ ,  $t = 4.65$ ,  $p < .001$ ).

The Actively Open-Minded Thinking (AOT) Scale also predicted Liberals' willingness to watch the inaugural address ( $b = -.08$ ,  $SE = .03$ ,  $t = 2.84$ ,  $p = .005$ ). However, this relationship was in the opposite direction than expected: participants who reported placing a higher value on AOT were less likely to report having watched the speech. Finally, the Need for Closure Scale did not significantly predict watching behavior ( $b = .04$ ,  $SE = .03$ ,  $t = 1.46$ ,  $p = .15$ ).

Table 7 presents the raw correlation coefficients between the receptiveness scale, its four subscales, NFC, AOT and our dependent measure. Our results do not change in either significance or direction if we focus on self-reported Democrats ( $n = 541$ ) instead of self-reported Liberals ( $n = 529$ ).

**Recalling content from the inaugural address (Information Attention).** When we asked participants to free-recall thoughts, ideas, or points from the inaugural address (either from having watched it, or from coverage in the media), they listed an average of 3.5 ( $SD = 2.1$ ) thoughts per person. The number of thoughts listed was correlated with self-reported political ideology, such that more conservative participants recalled more thoughts ( $b = .016$ ,  $SE = .004$ ,  $t = 4.04$ ,  $p < .001$ ).

Of the three scales we tested, only receptiveness significantly predicted the number of thoughts listed by liberals ( $b = .017$ ,  $SE = .009$ ,  $t = 1.96$ ,  $p = .05$ ). The relationship between number of thoughts and NFC did not reach significance ( $b = -.011$ ,  $SE = .009$ ,  $t = -1.32$ ,  $p = .19$ ), nor did the relationship between number of thoughts and AOT, ( $b = .011$ ,  $SE = .01$ ,  $t = 1.22$ ,  $p = .22$ ).

When we examined participants' self-reported agreement with the ideas that they recalled from the speech, we again found that agreement was strongly predicted by political ideology, such that conservatives stated greater agreement with the thoughts they listed from the speech ( $b = .45$ ,  $SE = .03$ ,  $t = 14.56$ ,  $p < .001$ ). Examining the agreement of Liberals, we found that

standardized receptiveness again significantly predicted the agreement with the listed ideas ( $b = .20, SE = .08, t = 2.44, p = .015$ ). Need for Closure was also marginally predictive ( $b = .25, SE = .08, t = 1.82, p = .07$ ). Interestingly, AOT strongly predicted *disagreement* with the listed ideas ( $b = -.35, SE = .08, t = -4.39, p < .001$ ).

**Overall evaluations of speech (Information Evaluation).** When we asked participants to report their impressions of the overall speech, we observed both a clear effect of partisanship and of self-reported receptiveness.

We created indices of positivity and negativity by averaging the ratings on each of the characteristics we measured. We found that liberals who scored higher on the receptiveness scale rated the speech as being higher on the positive characteristics ( $b = .13, SE = .03, t = 3.83, p < .001$ ; Table 8a) and as being lower on the negative ones ( $b = -.17, SE = .04, t = -4.03, p < .001$ ; Table 8b) than liberals who scored lower on the scale. Neither NFC (positive characteristics:  $b = -.005, SE = .04, t = 0.14, ns$ ; negative characteristics:  $b = .02, SE = .04, t = 0.54, ns$ ), nor AOT (positive characteristics:  $b = -.05, SE = .04, t = -1.41, ns$ ; negative characteristics:  $b = .05, SE = .04, t = 1.26, ns$ ) showed significant relationships with the evaluation of the speech.

**Use of news sources (Information Seeking).** Participants selected an average of 2.36 ( $SD = 1.64$ ) news sources that 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.

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. Not surprisingly, the conservatism of the selected news sources was highly correlated with the participant's own ideology ( $b = .67, SE = .04, t = 18.19, p < .01$ ). However, when we again examine the self-

reported liberals in our sample, standardized receptiveness significantly predicts the conservatism of their selections ( $b = .20, SE = .07, t = 2.68, p = .007$ ). NFC did not predict the conservatism of participants' news selections ( $b = .11, SE = .08, t = 1.42, p = .16$ ). AOT again showed the opposite relationship of that predicted with liberal participants who reported higher AOT scores selecting more liberal news sources ( $b = -.29, SE = .07, t = -3.86, p = .001$ ).

