Two sides to every story

Causes and consequences of selective exposure to balanced political information

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Chapter 3

Desired vs. Correct Conclusions:
The Motivated Selection of Balanced Content

Abstract

Past studies have examined the psychological underpinning of selective exposure to pro- and counter-attitudinal political information, despite the fact that the media environment primarily offers balanced information. We expand the literature on motivated reasoning and selective exposure by studying 1) how individual motivation impacts the selection of balanced, pro- and counter-attitudinal content, and 2) whether motivated selection differs across attitude strength and certainty. Using two online experiments, we prime either accuracy or defensive motivation and examine the selection of information about health care reform (N = 155) and climate change (N = 274). As expected, having a defensive motivation and strong and certain attitudes, were the strongest predictors of pro-attitudinal selection, whereas accuracy motivation was the strongest predictor of balanced selection.

Keywords: Selective exposure, motivated reasoning, defensive goal, accuracy goal, balanced content

Desired vs. Correct Conclusions: The Motivated Selection of Balanced Content

The current media environment offers citizens opportunities to select diverse media content. One concern is that this media environment facilitates it for citizens to choose information that confirms their beliefs, which may decrease mutual understanding between different social groups and lead to political polarization (e.g., Sunstein, 2001). These potential consequences have reinvigorated scholarly focus on *selective exposure*, i.e., the purported tendency of media consumers to select information in line with their political predispositions (e.g., Arceneaux & Johnson, 2013; Garret & Stroud, 2014; Knoblock-Westerwick & Kleinman, 2012; Levendusky, 2013; Stroud, 2008).

However, the debate about the prevalence of selective exposure has been inconclusive. Whereas some research has suggested that citizens select mostly pro-attitudinal media content (e.g., Iyengar & Hahn, 2008), other studies have shown that people choose both pro- and counter-attitudinal information (Bakshy et al., 2015; DiMaggio & Sato, 2003; Stroud, 2011), and that they do not actively avoid counter-attitudinal news (Garret, 2009). One possible explanation for these inconsistencies is that preferences for like-minded information are influenced by psychological factors that vary among individuals (e.g., Arceneaux & Johnson, 2013; Guess, 2016; Knoblock-Westerwick & Kleinman, 2012; Knoblock-Westerwick & Meng, 2009; Winter et al., 2016).

However, whereas this research has primarily focused on the selection of pro- or counter-attitudinal information, the majority of information in the media is balanced (Prior, 2013), and – when given the opportunity – people select balanced content (e.g., Feldman et al., 2013; Garrett & Stroud, 2014; Levendusky, 2013). Whereas past studies have examined the psychological underpinnings of selective exposure, we do not yet understand the motivations leading to balanced news selection.

We focus on two psychological factors central to the communication science literature, namely motivations for information selection (e.g., Druckman, 2012; Hart et al., 2009; Winter et al., 2016) and attributes of issue attitudes, i.e., attitude strength and certainty (e.g., Hart et al., 2009; Knoblock-Westerwick & Meng, 2009; Lodge & Taber, 2005; Taber & Lodge, 2006). First, motivated reasoning theory posits that a defensive motivation drives people to reinforce their priors with like-minded information, and an accuracy motivation leads individuals to seek diverse and unbiased information (Kunda, 1990; Kruglanski & Klar, 1987; Pyszczynski & Greenberg, 1987). Second, the strength (e.g., Lodge & Taber, 2005; Taber & Lodge, 2006) and certainty (e.g., Hart et al., 2009) of issue attitudes increase a defensive motivation, and consequently, pro-attitudinal selection (e.g., Hart

et al., 2009; Holbrook et al., 2005). Because attributes of issue attitudes can differently influence content selection, we compare whether attitude strength and certainty play different moderating roles on defensive and accuracy driven selection.[1]

We used data from two online experiments on convenience samples of U.S. adults. In both studies, participants were randomly assigned to three conditions: control, defensive goal prime, or accuracy goal prime. Then, we unobtrusively observed whether participants selected balanced, or pro-, or counter-attitudinal information about two salient political issues, healthcare reform or climate change. Before reviewing the data and findings, we outline the motivated reasoning theory to predict information selection among people motivated by defensive and accuracy goals. Then, we examine whether and how individual differences in attitude strength and certainty affect motivated selection of political information.

Motivated Reasoning and Selective Exposure

Motivated reasoning theory argues that individual motivations, which can be defined "as any wish, desire, or preference to achieve desired outcomes" (Kunda, 1990, p.480), influence the cognitive strategies people use to select and process information.[2] Two main motivations are said to affect information selection: a defensive motivation and an accuracy motivation (Leeper & Slothuus, 2014; Kruglanski & Klar, 1987; Pyszczyinski & Greenberg, 1987).

A defensive motivation drives people to select and process information in ways that validate and protect their existing attitudes, beliefs, and behaviors (e.g., Hart et al., 2009; Kunda, 1990; Kruglanski, 1989; Pyszczyinski & Greenberg, 1987). Given a choice between pro- and counter-attitudinal information, defensive motivated people prefer the former (Hart et al., 2009; Lodge & Taber, 2005; Smith et al., 2007; Taber & Lodge, 2006), although not necessarily avoid the latter (e.g., Knoblock-Westerwick & Kleinman, 2012).

In contrast, people driven by accuracy motivation seek to reach correct conclusions (Kunda, 1990). As a result, they choose and process information in an objective and open-minded manner, regardless of whether or not this information is consistent with their prior views (e.g., Chaiken et al., 1996). Accuracy goals encourage people to select information in an unbiased way, and reduce the extent to which individuals seek pro-attitudinal political messages (Fischer & Greitemeyer, 2010; Fischer et al., 2008; Hart et al., 2009). This perspective suggest that, when confronted with pro- and counter-attitudinal information, accuracy motivated individuals should attend to both types of information, as exposure to diverse perspectives may be useful to arriving at a more thorough understanding of

complex sociopolitical issues. Another perspective suggests that accuracy motivated people select pro-attitudinal information because they find it more credible (Metzger et al., 2015).

