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Fuel for Fake News: Emotion and Partisan Bias in the Processing of Political Misinformation

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

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Abstract

Political misperceptions shaped by strong emotional experiences and partisan biases can undermine individuals' ability to distinguish misinformation from facts (Garrett & Weeks, 2013; Nyhan & Reifler, 2015; Weeks, 2015). Prior research demonstrates that emotional states (Lerner & Keltner, 2000; Lerner et al., 2015; Nabi, 2002), congruence between misinformation and preexisting beliefs (Taber & Lodge, 2006), and the strength of partisan identity – conceptualized as affective polarization (Lelkes, 2016; Sanchez & Dunning, 2021) – each shape vulnerability to political misinformation. The present dissertation investigated how three discrete emotions that differ in valence and motivational orientation – anger, fear, and joy – distinctly influence (a) accuracy in evaluating political misinformation, (b) time required to reach a judgment, (c) confidence in judgment, (d) skepticism toward statements regarded as true, and (e) willingness to share statements regarded as true. Congruence between misinformation and preexisting beliefs and affective polarization were included as moderators in a series of moderation analyses. Across a sample of US adults (N = 600), fear consistently suppressed willingness to share political information judged as true, regardless of affective polarization level. Anger amplified confidence and willingness to share among individuals high in affective polarization but decreased both outcomes among those low in affective polarization. Finally, higher congruence between misinformation and preexisting beliefs predicted poorer discernment between facts and misinformation. Implications of the findings on the affective processing of political misinformation are discussed in detail.

Literature Review

The landscape of American politics has become increasingly polarized and divisive through the media environment rife with misinformation, false information that is disseminated to the public (Greifeneder et al., 2021; Iyengar et al., 2019). Global broadcasting networks and the expansive reach of social media technology have made the accessibility of political misinformation easier than ever before, creating a media terrain pervaded with emotionally high-octane political misinformation that can warp public knowledge and create misperceptions of reality (Bakir et al., 2017; Cheung-Blunden et al., 2021). Political misperceptions are inaccurate beliefs about political topics, figures, or events given the factual evidence available to the public (Kuklinski et al., 2000; Nyhan & Reifler, 2010). This phenomenon has become increasingly common in modern American politics and media (Jerit & Barabas, 2012; Weeks & Garrett, 2014; Weeks, 2015). Political misperceptions are common when people have limited access to information, hold preconceived biases, and harbor strong partisan emotions that overshadow more deliberative cognitive processing of information (Garrett & Weeks, 2013; Nyhan & Reifler, 2015; Weeks, 2015). Misperceptions that result from partisan biases can hinder critical evaluation of information and decision-making by compromising one's motivation to seek out information that opposes one's political views (Garrett & Weeks, 2013; Gaines et al., 2007; Weeks & Garrett, 2014). As a result, strongly partisan individuals are less likely to critically evaluate information and consider different perspectives to establish a more accurate understanding of political matters (Lodge & Taber, 2000).

Politically polarized people tend to understand political issues through the perspective of their preferred party ideology, which often results in the misinterpretation of opposing views when polarized individuals engage in the phenomenon known as affective polarization (Iyengar

et al., 2019). Affective polarization—the attitude of devout favoritism towards the preferred political group while maintaining strong hostility and disdain towards the opposing political entities—has gradually become a prominent feature of modern democratic politics (Iyengar, 2012). Polarized political attitudes fuel the appetite for biased information, which can further compromise a media market already rife with "fake news," false information that imitates the facade but not the process of production or intent of factual news (Greifeneder et al., 2020; Martel et al., 2020). The cyclical interaction between increasing affective polarization and proliferation of fake news in a democratic society can destroy the public's faith in news organizations and other credible information outlets and damage the stability of a society's economy and public health (Guo, 2019). With the breadth of research demonstrating that fake news has become an integral part of modern American's media consumption, especially among certain political subgroups and demographics (Lewandowsky et al., 2017; Lewandowsky & van der Linden, 2021), it is imperative to examine the psychological mechanisms behind political misperceptions.

This dissertation proposal explores the interactive relationship between various affective components and political biases to understand the psychological mechanisms influencing one's belief in political misinformation. It specifically examines how the interaction between emotion state and emotional investment in partisan views can influence a person to become more susceptible to polarizing political misinformation. In doing so, this proposal explores the two major theoretical frameworks of affective processing – dimensional (positive vs. negative valence; Forgas, 1995; Russell, 1980; Watson, 2000) and discrete (specific emotions like anger or fear; Ekman, 1994; 2003; Lerner & Keltner, 2000; Nabi, 1999; 2002) perspectives of emotion – and elaborate on how these two approaches complement each other to explain the unique

impact of various emotions (i.e., anger, fear, and joy) on the processing of political misinformation. By combining both the dimensional and discrete perspectives of emotion, the objective of this dissertation is to investigate how different positive and negative emotions interact with one's partisan views and degree of political polarization to affect the processing of political misinformation. Through the design of a quasi-experimental study, this dissertation aims to bridge a gap in past research by addressing how an individual's emotional state, partisan bias, and political polarization together can affect one's vulnerability to misinformation.

Emergence of Fake News and Its Societal Impact

Political misinformation is usually distributed to the public through the strategy of fake news, which is misinformation disseminated under the disguise of credible news sources. Fake news can often be political by incorporating strong partisan sentiments (Greifeneder et al., 2020). Fake news differs from the blunders and unintentional inaccuracies in news reporting that may result from poor journalistic practices since the intention of fake news is to deliberately deceive an audience and those who create them make no attempts to provide accurate information or uphold journalistic ethics (Greifeneder et al., 2020; Lewandowsky et al., 2017). Although manufactured false information is disseminated in all types of domains, some of the most predominant areas proliferated with false information are political media, news reporting, consumer marketing, health, and finances (Greifeneder et al., 2020). Most importantly, even sources that are deemed traditionally trustworthy, such as prestigious scientific journals/publishing platforms and government databases, are not free from the presence of fake news, which exist in the form of intentionally misleading reports based on manufactured or manipulated data (Bar-Ilan & Halevi, 2020).

Over the recent years, fake news has gained public scrutiny for several reasons. First, misinformation has gradually become an ever-present facet of daily life as media platforms have rapidly multiplied and become more easily accessible than ever before (Guess & Lyons, 2020). For example, the average U.S. adult encountered between one to three pieces of fake news in the months prior to the U.S. presidential election in 2016 (Allcott & Gentzkow, 2017). False information, especially political news, frequently propagates on social media platforms that are commonly used to spread information, like Twitter (now known as X), and is shared more rapidly and more frequently than factual information that was verified through independent fact-checking (Vosoughi et al., 2018). Advancements in modern technology (i.e., automated bots) have contributed to the fast generation and proliferation of fake news. The impact of technology in the generation of false information became more evident right before the 2016 U.S. presidential election due to the explosion in quantity and popularity of media content and websites that contained fake news, some of which percolated into mainstream broadcast media and were presented as legitimate news to the media consumers (Greifeneder et al., 2020). Furthermore, an investigation during the 2016 U.S. presidential election campaign revealed that the most popular fake news stories generated more traction in Facebook engagement than the most popular factual news from major news outlets (Silverman, 2016). In this analysis, they found that the top-performing fake news on Facebook tend to sell high-octane, scandalous contents about specific political figures (i.e., “Clinton sold weapons to ISIS” and a claim that Trump groped RuPaul, a renowned drag queen and celebrity), which can often elicit strong emotions from avid political supporters of both parties. Interestingly, a study examining the proliferation of fake news within the three months prior to the 2016 U.S. presidential election showed that fake news favoring Trump was shared approximately 3.75 times more than fake

news favoring Clinton, suggesting a partisan bias in fake news propagation (Allcott & Gentzkow, 2017).

