RESPONSES TO ATTITUDE-CONGRUENT AND ATTITUDE-INCONGRUENT
INFORMATION

Resistance to Persuasion and Memory for Attitude-Congruent and Attitude-Incongruent

Information in Political Advertisements

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Abstract

Across three studies, we tested competing hypotheses about how individual differences in social vigilantism and need for cognition relate to levels of attitude change, intentions to resist attitude change, and memory for political advertisements concerning a highly polarized issue. In Experiments 1 and 2, we examined participants' intentions to use resistance strategies to preserve their pre-existing attitudes about abortion, by either engaging against opposing opinions or disengaging from them. In Experiment 3, we examined participants' memory for information about both sides of the controversy presented in political advertisements. Our results suggest higher levels of social vigilantism are related to greater intentions to counterargue and better memory for attitude incongruent information. These findings extend our understanding of individual differences in how people process and respond to controversial social and political discourse.

Keywords: social vigilantism, resistance to persuasion, attitudes, memory, political advertisements

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Information in Political Advertisements

No fathers or mothers think their own children ugly; and this self-deceit is yet stronger with respect to the offspring of the mind.

—Miguel de Cervantes

Nothing limits intelligence more than ignorance; nothing fosters ignorance more than one's own opinions; nothing strengthens opinions more than refusing to look at reality.

— Sheri S. Tepper

When we open up our hearts and our minds to those who may not think precisely like we do, or believe precisely what we believe—that's when we discover at least the possibility of common ground.

— Barrack Obama

Opposing opinions about political and social issues often provoke sharp and contentious debate. It seems impossible to escape confrontations with opponents when people voice their positions on political or social issues. But when confrontation occurs, people may decide to engage the opponent, investing attention and effort to debate, or they may disengage from the opponent, diverting attention and conserving effort. We examined these decisions by investigating individual differences related to how people respond to attempted persuasion. Specifically, when faced with highly controversial social issues in political advertisements, do people engage in active resistance to attitude challenges, or selective exposure away from them? Additionally, does this affect their memory for pro- versus attitude-incongruent arguments?

Social psychologists have examined individual difference factors that influence how receptive versus resistant people are to attitude change attempts for decades (for reviews, see

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Crano & Crislin, 2006; Petty & Wegner, 1998). Stronger attitudes are harder to change (Jacks & Cameron, 2003; Jacks & Devine, 2000; Eagly & Chaiken, 1995; Krosnick et al., 1993; Krosnick & Petty, 1995; Pomerantz et al., 1995; Saucier et al., 2014; Skitka et al., 2005; Visser et al., 2003; Visser et al., 2006; Zuwerink & Devine, 1996), and challenges to strongly held attitudes provoke people to resist these attempts either by engaging with the persuasion attempt or by disengaging from it. Additionally, the strategies people use to resist such attempts vary with their individual differences in need for cognition (NFC) (Cacioppo & Petty, 1982; 1986) and social vigilantism (SV) (Saucier & Webster, 2010).

Need for Cognition

People higher in NFC are less likely to be persuaded by peripheral cues, such as the number of arguments (regardless of their quality) or the physical attractiveness of speakers (for a review, see Cacioppo et al., 1996), and prefer, are more receptive to, and have a better memory for cognitive versus emotional appeals (Haddock et al., 2008). Importantly, higher levels of NFC related to greater resistance to attitude change attempts (Huagtvedt & Petty, 1992). Thus, people higher in NFC may be more likely to engage the information presented about an issue, more likely to pay attention to it, and be more like to recall it later. Interestingly, this tendency to engage information may occur regardless of whether the information supports or opposes people's pre-existing attitudes about an issue. However, SV may compel different responses to attitude-congruent versus attitude-incongruent information.

Social Vigilantism

Social vigilantism is the tendency for people to believe their own attitudes are superior to others' attitudes, to resist persuasion attempts and attitude challenges, and to attempt to impress their own attitudes on others (Saucier & Webster, 2010; Saucier et al., 2017). Higher levels of

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SV are related to greater resistance to persuasion. Specifically, people higher in SV have more extreme attitudes and show greater use of various resistance strategies—particularly counter-arguing—in response to attitude challenges about a range of socially controversial topics (Maki & Raimi, 2007; O’Dea et al., 2018; Raimi & Leary, 2014; Saucier & Webster, 2010; Saucier et al., 2014). Counter-arguing involves directly engaging and trying to defeat an opposing argument, and is a commonly used and effective technique for resisting persuasion (Cameron et al., 2002; Jacks & Cameron, 2003). SV has consistently related to counter-arguing, but has been inconsistently related to using passive strategies to resist persuasion, with some studies finding that SV is positively correlated with selective exposure (O’Dea et al., 2018), but others not (Saucier et al., 2014).

Strategies to Resist Persuasion

When people are motivated to resist persuasion, and preserve their pre-existing attitudes, they may use various strategies to actively or passively counter the specific persuasion attempt or attitude challenge. While people may use several resistance strategies to resist persuasion (see Jacks & Cameron, 2003; Saucier et al., 2014), we focus on two: the above-discussed direct strategy of counter-arguing, in which people attack the opposing information, and the passive strategy of selective exposure, in which people withdraw from and avoid the opposing information. Importantly, these two strategies involve the binary choice to either engage with or avoid opposing information, which has important implications for later memory for the persuasive material.

Linking Strategy Use to Subsequent Memory

Because of the likely differences in cognitive processing engendered by counter-arguing versus selective exposure strategies, there are strong reasons to hypothesize links between the

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strategies people report using in response to pro- versus attitude-incongruent information and their subsequent memory for it. First, we remember what we attend to in our environment (Hollingworth & Henderson, 2002; Loftus, 1972; Pertzov et al., 2009; Tatler et al., 2005; Zelinsky & Loschky, 2005). Counter-arguing and selective exposure strategies likely differ in attention, thus also in memory. Specifically, in order to counter-argue, one must attend to and process information, thus encoding memory for it. Indeed, counter-arguing is a highly cognitively demanding task that should produce deeper level processing of information than if one agreed with it. Thus, people who counter-argue attitude-incongruent information, and therefore engage in deep-level processing of it, should show a level of processing effect (Baddeley & Hitch, 2017; Craik & Lockhart, 1972) in which they have better memory for the attitude-incongruent than attitude-congruent information.

Selective exposure and memory. Theories of selective exposure argue people will avoid or tune out attitude-incongruent information. Subsequently, memory experiments found people tend to have worse memory for attitude-incongruent information (Eagly et al., 1999). However, there are several important considerations concerning these selective exposure memory effects. Meta-analyses show that selective exposure effects on memory across studies are fairly weak (Eagly et al., 1999). However, these effects become stronger when individuals' attitude strength is included as a moderating variable, with selective exposure effects on memory being more common for people with weakly held, but highly partisan attitudes (Eagly et al., 2000). Conversely, people with strongly held beliefs tend not to show selective exposure effects, but rather use resistance strategies that increase their engagement with attitude-incongruent information. Critically, although people clearly engage in selective exposure, effects on memory are not entirely dependent on attitude congruence. Instead, moderating variables such as attitude

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strength, propensity to counter-argue, and belief superiority are also important for understanding how people engage attitude-incongruent information (Brannon et al., 2007; Albarracín & Mitchell, 2004).