We extend the literature on motivated reasoning and selective by examining the motivations underlying the selection of balanced content, one that presents information and arguments for and against a certain political issue. Attention to balanced content, above and beyond the pro- or counter-attitudinal information, is crucial as people select more pro-attitudinal than counter-attitudinal information when only these two options are available. But, once presented with a balanced alternative, people select balanced content (Feldman et al., 2013; Garret & Stroud, 2014).

We argue that defensive and accuracy motivated individuals will consider different types of information (i.e. balanced, pro- or counter-attitudinal) as most useful to meeting their goals. Because people motivated by defensive goals seek evidence to reinforce their desired conclusions, they should be less interested in counter-attitudinal or balanced messages, which – by definition – include evidence that challenges people's priors. Instead, we draw on the extensive research mentioned above, to advance our first baseline hypothesis:

People motivated by a defensive goal are more likely to select pro-attitudinal content, compared to balanced and counter-attitudinal (Hypothesis 1).

In contrast, there are various reasons why *accuracy* motivated people should be especially likely to select balanced messages. First, because these individuals seek information that is not biased toward a single perspective (see Kruglanski, 1989), they may be drawn to balanced messages that contrast arguments for and against an issue. Second, exposure to diverse perspectives provides a more thorough and comprehensive understanding of various issue complexities, which should be of value to those individuals who aim to reach correct and complete understanding. Third, it is more time efficient and easier to weigh evidence about various issue perspectives when this information is embedded in balanced messages than to seek supportive and oppositional arguments separately. Because of these arguments, we predict that:

People motivated by an accuracy goal are more likely to select balanced content, compared to counter- and pro attitudinal (Hypothesis 2a).

However, an alternative expectation is that accuracy motivated people will select pro-attitudinal content because their prior attitudes color their perception of what is credible. People evaluate pro-attitudinal information as more credible than counter-attitudinal (Ditto & Lopez, 1992, Lord et al., 1979; Metzger, et al., 2015), and if accuracy motivated people associate credibility with accuracy, they may prefer pro-attitudinal information. Hence, we advance our alternative hypothesis:

People motivated by an accuracy goal are more likely to select pro-attitudinal content, compared to counter-attitudinal and balanced (Hypothesis 2b).

We also pull these hypotheses together to compare the content selection among defensive and accuracy motivated people, predicting that:

People motivated by a defensive goal will select more pro-attitudinal information than accuracy-motivated people (Hypothesis 3a).

People motivated by accuracy will select more balanced content than defensively- motivated people (Hypothesis 3b).

In addition to the role of motivation in shaping selection, attitude strength and certainty increase a defensive motivation (e.g., Hart et al, 2009; Lodge & Taber, 2005; Taber & Lodge, 2006) and selective exposure (e.g., Holbrook et al., 2005; Knoblock-Westerwick & Meng, 2009). However, the literature has not accounted for whether accuracy driven selection is also moderated by these attributes of issue attitudes.

Motivated Selection and the Attributes of Issue Attitudes

We focus on two attributes that may interact with motivated selection, namely attitude strength and certainty. Regarding attitude strength, individuals with strong attitudes are more likely to choose information that reinforces a desired conclusion (e.g., Hart et al, 2009; Lodge & Taber, 2005; Taber & Lodge, 2006) and select pro-attitudinal content at a greater rate than people with weaker opinions (e.g., Hart et. al, 2009; Holbrook et al., 2005). Therefore, when those with strong attitudes are primed to be defensively motivated, we expect an even greater preference for pro-attitudinal information than for those with weaker opinions.

Among people motivated by a defensive goal, those with stronger attitudes will select more pro-attitudinal content than people with weak attitudes (Hypothesis 4).

The evidence regarding attitude certainty has been less consistent. On the one hand, people who are highly certain of their opinions are more likely to select pro-attitudinal content (Hart et al., 2009), whereas uncertain people select less counter-attitudinal information (Albarracin & Mitchell, 2004). On the other hand, opposite findings have shown that uncertain individuals seek counter-attitudinal arguments, perhaps to improve the certainty of their opinions (Knoblock-Westerwick & Meng, 2009). In light of the mixed evidence, we examine the following research question.

How does attitude certainty affect information selection among defensive motivated people? (Research Question 1).

Lastly, to our knowledge no studies have examined whether and how attitude strength and certainty affect content selection among accuracy driven people. Because these individuals are motivated to choose information that helps them reach a correct conclusion, regardless of whether this information is consistent with their priors, (e.g., Chaiken et al., 1996), we expect that the strength and certainty of their opinions will not matter for information selection. Still, given the lack of available evidence, we pose the following research question.

How do attitude strength and certainty affect information selection among those who are driven by accuracy motivations? (Research Question 2).

Method

Design Studies 1 and 2

To test these hypotheses and research questions, we conducted two independent online experiments with a 2 between-subjects (control, defensive goal, accuracy goal) x 3 within-subjects (pro-issue, counter-issue, balanced) design that unobtrusively logged participants' information selection. To guard against the possibility that our results are attributable to peculiarities of some sociopolitical issues alone, we selected two issues that differ on their perceived importance for the U.S. public: Health care reform is ranked as one of the most important issues for Americans, and climate change is considered one of the least important (Gallup, 2014; Pew Research Center, 2014). Study 1 examined the selection of information about health care reform — namely hypotheses 1 thru 3. Study 2 examined the selection about climate change — namely hypotheses 1 thru 4, and research questions 1 and 2.