To summarize, out of the receptiveness scale, NFC, and AOT, only the receptiveness scale consistently predicted behavior related to three major stages of information processing: information seeking, attention, and evaluation.

**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 of 2016, with the scores obtained during the second administration in January of 2017. When we performed a simple correlation between the receptiveness scores collected at Time 1 and Time 2, the correlation was highly significant,  $r(984) = .67, p < .001$ .

When we calculate a simple change score by subtracting Time 2 receptiveness scores from Time 1 receptiveness scores, we observe a significant positive change in our participants' receptiveness over time,  $M = 0.18, t(985) = 7.4, p < .001$ . Interestingly, this change was primarily driven by the Liberal participants in the sample. Whereas the self-reported Conservatives remained at roughly the same average level of receptiveness ( $M = .02, SD = 0.76, t(267) = 0.43, ns$ ), the Liberal participants reported significantly higher levels of receptiveness at Time 2 ( $M = .28, SD = 0.75, t(528) = 8.49, p < .01$ ). We speculate that this difference may be driven by the fact that Liberal and Conservative participants were facing a different situation after the election of President Trump. Specifically, Liberals 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, in press). Like many dispositional traits, therefore, receptiveness appears to be sensitive

to the situation. Our observation of a Liberal/Conservative distinction 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, opposing party president at the conclusion of a bitterly-contested election. Liberal 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), greater information attention (recalling more of the speech content), and more balanced information evaluation (rating it in a less negative manner).

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 Liberals in our sample. Although we did not predict this final result, it is suggestive of the malleability of this trait and possible avenues for systematic manipulation.

### **General Discussion**

In five studies, we develop and validate a questionnaire measure of receptiveness to opposing views, conceptualized as an individual's willingness to expose oneself to, and intellectually engage with, 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 2-4 show that individuals' scores on the scale are correlated with their tendency to exhibit behaviors that reflect well-documented biases in



information processing. 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. In Study 3, more receptive individuals exhibited less mind wandering when listening to a political speech that opposed their views. In Study 4, more receptive individuals evaluated attitude-confirming and attitude-disconfirming arguments in a more even-handed manner than less receptive individuals. Finally, Study 5 demonstrated that scores on the receptiveness scale are correlated with behavior outside of the laboratory that reflected three key components of receptiveness: exposure to a politician holding opposing views and subsequent willingness to seek out information from a more balanced set of news feeds, recall of the politician's arguments, and a more balanced evaluation of these arguments.

### **Scale Validity**

Study 1 demonstrates that our new scale measures a construct that is distinct from other constructs measured by conceptually-related scales. 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 & Fiske, 1959). Thus, our scale demonstrates appropriate levels of both convergent and discriminant validity. Importantly, self-reported political affiliation was not correlated with receptiveness scores.

Moreover, the predictive validity of the receptiveness scale was higher than that of extant scales (such as Perspective Taking, Need for Cognition, and Actively Open-Minded Thinking). Importantly, this predictive validity was observed across various laboratory tasks as well as in real-world behavior. In each case, we attempted to construct a conservative test of our hypothesis

that receptiveness would outperform existing scales by choosing those scales that closely related to our dependent behavior of interest.

### **Situational versus 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 present social 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 & Leggett, 1988; Mischel & 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 (Aquino & Reed, 2002; Muraven & Baumeister, 2000).

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 & Keltner, 2001). On the other hand, that Liberals increased their receptivity levels after the election of Trump (Study 5)

suggests that, in certain situations, people may feel more receptiveness to opposing views when it is demanded of them, at least in the short term.

Although here we present 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, whether or not it can be 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 sub-factor is positively 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 & Vaillant, 1999). However, the role of emotional reactions in our scale also suggests a number of interventions and manipulations that may be able to shift individuals' level of receptiveness (Huber, Van Boven, Park, & Pizzi, 2015). For example, future research could investigate whether incidental emotions induced in one situation affect receptiveness in future situations.

The second factor in our scale can be characterized as intellectual curiosity toward opposing views and a value for 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 the use of hot-button social and political topics in all of our studies. This factor may predict reactions to opposing views more robustly when tested across a variety of issues, varying in importance and moral centrality. Individuals' level of receptiveness in any given situation may also vary to the extent that the taboo nature of particular issues can be made more or less salient.