The current research provides an important extension of the selective exposure literature by incorporating cognitive constructs of attention and depth of processing into hypotheses linking strategy use with memory. In developing our hypotheses, we take into account research on the effects of specific types of stimuli on attention, which could then affect memory. Recent work on visual attention to videos shows that highly produced films and ads create a phenomenon known as attentional synchrony (Dorr et al., 2010; Smith & Mital, 2013), in which people show high convergence in where they look in videos on a moment-to-moment basis. Importantly, attentional synchrony is stronger for videos in which more professional film-making techniques have been used (Dorr et al., 2010), for example, focusing the camera on one subject at a time, using close-ups, and constructing the video from a sequence of relatively short duration shots (i.e., several seconds each). Perhaps because of such attentional synchrony created by film-making techniques, top-down effects on visual attention in these videos appear to be very weak, which has been termed the tyranny of film (Hutson et al., 2017; Loschky et al., 2015). Thus, an alternative competing hypothesis is the use of videos will produce null effects for the individual difference-based resistance strategies on memory, due to the tyranny of film.

Unique Contributions of the Current Research

The current research extends selective exposure and memory research in several important ways. First, we integrate attitude, persuasion, and memory research to test how self-reported behavior aligns with memory performance. Second, we use the individual difference variables of SV and NFC as moderators of selective exposure effects. Third, we integrate

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research on the top-down effects of attitudes and personality with that on the bottom-up effects of video stimuli in developing our hypotheses regarding self-reported resistance strategy use and subsequent memory.

Overview of the Current Experiments

Across three experiments, participants viewed a series of political ads and completed attitude and persuasion questionnaires (Experiments 1 & 2), or memory measures (Experiment 3). We used both controversial and non-controversial ads to manipulate attitude congruence (congruent, incongruent, and neutral), and the topic of abortion because: 1) it was a familiar topic to the participant pool used, 2) people typically have strong attitudes about abortion, and 3) pilot studies showed a bimodal distribution with a fairly even proportion of participants with highly pro-life versus pro-choice attitudes.

In Experiments 1 and 2, participants viewed either a pro-choice or a pro-life ad and reported their intentions to engage in counter-arguing and selective exposure. In Experiment 3, participants watched the videos and completed memory tests about the content of the videos. We examined how NFC and SV were related to a) participants' intentions to respond with counter-arguing or selective exposure (Experiments 1 & 2), and b) participants' memory (Experiment 3).

Experiment 1

In Experiment 1, we tested two hypotheses: the social vigilantism hypothesis and the need for cognition hypothesis. Both hypotheses predict people higher in that individual difference variable, either SV or NFC, should report stronger intentions to engage in counter-arguing and weaker intentions to engage in selective exposure in response to attitude-*incongruent* political ads about the issue of abortion. We also included an attitude-*congruent* condition to test whether these patterns of relationships extended to situations where the message

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people receive is *congruent* with their attitudes about abortion, or whether these patterns of relationships are unique to situations where the message people receive is *incongruent* with their attitudes.

Method

Participants. We recruited college students from introductory psychology courses at Kansas State University in exchange for research credit. Our sample included 79 men and 153 women, ages 18 to 35 ($M = 19.60$, $SD = 2.30$), most of whom were White (79.9%).

Materials. We used 2 videos in Experiment 1 (pro-life ad and pro-choice ad); <https://www.youtube.com/playlist?list=PLChGnR0Bh6QWt2mxpwKau3rXk2kk1y1Qx>). The abortion ads, including the arguments presented, were developed specifically for this research. (See supplementary materials for the results of our pilot studies used to create these materials.)

Abortion ads. We created the pro-life (59 seconds long) and pro-choice abortion (1 minute and 7 seconds) ads using matching formats. The ads used intertitles to present the arguments, and had imagery that by itself would be neutral, but when paired with the arguments would strengthen the arguments being presented. We created intertitles brief enough to be read quickly in short videos, with parallel arguments for each ad (Table 1).

The videos share a visual theme that focused on the hands of different people. The pro-Life video mostly showed the hands of children, doing things like playing with Play-Doh or holding fruit. The pro-choice video focused on the hands of adult women, doing things like searching on a computer or holding their face. We designed the pro-life ad to show the positives of being a child, and the pro-choice to show the difficulty of deciding to have an abortion.

To immediately inform participants about the position each ad would take, each ad started with an intertitle stating the ad was paid for by either a pro-life or pro-choice group. At

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the end of each video, a final intertitle told viewers to either “Vote for Choice” (pro-choice video) or to “Choose Life” (pro-life video). The videos had instrumental background music. The pro-choice intertitle texts were slightly longer than the pro-life intertitle texts. The pro-choice video was 8 seconds longer to give participants time to read the ad’s intertitles.

Table 1. *Arguments for Abortion Ads*

	Pro-Choice	Pro-Life
1	Women today have the right to accomplish anything	Innocent lives should be protected
2	Women of all ages choose to have an abortion	Abortion is irresponsible and unsafe
3	There are many reasons for choosing an abortion	Life begins at conception
4	The rights of the fetus should not outweigh a woman’s rights	Life should be given a chance

Procedure and measures. Participants completed all materials online in the following order: 1) informed consent, 2) demographic information, 3) abortion attitudes pretest, 4) SV, 5) NFC, 6) randomly assigned pro-choice or pro-life video ad, 7) resistance strategies, 8) abortion attitudes posttest. After completing the study, participants were thanked and debriefed.

Abortion attitudes. We measured participants’ attitudes about abortion using five items modified from Brannon, Tagler, and Eagly, (2007). Participants rated “*The availability of abortion as a legal medical procedure is*” on five 9-point semantic differential scales: good–bad, foolish–wise, unnecessary–necessary, harmful–beneficial, oppose it–favor it. We averaged these items together to create a composite score where higher scores represented more pro-choice attitudes (pretest $M = 5.17$, $SD = 2.72$, $\alpha = .98$; posttest $M = 5.22$, $SD = 2.78$, $\alpha = .98$). Both the

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pretest and posttest distributions were multimodal, with distinct peaks at one and nine, and a smaller peak near the midpoint of the scale, demonstrating many participants had extreme attitudes about abortion.

Social vigilantism. We used the SV scale (Saucier & Webster, 2010) to measure individual differences in the extent to which people generally think their beliefs are superior to others' beliefs and have a desire to impress their beliefs onto others. Participants responded to the items (e.g., "*I feel as if it is my duty to enlighten other people*") on 1 (*Strongly Agree*) to 9 (*Strongly Disagree*) scales. We averaged the 14 items to create composite scores where higher values represented higher levels of SV ($M = 5.02$, $SD = 1.10$, $\alpha = .85$).

Need for cognition. We measured people's preference for, and enjoyment of, deliberate thinking using the NFC scale (Cacioppo & Petty, 1982). Participants responded to the items (e.g., "*I would prefer complex to simple problems*") on 1 (*Strongly Agree*) to 9 (*Strongly Disagree*) scales. We averaged the 17 items (reverse-scoring appropriate items) to create composite scores where higher values represented higher levels of NFC ($M = 5.46$, $SD = 0.92$, $\alpha = .84$).

Resistance strategies. To measure participants' intentions to resist persuasion in response to viewing the pro-choice or pro-life video, we used items developed by Jacks and Cameron (2003) and Saucier et al. (2014) to measure eight different resistance strategies (e.g., counter-arguing, attitude bolstering). Participants responded to these items with the instructions to "*rate how likely you are to respond in this way to the person who showed you the video.*" While we were only interested in counter-arguing and selective exposure, we included the other items as filler material to distract participants from the nature of our study. To reduce the number of variables in our analyses, we averaged the two counter-arguing items (e.g., *Respond by thinking*

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about or verbalizing why the person's arguments are faulty) to create a composite score ($M = 4.48$, $SD = 2.05$, $\alpha = .60$), and the two selective exposure items (e.g., *Respond by tuning-out the arguments that contradict my position*) to create a composite score ($M = 3.02$, $SD = 1.87$, $\alpha = .75$).