Manipulations of Motivated Selection

Before we present our studies, it is important to introduce some considerations about experimentally manipulating motivations for information selection. In general, prior research does not offer clear-cut suggestions, nor strong evidence, on which manipulations should be used in this context. To prime accuracy goals, studies typically have used two approaches combined: (1) explicit manipulation embedded in the instructions and containing words like "*accuracy*" (e.g., Prior et al., 2013) or "*objectivity*" (e.g., Taber et al., 2009), or asking participants to consider alternative perspectives (Druckman, 2012; Lord, Lepper & Preston, 1984), and (2) *accountability* manipulation, in which participants are told they will explain or justify their information choices to others (Druckman, 2012; Kim, 2007; Taber & Lodge, 2006b). Unfortunately, most experiments have not prime a defensive motivation, making it necessary for researchers to develop and pilot them. This is needed also because motivations are primed mostly in studies on information processing (e.g., Cronly, Mantel & Kardes, 2010; Taber, et al., 2009) or content selection (e.g., Kim, 2007), but only in two studies on selective exposure (Taber & Lodge, 2006; Winter, et al., 2016), the context we study.

Also, most experiments on motivated exposure have not used manipulation checks. Among the few that have, some were partially effective (e.g., Lundgren & Prisling, 1998) or failed (e.g., Pelham & Neter, 1995). A few studies have used time spent on a task to determine whether an accuracy manipulation was effective (e.g., Kim, 2007: Prior et al., 2013). However, time spent on task can also indicate increased defensive motivated reasoning (see Peterson, Skov, Serritzlew & Ramsoy, 2013). Moreover, these studies have not included a control group, which makes it difficult to detect whether primed motivations were different from the motivational baseline that participants pursued in the experimental situation (i.e., to address the contention that people are naturally driven by defensive goals, see Taber & Lodge, 2006). Furthermore, because most experiments have tested explicit and accountability manipulations *together* (e.g., Winter et al., 2016), it is difficult to discern how each works. In sum, we developed and piloted three different manipulations of accuracy and defensive goals in the context of information selection.

Pilot results. In our pilot study, we relied on a sample from the *Amazon Mechanical Turk* recruited in June, 2015 (*N* = 324). We randomly assigned participants to one of three conditions: a control, a defensive goal, and an accuracy goal. Participants in the control group received the following text: "*You will participate in a task. You will be shown three headlines. Please read the three headlines, then select just one to read the complete article,*" without any additional instruction. To prime defensive and accuracy goals, we tested *separately* one explicit manipulation and two variations of the accountability

manipulations, and used three different samples to do so. First, in the explicit manipulation, participants in the defensive condition read the following text: "*We advise you to select the article that you think offers the strongest information in support of your opinion about health care reform.*" Those in the accuracy condition read "*We advise you to select the article that you think offers the most accurate and objective information about the health care reform.*"

Second, to implement the accountability manipulation, we designed a debate condition to manipulate a defensive goal (i.e., "*you will participate in a two minute debate about the issue you read with another participant. We will evaluate your performance in the debate, and decide on a winner based on who has the strongest argument*"), and a judge condition to manipulate an accuracy goal (i.e., "*you will participate as a judge in a two-minute debate, in which two other participants will debate on the issue you read. We will evaluate your performance on whether your decision about the winner was objective*").

Third, we tested a variation of the debate manipulation with another sample, drawing on previous research which used monetary incentives to encourage accurate responses about political knowledge questions (Prior, et al., 2015). We offered monetary incentives to increase a defensive or accuracy goal in the debate conditions (i.e., we offered $0.50 to participate in the debate and an additional 1$ for positive performance).

We tested these manipulations using a series of multinomial logistic regressions. We estimated the extent to which motivation (i.e., defensive goal, compared to accuracy goal, and control as the reference category) predicted the type of information people selected about health care reform (i.e., balanced, pro-, or counter-attitudinal as reference category). To facilitate the interpretation of regression models with a categorical predictor and dependent variable, we calculated the predicted probabilities of selecting the type of information.

Our results showed the accountability manipulation *without* an incentive had different effects on information selection, compared to the other two manipulation types, and that the effects of explicit and accountability manipulations with a monetary incentive were similar (see Appendix C). Specifically, among defensively motivated pilot participants, selection of pro-attitudinal information was similar in the explicit manipulation condition (probability selection = .52, C.I. 90% = .38 - .66) and in the accountability with incentive manipulation condition (probability selection = .40, C.I. 90% = .26 - .54). Likewise, these two conditions showed similar selection of balanced information (probability selection explicit = 44, C.I. 90% = .30 - .57; accountability = 53, C.I. 90% = .39 - .68), and

counter-attitudinal information (probability selection explicit = 04, C.I. 90% = .01 - .09; accountability = 07, C.I. 90% = .0 - .14).

Also, among accuracy motivated participations, our results showed similar selection patterns of pro-attitudinal information (probability selection explicit = 19, C.I. 90% = .08 - .31; accountability = 19, C.I. 90% = .08 - .30), balanced information (probability selection explicit = 78, C.I. 90% = .66 - .90; accountability = 70, C.I. 90% = 57 - .83), and counter-attitudinal information (probability selection explicit = 02, C.I. 90% = .02 - .06; accountability = 10, C.I. 90% = .02 - .19). In sum, these results show that explicit and accountability manipulations with a monetary incentive affect information selection similarly, which suggests that both manipulations are suitable primes of defensive and accuracy goals in selective exposure experiments. However, we chose the explicit manipulations for our final studies because they do not incur an additional financial cost, unlike the accountability manipulations.

To further assure that our explicit manipulations activate motivations for information selection, we conducted a second pilot study using another *MTurk* sample recruited in July, 2015 (*N* = 138). This pilot tested the effects of the explicit manipulations on selection of pro- versus counter-attitudinal information. In line with evidence from extant literature (e.g. Hart et al., 2009), our results showed that defensive motivated participants chose more pro-attitudinal information (probability selection = 83, C.I. 90% = .73 - .94) than accuracy motivated participants (probability selection = 59, C.I. 90% = .45 - .72), who in turn selected more counter-attitudinal content (probability selection = 41, C.I. 90% = .28 - .55) than defensive motivated participants (probability selection = 17, C.I. 90% = .06 - .27). This suggests that the influence of explicit manipulations on information selection results from the activation of defensive and accuracy goals and not from an experimental artifact.