### **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 the cognitive challenge to this body of work mounted in the 1970's and 1980's, 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, Gilovich, & Regan, 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. Considered from this perspective, receptiveness can be seen as a precursor to a motivated reasoning process, 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 deep discussion on this topic with individuals who consider climate change to be a "hoax." Future research should investigate whether there are specific circumstances under which motivated reasoning enhances versus undermines receptiveness.

### **Receptiveness and Social Interaction**

In the current work, we develop and validate the construct of receptiveness to opposing views using a self-report measure and several individual-level measures of information processing. People are often praised for being "good listeners" or condemned as being "closed-minded." Clearly, our perception of others' receptiveness is an important dimension of social judgment, especially in contexts rife with disagreement. However, beyond impacting the objectivity of individual judgment, receptiveness is perhaps most important in inter-group settings, which may promote inter-group conflict (Sherif, Harvey, Hood, Sherif & White, 1998; Tajfel, 1970; Tajfel & Turner, 1979).

Our studies provide initial evidence that people can accurately report their own levels of receptiveness to opposing views, yet it remains to be seen they can accurately evaluate the receptiveness of others, and whether this construct (either as measured by self-report, behavior, or social perception) has measurable impacts on conflict. 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 his or her 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 an effort to develop a self-report measure of receptiveness to opposing views. Developing such a self-report scale rests on the assumption that in addition to being detectable by psychologists, and being observable to third parties, one’s level of receptiveness is something individuals can access and accurately report. The self-report measure possesses both advantages and disadvantages relative to behavioral measures and third party evaluation. The scale may fall short in detecting the receptive mindset due to people’s lack of awareness of their internal states, or due to a systematic bias that might, for example, lead individuals to report that they are more receptive than they really are. However, relative to third party observation, a scale possesses the advantage of not relying on the interpersonal skills of the observer for its conclusions. Relative to laboratory measures, the scale also possesses the advantage of ease of administration that can allow it to be used to detect the way different manipulations affect receptiveness, or how receptiveness persists or varies across contexts.

We believe that our scale provides the groundwork for a multifaceted exploration of receptiveness, its antecedents, and consequences. The above discussion has touched on important questions regarding the interpersonal nature of receptiveness and whether individuals can

accurately access it in others (given how often people complain that others lack such receptiveness). Of similar 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.

An additional area of research concerns the impact of receptiveness on decision-making in fields beyond policy debate or conflict resolution. For example, 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.

In closing, we believe that our new scale measures an important construct related to a variety of outcomes in individual 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.

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Table 1a

*Exploratory factor analysis with varimax rotation (Study 1a)*

<b>Scale Item</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>
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	0.186	0.827	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	0.074
Views too extreme	0.2107	0.3111	0.5775	0.215
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	-0.036	0.7588
Not debatable	0.1526	0.0248	0.1032	0.7878
Ideas dangerous	0.1443	0.1127	-0.034	0.8138
Sacred Issues	-0.014	-0.0536	0.3034	0.6712



Table 1b

*Exploratory factor analysis with oblique rotation (Study 1a)*

<b>Scale Item</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>
Angry	0.8377	0.082	-0.0231	0.047
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	0.041
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	0.723	0.0597	0.0562
Curious	-0.0364	0.8301	0.0024	-0.0037
Views too extreme	0.1575	0.132	0.5434	0.1609
Uncompelling arguments	0.0053	0.192	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	-0.081	0.3079	0.6812

Table 2

*Correlations among factor scores with oblique rotation (Study 1a)*

N = 205 (Study 1a)	<b>Factor 1: Negative Emotions</b>	<b>Factor 2: Intellectual Curiosity</b>	<b>Factor 3: Derogation of Opponents</b>	<b>Factor 4: Taboo Issues</b>
<b>Factor 1: Negative Emotions</b>	1.00			
<b>Factor 2: Intellectual Curiosity</b>	0.33	1.00		
<b>Factor 3: Derogation of Opponents</b>	0.42	0.19	1.00	
<b>Factor 4: Taboo Issues</b>	0.18	0.22	0.15	1.00