Results

We were interested in the behavior of participants with more extreme attitudes about abortion, excluding participants who scored in the middle range of the scale (3.5 to 6.49) on the pretest of abortion attitudes¹. For the remaining 153 participants, we coded whether the participants' abortion attitude was pro-life (scores 1 to 3.49, $n = 74$, 34 viewed the pro-life video and 40 viewed the pro-choice video) or pro-choice (scores 6.5 to 9, $n = 79$, 38 viewed the pro-life video and 41 viewed the pro-choice video). We created a variable to indicate whether the video was congruent (coded 1) or incongruent (coded 0) with participants' abortion attitudes.

Attitude Change. We first tested whether participants' attitudes about abortion changed as a function of whether they viewed the pro-life or pro-choice video. The results of a 2 (pretest/posttest abortion attitude) $\times$ 2 (pro-life/pro-choice video) mixed factorial ANOVA with repeated measures on the first factor showed no evidence of attitude change: abortion attitude $F(1, 151) = 0.65$, $p = .42$; abortion attitude $\times$ video condition interaction $F(1, 151) = 0.50$, $p = .48$. Given we chose participants with the most extreme abortion attitudes, the lack of attitude change after watching a single ad was not surprising.

Resistance Strategies. We next tested how viewing an attitude-congruent or attitude-incongruent persuasion attempt affected intentions to engage in counter-arguing or selective

¹ On an ordinal scale of 1-9, we would have removed 4-6. However, because the scores were averaged, they were rational numbers rather than whole numbers. We therefore removed participants having the range of values between those that would round up to 4 and those that would round down to 6.

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exposure, and how those intentions were moderated by SV or NFC. We entered counter-arguing and selective exposure as criterion variables in separate regression models with attitude congruence, SV, and their interaction as predictors. In additional models, we entered attitude congruence, NFC, and their interaction as predictors. We present these analyses in Table 2.

In sum, the video's congruence with participants' abortion attitudes affected their intentions to counter-argue, such that participants intended to counter-argue the attitude-incongruent message more than the pro-attitudinal message (Congruent: $M = 4.07$, $SD = 1.90$; Incongruent: $M = 5.35$, $SD = 2.08$). NFC was unrelated to counter-arguing intentions and did not interact with the video condition. Consistent with the social vigilantism hypothesis, SV was positively related to counter-arguing, and this relationship was not significantly stronger in the incongruent condition.

Selective exposure intentions did not significantly differ by condition (Congruent: $M = 2.88$, $SD = 1.88$; Incongruent: $M = 3.05$, $SD = 1.73$). As expected, NFC was negatively related to selective exposure (but only in the Incongruent condition, even though the interaction between NFC and attitude congruence was not significant). Inconsistent with the social vigilantism hypothesis, SV was not significantly related to selective exposure and did not interact with the attitude congruence of the video.

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Table 2. *Effects of Attitude Congruence, SV, and NFC on Resistance Strategies (Experiment 1)*

	Main Effects and Interactions	Simple Slopes	
		Congruent	Incongruent
Counter-arguing	<i>b</i> 95% [LL, UL]	<i>b</i> 95% [LL, UL]	<i>b</i> 95% [LL, UL]
Congruent – Incongruent	-1.23** [-1.84, -0.62]		
SV		0.44* [0.04, 0.83]	0.75** [0.33, 1.16]
Congruence x SV	-0.31 [-0.88, 0.26]		
Model summary $R^2 = .19$, $F(3, 149) = 11.55$, $p < .001$			
Congruent – Incongruent	-1.23** [-1.93, -0.64]		
NFC		-0.02 [-0.54, 0.51]	-0.06 [-0.52, 0.39]
Congruence x NFC	0.04 [-0.65, 0.74]		
Model summary $R^2 = .09$, $F(3, 149) = 5.15$, $p = .002$			
Selective Exposure			
Congruent – Incongruent	-0.16 [-0.73, -0.42]		
SV		0.23 [-0.14, 0.61]	0.13 [-0.27, 0.52]
Congruence x SV	0.11 [-0.44, 0.65]		
Model summary $R^2 = .02$, $F(3, 149) = 0.77$, $p = .514$			
Congruent – Incongruent	-0.26 [-0.83, 0.31]		
NFC		-0.33 [-0.79, 0.13]	-0.56** [-0.96, -0.16]
Congruence x NFC	0.22 [-0.39, 0.84]		
Model summary $R^2 = .06$, $F(3, 149) = 3.34$, $p = .021$			

Note. Regression weights are unstandardized; variables were mean-centered for the interactions;

SV = Social Vigilantism, NFC = Need for Cognition, LL = lower limit of the confidence

interval, UL = upper limit of the confidence interval.

* $p < .05$, ** $p < .01$

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Discussion

Our findings were consistent with previous research showing a persuasion attempt incongruent with a strongly held attitude is unlikely to change that attitude and would likely elicit stronger intentions to counter-argue than a persuasion attempt congruent with that attitude. We also found partial support for our social vigilantism hypothesis – higher levels of SV were related to stronger intentions to counter-argue. However, SV did not moderate the effects of the attitude congruence of the persuasive message. Rather, our data suggest people's tendencies to argue and impress their beliefs on others may be an omnipresent goal, regardless of whether a message agrees or disagrees with their position on the issue.

Additionally, SV was not related to intentions to ignore either an attitude-incongruent or attitude-congruent message. Although we anticipated SV might be negatively related to avoidance behaviors and inattention to another's message, our data do not support this. We did find support for the hypothesis that people with greater NFC would be less likely to ignore attitude-incongruent information.

Overall, these data suggest individual differences in SV and NFC are important for understanding how people resist persuasion. The chronic motivation to influence others' attitudes appears to be related to intentions to counter-argue. Furthermore, dispositional tendencies for careful thought are also related to being less likely to ignore information relevant to a strongly held attitude.

Experiment 2

In Experiment 1, we measured abortion attitudes at the start of the study. Priming participants' attitudes about abortion may have affected how they responded to the items measuring intentions to counter-argue or ignore the persuasion attempt. Therefore, in Experiment

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2 we waited to measure participants' attitudes about abortion until the end of the study.

Additionally, we assessed the effects of attempted persuasion on resistance to persuasion, and the role of SV and NFC, in the context of an *uncontroversial* message. In Experiment 2, we used the same pro-choice and pro-life videos, but added a third condition in which our participants viewed a short video containing a relatively politically uncontroversial message: *Just because you do something differently, doesn't mean you are "disabled."* This allowed us to test whether the associations between SV and counter-arguing or NFC and selective exposure are specific to attitude-relevant persuasion attempts or whether they generalize to participants' responses to an attitude-neutral message.

Method

Participants. We recruited college students from introductory psychology courses at Kansas State University in exchange for research credit. Our sample included 102 men and 132 women, ages 18 to 28 ($M = 19.18$, $SD = 1.72$), most whom were White (81.4%).

Procedure and measures. We used the same procedure from Experiment 1, with the exception that participants only completed the abortion attitudes items at the end of the study. We also included a Non-controversial video condition in the form of a public service announcement to promote inclusivity and diversity. Visually, the ad is set on a series of steps, and people go up and down them in different and creative ways (e.g., dancing and crab walking). Composite variables for each of the measures were calculated as described in Experiment 1 (abortion attitudes $M = 5.24$, $SD = 2.80$, $\alpha = .99$; SV $M = 5.18$, $SD = 1.09$, $\alpha = .85$; NFC $M = 5.83$, $SD = 1.05$, $\alpha = .84$; counter-arguing $M = 4.40$, $SD = 1.99$, $\alpha = .63$; selective exposure $M = 3.12$, $SD = 1.91$, $\alpha = .81$). Again, the distribution of abortion attitudes was multimodal, with distinct peaks at one and nine, and a smaller peak near the midpoint of the scale.