In conclusion, we used the explicit manipulations to prime defensive and accuracy goals in our final study 1 and 2 because of two reasons. First, explicit manipulation affect information selection in a similar same way as accountability manipulations with an incentive, and additionally, they do not represent an additional financial cost. Second, explicit manipulations reproduce the same patterns of selection observed in the extant literature on motivated reasoning and selective exposure.

Manipulations Motivated Selection in Study 1 and 2.
We used the data of the explicit manipulations from the first pilot study for study 1. We recruited an additional Mechanical Turk sample for study 2, in which we used the same explicit manipulations and control text from study 1.

Manipulation Checks Study 1 and 2

Unlike most experiments on motivated exposure, we used two different manipulation checks in the two studies. First, we measured reading time of selected texts (Kim, 2007), which failed in both studies. However, as aforementioned, it is unclear what the timing measure means as a manipulation check. Second, we used two questions as another manipulation check of goal-driven selection (see Lundgren, & Prislin, 1998), and which have been also used in a similar study as ours (Winter et al., 2016). To check defensive motivation, we asked participants how motivated they were to select information that most strongly supported their opinion about health care reform (study 1) and climate change (study 2). ANOVA results showed the manipulation was effective in both studies. Compared to participants in the control and accuracy conditions, those in the defensive condition reported a significantly greater motivation to select supportive information in study 1, $F_{(2, 152)} = 10.31$, $p < .001.1$ and study 2, $F_{(2, 271)} = 14.87$, $p < .001$.

Another question tested the accuracy motivation in both studies. Participants were asked how motivated they were to select the most accurate information about the issue. Accuracy motivated participants scored slightly higher than the defensive motivated in study 1 ($F_{(2, 152)} = 2.66$, $p = .06$), and were significantly more motivated to select accurate information in study 2, $F_{(2, 271)} = 4.02$, $p < .05$. In both studies, the average reported motivation scores did not differ significantly between the accuracy and the control conditions, an issue we address in the "Discussion" section.

Study 1

Participants

We used data from a Mechanical Turk sample composed of 170 U.S participants. Because participants with neutral attitudes on climate change or health care do not have a readily identifiable selective exposure pattern, they were excluded from the data analysis (see Feldman et al., 2013). The final sample consisted of 140 participants. Studies have shown that, compared to other convenience samples, Mechanical Turk samples are more demographically diverse, more representative of the general population, and are equally or more attentive to experimental tasks (Berinsky et al., 2012; Hauser & Schwarz, 2015; Paolacci et al., 2010). Also, the results of identical studies run on Mechanical Turk and nationally representative samples were substantively the same (Leeper & Mullinix, 2014).

Stimulus Material

We drew on existing news articles and issue-specific websites to write 24 texts about health care reform and climate change. We pretested all texts on a sample of 711 U.S. participants via Mechanical Turk, to determine that participants perceived the stimulus material as intended (i.e., balanced, pro- or con-issue), and also as equally interesting, understandable, convincing, believable and coherent. In general, the results of the pretest were as expected (see Appendix D for a summary of the pretest results). For studies 1 and 2, we chose three texts per issue that pretest results showed were comparable.[3]

For each issue, one text presented only arguments supporting the issue (pro-issue text), one text presented only arguments opposing the issue (con-issue text), and one text presented both supporting and opposing arguments (balanced text). Each text included a headline, three or four paragraphs of text and a concluding statement. The balanced, pro- and con-issue texts had the same number of arguments. The texts varied between 217 and 250 words (see Appendix A for an example of the stimulus material).

Procedure

First, participants answered a questionnaire, which measured their attitudes about health care reform and immigration as a filler issue, and a question that measured whether participants paid attention to instructions. Those who failed this question were excluded from the experiment. Then, participants were randomly assigned to one of three motivated selection conditions: control, defensive goal or accuracy goal. They were then presented with three headlines in a random order, and instructed to select and read one article, by clicking on the headline in the screen. *Qualtrics* logged article selection in an unobtrusive manner. Finally, three questions assessed participants' defensive and accuracy motivations regarding the article they selected.[4]

Measures

Health care reform attitudes. Participants reported how strongly they opposed or supported the National Health Care Reform Legislation (M = 4.28, SD = 1.90) on a 7-point scale (1 = *strongly oppose*, 7 = *strongly favor*). Health care reform attitudes did not differ significantly across the three conditions, $F_{(2, 152)}$ = .63, p =.54. To measure selective exposure, we trichotomized the original measure into oppose/support. Values of 1 thru 3 were recoded as oppose and 5 thru 7 as support. The percentages for health care reform attitudes were 35% oppose, 10% neutral and 55% support.[5]

News article exposure. *Qualitrics* automatically recorded article selection behavior when participants clicked on a headline.

Selective exposure. We operationalized selective exposure as the congruence between participants' issue attitudes and the stance (balanced pro- or con-issue) of the articles they selected. For example, participants supporting (opposing) an issue who chose an article supporting (opposing) the issue were categorized as engaging in pro-attitudinal selection. In turn, selection was counted as counter-attitudinal when participants chose an article incongruent with their pre-test issue opinion (e.g., when an opponent of health care reform chose an article favoring the reform, for instance). Third, selection of a balanced article was counted as balanced, regardless of participants' initial position.[6]

Data Analysis
To test hypotheses 1 through 3, we used the same analytical strategy as in the pilot studies.

Results

Effects of Motivation on Selective Exposure about Health Care Reform
Results did not support our expectation that defensive motivated people would select more pro-, over counter-attitudinal and balanced information *(Hypothesis 1).* These individuals were *no more likely* to select pro-attitudinal (probability selection = .52, C.I. 90% = .38 - .66) than balanced content (probability selection = .44, C.I. 90% = .30 - .57). Selection of counter-attitudinal content was almost zero (probability selection = .04, C.I. 90% = .01 - .09 (see Table 1).