The second reason why the phenomenon of fake news has gained public attention is that people who believe it are likely to act upon these false beliefs, which can result in serious consequences (Greifeneder et al., 2020). Several examples in the news involving the QAnon, an online organization upholding conspiracy theories about the U.S. government, have thoroughly illustrated this point (Bessarabova & Banas, 2023). For example, the attack on the U.S. Capitol Building on January 6th, 2021 was initiated by the false belief that the 2020 U.S. presidential election was stolen from Donald Trump (Lee et al., 2022). In another case in 2016, a man brought a rifle to a pizzeria in Washington, D.C., and fired shots at people inside because of his belief in the now infamous conspiracy theory known as Pizzagate, which claimed that the restaurant was a front for child-trafficking operations hosted by Democrat officials (Mukerji, 2018). Admittedly, many cases of acting upon fake news are not as extreme or dramatic as the aforementioned scenarios. However, the results of acting upon fake news are certainly to the disadvantage of the individual believers and their societies.

The third reason why the impact of fake news has gained increasing social interest is that fake news violates the basic interpersonal trust that is foundational to social harmony and prosperity. Established facts and reliable sources are essential for basic social structures such as commercial trade, division of labor, and democratic governing structures (Greifeneder et al., 2020). Social entities such as individuals, organizations, or government that have been caught lying or violating promises are publicly distrusted and often face various degrees of societal backlash, from social hatred on the internet to serious financial repercussions. Dissemination of fake news can therefore threaten democratic systems by corroding societal trust in government

and other institutions of authority. Denouncing the integrity of established sources such as the scientific community, government institutions, or reputable media outlets can potentially gut a society of its fact-checkers by eroding public trust in them (Greifeneder et al., 2011; 2020). Establishing reputable, trustworthy fact-checkers is therefore necessary for fostering a healthy media environment in modern democratic societies.

Given that the current misinformation pandemic has demanded significant public concerns in the increasingly divisive U.S. media environment, research on the consumption and processing of fake news has emerged as a major focus in various academic fields. The polarizing nature of political news for partisan media consumers, in addition to the high-octane contents often found in political news, make exploring the of role emotions crucial to understanding the cognitive processing of political fake news. This dissertation therefore aims to explore the role of several discrete emotions in the processing of political fake news based on prior research that has examined their impact on information processing.

Motivated Reasoning and Political Misperceptions

Media consumers are particularly vulnerable to the persuasive influence of misinformation when they have the tendency for bias-driven reasoning, a process known as motivated reasoning (Lodge et al., 2000; Sanchez & Dunning, 2021). Motivated reasoning is the cognitive processing of information driven by the goal to confirm a strong, preconceived bias that guides the person's way of thinking and the perception of reality (Lodge & Taber, 2000; 2005). As a result, people utilize heuristic shortcuts that confirm preconceived biases (i.e., selective attention) to reach biased conclusions (Hughes & Zaki, 2015).

Motivated reasoning helps placate the discomfort created by the dissonance between personal biases and information that is incongruent with the biases by deliberately seeking

confirmatory information and using the confirmatory information to reason and reinforce the biased perspective (Aronson, 1992; Festinger & Carlsmith, 1959; Lodge et al., 2000). The concept of motivated reasoning suggests that the two goals of preserving one's belief and assessing information accuracy may run in conflict with one another in certain situations. By prioritizing the goal of preserving partisan belief over accuracy in perceptions of reality (Taber & Lodge, 2006), motivated reasoning can streamline the information search and strategies of cognitive processing by guiding one towards information consistent with belief, while simultaneously regulate the impact of emotional variables on one's judgment during the process (Lodge & Taber, 2005; Redlawsk, 2002). The process of motivated reasoning implicitly regulates emotions by forcing an individual to take more time to process information that is inconsistent with the preexisting emotion (Redlawsk, 2002). This will automatically direct the information search in a biased manner, which will favor conclusions that minimize feelings of uncertainty (i.e., anxiety) associated with the threat of being incorrect and maximize confirmatory emotions (i.e., anger and joy) that help reinforce one's preconceived biases (Westen et al., 2006). Therefore, people who are inclined to resort to motivated reasoning are those with the strongest directional goals in supporting their party misperceptions and weakest accuracy goals in verifying the veracity of the information.

Strong partisanship is the main driver behind the tendency for one to resort to motivated reasoning when assessing political news (Garrett & Weeks, 2013; Flynn, 2016; Flynn et al., 2017; Nyhan & Reifler, 2010; Satherley et al., 2018). Past research has demonstrated that the strong impact of partisan ideology and the unwavering support for the favored political candidate can even overpower the explicit correction of misinformation disseminated by the favored candidate (Thompson-Swire et al., 2020). Furthermore, several studies examining participants

from ideological subcultures found that when people were presented with corrected information that opposed their political ideology, the corrections either failed to influence the subjects or reinforced misperceptions among the most ideologically committed participants (Garrett & Weeks, 2013; Nyhan & Reifler, 2010). The unwavering support for one's favored political party and candidate despite knowing that they have disseminated inaccurate information can be attributed to the strong need to avoid cognitive dissonance for people whose political identity is centered around their self-concept (Elliot & Devine, 1994; Van Bavel & Periera, 2018).

Partisan bias in motivated reasoning can be enhanced by heightened cognitive abilities (Sanchez & Dunning, 2021). Prior studies examining the relationship between cognitive abilities and endorsement of partisan misinformation have found that although people who have lower cognitive abilities were more equally receptive of misinformation from both sides of the political spectrum than those with higher cognitive abilities, people with higher cognitive abilities were more politically biased in their endorsement of misinformation (Pennycook & Rand, 2019; Sanchez & Dunning, 2021). Greater capabilities in analytical reasoning may, in fact, enhance political biases by reinforcing the biases with ostensibly sound arguments (Kahan, 2013). Given the frequently emotional nature of political news, one's ability to discern political misinformation may concern more than just cognitive abilities but is also heavily influenced by partisan-driven emotions (Sanchez & Dunning, 2021). While the maintenance of strong political biases requires a substantial degree of sophisticated, higher-level reasoning, strong emotional endorsement of the party is essential to motivating the news consumer towards biased judgments (Sanchez & Dunning, 2021; Stanovich, 2011). Building on the argument that susceptibility to political misperceptions is better explained by emotional investment in partisan ideals rather than cognitive ability (Sanchez & Dunning, 2021), we argue that accounting for the emotional state

under which the evaluations of political misinformation occur in is necessary for understanding the mechanisms that lead to political misperceptions.

Emotion and Processing of Political Fake News

Emotion is an essential element of political attitudes and behaviors (Brader, 2005; Marcus, 2002; Marcus et al., 2011; Nabi, 2003). Their influence on the consumption of political media and perception of political reality is therefore crucial for examining the persuasive mechanisms of fake news (Weeks, 2015). The dual-process model of cognition posits emotion as the "gut-feelings" that facilitate the intuitive, heuristic route of information processing (Evans, 2003; Stanovich, 2005). Heuristic processing contrasts with the deliberative, central route of analytic processing by producing less accurate judgments with little information, which can in turn heighten the belief in misinformation (Martel et al., 2020; Stanovich et al., 2011). For instance, faith in intuition, the tendency to resort to heuristic reasoning (i.e., "I trust my initial feelings about the facts") in processing information, has been found to be positively associated with belief in conspiracy theories, pseudoscience, and meaningless phrases composed of profound-sounding vocabulary (Garrett & Weeks, 2017, Pennycook et al., 2015). In addition to reducing and even replacing the use of analytical reasoning, the reliance on emotions in assessing information promotes inaccuracies in judgement by enhancing the perceived plausibility of fake news (Garrett & Weeks, 2017). Research examining the process through which emotion facilitates one's susceptibility to political misinformation has found that temporarily heightened levels of any emotion in general, regardless of the specific type or valence, predicts greater belief in all types of fake news, including both politically congruent and politically incongruent fake news (Martel et al., 2020). Martel and colleagues (2020) found that the tendency to rely on emotions instead of analytic reasoning to evaluate information can make