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
<b>Big Five Personality</b>										
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	0.01	0.01	0.23	0.27	-0.23	-0.28	0.09	0.11	0.03	0.03
<b>Need for Closure</b>	-0.21	-0.24	-0.09	-0.10	-0.03	-0.04	-0.29	-0.35	-0.22	-0.25
<b>Need to Evaluate</b>	-0.07	-0.08	0.24	0.28	-0.19	-0.23	-0.02	-0.02	-0.02	-0.02
<b>Perspective Taking</b>	0.31	0.36	0.52	0.61	0.29	0.35	0.09	0.11	0.42	0.49
<b>Resistance to Persuasion</b>	-0.16	-0.18	-0.19	-0.22	-0.24	-0.28	-0.31	-0.37	-0.32	-0.36
<b>Bolster-Counterargue</b>	-0.03	-0.04	0.30	0.36	-0.10	-0.12	0.03	0.04	0.07	0.08
<b>Bias Blind Spot</b>	-0.11	-0.13	0.21	0.23	-0.17	-0.19	0.01	0.02	-0.02	-0.02
<b>Thomas Kilmann Inventory</b>										
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
<b>Narcissistic Personality</b>	0.12	0.14	-0.12	-0.13	-0.03	-0.03	-0.05	-0.06	-0.03	-0.03

<b>Individual and Group Loyalty</b>										
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	0.13	0.15	0.15	0.18	-0.23	-0.28	0.13	0.14
<b>Need for Cognition</b>	0.25	0.27	0.29	0.32	0.17	0.19	0.24	0.28	0.30	0.32
<b>Epistemic Curiosity</b>										
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
<b>Resistance to Change</b>	-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
<b>Dogmatism</b>	-0.20	-0.29	-0.08	-0.12	-0.23	-0.34	-0.32	-0.50	-0.26	-0.37
<b>Defensive Confidence</b>	0.08	0.09	0.27	0.30	-0.07	-0.08	0.11	0.13	0.11	0.12
<b>Right-Wing Authoritarianism</b>	0.04	0.04	0.18	0.22	0.16	0.20	0.24	0.31	0.20	0.24
<b>Creative Personality</b>	0.03	0.04	0.20	0.26	-0.01	-0.02	0.22	0.31	0.14	0.18
<b>Multidimensional Attitude Toward Ambiguity</b>										
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

Table 4

*Factor loadings and completely standardized parameters (Study 1b)*

	<b>Scale Item</b>	<b>Completely Standardized Parameter (CFA)</b>
<b>Factor 1: Negative Emotions</b>	Angry	0.75
	Disgusted	0.66
	Frustrated	0.85
	Annoyed	0.83
<b>Factor 2: Intellectual Curiosity</b>	Conversations	0.79
	Reading	0.64
	Listening	0.81
	Value interactions	0.80
	Curious	0.80
<b>Factor 3: Derogation of Opponents</b>	Views too extreme	0.73
	Uncompelling arguments	0.71
	Designed to mislead	0.79
	Opponents biased	0.59
	Emotional arguments	0.70
<b>Factor 4: Taboo Issues</b>	Too offensive	0.71
	Not debatable	0.66
	Ideas dangerous	0.80
	Taboo issues	0.34

Table 5

*Fit statistics for three alternative confirmatory factor analysis models (Study 1b)*

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
RMSEA	0.06	0.07	0.06	0.07
Tucker-Lewis Index	0.941	0.918	0.92	0.911
BIC	12433.363	9328.163	11647.524	12425.698

Table 6a

*Correlations among factors from confirmatory factor analysis (Study 1b).*

N = 202 (Study 1b)	<b>Factor 1: Negative Emotions</b>	<b>Factor 2: Intellectual Curiosity</b>	<b>Factor 3: Derogation of Opponents</b>	<b>Factor 4: Taboo Issues</b>
<b>Factor 1: Negative Emotions</b>	1.00			
<b>Factor 2: Intellectual Curiosity</b>	0.53	1.00		
<b>Factor 3: Derogation of Opponents</b>	0.71	0.42	1.00	
<b>Factor 4: Taboo Issues</b>	0.29	0.23	0.36	1.00

Table 6b

*Correlations among clusters of unweighted items that load onto each factor (Study 1b)*

N = 202 (Study 1b)	<b>Factor 1: Negative Emotions</b>	<b>Factor 2: Intellectual Curiosity</b>	<b>Factor 3: Derogation of Opponents</b>	<b>Factor 4: Taboo Issues</b>
<b>Factor 1: Negative Emotions</b>	1.00			
<b>Factor 2: Intellectual Curiosity</b>	0.45	1.00		
<b>Factor 3: Derogation of Opponents</b>	0.61	0.35	1.00	
<b>Factor 4: Taboo Issues</b>	0.28	0.15	0.32	1.00