Our results about selection among people motivated by accuracy goals supported *hypothesis 2a* and rejected *hypothesis 2b*. These participants chose balanced content at a greater rate (probability selection = .78, C.I. 90% = .66 - .90), compared to pro-attitudinal (probability selection = .19, C.I. 90% = .08 - .31). Again, counter-attitudinal selection was low (probability selection = .02, C.I. 90% = .02 - .06) (see Table 1). Finally, we found support for *hypotheses 3a and 3b*. A contrast of selection probabilities between conditions showed that defensive motivated people chose more pro-attitudinal information than those motivated by accuracy, $X^2(1) = 12.50$, p < .01, whereas the latter chose more balanced information, $X^2(1) = 13.61$, p < .01.

Table 1. *Predicted probabilities of selecting information type about health care by defensive and accuracy motivations (Study 1)* (*N* = 140)

	Pro-Attitudinal			Balanced			Counter-Attitudinal		
	Margin	z	90% C.I.	Margin	z	90% C.I.	Margin	z	90% C.I.
Control	.27(.07)***	6.00	.14 - .40	.61(.07)***	8.36	.44 - .66	.11(.05)*	2.38	.02 - .21
Defensive goal	.52(.07)***	7.36	.38 - .66	.44(.07)***	6.27	.30 - .57	.04(.03)	1.44	.01 - .09
Accuracy goal	.19(.06)***	3.35	.08 - .31	.78(.06)***	12.9	.66 - .90	.02(.02)	1.01	.02 - .06

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. Entries on the left column are predicted probabilities of selecting an information type, with the standard errors in parenthesis. P values indicate whether predicted probabilities are significantly different from zero.

Study 2

Design
Study 2 differed from Study 1 in two ways. First, we examined the selection of information about climate change to ensure that the results from Study 1 were not driven by issue choice. Second, to test hypothesis 4 and research questions 1 and 2, we measured issue attitudes, attitude strength and attitude certainty about climate change.

Participants
A total of 291 participants were recruited via *Mechanical Turk* in August 2015.[7] The final sample had 258 participants, after excluding those with neutral attitudes.

Manipulations Motivated Selection
As in study 1, we used the same manipulations of defensive and accuracy goals, and the same text for the control condition.

Measures
Climate change attitudes. Participants reported how strongly they opposed or supported a U.S. governmental policy that mitigates climate change by limiting carbon emissions (*M* = 5.33, *SD* = 1.78) on a 7-point scale (1 = *strongly oppose*, 7 = *strongly favor*). Climate change attitudes did not differ significantly between the three conditions, $F_{(2, 271)}$ = .05, *p* =.95. As in study 1, the measure was trichotomized into oppose (17%), neutral (6%) and support (77%).

Attitude strength. We asked participants how strong were their opinions about climate change (M = 5.27, SD = 1.53). Values ranged from 1 (*not strong at all*) through 7 (*very strong*) (e.g., Krosnick et al., 1993). Attitude strength did not differ significantly between conditions, $F_{(2, 271)}$ = .40, p =.67.[8]

Attitude certainty. We asked participants how certain they were that their opinions about climate change were right (M = 5.54, SD = 1.31). Values ranged from 1 (*not strong at all*) through 7 (*very strong*) (e.g., Krosnick & Schuman, 1988). Attitude certainty did not differ significantly across the three conditions, $F_{(2, 271)}$ = 1.24, p =.29.
Selective exposure was operationalized as in study 1.

Data Analysis

We repeated the analytical strategy to test hypotheses 1 thru 3. To test hypothesis 4 and research questions 1 and 2, we tested the selection of information type about climate change (i.e., balanced, pro-attitudinal, or counter-attitudinal as the reference category) by a two-way interaction between motivation conditions and attitude strength, and another interaction between motivations and attitude certainty. Then, we calculated the predicted probabilities of information selection for each subgroup.[9]

Results

Effects of Motivation on Selective Exposure about Climate Change

As in study 1, results did not support *Hypothesis 1.* Participants motivated by a defensive goal chose pro-attitudinal (probability selection = .46, C.I. 90% = .35 - .56) and balanced content (probability selection = .40, C.I. 90% = .30 - .50) at similar rates. Counter-attitudinal selection was low (probability selection = .02, C.I. 90% = .01 - .06) (see Table 2).

Replicating the findings of study 1, the results supported *Hypothesis 2a* and rejected *Hypothesis 2b.* Accuracy motivated participants chose balanced content at a greater rate (probability selection = .67, C.I. 90% = .57 - .77) than pro- (probability selection = .14, C.I. 90% = .06 - .21). Counter-attitudinal selection was almost zero (probability selection = .06, C.I. 90% = -.01 - .14) (see Table 2). The results replicated those of study 1 regarding *hypotheses 3a and 3b*. Defensive motivated people chose more pro-attitudinal information than accuracy motivated individuals, $X^2(1)$ = 24.36, p < .01. The latter group chose more balanced information, $X^2(1)$ = 14.21, p < .01.

Issue Attributes and Motivated Selection

The second goal of our study was to test whether and how attitude strength and certainty moderated motivated selection. The results supported *hypothesis 4* (see Figure 1). Among people motivated by a defensive goal, those with stronger attitudes chose more pro-attitudinal information about climate change (probability selection = .56, C.I. 90% = .42 - .68), than people with weak attitudes (probability selection = .30, C.I. 90% = .16 - .45). Furthermore, strongly and weakly opinionated participants in the defensive condition selected the same amount of balanced information and of counter-attitudinal information, respectively.

Next, we examined how attitude certainty moderates information selection among defensive motivated people *(Research Question 1).* Participants with certain attitudes towards climate change selected more pro-attitudinal content (probability selection = .76, C.I. 90% = .59 - .93), compared to those with uncertain attitudes (probability selection = .33, C.I. 90% = .22 - .45). Furthermore, selection of balanced content was greater among uncertain (probability selection = .48, C.I. 90% = .35 - .60) than among certain participants (probability selection = .20, C.I. 90% = .04 - .35) (see Figure 2).