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Results

As in Experiment 1, we excluded participants who scored in the middle range of the scale (3.5 to 6.49) on abortion attitudes, resulting in a sample of 160 participants. We coded participants' abortion attitudes as described in Study 1 (pro-life $n = 72$, 24 viewed the non-controversial video, 28 viewed the pro-life video, and 20 viewed the pro-choice video; pro-choice $n = 88$, 29 viewed the non-controversial video, 28 viewed the pro-life video, and 31 viewed the pro-choice video).

Resistance Strategies. We entered counter-arguing and selective exposure in separate regression models with the abortion attitude congruence of the video entered as dummy-coded aspects of the three video conditions (Congruent, Incongruent, or Neutral for the uncontroversial video), SV, and their interaction as predictors. In additional models, we entered attitude congruence, NFC, and their interaction as predictors. We present the results of these analyses in Table 3.

We replicated the finding from Experiment 1 that the attitude congruence of the persuasion attempt affected intentions to counter-argue (Congruent: $M = 3.83$, $SD = 2.18$; Incongruent: $M = 5.16$, $SD = 1.96$; Neutral: $M = 4.45$, $SD = 2.00$). Again, we found NFC was unrelated to counter-arguing and did not interact with attitude congruence. Likewise, as in Experiment 1, we found SV was positively related to counter-arguing, but it did not interact with attitude congruence.

For selective exposure, as expected, we found intentions to ignore the persuasion attempt were highest in the Incongruent condition ($M = 3.74$, $SD = 2.09$), followed by the Neutral condition ($M = 2.93$, $SD = 1.99$), and lowest the Congruent condition ($M = 2.37$, $SD = 1.58$). Again, we found NFC was negatively related to selective exposure only in the Incongruent

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condition, but the interaction between NFC and attitude congruence was not significant. SV was positively related to selective exposure only in the Neutral condition, but the interaction between SV and attitude congruence was also not significant.

Table 3. *Effects of Attitude Congruence, SV, and NFC on Resistance Strategies (Experiment 2)*

	Main Effects and Interactions	Simple Slopes		
		Congruent	Incongruent	Neutral
	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>
	95% [LL, UL]	95% [LL, UL]	95% [LL, UL]	95% [LL, UL]
Counter-arguing				
Congruent – Incongruent	-1.47** [-2.21, -0.73]			
Neutral – Congruent	0.60 [-0.13, 1.34]			
Neutral – Incongruent	-0.87* [-1.62, -0.11]			
SV		0.59* [0.15, 1.02]	0.54* [0.06, 1.01]	0.74* [0.30, 1.19]
Congruent – Incongruent SV Slope Diff.	0.05 [-0.59, 0.70]			
Neutral – Congruent SV Slope Diff.	0.16 [-0.47, 0.78]			
Neutral – Incongruent SV Slope Diff.	0.21 [-0.44, 0.86]			
Interaction $\Delta R^2 = .002$, $F(2, 154) = 0.22$, $p = .801$				
Model summary $R^2 = .19$, $F(5, 154) = 7.11$, $p < .001$				
Congruent – Incongruent	1.42** [-2.22, -0.63]			
Neutral – Congruent	0.58 [-0.20, 1.36]			
Neutral – Incongruent	-0.84* [-1.65, -0.04]			
NFC		-0.10 [-0.60, 0.39]	0.52 [-0.09, 1.14]	0.27 [-0.20, 0.75]
Congruent – Incongruent NFC Slope Diff.	-0.62 [-1.41, 0.16]			
Neutral – Congruent SV Slope Diff.	0.38 [-0.31, 1.06]			
Neutral – Incongruent NFC Slope Diff.	-0.25 [-1.03, 0.53]			
Interaction $\Delta R^2 = .02$, $F(2, 154) = 1.32$, $p = .272$				
Model summary $R^2 = .09$, $F(5, 154) = 3.09$, $p = .011$				

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Selective Exposure				
Congruent – Incongruent	-1.47** [-2.18, -0.76]			
Neutral – Congruent	0.54 [-0.16, 1.24]			
Neutral – Incongruent	-0.93* [-1.65, -0.21]			
SV		0.24 [-0.18, 0.61]	0.42 [-0.03, 0.87]	0.55* [0.12, 0.97]
Congruent – Incongruent SV Slope Diff.	-0.18 [-0.80, 0.43]			
Neutral – Congruent SV Slope Diff.	0.31 [-0.28, 0.90]			
Neutral – Incongruent SV Slope Diff.	0.13 [-0.49, 0.75]			
Interaction $\Delta R^2 = .01$, $F(2, 154) = 0.53$, $p = .588$				
Model summary $R^2 = .14$, $F(5, 154) = 5.19$, $p < .001$				
Congruent – Incongruent	-1.22** [-1.94, -0.50]			
Neutral – Congruent	0.56 [-0.15, 1.27]			
Neutral – Incongruent	-0.65 [-1.39, 0.08]			
NFC		-0.31 [-0.76, 0.14]	-0.69* [-1.25, -0.13]	-0.08 [-0.51, 0.36]
Congruent – Incongruent NFC Slope Diff.	0.38 [-0.33, 1.10]			
Neutral – Congruent SV Slope Diff.	0.23 [-0.39, 0.86]			
Neutral – Incongruent NFC Slope Diff.	0.62 [-0.09, 1.32]			
Interaction $\Delta R^2 = .002$, $F(2, 154) = 1.47$, $p = .232$				
Model summary $R^2 = .13$, $F(5, 154) = 4.49$, $p < .001$				

Note. Regression weights are unstandardized; variables were mean-centered for the interactions;

SV = Social Vigilantism, NFC = Need for Cognition.

* $p < .05$, ** $p < .01$

Discussion

In Experiment 2, we replicated our findings of partial support for our social vigilantism hypothesis: once again, higher levels of SV were found to be related to stronger intentions to

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counter-argue. We additionally replicated the finding that the relationship between SV and counter-arguing was not moderated by the attitude congruence of the persuasive message.

Replicating this finding gives us stronger confidence in concluding people who perceive their beliefs are superior and try to impress them onto others, may feel a greater need to argue in response to persuasion attempts—regardless of whether that attempt is congruent or incongruent with a strongly-held attitude.

Once again, SV was not related to intentions to ignore either an attitude-incongruent or an attitude-congruent message. However, interestingly, SV was positively related to ignoring an attitude-neutral message. This finding is interesting because it suggests people higher in SV may not be as interested in messages about an uncontroversial issue. Yet, SV was positively related to intentions to counter-argue against the uncontroversial issue. In combination, these findings suggest, although people higher in SV may intend to counter-argue regardless of the topic, they may also be more likely to ignore the content of messages that are uncontroversial.

Experiment 3

Experiment 3 tested if the reported behaviors in Experiments 1 and 2 are related to participants' subsequent memory. Based on the resistance strategy results, people high in SV should be more engaged with all material, which would likely result in better memory for all video material, possibly except for non-controversial information. Memory effects could potentially support any of the four competing hypotheses stated below. The two main potential drivers of memory differences are viewers attending to different information in the video (Hollingworth & Henderson, 2002; Loftus, 1972; Pertzov et al., 2009; Tatler et al., 2005; Zelinsky & Loschky, 2005), or engaging in shallower or deeper levels of processing of the video (Baddeley & Hitch, 2017; Craik & Lockhart, 1972).

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Memory Experiment Hypotheses

Tyranny of Film. The tyranny of film hypothesis predicts, due to the control filmmakers have over what information is presented, participants will have similar memory for the ads regardless of their attitudes, SV, or NFC.

Selective Exposure. The selective exposure hypothesis predicts participants will have better memory for attitude-congruent versus attitude-incongruent information.