Table 7

*Correlations between scales and watching the inaugural address for self-reported Liberals (Study 5)*

	<b>Watched inaugural</b>	<b>Receptiveness</b>	<b>Factor 1: Negative Emotions</b>	<b>Factor 2: Intellectual Curiosity</b>	<b>Factor 3: Derogation of Opponents</b>	<b>Factor 4: Taboo Issues</b>	<b>NFC</b>	<b>AOT</b>
<b>Watched inaugural</b>	1.00							
<b>Receptiveness</b>	0.20	1.00						
<b>Factor 1: Negative Emotions</b>	0.25	0.82	1.00					
<b>Factor 2: Intellectual Curiosity</b>	0.13	0.65	0.38	1.00				
<b>Factor 3: Derogation of Opponents</b>	0.17	0.79	0.62	0.30	1.00			
<b>Factor 4: Taboo Issues</b>	0.04	0.70	0.44	0.28	0.37	1.00		
<b>NFC</b>	0.06	-0.31	-0.28	-0.23	-0.16	-0.26	1.00	
<b>AOT</b>	-0.12	0.12	-0.05	0.20	-0.01	0.23	-0.10	1.00



Table 8a

*Liberals' evaluations of the speech on positive attributes (Study 5)*

	<b>Low Receptiveness</b>	<b>High Receptiveness</b>
<b>Competent</b>	1.80	2.11
<b>Intelligent</b>	1.77	1.99
<b>Well Informed</b>	1.62	1.75
<b>Caring</b>	1.67	1.84
<b>Respectful</b>	1.93	2.14
<b>Accommodating</b>	1.76	1.99

Table 8b

*Liberals' evaluations of the speech on negative attributes (Study 5)*

	<b>Low Receptiveness</b>	<b>High Receptiveness</b>
<b>Coercive</b>	2.88	2.76
<b>Frightening</b>	3.25	2.80
<b>Naive</b>	3.11	3.06
<b>Weak</b>	2.73	2.44
<b>Unethical</b>	2.64	2.40
<b>Deceptive</b>	3.42	3.19