Finally, results of our second research question showed that neither strength nor certainty significantly moderated information selection among accuracy motivated participants. Individuals with weak and strong attitudes made similar choices of pro-attitudinal content (probability selection low strength = .13, C.I. 90% = .03 - .23), (probability selection high strength = .14, C.I. 90% = .03 - .24), balanced content (probability selection low strength = .67, C.I. 90% = .53 - .80), (probability selection high strength = .67, C.I. 90% = .53 - .81), and counter-attitudinal information (probability selection low strength =.20, C.I. 90% = .08 - .32), (probability selection high strength =.19, C.I. 90% =.07 - .30)(see Figure 1).

The results were the same when attitude certainty was examined as a moderator. Participants with uncertain and certain attitudes made similar choices about pro-attitudinal content (probability selection low certainty = .16, C.I. 90% = .07 - .25), (probability selection high certainty = .08, C.I. 90% = -.02 - .19), balanced content (probability selection low certainty = .67, C.I. 90% = .55 - .78), (probability selection high certainty = .68, C.I. 90% = .50 - .86), and counter-attitudinal information (probability selection low certainty = .17, C.I. 90% = .08 - .27), (probability selection high certainty = .24, C.I. 90% = .07 - .41) (see Figure 2).

Table 2. *Predicted probabilities of selecting information type about climate change by defensive and accuracy motivations (Study 2) (N = 258)*

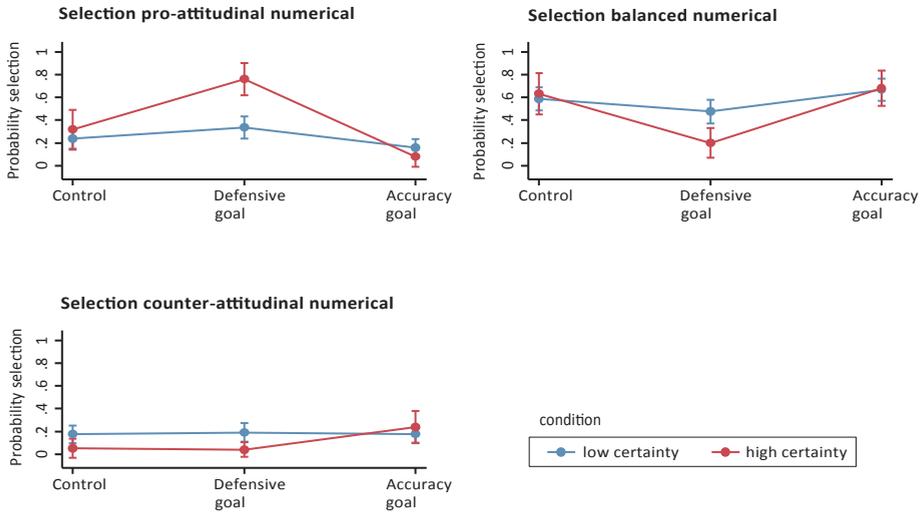|	Pro-Attitudinal			Balanced			Counter-Attitudinal		
	Margin	Z	90% C.I.	Margin	z	90% C.I.	Margin	z	90% C.I.
Control	.26(.05)***	5.31	.16 - .35	.60(.05)***	11.03	.49 - .70	.23(.06)***	2.38	.10 - .35
Defensive goal	.46(.05)***	8.56	.35 - .56	.40(.05)***	7.62	.30 - .50	.02(.02)	1.01	.01 - .06
Accuracy goal	.14(.04)**	3.73	.06 - .21	.67(.05)***	13.38	.57 - .77	.06(.04)	1.79	.01 - .14

Note. *** p< .001, ** p< .01, * p< .05. Entries on the left column are predicted probabilities of selecting an information type, with the standard errors in parenthesis. P values indicate whether predicted probabilities are significantly different from zero.

Figure 1. Predicted probabilities of selecting information type by motivation and attitude strength (Study 2) (N = 258)
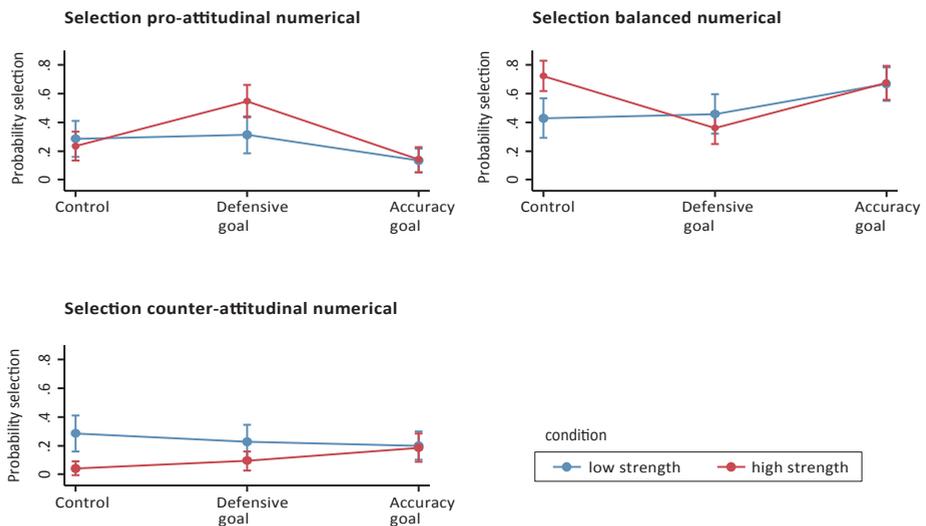
Note. The three graphs show predicted probabilities of selecting pro-attitudinal, balanced and counter-attitudinal numerical content by motivated reasoning manipulations and attitude strength. Confidence intervals set at 90%.