an individual more susceptible to fake news. They argued that research examining the relationship between affect and susceptibility to fake news should focus on the tendency to rely on elevated emotions to reason in a heuristic manner rather than the experience of a specific emotion. Given that the results of their studies did not find an interaction between the participants' emotion states and the congruence of political news with participants' own biases, Martel and colleagues (2020) concluded that their findings do not support the motivated reasoning account of political misperception, which argues that the audience will engage in biased analytic reasoning to protect their political identity by deliberately seeking out and believing in confirmatory information that reinforces the preconceived political perspective (Kahan, 2017; Lodge & Taber, 2000). Their findings (Martel et al., 2020), that participants with heightened levels of emotions are more likely to believe in fake news in general, regardless of political leaning, and that the tendency to rely on emotion instead of reasoning during information processing predicts to fake news, suggest that emotion activation is a stronger predictor of one's fake news susceptibility than bias-driven motivated reasoning. However, past research has demonstrated that the impacts of political biases and emotional components on one's susceptibility to misinformation are not mutually exclusive (Iyengar et al., 2012; Sanchez & Dunning, 2021). The level of emotional investment into one's partisan identity predicts the level of bias in processing of misinformation that favors one's political ideology (Iyengar, 2019). Emotional investment into one's political ideology and the management of these emotions can motivate people to selectively endorse political misinformation that agrees with their partisan identity (Iyengar, 2012).

Prior research examining the mechanisms through which political misinformation can lead to misperceptions has mostly approached the process by exclusively focusing on either

emotional activation in general and the reliance on those evoked emotions when processing political information (Martel et al., 2020), categorical dimensions (i.e., valence and level of engagement) of various emotions associated with misinformation (Cheung-Blunden et al., 2021), or the influence of partisan biases (Sanchez & Dunning, 2021). However, little research has focused on how the unique attributes of various discrete emotions can interact with one's political biases to impact the evaluation of political information. Weeks (2015) has examined this interaction with discrete negative emotions and found that unique negative emotions such as anger and anxiety can interact with partisan biases to result in heightened susceptibility to political misinformation. However, further research needs to be conducted to examine whether discrete positive emotions can elicit similar interactive effects on the processing of political information. The current dissertation aims to address this research gap in two major ways. First, this dissertation explored how the various dimensions of each discrete emotion, such as valence (i.e., positive vs. negative) and types of engagement (i.e., approach vs. withdrawal), can influence the processing of political misinformation. Second, given that Weeks (2015) did not factor in any variable that assesses one's emotional investment into a political party (i.e., affective polarization) when examining the impact of corrective information on the interaction between discrete emotions and political bias, this dissertation also investigated whether the audience's level of emotional investment in their political bias, captured by the concept of affective polarization, can influence the interactions between discrete emotions and political bias to impact the processing of political misinformation.

Affective Polarization

The interactive roles of political biases and emotion in the processing of political misinformation is encapsulated by the concept of affective polarization (Iyengar et al., 2012;

Sanchez & Dunning, 2021), which describes the strong partisan group identity that motivates one to incorporate positive emotions to one's attitudes toward one's favored political party while attributing negative emotions to attitudes toward the opposing party (Iyengar et al., 2012; 2019). Affectively polarized individuals experience the increase in positive emotions (i.e., hope and elation) when their party receives positive outcomes and the increase in negative emotions (i.e., anger and fear) when discussing the opposing party and its victories. In contrast, those who are less emotionally invested toward political parties tend to harbor indifferent sentiments towards the outcomes of both parties.

Sanchez and Dunning (2021) found that the level of affective polarization toward a political party predicts the endorsement of political misinformation in a partisan manner. Furthermore, their findings bridge the contradictory literature between Martel and colleagues (2020) and the motivated reasoning account (Lodge et al., 2000; Taber & Lodge, 2006) by demonstrating that the cognitive processing motivated by the extremity of political biases and emotional investment into a political party are two interrelated constructs captured by the concept of affective polarization. Rather than analytically endorsing misinformation based on whether they support the arguments of one's political view, as argued by the motivated reasoning account, affectively polarized individuals, driven by high levels of emotional investment in their favored political party, endorse misinformation that generates positive outcomes for their party to facilitate positive emotions (Iyengar et al., 2012; Sanchez & Dunning, 2021). This current dissertation aims to explore how affective polarization can influence the interaction between political bias and various discrete emotions commonly evoked by political information to impact one's susceptibility to political misinformation.

Even though affective polarization has been found to be significantly on the rise within the past few decades in the United States, especially since the 2016 presidential election (Pew Research Center, 2016), the polarization between supporters of the two major parties in the U.S. is mainly focused on ideological differences rather than policy disagreements (Iyengar et al., 2012). Despite the increasing levels of dislike Democratic and Republican partisans have for each other, the polarizing partisan belief has not been found to be reflected by policy differences between elites and supporters of the two parties (Webster & Abramowitz, 2017). For instance, recent research has found that the misalignment between the agendas of political supporters and their favored political party, described as voter-party incongruence, can significantly attenuate affective polarization by lowering people's evaluations of their favored party and the leaders of the party (Marchal & Watson, 2022). This finding implies that affective polarization may be mainly driven by ideological loyalty (i.e., advocating for libertarian conservatism) rather than by partisan loyalty (i.e., advocating for the Republican Party).

Ideological loyalty has been found to be associated with various discrete emotions (i.e., anger, anxiety, and enthusiasm) in the processing of political information (Sabucedo et al., 2011). The categorical dimensions of emotions (i.e., valence, motivation, and intensity) are crucial towards understanding how various discrete emotions can interact with personal political bias to impact the processing of political information (Cheung-Blunden et al., 2021). The next section will explore the two predominant approaches that offer different explanations for the categorization of emotions.

Two Frameworks of Affective Processing: Dimensional vs. Discrete Approach

Past research has considered the affective processing of information from two different approaches. The *dimensional perspective of emotion* posits the basic structures of emotion as

dimensional, such as viewing emotions on a valence of positive to negative (Harmon-Jones et al., 2017). Rather than understanding emotions through general dimensional categories, the discrete perspective of emotion argues that each emotion elicited by a piece of information exerts its unique impact on the subject based on its distinct function and mechanism in the information context (Nabi, 1999; Roseman, 2011).

Past literature examining the dimensional perspective of emotion in information processing generally agrees that emotions exist on three dimensions: the *valence* of positive and negative (Niemic, 2004), different levels of *arousal* (Bradley & Lang, 1994), and the *motivational dimension* of approach and withdrawal (Harmon-Jones et al., 2017). The current dissertation focuses on the two dimensions that are most impactful to the processing of misinformation: valence and motivation.

The emotional valence of a message concerns whether the information elicits positive, negative, or neutral emotion and is the most distinguishable aspect of a message (Neimic, 2004). Valence is a prominent dimension in media research because it is fairly straightforward to categorize a piece of information as positive, negative, or neutral, and in the context of social media, media contents that are on the extreme ends of the positive or negative valence tend to attract more attention and engagement than neutral ones (Cheung-Blunden et al., 2021; Hoang et al., 2013; Stieglitz & Dang-Xuan, 2012; Keib et al., 2018). Prior studies that have examined the affective processing of online contents on the media platform of Twitter (now known as X) have primarily focused on emotional valence as opposed to other dimensions of emotion (Bifet & Frank, 2010; Vosoughi et al., 2018). Past studies (Cheung-Blunden et al., 2021; Lahuerta-Otero & Cordero-Gutiérrez, 2016) identifying the traits of influential Twitter posts (“tweets”) found that although tweets exuding high level of positive or negative sentiments receive more attention

than neutral tweets, positive tweets receive more engagement than both negative and neutral tweets. This finding demonstrates that an information's affective valence can differentially impact how audiences process and interact with it.