Social Vigilantism. The social vigilantism hypothesis predicts participants lower in SV will engage in selective exposure for attitude-incongruent information, resulting in effects similar to, but in the opposite direction of, the selective exposure hypothesis. Specifically, when participants are higher in SV, they will be more likely to engage in processing attitude *incongruent* information, which would result in better memory for it.

Need for Cognition. The need for cognition hypothesis predicts, regardless of attitude-congruence and SV, participants higher in NFC will engage more with, and have better memory for, the videos.

Method

Participants

A total of 118 participants recruited from Introduction to Psychology courses at Kansas State University were in the experiment (ages 18-41 [$M = 19.8$, $SD = 3.1$], 57% female, 86% were White).

Individual Difference Scores. Participants completed the same individual difference measures for both memory experiments as participants in Experiments 1 and 2 (abortion attitudes $M = 4.89$, $SD = 2.82$; SV $M = 4.98$, $SD = 1.22$; NFC $M = 5.28$, $SD = 1.06$). Most participants identified as being either strongly pro-life or pro-choice, with a smaller group of participants

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indicating they had no strong attitude one way or the other. There were roughly an equal number of participants identifying as pro-life and pro-choice.

Stimuli

Videos. Participants viewed the same non-controversial and abortion ads as in Experiments 1 and 2.

Memory Test Items. The memory test stimuli were developed to measure both recall and recognition memory, and visual and verbal memory. Free recall memory was of interest, because previous work has shown it may be more susceptible to top-down effects than recognition memory (Mandler, 2008). For free recall memory, participants were given prompts to recall as much verbal and then visual information as possible, as if they were explaining the video to a friend who had not seen it.

Participants completed 3 types of recognition memory items: argument recognition, visual multiple choice, and visual recognition. Argument recognition memory items presented participants with an argument, and they indicated whether it was worded exactly as in the ad they saw, or if it was reworded in some way (e.g., synonyms were used and/or verb tense was changed). Visual multiple-choice questions had a stem asking about a visual component of an ad (e.g., What fruit was shown in the ad?). Each question had four answer options. Finally, Visual Recognition used video stills taken from the ad. For these items, participants indicated whether the image was presented as it originally was in the ad, or if it was mirror reversed (i.e., left-right reversed). All items were scored as correct (1) or incorrect (0).

Procedure

Participants watched all three ads (order randomized). After the videos, participants responded to the memory questions. The questions were organized into blocks based on their

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type: free recall, argument recognition, visual multiple choice, and visual recognition. The question blocks were presented in this order for all participants. visual multiple-choice questions were presented before the visual recognition memory items to ensure that seeing the visual recognition items could not influence responses to the visual multiple-choice questions.

Analyses

We ran multilevel logistic regressions separately for each video type (non-controversial & abortion ads), as well as for the different types of memory items. The random effects structure for all analyses included the participant and memory item. This random effects structure was determined to be best based on AIC values when compared to a random effects structure that only included the participant (Burnham & Anderson, 2004). To determine the best fixed effects (predictor) structure most likely to generalize at the population level, we used a model testing procedure, and selected the best model using AIC values to reduce the likelihood of Type I errors.

Signal Detection Analyses. The Argument and Visual Recognition memory items used an Old/New format, and therefore we used signal detection analyses. We conducted the signal detection analyses using logistic multilevel models with the probit link function (DeCarlo, 1998; Wright et al., 2009).

There are a few keys to interpreting signal detection analyses done with multilevel models. First, the intercept of the model is the overall bias (i.e., c = decision *criterion*, do participants disproportionately respond “Old” or “New”?). Second, the first predictor in the model is always whether the memory item was an “Old” or “New” item, and this is the overall sensitivity (i.e., d' , ability to discriminate between “Old” and “New” items). Effects of predictors

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on bias are indicated by adjustments to the intercept. Effects of the predictors on sensitivity are indicated by their interaction with “Old/New.”

Free Recall Scoring. Unfortunately, participant free recall responses were very short ($M = 19.4$ words; $SD = 15.2$ words), and some participants indicated they did not remember the video. This resulted in a floor effect, and as such the free recall data is not presented here.

Results

Results Overview

Overall, Experiment 3 showed support for the tyranny of film and social vigilantism hypotheses, as well as some general top-down effects independent of attitude congruence that were not hypothesized a priori. Interestingly, many of these effects were found across measures and videos. Also, in contrast to Experiments 1 and 2, we found no effects of NFC on any of the memory measures, thus providing no support for the need for cognition hypothesis in terms of memory.

Non-Controversial Ad

Argument Recognition Memory. The signal detection model tests showed the best model only included attitude and SV as predictors (i.e., the simplest model). As expected, given the non-controversial nature of the ad, neither of these influenced sensitivity or bias (all p 's $> .05$). In other words, the model indicated individual differences did not significantly predict argument recognition memory for the non-controversial ad. Overall, for the non-controversial video argument recognition items, participants were not sensitive ($d' = .16$, $z = .90$, $p = .368$), but they showed a strong “Old” bias ($c = .62$, $z = 6.99$, $p < .001$). Thus, participants did well for unchanged “Old” items, but were well below chance for reworded “New” memory items.

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Visual Recognition Memory. Surprisingly, given the non-controversial nature of the ad, the best model included the interaction of attitude and SV with recognition memory item type (“Old/Mirror reversed”). Participants were sensitive to the visual recognition memory items, and pro-choice participants showed higher overall sensitivity (Table 4). Interestingly, however, the interaction of attitude and SV influenced sensitivity. As shown in Figure 1A, the interaction between attitude and SV on sensitivity created an “arch” shape. Specifically, for people higher in SV, pro-life participants were more sensitive than those who were pro-choice; conversely, for people lower in SV, this relationship reversed -- pro-choice participants were more sensitive than pro-life participants (Figure 1A). Surprisingly, these results show, even when a video is on a *non-controversial* topic, a person’s attitude towards a controversial topic and their level of SV, can interact to influence their visual recognition memory.

Table 4. *Summary of Multilevel Logistic Signal Detection Analysis for Non-Controversial Ad Visual Recognition Memory*

Variable	<i>B</i>	<i>SE(B)</i>	<i>z</i>	Sig. (<i>p</i>)
Intercept [Bias]	.29	.17	1.79	.072
“Old”/“New” [Sensitivity]	.73	.33	2.23	.026
Attitude	-.005	.02	-.25	.805
Social Vigilantism	-.02	.04	-.43	.664
“Old”/“New” x Attitude	.10	.04	2.80	.005
“Old”/“New” x SV	.03	.09	.38	.703
Attitude x SV	-.005	.01	-.37	.713
“Old”/“New” x Attitude x SV	-.07	.03	-2.51	.012

Note. The intercept of the model is the overall bias. “Old”/“New” shows the overall sensitivity to the memory items. Attitude, Social Vigilantism, and Attitude x SV show adjustments to bias.

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Interactions with “Old”/“New” show adjustments to sensitivity. The continuous variables were centered for the interaction. Statistically significant effects are shaded.

Figure 1. Signal detection analysis for Non-controversial visual recognition memory. A) The Y-axis is the sensitivity (d') to the memory items. The X-axis is attitude PL = pro-life, PC = pro-choice (1 = most pro-life; 9 = most pro-choice). The panels labeled at the top of the graph are cross sections of the SV measure (1 = Very low in SV; 9 = Very high in SV). B) The Y-axis is the predicted bias (c). All other axes are the same as for A (Attitude on the X-axis and Social vigilantism for the panels). Error bars are 1 standard error.

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Visual Multiple Choice. The three individual difference variables in the accuracy model showed no significant effects (p 's $> .05$). The performance predicted by the model was relatively low, 38%, but significantly above chance performance (25%).

When taken together, the recognition memory item results for the non-controversial ad were mostly consistent with our expectation that differences in abortion attitudes and SV would not have effects. However, there was one exception. For visual recognition memory, there were effects of attitude, SV, and their interaction (discussed below).