Figure 2. Predicted probabilities of selecting information type by motivation and attitude certainty (Study 2) (*N* = 258)

Note. The three graphs show predicted probabilities of selecting pro-attitudinal, balanced and counter-attitudinal numerical content by motivated reasoning manipulations and attitude certainty. Confidence intervals set at 90%.

Discussion

We used two experiments to examine how individual motivation, i.e., defensive and accuracy goals, and the attributes of issue attitudes, i.e., attitude strength and certainty, impact political information selection, in a selection environment that offers balanced content, in addition to pro- and counter-attitudinal information. In general, our findings were consistent in both studies, which examined motivated selection about healthcare reform and climate change.

Our first notable finding concerns selection among people motivated by defensive goals. As we expected, and consistent with prior research, a need to reinforce desired conclusions drives people to actively seek pro-attitudinal content. However, and in our view very importantly, we also found that an equal number of people preferred balanced information. These individuals may be drawn to balanced messages for two reasons. First, they experience pleasure from refuting and improving their resistance to persuasion

from counter-attitudinal arguments (see Taber et al., 2009; Taber & Lodge, 2006; Tormala & Petty, 2004). Second, unlike counter-attitudinal information, balanced information gives them also pro-attitudinal arguments to bolster their desired conclusions.

Our second notable finding involves information selection among individuals motivated to reach accurate conclusions. Our results showed that accuracy driven people chose more balanced information than pro- and counter-attitudinal. This finding is in line with previous research showing these individuals engage less in selective exposure (Fischer & Greitemeyer, 2010; Fischer et al., 2008; Hart et al., 2009). In contrast, it does not support a perspective that accuracy motivated people may prefer pro-attitudinal information because they perceive it more credible (e.g., Metzge et al., 2015). Most importantly, our finding suggests that accuracy motivated people seek exposure to both like-minded and cross-cutting perspectives, in order to reach a more thorough understanding of complex sociopolitical issues. Our third notable findings also showed that different goals lead to distinct preferences for political information. A defensive goal is the strongest driver of selective exposure, whereas an accuracy goal drives a preference for diverse perspectives.

However, our findings regarding selection patterns among accuracy motivated people should be interpreted with caution because, in both studies, accuracy motivated and control participants made similar information choices. This similarity can be explained in several ways. First, although some have theorized that defensive goals are the automatic and dominating motivation people use to reason about politics (e.g., Taber & Lodge, 2006; Taber & Lodge, 2012), other research has suggested that accuracy goals could be stronger for certain individuals and in different situations (see Leeper & Slothuus, 2014). This may have been the case in our study, as our sample may have been more sensitive to demand effects to appear unbiased (see Mullinix et al., 2015).

Second, another explanation is that our accuracy goal manipulation was not completely effective, as has occurred in prior research (Pelham & Neter, 1995). After all, in both studies, the control and accuracy goal groups did not differ significantly on their self-reported motivation to be accurate. However, this lack of significant difference may or may not be problematic for several reasons. First, we found clear differences in the manipulation checks between defensive and accuracy motivated participants. The latter group and the control participants might not have differed because at baseline these participants were already motivated to be accurate (see Leeper & Slothuus, 2014). Second, not only did we test the same manipulations and manipulations checks as other studies, but because of the aforementioned limitations of these studies, there is insufficient evidence to rule out the effectiveness of our own manipulations. Future

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research should focus on developing new manipulations that include factors which have been shown to activate accuracy goals, such as information utility, novelty and reflection on the reasoning process (e.g., Druckman, 2012; Fischer et al., 2008; Hart et al., 2009). Designing and testing manipulations and manipulations checks that are specifically focused on these factors can provide more precise estimates about the effectiveness of activating accuracy goals in experiments.

As a third explanation, our finding could be due to the type of issues we studied – i.e. climate change and health care reform. Because both issues are relatively complex and can be categorized as hard issues (see Carmines & Stimson, 1986), our participants may have wished to form accurate opinions to greater extent than would be the case for easy issues (e.g., abortion, same-sex marriage). In fact, a recent study on selective exposure to science information found that for two of the four topics, participants were more likely to select counter-attitudinal messages than pro-attitudinal ones (Jang, 2014). And, although in another study people favored attitude-consistent science messages, they also spent considerable amount of time on science messages that challenged individual issue attitudes (Knobloch-Westerwick et al., 2015). Even though the health care reform tested in our study is not a science-related issue, it is similarly complex. Examining the influence of motivation on information selection about different issues is an important challenge for future research.

Our last noteworthy results regard the moderating role of attitude strength and certainty on motivated selection. Being motivated to reinforce desired conclusions, together with possessing strong and certain attitudes about socio-political issues, are the strongest drivers of pro-attitudinal selection. Whereas our findings about the moderating role of attitude strength confirm prior evidence (e.g., Holbrook, et al., 2005; Lodge & Taber, 2005; Taber & Lodge, 2006), the results for attitude certainty contradict other studies, which suggested that more certain people select less like-minded information (e.g., Hart et al., 2009). We speculate that, at least in the context of our study, certain people may have been convinced of their desired conclusions about an issue and, as such, were mostly interested in reinforcing what they previously believed. The relatively inconsistent findings in selective exposure literature underscore the need for future research, to closely examine attitude strength and certainty as separate issue-attributes that may differently influence motivated selection.

Lastly, attitude strength and certainty did not moderate selection among people motivated by accuracy goals. This finding suggests that having strong and certain attitudes is not necessary for citizens to want information that provides accurate and correct views about

an issue. However, as aforementioned, this finding could be limited to selection about hard issues. Perhaps strongly opinionated and certain individuals may be less interested in reaching correct conclusions when exposed to information about easy issues, because typically for these issues, people care more about reinforcing their prior point of view (see Carmines & Stimson, 1986). Examining motivated selection patterns between hard and easy issues is an important challenge for future research.