The impact of affective valence on the processing of information has been studied from the angle of mood, an affective state that is low intensity, diffused, and relatively enduring compared to emotion. Affect Infusion Model (AIM; Forgas, 1995, 2002) describes the mechanism through which mood valence predicts the attitudes and cognitive processing style used to assess the new information. AIM presents a dichotomous mood-induced processing that is based on valence by arguing that information that generates positive emotions will evoke more heuristic, less deliberative processing, while information that generates negative emotions will evoke more deliberate processing (Forgas, 1995; 2019). According to AIM, the reason that mood valence can bias one's attitude and method in approaching new information is because it can facilitate the association of mood-specific memories and schemas with the encountered information (Bower, 1981; Forgas, 1992). Positive mood would prime the audience into making more trusting evaluations of new information by associating positive memories and schemas with the information, while negative mood would prime more cautious, skeptical, and deliberative evaluations of the information by associating negative memories and schema with it (Forgas, 1995; 1992; 2019).

Indeed, some prior research has found that memory and evaluations of the encountered message are often biased by mood valence during message processing (Bless & Fiedler, 2006; Fiedler, 2001; Forgas, 1994, 1995; Forgas, Bower, & Krantz, 1984; Niedenthal et al., 2000). Positive mood tends to prime an individual into adopting a cognitive style that is more heuristic (Krueger, 2019; Pennycook et al., 2015), global, assimilative, and trusting (Fieldler et al., 1992),

compared to negative mood. Past research has also found that compared to participants in neutral and negative moods, participants who experienced positive mood when evaluating new information were more likely to perceive logical coherence (Forgas, 2019), attribute meaning to meaningless information (Pennycook et al., 2015), hold greater confidence in their judgements of information (Bower, 1981; Forgas, 1995; Schwarz & Clore, 1983), arrive to a judgment within a shorter response time (Forgas, 2019), and have poorer memory recall and recognition of the processed information (Bless & Fieldler, 2006). On the contrary, negative mood has the evolutionary function of triggering alert and threat, which can evoke deliberative, cautious, accommodative, and systematic processing of the presented information in order to resolve the threat as efficaciously as possible (Bless, 2001; Bless & Fieldler, 2006; Bohner et al. 1992; Fiedler, 1998; 2006; Forgas, 2019; Frijda, 1988; Khan & Isen, 1993; Schwarz, 1990, Schwarz et al., 1991). Past research similarly indicates that compared to participants in positive or neutral mood, participants who experienced negative mood tend to rely more on new, external information (Fiedler et al., 1987), show fewer judgment errors (Forgas, 2011; 2013), have better memory of the presented information (Fieldler et al., 1992; Forgas et al., 2005), are more inclined to use detailed schemas and systematic processing as opposed to a more global and heuristic processing of new information (Bless, 2001; Forgas, 2007), rendering them less susceptible to misinformation (Forgas et al., 2005).

The motivational dimension describes emotions based on the responses they evoke, which can lean towards either approach or withdrawal (Bradley & Lang, 2000; Niemic, 2004). Approach-oriented emotions are usually generated by pleasant stimuli that evoke behaviors of engagement to move one towards the stimuli, while withdrawal-oriented emotions are usually generated by unpleasant and possibly threatening stimuli that prompt the individual to disengage

from the stimuli to guard themselves (Davidson et al., 1990; Schneirla, 1959), although it should be noted that this may not apply to certain withdrawal emotions with positive valence, such as serenity and relief (Harlé & Sanfey, 2010; Roseman, 2011). Emotions within the same valence category can differ along the motivation dimension, which can be observed in the different emotive behaviors between the withdraw-based negative emotion anxiety and approach-based negative emotion anger. Past research (Cheung-Blunden et al., 2021) comparing the processing of online fake news containing either angry or fearful sentiments has found that anger increases the popularity (measured by "likes") of a tweet and the likelihood of the tweet being shared, while fear undermines the popularity of a tweet by discouraging engagement with it ("likes" and retweeting). Furthermore, other research has shown that the impact of motivational dimension can overshadow the impact of valence in decision making tasks involving unfair situations (Harlé & Sanfey, 2010). Using an economic task known as the *Ultimatum Game*, in which the participant can either accept or refuse offers to split money with varying degrees of fairness from another player, the researchers observed a main effect for motivational dimension, but not valence in participants' choices. Those experiencing withdrawal-based emotions (disgust and serenity) were more likely to reject the offers than those experiencing approach-based emotions (anger and amusement) and control condition, and this main effect of the motivation dimension was observed at all fairness levels of offers. Together, these studies demonstrate that while approach-based emotions are often associated with positive valence and withdrawal-based emotions with negative emotions, the motivation dimension can be independent from emotional valence for specific emotions in certain contexts.

Each dimension alone is insufficient for capturing the unique, complex roles of discrete emotions in the processing of political information, especially given that most political news

tends to contain complex and multifaceted contents that elicit biased processing. Furthermore, each discrete emotion often encompasses elements from multiple dimensions. For example, if we adopt the valence-approach to understanding emotion, all emotions of the same valence should evoke similar behavioral responses and cognitive processing when encountering new information. However, past research has shown that distinct emotions of the same valence (i.e., anger and fear) can often evoke completely different approaches in the processing of new information (Lerner & Keltner, 2000), especially given that emotions with the same valence categorization can have different categorizations on other dimensions (Roseman, 2011). Rather than existing as independent factors, the emotion dimensions of valence and motivation can conjunctively create a discrete framework that describes how each emotion functions in its unique information context. Together, the two affective dimensions of valence and motivation can be incorporated into a discrete framework to help categorize the distinct impacts of various emotions generated by political media (Fontaine et al., 2007; Russell et al., 1989).

Contrary to the dimensional approach, the *discrete approach* studies the unique impact of each emotion on one's appraisal of the information, based on the emotion's distinct *goals* and *action tendencies* in the informational context and how it interacts with other components of the information, such as the presence of reassurance (Lerner & Keltner, 2000; Nabi, 1999; 2002). This approach argues that each discrete emotion is associated with its own distinct set of cognitive processing, physiological response, and action tendency (Lerner & Keltner, 2001). The discrete approach to emotion expands and further elaborates on the foundation of dimensional approach by building a more nuanced model of information processing that factors in the unique emotive processes of each emotion and the contextual factors of the information when considering how each unique emotion impacts the evaluation of information (Lerner & Keltner,

2000; Nabi, 1999; 2002). Oftentimes, the emotive process of discrete emotion cannot be adequately described by the categorization of a single dimension such as valence (Lerner & Keltner, 2000; 2001).

The discrete approach allows for the incorporation of multiple dimensions to illustrate how distinct emotions within the same valence category can differentially influence the processing of misinformation. When the categorization of an emotion is described by the intersection between multiple dimensions rather than the categorization of a single dimension, unique emotive processes and manifested behaviors of the discrete emotion in the specific information context can be more aptly described (Roseman, 2011). For example, emotions with the same categorization in valence but different categorizations on the motivation dimension, such as anger and fear, can each evoke distinct engagement style with the new information that result in different judgments of and behavioral response to the information (Cheung-Blunden et al., 2021; Lerner & Keltner, 2001; Roseman, 2011; Weeks, 2015). The same emotion can also elicit different processing styles based on distinct contextual factors unique to the information, such as whether the information is political in nature (Lerner & Rivkin-Fish, 2021; Small et al., 2006), is corrected for misrepresentation (Weeks, 2015), or provides reassurance (Nabi, 1999; 2002). Given that the discrete approach offers a more sophisticated and comprehensive perspective for understanding the role of individual emotions in information processing, this dissertation adopted the discrete approach to examine how various negative and positive emotions previously studied in the literature of political misinformation can uniquely interact with preconceived political biases to impact the processing of political news.