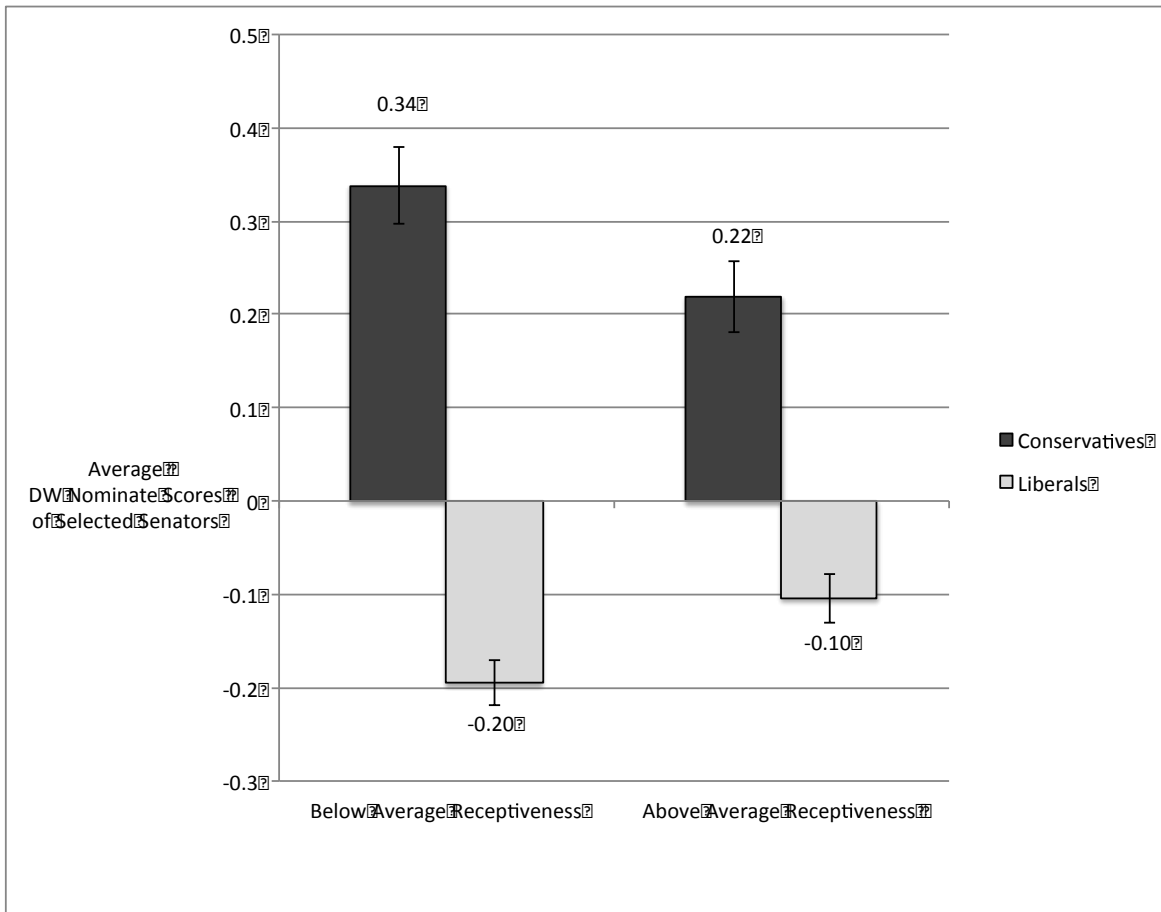


Figure 1. DW Nominatè scores of selected Senators by participant's political ideology and level of receptiveness (Study 2).

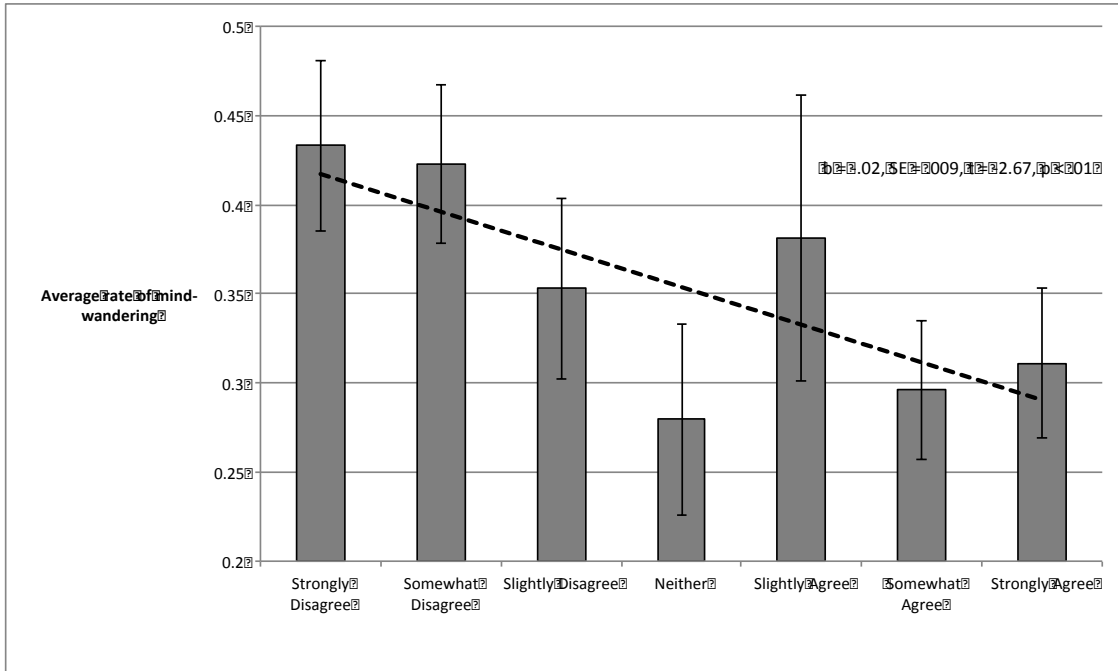


Figure 2a. Rates of mind wandering as a function of disagreement with the speaker for participants reporting below average levels of receptiveness (Study 3).