Our study has some limitations that should be considered when drawing conclusions about our findings. First, we argued that content selection patterns are primarily due to the activation of defensive and accuracy goals. However, other contextual factors may also affect selectivity – and perhaps even more strongly – than individual motivations. For example, selective exposure increases when people feel tired from a previous experimental task (Fischer, Greitemeyer & Frey, 2008), when they are cognitively distracted (Fischer, Fischer, Weisweiler & Frey, 2010) or threatened (Fischer, Kastenmuller et al., 2011) during a selection task. Furthermore, balanced selection increases when information is useful for anxious individuals to cope with a problem (Valentino et al., 2009). Further research is necessary to understand the extent to which activating defensive and accuracy goals in different contexts may strengthen or diminish their effects on content selection.

Second, participants in our design were given the opportunity to select a single article from three options, a selection task that is not often encountered in the "real world" of media choice. Had we had more options for participants to choose from, the results may have been different. For example, selective exposure to pro-attitudinal information increases when the number of articles available for selection is higher (Fischer et al., 2008). Therefore, future research should test the amount of available choices as a moderator of motivated selection.

Third, even though multi-item measures may have better psychometric properties than single-item measures, we used the latter because our focus was on individual issue attitudes and their attributes, as it has been done in previous research (e.g., Knoblock-Westerwick, et al., 2015; Knoblock-Westerwick & Meng, 2009). Fourth, it is possible that observed selection patterns were partially due to specificities of our sample. Mechanical Turk workers are disproportionally liberal (see Berinsky et al., 2012), and prior evidence has shown they are less avoidant of counter-attitudinal content than conservatives (Garret & Stroud, 2009). However, the prior study also showed that neither partisan group is more likely to prefer pro-attitudinal over balanced information. Still, our study should be replicated to test whether a more diverse sample may behave differently.

Despite these limitations, our findings have theoretical and methodological implications. First, our results support the argument that selective exposure to political information is most prevalent among citizens who are motivated to reinforce desired conclusions and who hold strong and certain issue attitudes. Second, when people are motivated to reach a correct conclusion, they engage less in selective exposure and, instead, seek a direct contrast of diverse perspectives, most readily available in balanced content. Interestingly, whether people have strong and certain opinions does not matter when they are motivated by an accuracy goal.

Third, we demonstrate that both accuracy and defensive motivated individuals could select the same type of information, but for different reasons. On the one hand, some defensive motivated people may seek balanced content to refute counter-attitudinal views and bolster their desired conclusions. On the other hand, a balanced information environment can make it easier for accuracy motivated individuals to arrive at a correct conclusion (see Leeper & Slothuus, 2014). Drawing on motivated reasoning theory, future research should examine whether the processing of balanced messages differs between defensive and accuracy motivated people. Fourth, our results strengthen the methodological argument that future studies should include balanced content in their designs, to reproduce how people choose information in the real world of media exposure.

To conclude, both defensive and accuracy motivations are valuable in a democratic system. On the one hand, defensive motivated selection may be necessary for citizens to hold stable and coherent opinions (see Kruglanski & Boyatzi, 2012), which are needed for active participation in the political system. On the other hand, accuracy driven selection may help citizens correct their own partisan distortions (Prior et al., 2013), desirable if people are expected to be competent, reflective, and open-minded (see Druckman, 2012). Because, in our study, both defensive and accuracy motivated participants chose balanced content, news media may contribute to bringing out the best of motivations by offering balanced news coverage. In turn, this may encourage people to become ideal citizens (see Mill, 1860), namely, those who form stable preferences by seeking diverse perspectives to correct their own opinions.

Footnotes

[1] Although attitude strength and certainty have been associated with other issue attributes as an overall dimension of involvement (e.g., Petty & Krosnick, 1995), evidence has shown they are distinct psychological constructs with different causes and consequences. Therefore, they should be studied separately (see Visser, Bizer & Krosnick, 2006 for a review).

[2] We adopt the definition that motivated reasoning does not imply biased reasoning. Instead, it can assume many forms, depending on the particular goals people pursue, and how these goals influence people's reasoning strategies (see Kunda, 1990). Furthermore, we consider *goal* and *motivation* as conceptual synonyms (see Leeper & Slothuus, 2014).

[3] Our stimulus material contained statistical information. We replicated both studies using a different set of texts with narrative information. The results were the same.

[4] Although our experimental design may raise ecological validity issues, our approach is a standard way of addressing selective exposure (e.g., Feldman et al., 2013; Garret, 2009; Garret & Stroud, 2014; Levendusky, 2013).

[5] The results of the hypotheses testing in both studies did not differ substantially when we recoded issue attitudes in different ways.

[6] We measured reading time of selected texts as another operationalization of selective exposure. The differences between conditions were non-significant in both studies.

[7] Our sample in experiment 2 consisted of 48% males and 52% females, with an average age of 34.3 years (SD = 9.90). Across education attainment, 16% had a high school degree or less, 26% some college but no degree, 12% had an Associate degree, 37% a Bachelor's degree, 8% a Master's degree, and 1% had a Doctorate or professional degree. Compared to the U.S. population, our sample was similar in terms of gender (see U.S. Census Bureau, 2010b), but younger and more educated (see U.S Census Bureau, 2010b). Even though we did not collect demographic data in study 1, the distribution of the demographics of study 2 was similar to the data of other Mechanical Turk samples (e.g., Goodman, Cryder & Cheema, 2013; Paolacci et al., 2010). Furthermore, study 1 and study 2 were carried out in a difference of two months. Therefore, we do not expect a substantive variation in the composition of samples between studies.

[8] The 7-point measure of issue attitudes was used to operationalize selective exposure. Therefore, we could not use it to assess attitude extremity as an additional moderator.

[9] We combined attitude strength and certainty. The results of study 2 were the same in direction and similar in magnitude, but the differences between groups were non- significant, compared to the results using separate moderators (see full results in Appendix E).