The Discrete Approach to Misinformation Processing

Past research in political communication has explored how various discrete emotions can differentially impact discernment of political misinformation in news media. For instance, research conducted on Twitter (now known as X) has found that the popularity of negative tweets depends on whether they generate fear or anger, with angry tweets generating significantly more engagement than fearful tweets (Cheung-Blunden et al., 2021; Gadde & Roth, 2018). Furthermore, Weeks (2015) has found that the negative emotions of anger and fear can interact with preconceived partisan biases to determine whether people evaluate misinformation in a partisan or open-minded manner. Specifically, inducing anger in participants encouraged politically biased evaluation of misinformation, where participants are more likely to endorse and share misinformation that favors their supported political party, while inducing anxiety discourages partisan evaluations of misinformation and encourages participants to seek out and consider out-party sources to verify the misinformation. These findings (Cheung-Blunden et al., 2021; Weeks, 2015) demonstrate that various discrete emotions can interact differently with preconceived biases by either enhancing or diminishing the influence of partisanship on the processing of misinformation. This dissertation aims to further explore these effects by investigating whether the interaction between the unique appraisal process of discrete emotions and the contextual factors of the political information, such as the congruence of information with an individual's partisan bias and level of political polarization, affect the processing of misinformation and intention to propagate it.

Several theoretical frameworks from the fields of psychology, sociology, and communication have shaped research on the roles of discrete emotions in cognitive processing (Bessarabova et al., 2020). Two major frameworks embody the discrete approach to examine the roles of various emotions in information processing: the Appraisal Tendency Framework (ATF)

and Cognitive Functional Model (Lerner & Keltner, 2000; Nabi, 1999). While ATF and CFM both take on the discrete perspective of emotion to describe the unique cognitive processing of and behavioral reaction to new information evoked by discrete emotions, these two frameworks (Lerner & Keltner, 2000; 2001; Nabi, 2002) differ in their theoretical underpinnings by emphasizing different factors that guide behavioral interactions with the information across various contexts (i.e., individual differences in appraisal patterns in ATF vs. each emotion's unique pattern in cognitive processing style under specific circumstances in CFM).

ATF defines and differentiates emotions through their distinct patterns of appraisal, which are automatic cognitive processes that guide the subsequent perception and evaluation of a situation (Lerner & Keltner, 2000; Moors, 2017). The processes of appraisal are determined by a range of factors that form a pattern of appraisal unique to each emotion, known as *appraisal tendency*. The appraisal tendency of each emotion constitutes of a set of core dimensions that determine the emotionally themed predispositions to appraise a situation that subsequently result in the experience of the discrete emotion (Arnold 1960; Ellsworth 2013; Frijda 1986; Lazarus 1991; Lerner & Keltner, 2001; Ortony et al., 1988; Roseman 2013; Scherer 2009). Appraisal tendencies are processes motivated by goals, which can shape future judgment by unconsciously influencing the perception and interpretation of future situations (Lerner & Tiedens, 2006). Appraisal tendencies can impact both the processed contents and depth of cognitive engagement (Lerner & Keltner, 2001).

The unique pattern of appraisal tendencies manifested by each emotion is described by the six cognitive dimensions adopted from Smith and Ellsworth (1985): certainty about whether the source of emotion is identifiable and/or predictable (certainty/uncertainty bias), pleasantness of the activated emotion (positivity/negativity bias), intensity of attentional activity demanded by

the stimulus, sense of control over the emotion-eliciting stimulus (risk/opportunity bias), expected level of processing effort, and the attribution of responsibility in situational control to either internal or external factors (Lerner & Keltner, 2000). In other words, the six core dimensions essentially form the unique identifier for each emotion (Lazarus, 1991; Smith & Ellsworth, 1985). Each specific emotion is defined and generated by the six core dimensions, which in turn focus cognitive resources to address an encountered situation, or in the case of the current dissertation, political information. The appraisal tendency of each emotion, constructed by the six core dimensions, is therefore a goal-oriented process that utilizes the emotion evoked by the stimulus to assess and resolve the encountered situation. The theoretical premise of ATF is that appraisal tendency mediates the effects of the stimuli on the affective responses by embodying the impact of each emotion on the processing of the situation or information. The six core dimensions are concerned with describing how different types of cognitive evaluations evoked by the appraisal tendency of each emotion can determine the valence, strength, and length of emotional experiences. For instance, the core dimensions of the negative emotion anger, responsibility, control, and certainty, can be described by the appraisal tendencies of external attribution of the responsibility to a negative outcome, a sense of personal control of the situation, and feeling certain about the situation (Averill, 1983; Betancourt & Blair, 1992; Lerner & Keltner, 2000; Smith & Ellsworth, 1985).

The appraisal tendencies of each emotion can usually evoke a set of unique responses that can be manifested through the individual's behavior, physiology, subjective experience of the situation, and communication about the situation. These emotion-specific responses allow the individual to automatically evaluate and react to an encountered situation when experiencing the emotion (Frijda, 1986; Levenson, 1994; Oatley & Johnson-Laird, 1996). According to ATF,

reason that each emotion has its own specific pattern of outcomes in cognitive processing, physiological reaction, and behavioral tendencies is due to the unique appraisal tendencies that connect each discrete emotion to the theme of the emotion-generating stimulus (Lazarus, 1991; Lerner & Keltner, 2001; Smith & Ellsworth, 1985). These appraisal tendencies are used to evaluate outcomes consistent with the core elements of the emotion. Therefore, the appraisal of each emotion in the context of processing new information, particularly political information that is provocative in nature, is a complex and adaptive process that can often result in inaccuracy, bias, and even radicalization (Bessarabova et al., 2020; Lerner & Keltner, 2000; 2001). The Cognitive Functional Model (CFM) is another common discrete approach in emotional research that builds on ATF by providing a more comprehensive framework for understanding the dynamic interplay between cognitive and emotional processes by emphasizing the functional roles of individual emotion in influencing different cognitive processes of the information or decision at hand (Bessarabova et al., 2020; Nabi, 2002). Specifically, it considers how emotions shape cognitive processes such as perception, appraisal, attention, memory, critical reasoning, and decision-making and how those cognitive functions in turn influence the generation, regulation, and expression of emotions to help one adapt to environmental demands and achieve decision goals (Nabi, 1999). Therefore, CFM is more concerned with the mediated message effects of emotions on cognitive processing rather than focusing on the unique appraisal patterns of each emotion like ATF (Bessarabova et al., 2020). While the CFM acknowledges the differences in cognitive processes and emotional responses between individual subjects, its primary focus is on understanding the functional role of cognition and emotion in guiding behavior across diverse contexts. It considers how individuals' cognitive strategies and emotional regulation efforts contribute to adaptive or maladaptive outcomes (Nabi, 1999). Although like

ATF, CFM views emotions as discrete to explain their unique goals and action tendencies in the context of information processing (Nabi, 1999; Dillard, 2013), its predictions of unique emotional outcomes are more fluid than ATF and often contingent on various information contexts (Bessarabova et al., 2020; Nabi, 2015). For instance, CFM deems the adaptive impacts of certain emotions (i.e., anger and fear) on message processing to be contingent on the expectation of reassurance (Nabi, 2002). The model aims to explain how emotion plays a role in various aspects of information processing (i.e., perception, appraisal, memory, attention, critical reasoning, and decision-making) to elicit attitudinal and behavioral changes.

CFM describes how specific emotions facilitate attitude change in response to misinformation by (a) accounting for the role of contextual factors (i.e., presence of reassurance) in motivated attention and motivated processing and (b) considering the distinct persuasive effects of various discrete emotions (Dillard & Peck, 2001; Nabi, 2002). CFM posits that emotions emerge as the result of one's assessments of whether a certain situation, such as a piece of misinformation, supports or opposes one's goals (Nabi, 1999). Like ATF, CFM assumes that emotions are discrete, meaning they each reflect a unique person-environment relationship (i.e., core relational theme; Lazarus, 1991), and, thus, are associated with different goals and action tendencies designed to achieve those goals. For instance, fear is evoked by an environment that is perceived to contain a threat to physical safety, thus motivating protective behavior, whereas anger is evoked from the sense of offense and goal hindrance, motivating retributive action (Nabi, 2002). CFM argues that a specific situation (i.e., the expectation of encountering politically charged news) can successfully evoke an emotion if the information's content captures the core relational theme of the emotion (i.e., bias-induced anger), allowing the

audience to easily identify that theme (i.e., partisan political news) and its relevance to the self (i.e., preconceived political biases).