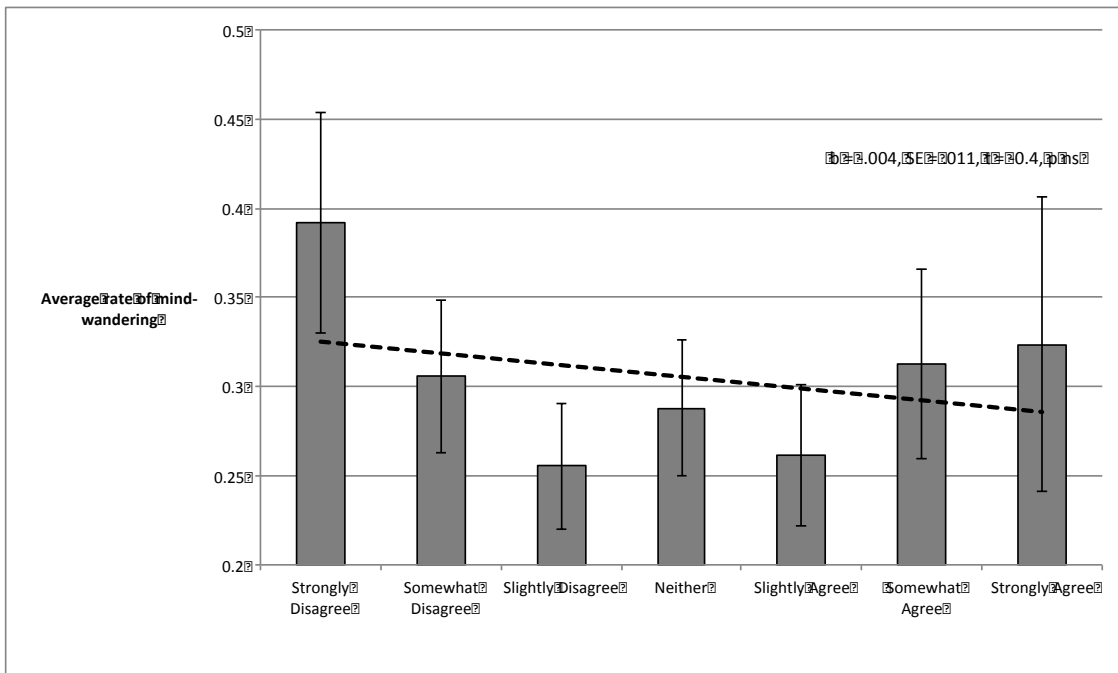


Figure 2b. Rates of mind wandering as a function of disagreement with the speaker for participants reporting above average levels of receptiveness (Study 3).

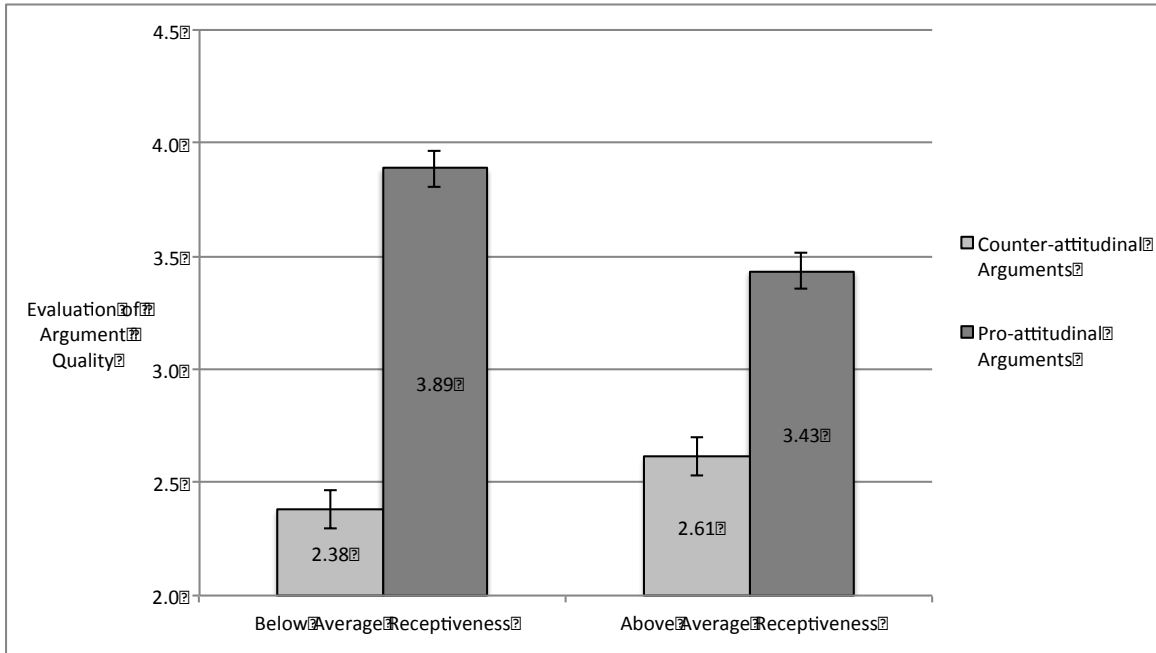


Figure 3a. Evaluation of pro- and counter-attitudinal arguments by participants high and low in receptiveness (Study 4).