Abortion Ads

Argument Recognition Memory. As with the non-controversial ad, model comparisons showed the only significant effect was the “Old” bias. Participants were more likely to indicate that memory items had appeared in the video ($c = -.61, z = 5.39, p < .001$). Although none of the individual difference measures were significant, there was a trend toward an interaction of attitude congruence and SV on sensitivity ($b = -.04, z = -1.76, p = .08$) in the predicted direction for the social vigilantism hypothesis. Participants lower on SV tended to show higher sensitivity for the attitude-congruent video, but participants higher on SV tended to show better memory for the attitude-incongruent video.

Visual Recognition Memory. Visual recognition showed several attitude and SV effects for the Non-controversial video. Some of these effects replicated for the abortion ads. The best model included “Old”/“New,” Attitude, and SV, but there were no attitude congruence effects. Overall, there was an “Old” bias, and participants were sensitive to the memory items (Table 5). Interestingly, participants who were more pro-choice had higher sensitivity. This effect was not predicted.

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Table 5. *Summary of Multilevel Logistic Signal Detection for Abortion Ad Visual Recognition Memory*

Variable	<i>B</i>	<i>SE(B)</i>	<i>t</i>	Sig. (<i>p</i>)
Intercept [Bias]	-.46	.08	5.60	< .001
“Old”/“New” [Sensitivity]	.79	.16	4.80	< .001
Attitude	.0004	.009	-.04	.97
Social Vigilantism	.03	.02	-1.45	.15
“Old”/“New” x Attitude	.05	.02	2.58	.01
“Old”/“New” x SV	-.06	.05	-1.22	.22
Attitude x SV	-.01	.007	1.41	.16
“Old”/“New” x Attitude x SV	-.01	.01	-1.07	.28

Note. The intercept of the model is the overall bias. “Old”/“New” shows the overall sensitivity to the memory items. Attitude, SV, and Attitude x SV show adjustments to bias. Interactions with “Old”/“New” show adjustments to sensitivity. The continuous variables were centered for the interaction. Statistically significant effects are shaded.

Visual Multiple Choice. The best model for the visual multiple-choice questions is presented in Table 6. Consistent with the social vigilantism hypothesis, higher levels of SV related to better memory for attitude *incongruent* content (Figure 2). This U-shaped pattern is especially clear for the pro-life video. At lower levels of SV, pro-life participants showed better memory, and, at higher levels of SV, pro-choice participants showed better memory. For the pro-choice video, we found approximately the same general trend in reverse, a partial “arch” pattern, similar to visual recognition memory for the Non-controversial ad (Figure 1A), and the non-significant trend we found for argument recognition memory. In this case, at lower levels of SV,

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pro-choice participants had better memory for the pro-choice video; however, the slope did not reverse direction at higher levels of SV.

Table 6. *Summary of Multilevel Logistic for Abortion Ad Visual Multiple-Choice Memory*

Variable	<i>B</i>	<i>SE(B)</i>	<i>z</i>	Sig. (<i>p</i>)
Intercept	-.26	.23	-.94	.349
Attitude	.02	.02	.90	.367
Social Vigilantism	-.01	.06	-.23	.816
Video	-.33	.23	-1.47	.141
Att. x SV	.02	.02	1.10	.271
Att. x Video	.04	.02	2.20	.028
Video x SV	.07	.05	1.5	.134
Att. x SV x Video	-.03	.01	-2.33	.020

Note. Describes model for predicted accuracy for the visual multiple-choice memory questions.

The continuous variables were centered for the interaction. Statistically significant effects are shaded.

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Figure 2. Abortion ads’ visual multiple choice. Y-axis is predicted accuracy. The X-axis shows abortion attitude (low scores = more pro-life; high scores = more pro-choice). The panels labeled at the top of the graph are cross sections of the SV measure (1 = very low in SV; 9 = very high in SV). Error bars are 1 standard error.

A trend that emerged from the abortion ad memory results was that SV moderated the effect of attitude congruence on memory performance in a way that was consistent with the social vigilantism hypothesis. People lower in SV had better memory for attitude congruent items, while those higher in SV had better memory for attitude *incongruent* items—which produces a “U” pattern, or conversely an arch pattern. Although this effect was only significant for the visual multiple-choice questions, the argument recognition items trended in the same

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direction. It is interesting that SV moderated the effects of attitude congruence for items based on visual information and trended for argument items, but not for the visual recognition items. One possibility, based on Mandler's (2008) dual process model of recognition memory, is immediate visual recognition memory operates at a perceptual level (Langley et al., 2008) that may not be affected by top-down processing.

Discussion

Both attitude congruence and SV influenced memory for political ads, but the presence of effects varied with memory type (argument recognition vs. visual multiple choice). First, for the non-controversial ad, which was included as a baseline condition, viewers' visual recognition memory surprisingly showed differences based on their attitudes and level of SV. Participants who were pro-choice were more sensitive for visual recognition memory items (which was also found for the abortion ads). However, this attitude effect was not moderated by attitude congruence. Thus, the non-controversial ad showed top-down effects of attitude and SV on memory, even for a non-controversial topic. Additionally, the arch shaped interaction created in Figure 1A was also partially found in Figure 2 for the abortion ads visual multiple-choice memory measure.

Importantly, the abortion ad results showed effects of both attitude and SV, consistent with the social vigilantism hypothesis. At higher levels of SV, participants showed better memory for attitude *incongruent* information. This effect was strongest for the visual multiple-choice measure, and somewhat less so for argument recognition. These findings combine to indicate an effect of attitude congruence, SV, and their interaction on memory for politically controversial content. However, in contrast to Experiments 1 and 2, we found no support for the need for cognition hypothesis.

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An interesting insight from the current work and area for future inquiry is the level of memory representation at which the top-down effects occurred. Van Dijk and Kintsch (1983) proposed three levels of representation for text: surface, propositional, and situational. Subsequent work verified people do encode and retrieve all three levels of representation (Fletcher & Chrysler, 1990; Schmalhofer & Glavanov, 1986). In the current work, the recognition memory items manipulated the surface structure of the arguments presented in the videos, but the proposition and situation text base remained the same (i.e., the wording of the arguments changed, but the meaning stayed the same). Thus, the recognition memory results showed individual difference effects at the surface level.

General Discussion

We live in a highly politically divisive era, in which political discourse is increasingly insular. People are continuously exposed to political video content through various media, which is increasingly filtered to create political “echo chambers” consistent with people’s pre-existing beliefs. Highly produced videos, such as political ads, create similar attentional patterns across viewers, which could produce similar memory across viewers as well. Some people choose to actively debate with those with whom they disagree, often trying to persuade them to change their minds. Such individual differences could create large differences in people’s memory for the contents of political videos. This inspires our key question: how do individual differences in SV and NFC interact with the attitude congruence of political videos in determining viewers’ reported resistance strategies and what they remembered from such videos?

We tested several hypotheses about how SV and NFC would interact with responses to political content congruent versus incongruent with perceivers’ attitudes. The Tyranny of Film hypothesis predicted individual differences in SV and NFC would not be predictive, because

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video makers are experts at guiding viewers' attention and the information available to process.

The alternative competing hypotheses stated people may avoid or tune-out counter attitudinal information (selective exposure), engage with incongruent information more if they had higher belief superiority and desire to impress their beliefs on others (SV), or that viewers' who enjoy engaging in demanding cognitive tasks would engage more (NFC).