Political information can often provoke cognitive appraisals involving partisanship, such as the detection of information's congruence with personal partisan beliefs (Iyengar et al., 2012). The appraisal of political information's congruence with personal partisan beliefs can often interact with the emotion(s) evoked by the partisan nature of the information to trigger either heuristic or deliberative motivated processing from the audience, depending on the specific persuasive mechanisms of the triggered emotion(s) in the context of the political information (Dillard & Shen, 2013). Therefore, CFM builds on the one-dimensional perspective of AIM (i.e., dichotomous valence) by offering a framework that accounts for multiple affective dimensions (i.e., motivation, valence, and intensity) and contextual factors (i.e., whether information is politically congruent or incongruent with partisan bias) to explain how various emotions triggered by political misinformation can uniquely shape the subsequent information processing. CFM's conceptualization of affect in cognitive processing as distinct emotions and the incorporation of other intermediary levels of processing (i.e., whether an information offers reassurance or is followed by correction) provides a more nuanced and comprehensive framework for understanding the affective processing than the dichotomous mood-induced processing of AIM (Dillard & Peck, 2001; Forgas, 1995; Nabi, 1999; Weeks, 2015).

Unlike the AIM, which regards affect in information processing as general, diffused mood on a one-dimensional, bipolar valence, both ATF and CFM consider affect as discrete emotions with unique appraisal processes individualized by the context of the information (Dillard & Shen, 2013; Nabi, 2002). Instead of subscribing to a dipole categorization of affect along the valence dimension of positive and negative, in which every unit of positive feeling

gained displaces another unit of negative feeling, CFM understands each emotion as categorically distinct from each other based on how they interact with the broader contextual factors of the message (Dillard & Shen, 2013; Nabi, 2015). Each distinct emotion can interact with several contextual factors of the message, such as the expectation of reassuring information from the message, argument strength, presence of peripheral cues, level of emotional arousal, placement of emotion within a message, acceptance or rejection of the message as correct, and memory recall to mediate the depth of information processing (Nabi, 1999).

Given that the theory of AIM only focuses on the dichotomous valence of emotions (positive vs. negative) but does not account for how similarly-valenced emotions with different motivational dimensions (approach vs. withdraw) can differentially influence the processing of political information, discrete frameworks like ATF and CFM help account for this shortcoming by incorporating the interaction between different dimensions of each individual emotion and contextual factors of the processed message to explain the unique influence of each emotion on information processing. Beyond the general influence of emotional valence, the discrete perspective argues that each emotion, even those with the same valence categorization, has its own unique mechanism to influence the processing of political information (Jost et al., 2018; Nabi, 2002). Therefore, the current dissertation incorporates research findings from both the dimensional (i.e., AIM) and discrete (i.e., ATF and CFM) approaches of emotion to examine whether discrete negative and positive emotions with different motivational dimensions (approach vs. withdraw) can distinctively interact with the two moderators, congruence of encountered information with political beliefs and affective polarization, to impact various cognitive factors in the processing of misinformation.

The study of emotions in empirical psychological research has been categorized into either integral or incidental emotions (Lerner & Keltner, 2000; 2001). Integral emotions concern methods of emotion induction that are pertinent to the core message of the information or judgements about the message (Lerner et al., 2015; Lerner & Keltner, 2000). An example of emotion induction that concerns integral emotion would be the fear appeals used in health messages advocating for screening or preventative measures for cancer, which has been demonstrated to be effective in raising awareness in preventative health practices and eliciting responsive actions to the health concern in focus (Keesling & Friedman, 1995; Kline & Mattson, 2000; Ruiter et al., 2014; Peters et al., 2013; Zhang Meadows, 2020). On the other hand, incidental emotion inductions are irrelevant to the core topic or message of the information or judgements about the information (Lerner et al., 2015). The irrelevance between the induced emotion and the information can be observed in research demonstrating that emotions produced by viewing films, hypnosis, or stressful exams can influence subsequent evaluations of unrelated topics and objects (Bodenhausen, 1993; Clore et al., 1994; Forgas, 1995; Schwarz, 1990; 2013; Schwarz & Clore, 1996). However, if the participants are actively asked to attribute their feelings to a source that is irrelevant to the information at hand (i.e., current weather or traffic condition), the feelings will no longer be informative nor impact judgements about the information (Schwarz, 1990; Schwarz & Clore, 1983). Given the empirical difficulty to control the induced emotion generated by a specific topic or message, most psychological research that examines ATF employs methods that induce incidental emotions (Lerner & Keltner, 2000), while research in communication tend to be more mixed in examining incidental (Mitchell et al. 2001) and integral (Bessarabova et al., 2015; Nabi, 2002) emotions. On the other hand, research employing CFM tends to focus on integral affect, although similar to studies concerning ATF, both integral

and incidental emotions have been examined in research employing CFM. Past research has shown that the influence of the induced emotion on decision-making processes is similar between integral and incidental emotions (Ferrer et al., 2015). Given that emotions integral to political news are often multifaceted and difficult to standardize between individuals, the current dissertation therefore adopted an induction method for incidental emotion (Bessarabova et al., 2020).

Discrete Negative Emotions and Affective Processing of Information

Negative emotions tend to be more intense and evoke more specific responses compared to positive affect (Isbell et al., 2006). Specifically, although contents designed to elicit high-arousal positive or negative emotions (i.e., anger, fear, disgust, or joy) are more likely to be shared than neutral content in general (Berger & Milkman, 2012; Cotter, 2008; Heath et al., 2001; Peters et al., 2009; Vosoughi et al., 2018), people still experience positive and negative affect with different levels of arousal. The negativity bias proposes that negative affect has a stronger influence on the individual than positive affect (Baumeister et al., 2001; Cacioppo et al., 1999), while the principle of positivity offset proposes that at the baseline, most people experience mild positive affect most of the time (Cacioppo et al., 1999). This indicates that positive affective responses tend to be experienced as general positivity (Orehek et al., 2011), while negative affective responses are usually more specific and distinct from one another, such as in the distinct emotions of fear, anger, sadness, disgust, or guilt (Averill, 1980; Ellsworth & Smith, 1988). Prior research examining tweets posted by Iranian and Russian fake Twitter (currently known as X) accounts has found that while tweets that evoke various positive emotions do not significantly differ in their impact on the audiences and were generally popular, tweets that evoke negative emotions have differential impacts on the audience depending on the

type of discrete emotions. Negative tweets can be either widely unpopular or popular depending on whether they generate fear or anger (Cheung-Blunden et al., 2021; Gadde & Roth, 2018).

Negative emotions, such as anger and fear, can often be evoked by selective exposure to partisan news sources (Garrett et al., 2014). Past research (Lu & Lee, 2019) has found that the consumption of pro-party television programs is more likely to induce negative emotions of anger and fear toward the out-party candidate, which in turn leads to a higher level of affective polarization. In other words, fear and anger mediate the causal relationship between consumption of partisan television programs and increased affective polarization. However, other research comparing the impacts of anger and fear on processing misinformation have found that these two negative emotions appear to demonstrate contrasting behavioral outcomes with regards to affective polarization, in that anger encourages partisan-driven validation of misinformation while fear reduces the tendency to validate misinformation based on partisanship and encourages confirmation of information from other sources (Weeks, 2015). This shows that while the dimensional and discrete approaches hold similar predictions for the impact of various positive emotions on processing media content, they offer different predictions regarding the impact of distinct negative emotions such as anger and fear, two negative emotions that are most frequently compared in literature of affective polarization.