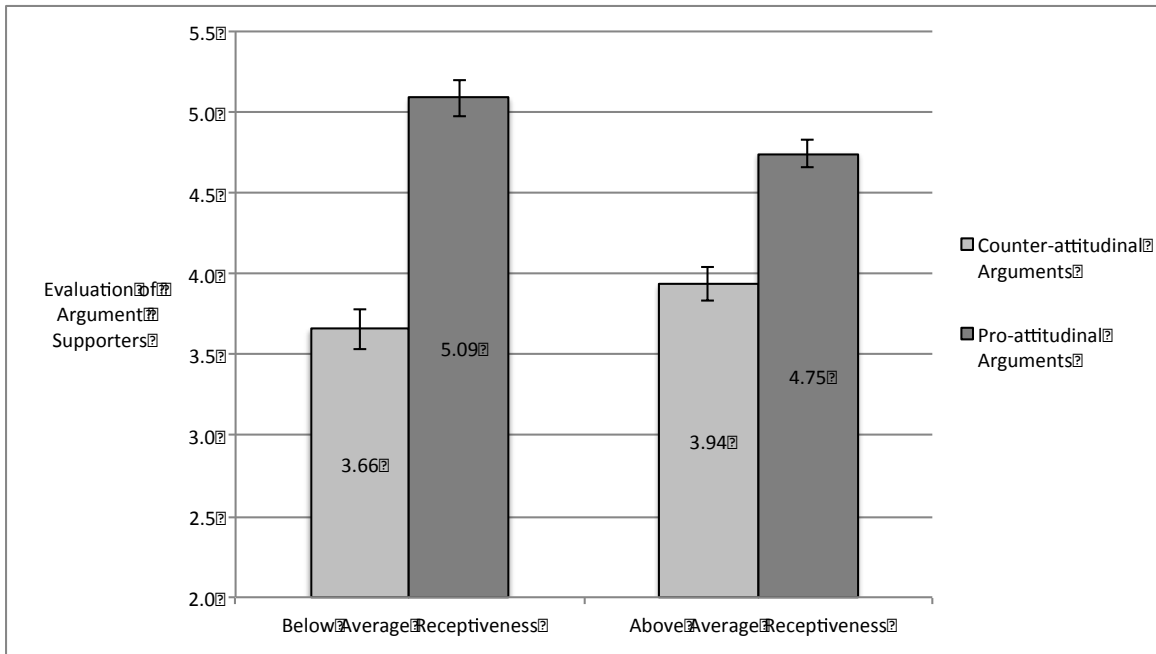


Figure 3b. Evaluation of pro- and counter-attitudinal argument supporters by participants high and low in receptiveness (Study 4).

## 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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1. I am willing to have conversations with individuals who hold strong views opposite to my own.
2. I like reading well thought-out information and arguments supporting viewpoints opposite to mine.
3. I find listening to opposing views informative.
4. I value interactions with people who hold strong views opposite to mine.
5. I am generally curious to find out why other people have different opinions than I do.
6. People who have opinions that are opposite to mine often have views which are too extreme to be taken seriously.
7. People who have views that oppose mine rarely present compelling arguments.
8. Information from people who have strong opinions that oppose mine is often designed to mislead less-informed listeners.
9. Some points of view are too offensive to be equally represented in the media.

10. Some issues are just not up for debate.
11. Some ideas are simply too dangerous to be part of public discourse.
12. I consider my views on some issues to be sacred.
13. People who have views that oppose mine are often biased by what would be best for them and their group.
14. People who have views that oppose mine often base their arguments on emotion rather than logic.
15. Listening to people with views that strongly oppose mine tends to make me angry.
16. I feel disgusted by some of the things that people with views that oppose mine say.
17. I often feel frustrated when I listen to people with social and political views that oppose mine.
18. I often get annoyed during discussions with people with views that are very different from mine.

### **Scoring**

Items 6-18 are reverse coded; 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.