In Experiments 1 and 2, we found evidence of both NFC and SV affecting the resistance strategies adopted when viewing videos containing controversial political content congruent or incongruent with their attitudes. As expected, people reported greater intentions to resist persuasive video content that was attitude-incongruent in terms of counter-arguing and selective exposure. However, consistent with the SV hypothesis, those higher in SV being more likely to report the intention to counter-argue than those who were lower in SV. Interestingly, people higher in SV were more likely to report intentions to counter-argue even when the video content was attitude-congruent, and more likely to report intentions to selectively ignore the video content when it was non-controversial. We also found evidence for the NFC hypothesis, with people higher in NFC reporting lesser intent to practice selective exposure to ads inconsistent with their attitudes.

In Experiment 3, we investigated whether these reported intentions were consistent with viewers' memory for the political videos and found those higher in SV had better recognition memory for ad content that was attitude-incongruent. Notably, these results showed evidence consistent with selective exposure for people lower in SV, though in Experiments 1 and 2, participants did not report intending to ignore attitude-incongruent political video content. Thus, the data across Experiments 1-3 show a degree of divergence between our self-report measures and ignoring information one disagrees with. Findings from Experiment 3 are also consistent

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with the hypothesis that higher levels of SV would be associated with counterarguing resistance strategies, because the better memory for attitude incongruent content suggests people higher in SV might be motivated to gather information about opposing viewpoints in order to directly challenge those arguments. Experiment 3 found no support for the NFC hypothesis. Nevertheless, Experiments 1 and 2 showed that participants higher in NFC were less likely to engage in selective exposure for attitude incongruent information. Future work should address this inconsistency.

Interestingly, we also found effects of attitude, but not attitude congruence, and SV, for memory for the non-controversial ad. This ad was included as a baseline measure, for which we expected to find no attitude effects. Nevertheless, viewers' (seemingly) irrelevant attitudes towards a different highly controversial political topic (abortion) produced differences in memory. The same pattern of results (arch/"U" shape) was also partially found for the visual multiple choice measure for the abortion ads. Future work will test whether this is a reliable relationship, which may be similar in nature to the effects of political ideology on attention (Dodd et al., 2012).

Limitations and Future Directions

People do not always behave in ways consistent with how they say they will behave. Thus, one limitation of Experiments 1 and 2 is that participants self-reported their intentions to engage in counter-arguing and selective exposure. It may be socially undesirable for people to claim they would ignore or counterargue against attitude-incongruent persuasion attempts, and this may have affected how participants self-reported their intentions to engage in resistance strategies. Additionally, in Experiments 1 and 2, higher levels of SV were related to stronger intentions to counter-argue regardless of whether the video was congruent or incongruent with

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participants' attitudes. This finding might have been due to participants attempting to maintain consistent responses across the counterarguing measures and the SV items pertaining to argumentative tendencies. However, our memory measures in Experiment 3, which did not have these same limitations, provided further support for the SV hypothesis. To be more confident in concluding higher levels of SV are related to counter-arguing against attitude-incongruent positions, future research could also assess whether higher levels of SV are associated with paying more attention to attitude-incongruent information. For example, eye tracking of participants would be a more direct measure of attention.

Conclusion

Our research contributes to our understanding of how people resist politically charged attempts at persuasion by showing how higher levels of SV are related to greater intentions to engage with, rather than tune out, information that opposes their strongly held attitudes. The results of our memory study further demonstrate how levels of SV relate to cognitive processes that may facilitate engagement through better memory for opposing arguments, perhaps because individuals higher in SV are tracking the information they are motivated to argue against. Together, our findings highlight the significant role individual differences play in how people process and respond to attempts to change their strongly held attitudes.

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References

- Brannon, L. A., & Brock, T. C. (2001). Scarcity claims elicit extreme responding to persuasive messages: Role of cognitive elaboration. *Personality and Social Psychology Bulletin*, 27(3), 365-375. <https://doi.org/10.1177/0146167201273010>
- Baddeley, A. D., & Hitch, G. J. (2017). Is the levels of processing effect language-limited?. *Journal of Memory and Language*, 92, 1-13
- Brannon, L. A., Tagler, M. J., & Eagly, A. H. (2007). The moderating role of attitude strength in selective exposure to information. *Journal of Experimental Social Psychology*, 43(4), 611-617. <https://doi.org/10.1016/j.jesp.2006.05.001>
- Burnham, K. P., & Anderson, D. R. (2004). Multimodel inference: understanding AIC and BIC in model selection. *Sociological methods & research*, 33(2), 261-304.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42(1), 116-131. <https://doi.org/10.1037/0022-3514.42.1.116>
- Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). Dispositional differences in cognitive motivation: The life and times of people varying in need for cognition. *Psychological Bulletin*, 119(2), 197-253. <https://doi.org/10.1037/0033-2909.119.2.197>
- Cacioppo, J. T., Petty, R. E., Kao, C. F., & Rodriguez, R. (1986). Central and peripheral routes to persuasion: An individual difference perspective. *Journal of Personality and Social Psychology*, 51(5), 1032-1043. <https://doi.org/10.1037/0022-3514.51.5.1032>
- Cameron, K. A., Jacks, J. Z., & O'Brien, M. E. (2002). An experimental examination of strategies for resisting persuasion. *Current Research in Social Psychology*, 7(12), 205–224. <https://doi.org/2002-14066-001>

RESPONSES TO ATTITUDE-CONGRUENT AND ATTITUDE-INCONGRUENT INFORMATION

- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology*, 67(2), 319-333. <https://doi.org/10.1037/0022-3514.67.2.319>
- Chaiken, S. (1979). Communicator physical attractiveness and persuasion. *Journal of Personality and Social Psychology*, 37(8), 1387-1397. <https://doi.org/10.1037/0022-3514.37.8.1387>
- Cialdini, R. B. (1993). *Influence: Science and practice* (3rd ed.). New York: HarperCollins.
- Crano, W. D., & Crislin, R. (2006). Attitudes and persuasion. *Annual Review of Psychology*, 57, 345-374. <https://doi.org/10.1146/annurev.psych.57.102904.190034>
- DeCarlo, L. T. (1998). Signal detection theory and generalized linear models. *Psychological Methods*, 3(2), 186-205. <https://psycnet.apa.org/doi/10.1037/1082-989X.3.2.186>
- Ditto, P. H. , & Jemmott, J. B. (1989). From rarity to evaluative extremity: Effects of prevalence information on evaluations of negative and positive characteristics. *Journal of Personality and Social Psychology*, 57(1), 16-26. <https://doi.org/10.1037/0022-3514.57.1.16>
- Dodd, M. D., Balzer, A., Jacobs, C. M., Gruszczynski, M. W., Smith, K. B., & Hibbing, J. R. (2012). The political left rolls with the good and the political right confronts the bad: connecting physiology and cognition to preferences. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 367(1589), 640-649. <https://doi.org/10.1098/rstb.2011.0268>

RESPONSES TO ATTITUDE-CONGRUENT AND ATTITUDE-INCONGRUENT INFORMATION

- Dorr, M., Martinetz, T., Gegenfurtner, K. R., & Barth, E. (2010). Variability of eye movements when viewing dynamic natural scenes. *Journal of Vision, 10*(10):28(10), 1-28.
<https://doi.org/10.1167/10.10.28>
- Eagly, A. H., & Chaiken, S. (1995). Attitude strength, attitude structure, and resistance to change. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 413-432). Mahwah, NJ: Lawrence Erlbaum Associates Inc.
- Fletcher, C. R., & Chrysler, S. T. (1990). Surface forms, textbases, and situation models: Recognition memory for three types of textual information. *Discourse Processes, 13*(2), 175-190. <https://doi.org/10.1080/01638539009544752>
- Haddock, G., Maio, G. R., Arnold, K., & Huskinson, T. (2008). Should persuasion be affective or cognitive? The moderating effects of need for affect and need for cognition. *Personality and Social Psychology Bulletin, 34*(6), 769-778.
[https://doi.org/10.1016/S1057-7408\(08\)80038-1](https://doi.org/10.1016/S1057-7408(08)80038-1)
- Harmon-Jones, E. (2003). Anger and the behavioral approach system. *Personality and Individual Differences, 35*(5), 995-1005. [https://doi.org/10.1016/S0191-8869\(02\)00313-6](https://doi.org/10.1016/S0191-8869(02)00313-6)
- Hastorf, A. & Cantril, H. (1954). They saw a game: A case study. *The Journal of Abnormal and Social Psychology, 49*(1), 129–134. <https://psycnet.apa.org/doi/10.1037/h0057880>
- Haugtvedt, C. P., & Petty, R. E. (1992). Personality and persuasion: Need for cognition moderates the persistence and resistance of attitude changes. *Journal of Personality and Social psychology, 63*(2), 308-319. <https://doi.org/10.1037/0022-3514.63.2.308>
- Hutson, J. P., Smith, T. J., Magliano, J. P., & Loschky, L. C. (2017). What is the role of the film viewer? The effects of narrative comprehension and viewing task on gaze control in film.