Effects of Fear on the Processing of Information

Fear is an emotion that exists along the withdrawal side of the motivational dimension and occurs in response to threatening stimuli in one's environment (Eysenck et al., 2007; Marcus et al., 2000). Fear arises from uncertainty, a lack of personal control, and high levels of physiological arousal, all of which lead people to develop strategies to ameliorate unpleasantness (Eysenck et al., 2007; Lazarus, 1991; Lerner & Keltner, 2001). Fear is a withdrawal emotion

typically associated with physiological responses such as blood draining away from the face and extremities and the motivation to seek protection (Cheung-Blunden & Blunden, 2008; Frijda, 1986; Ridout & Searles, 2011; Roseman et al., 1994; Vasilopoulos et al., 2018). Physiological sensations of fear serve the evolutionary function to activate the flight or freeze response, making fearful people less inclined to engage with the external stimulus (Frijda & Parrott, 2011; Lazarus, 1999; Levenson, 1994).

Prior research regarding the role of fear in political attitudes has found that novel political scenarios can often evoke fear, which in turn suppresses prior attitudes and increases the influence of contemporary information and opposing viewpoints in participants' evaluations of political arguments (MacKuen et al., 2010; Redlawsk et al., 2010). In the context of affective polarization, a polarized individual may perceive the negative traits ascribed to the opposing party and its partisan ideology as incongruent with their personal political beliefs and therefore threatening (Jamieson & Cappella, 2008). This sense of threat and uncertainty from ideologically incongruent information can easily generate fear (Lu & Lee, 2019), which may in turn motivate one to seek out a broad range of misinformation across the political spectrum to appease the fear-induced discomfort (MacKuen et al., 2010). The uncertainty of fear encourages consideration and deliberation of a wider range of perspectives (Parker et al., 2010; Tiedens & Linton, 2001), including views incompatible with personal beliefs, resulting in the decrease of influence from partisanship and increase in the likelihood to consider outside sources in one's evaluation of political information (MacKuen et al., 2010; Marcus et al., 2011; Redlawsk et al., 2010).

Although fear has typically been discussed as an emotion that facilitates open-mindedness and more democratic attitude toward politics, the paradox of fear is that while it promotes critical thinking and eagerness to expand knowledge about politics, this effect may

backfire if the information being considered is inaccurate or intentionally misleading (Marcus, 2002; Weeks, 2015). For example, Marcus and colleagues (2005) found participants who were primed to experience high levels of fear were less politically tolerant in their judgements when they were subsequently exposed to a message advocating against free speech, compared to those who received an affectively neutral prime. While fear discourages the tendency to process misinformation in a partisan manner, fear can also make someone more gullible to misinformation that counters their political beliefs. Given that fear can encourage the deliberation of misinformation that disagrees with partisan beliefs, this can result in the fearful individual being susceptible to misinformation from both sides of the political spectrum and therefore expands the range of potential influences from fake news (Marcus et al., 2011; Weeks, 2015).

Effect of Anger on the Processing of Information

Anger is regarded as an approach-based negative emotion, motivating behavioral responses that aim to restore a desired state or previously disrupted goal (Bessarabova et al., 2020; Carver & Harmon-Jones, 2009). Anger can be evoked and directed towards the stimulus when it is perceived as the cause of negative experiences or when a set of standards is being infringed (Carver & Harmon-Jones, 2009; Lerner & Keltner, 2000). This is why blaming the opposing side for major social issues, ridiculing unconventional claims made by an opposing side, and broadcasting scandals of political opponents are all popular media tactics to foster hostility towards the opposing side using anger (Arceneaux & Johnson, 2013). This hostility directed at the opposing group can facilitate a political misperception that aligns with one's partisan ideology by activating intuitive and politically motivated heuristics to seek and process political information that serves one's partisan ideology (Weeks, 2015).

The experience of anger can encourage the subsequent preference for affectively congruent information to sustain the levels of anger (Weeks & Garrett, 2019). In other words, angry people find messages with a matched tone of anger as the most convincing. Past research on the persuasive impact of messages that are affectively congruent with the audience's anger has found that participants who experience anger from anti-US protests in the Middle East endorsed a local tax argument that is framed to evoke anger more than an argument framed to evoke sadness (DeSteno et al., 2004). Similarly, in another study (Na et al., 2018) where participants were induced to feel angry after reading about mismanagement of a health crisis, researchers found that respondents were more inclined to accept an unsubstantiated rumor that also contained anger-inducing sentiments to match the original stimuli, compared to the low-anger group. These findings demonstrating the preference for affectively congruent information suggest that angry people are more likely to accept certain high-octane misinformation with matching sentiments of anger. Anger is therefore a powerful tool to propagate political misinformation. Misinformation that successfully evokes anger, particularly when congruent with personal beliefs, naturally appears more convincing to politically devout individuals (Reis et al., 2015; Weeks & Garett, 2019). This phenomenon can be observed in conspiracy believers such as QAnon followers who frequently expose themselves to angering conspiratorial beliefs (i.e., regarding the COVID-19 pandemic and 2020 presidential election), which facilitates their tendencies to endorse other conspiracies with similar sentiment of anger and disseminate political misinformation by appealing to anger (Bessarabova & Banas, 2023; Roose, 2021).

Interestingly, anger can often motivate people to actively seek out identity-threatening information from politically hostile platforms to sustain the intensity the emotion (Arpan & Nabi, 2011; Han & Arpan, 2017). Young and colleagues (2011) found that anger can prompt motivated

engagement with political misinformation by encouraging people to seek out information that opposes and challenges their beliefs for generating counterarguments against these opposing views. The approach aspect of anger encourages the partisan individual to seek out ideologically incongruent, identity-threatening information not because they are driven by accuracy but rather the need to gather information for future combative engagement with the opposing side, evaluate the weaknesses of the opposing group and their arguments, defend arguments of the one's political ingroup (Arpan & Nabi, 2011; Hwang et al., 2008; Kühne et al., 2011), and to discuss political issues with those who do not hold similar views (Han & Arpan, 2017; Mutz, 2006). All these various forms of motivated engagement with the opposing side help appease anger by restoring a sense of correctness and faith in one's partisan beliefs (Carver & Harmon-Jones, 2009).

Anger is considered as the major emotional driver of partisan motivated reasoning (Bessarabova et al. 2020; Weeks, 2015). Prior research examining the mechanisms of partisan motivated reasoning has found that anger can help facilitate partisanship and create political misperceptions (Suhay & Erisen, 2018). Given that anger facilitates a sense of certainty and individual control (Lerner & Keltner, 2001), partisan motivated reasoning process has been shown to be mainly facilitated by anger rather than fear or general negative affect (MacKuen et al., 2010; Marcus et al., 2011). This dogmatic confidence instilled by anger encourages biased assessment of political misinformation based on personal partisan beliefs(Weeks, 2015). Given that anger arises in response to undesirable external stimuli, it discourages one's willingness to consider new information (Valentino et al., 2008). The presence of anger in information processing has been found evoke behaviors consistent with motivated reasoning such as the increase in defensiveness, dismissal of belief-challenging information, biased search of

information exclusively supporting one's position, and the reliance on previous dispositions in evaluating new information (MacKuen et al., 2010; Marcus et al., 2011). The fact that people do not necessarily subscribe to disparaging misinformation about the opposing side solely based on partisan affiliation alone demonstrates that anger and partisan motivated reasoning conjunctively account for the persuasive effects of political misinformation (Druckman, 2012; MacKuen et al., 2010; Redlawsk et al., 2010). Of all types of discrete negative emotions, anger has been found to be uniquely responsible for facilitating partisan biases and various types of motivated engagement with misinformation, resulting in the biased endorsement of fake news that are congruent with partisan beliefs (MacKuen et al., 2010; Marcus et al., 2011; Suhay & Erisen, 2018; Taber & Lodge, 2006).