RESPONSES TO ATTITUDE-CONGRUENT AND ATTITUDE-INCONGRUENT INFORMATION

Cognitive Research: Principles and Implications, 2(1), 46.

<https://doi.org/10.1186/s41235-017-0080-5>

Jacks, J. Z., & Cameron, K. A. (2003). Strategies for resisting persuasion. *Basic and Applied Social Psychology*, 25(2), 145-161. https://doi.org/10.1207/S15324834BASP2502_5

Jacks, J. Z., & Devine, P. G. (2000). Attitude importance, forewarning of message content, and resistance to persuasion. *Basic and Applied Social Psychology*, 22(1), 19-29.

https://doi.org/10.1207/S15324834BASP2201_3

Krosnick, J. A., Boninger, D. S., Chuang, Y. C., Berent, M. K., & Carnot, C. G. (1993). Attitude strength: One construct or many related constructs? *Journal of Personality and Social Psychology*, 65(6), 1132-1151. <https://doi.org/10.1037/0022-3514.65.6.1132>

Krosnick, J. A., & Petty, R. E. (1995). Attitude strength: An overview. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 1–24). Mahwah, NJ: Lawrence Erlbaum Associates Inc.

Loschky, L. C., Larson, A. M., Magliano, J. P., & Smith, T. J. (2015). What Would Jaws Do? The Tyranny of Film and the Relationship between Gaze and Higher-Level Narrative Film Comprehension. *PLoS ONE*, 10(11), 1-23.

<https://doi.org/10.1371/journal.pone.0142474>

Maddux, J. E., & Rogers, R. W. (1980). Effects of source expertness, physical attractiveness, and supporting arguments on persuasion: A case of brains over beauty. *Journal of Personality and Social Psychology*, 39(2), 235-244. <https://doi.org/10.1037/0022-3514.39.2.235>.

Maki, A., & Raimi, K. T. (2017). Environmental peer persuasion: How moral exporting and belief superiority relate to efforts to influence others. *Journal of Environmental Psychology*, 49, 18-29. <https://doi.org/10.1016/j.jenvp.2016.11.005>

RESPONSES TO ATTITUDE-CONGRUENT AND ATTITUDE-INCONGRUENT INFORMATION

- O'Dea, C. J., Castro Bueno, A. M., & Saucier, D. A. (2018). Social vigilantism and the extremity, superiority, and defense of attitudes toward climate change. *Personality and Individual Differences, 130*, 83-91. <https://doi.org/10.1016/j.paid.2018.03.040>
- Petty, R. E., & Cacioppo, J. T. (1984). The effects of involvement on responses to argument quantity and quality: Central and peripheral routes to persuasion. *Journal of Personality and Social Psychology, 46*(1), 69-81. <https://doi.org/10.1037/0022-3514.46.1.69>
- Petty, R. E., Cacioppo, J. T., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology, 41*(5), 847-855. <https://doi.org/10.1037/0022-3514.41.5.847>
- Petty, R. E., & Wegener, D. T. (1998). Attitude change: Multiple roles for persuasion variables. In D. Gilbert, S. Fiske, and G. Lindzey (Eds.), *The handbook of social psychology* (4th ed.). New York: McGraw-Hill.
- Pomerantz, E. M., Chaiken, S., & Tordesillas, R. S. (1995). Attitude strength and resistance processes. *Journal of Personality and Social Psychology, 69*(3), 408-419. <https://doi.org/10.1037/0022-3514.69.3.408>
- Raimi, K. T., & Leary, M. R. (2014). Belief superiority in the environmental domain: Attitude extremity and reactions to fracking. *Journal of Environmental Psychology, 40*, 76-85. <https://doi.org/10.1016/j.jenvp.2014.05.005>
- Saucier, D. A., & Webster, R. J. (2010). Social vigilantism: Measuring individual differences in belief superiority and resistance to persuasion. *Personality and Social Psychology Bulletin, 36*(1), 19-32. <https://doi.org/10.1177/0146167209346170>
- Saucier, D. A., Webster, R. J., Hoffman, B. H., & Strain, M. L. (2014). SV and reported use of strategies to resist persuasion. *Personality and Individual Differences, 70*, 120-125.

RESPONSES TO ATTITUDE-CONGRUENT AND ATTITUDE-INCONGRUENT INFORMATION

<https://doi.org/10.1016/j.paid.2014.06.031>

- Saucier, D. A., Webster, R. J., O'Dea, C. J., & Miller, S. S. (2017). The role of individual differences in inciting anger and social action. In S. C. Cloninger & S. A. Leibo (Eds.), *Understanding angry groups: Multi-disciplinary perspectives on their motivations and effects on society* (pp. 3-27). Santa Barbara, CA: Praeger.
- Skitka, L. J., Bauman, C. W., & Sargis, E. G. (2005). Moral conviction: Another contributor to attitude strength or something more? *Journal of Personality and Social Psychology*, 88(6), 895-917. <https://doi.org/10.1037/0022-3514.88.6.895>
- Schmalhofer, F., & Glavanov, D. (1986). Three components of understanding of a programmer's manual: Verbatim, propositional, and situational representations. *Journal of Memory & Language*, 25(3), 279-294. [https://doi.org/10.1016/0749-596X\(86\)90002-1](https://doi.org/10.1016/0749-596X(86)90002-1)
- Smith, Tim J. and Mital, P.K. (2013). Attentional synchrony and the influence of viewing task on gaze behavior in static and dynamic scenes. *Journal of Vision*, 13(8), 16. <https://doi.org/10.1167/13.8.16>
- Visser, P. S., Bizer, G. Y., & Krosnick, J. A. (2006). Exploring the latent structure of strength-related attitude attributes. *Advances in Experimental Social Psychology*, 38, 1-67. [https://doi.org/10.1016/S0065-2601\(06\)38001-X](https://doi.org/10.1016/S0065-2601(06)38001-X)
- Visser, P. S., Krosnick, J. A., & Simmons, J. P. (2003). Distinguishing the cognitive and behavioral consequences of attitude importance and certainty: A new approach to testing the common-factor hypothesis. *Journal of Experimental Social Psychology*, 39(2), 118–141. [https://doi.org/10.1016/S0022-1031\(02\)00522-X](https://doi.org/10.1016/S0022-1031(02)00522-X)
- Zuwerink, J. R., & Devine, P. G. (1996). Attitude importance and resistance to persuasion: It's not just the thought that counts. *Journal of Personality and Social Psychology*, 70(5),

RESPONSES TO ATTITUDE-CONGRUENT AND ATTITUDE-INCONGRUENT
INFORMATION

931-944. <https://doi.org/10.1037/0022-3514.70.5.931>