Discrete Positive Emotion and Affective Processing of Information

The impact of high-arousal positive emotion on the dissemination of misinformation might not seem obvious given that most prior research in misinformation tends to focus on negative emotions. The contribution of negative emotions to the dissemination of misinformation is unsurprising given that high-octane outrage and fearmongering have been popular tactics to attract interactions with media content (Reis et al., 2015). However, positive contents have been found to be more likely to be shared due to concerns about maintaining an approachable self-image (Cheung-Blunden et al., 2021). Most people prefer to interact with those who exude positivity in their communication and avoid negative people who have the tendency to spoil the mood (Berger & Milkman, 2012). Thus, sharing positive media content, regardless of its accuracy, is one way for people to attain credence for a positive social image. Some positive emotions (i.e., awe and surprise) are associated with the feeling of novelty, which viral fake news often attempts to evoke (Skavronskaya et al., 2021; Vosoughi et al., 2018). In a

study that analyzed popular Twitter (X) news posts over a decade, Vosoughi and colleagues (2018) found that popular fake news tends to incorporate more novel information than factual ones and that novel information is more likely to be shared. Interestingly, they also found that in comparison to fake news, people are more likely to reply with positive emotions like joy, trust, and anticipation to factual news. As with negative emotions, behavioral outcomes of information processing with various positive emotions have also been found to differ along the motivational dimension of approach versus withdrawal. A commonly studied positive emotion in the context of affective processing is joy, an approach-based positive emotion (Cheung-Blunden et al., 2021; Nabi, 2015; Roseman, 2011; Vosoughi et al., 2018).

Joy on the Processing of Information

Joy a is a positive emotion that is uniquely associated with approach-oriented behaviors such as dancing, handclapping, and laughing (Darwin, 1965; Roseman, 2011). These response behaviors to the experience of joy stem from a sense of safety that encourages exploration of unfamiliar situations and willingness to engage with novel stimuli (Harlé & Sanfey, 2010; Izard, 1977; Roseman, 2011). Past research (Panksepp & Burgdorff, 2003) on animals has even found that young rats demonstrated attraction to joy by spending more time with seemingly more joyful adult rats who chirp more often. Joy facilitates the development of social bonding. Indeed, research (Cheung-Blunden et al., 2021) on the social media platform Twitter (now known as X) found that joyful tweets generally received higher tweet engagement via retweeting and liking, compared to angry and fearful tweets. Joyful tweets are considered as engaging by both dimensional and discrete views (Cheung-Blunden et al., 2021; Roseman, 2011), but the mechanisms of engagement differ in that the former focuses on the sensational nature of high-arousal and positive valence while the latter emphasizes the social-bonding nature of joy.

Political misinformation dispersed in communities bonded by the sharing of fake news, such as QAnon, can also indirectly evoke joy through the sense of community associated with the misinformation (Bessarabova & Banas, 2023). However, other research on Twitter (X) misinformation has also found that people are more likely to respond with joy towards factual rather than false information (Vosoughi et al., 2018). Induced joy has been found to make children more certain about their beliefs by boosting confidence (Tornare et al., 2017). When experiencing joy, individuals are encouraged to process political messages heuristically by relying more on party stances and less on detailed argument strength (Behnke et al., 2022; Lerner et al., 2015). Past research has found that emphasizing the source of joy (i.e., "*Why are you happy right now*?") can reduce overconfidence and improve the assessment of misinformation (Koellinger & Treffers, 2015).

Although most past research unanimously suggests that joyful sentiments may encourage susceptibility to new information (Cheung-Blunden et al., 2021; Roseman, 2011, Vosoughi et al., 2018), contradictory findings regarding the association of joy with false information specifically (Vosoughi et al., 2018) warrant further examination of its emotional impact on the evaluation of political news.

Research Rationale and Hypotheses

The current dissertation aims to expand on prior research examining the relationships between emotion and partisan-motivated processing (Cheung-Blunden et al., 2021; Lu & Lee, 2019; Weeks, 2015) by approaching the role of emotion from both dimensional and discrete perspectives of affective processing. While prior research has demonstrated how discrete negative emotions of anger (approach-based) and fear (withdrawal-based) can differentially impact the processing of political misinformation (Cheung-Blunden et al., 2021; Weeks, 2015)

and how discrete positive emotions like joy can elevate the popularity of misinformation (Cheung-Blunden et al., 2021), the design of these studies did not address four major questions regarding the processing of misinformation.

First, the interactive relationship between emotion states, political biases, and affective polarization on misinformation processing have not been addressed or observed in past research. The following relationships have been examined in past research: (a) the interactive relationship between affective polarization and the congruence of misinformation with personal partisan beliefs (Oyserman & Dawson, 2020; Sanchez & Dunning, 2021; Thompson-Swire et al., 2020) and (b) the moderating role of ideological congruency on the causal relationship between induced negative emotions (anger vs. anxiety) and participants' belief in misinformation without the presence of correction (Weeks, 2015). The current dissertation bridged these separate areas of research to build a more complete framework that examines whether the interactive relationship between the congruence of misinformation with personal beliefs and affective polarization can moderate the impact of various emotions on the processing of political misinformation, as conceptualized by the dimensional and discrete frameworks of affective processing. This moderated moderation model was inspired by a similar three-way model proposed by Weeks (2015), in which emotion induction is the independent variable and accuracy in assessing fake news is the outcome variable, while the congruence of misinformation with personal beliefs is the primary moderator. However, given that the current dissertation is not interested in examining the correction of misinformation as a moderator, as Weeks (2015) did, this dissertation's three-way model incorporated affective polarization as a secondary moderator to explore whether the interactions between various induced emotions, congruence, and affective polarization can impact the processing of political misinformation.

Second, past research examining the impact of emotion on misinformation processing had only focused on either the participants' endorsement of misinformation (Sanchez & Dunning, 2021) or their accuracy in assessing misinformation on specific political topics (Weeks, 2015) as outcome variables. No prior research in this area has incorporated outcome variables that assess whether the ability to identify political misinformation on a wide range of topics and one's attitude toward political news (i.e., skepticism vs. trust). Given that skepticism and trust are essentially opposite endpoints in measuring one's degree of confidence in an information source (Tsfati & Cappella, 2003), degree of skepticism is sometimes conceptualized and presented as trust in some research. Given that partisan information can often provoke more extreme feelings in people who are high on affective polarization (Iyengar et al., 2012), the effect from emotion induction may interact with the individual's affective polarization to activate different types of attitudes (i.e., confidence, skepticism, etc.) in processing, depending on whether the encountered information is confirmatory to personal beliefs (Oyserman & Dawson, 2020). Theoretically speaking, people who are driven by partisan motivated reasoning prefer a more heuristic, direct processing style when encountering political information that are confirmatory and congruent with personal political beliefs (Kahan, 2013; Lodge & Taber, 2000; Oyserman & Dawson, 2020), but these theoretical accounts have not factored in the influence of different emotions on one's level of trust/skepticism towards the information and its source.

As mentioned in the previous section discussing dimensional perspective of affect, research from the AIM approach has demonstrated that the valence of one's mood state can impact the level of trust/skepticism in information (Bless & Fieldler, 2006; Forgas, 1995; 2019). Compared to negative or neutral moods, positive moods can influence one to adopt a more trusting attitude towards new information (Fieldler et al., 1992). Various studies have shown that

compared to participants in neutral and negative moods, those who experienced positive mood tend to hold greater confidence in their judgements of information (Bower, 1981; Forgas, 1995; Schwarz & Clore, 1983), arrive to judgment in shorter time (Forgas, 2019), have poorer memory of the processed information (Bless & Fieldler, 2006), and are more likely to share the misinformation (Cheung-Blunden et al., 2021; Keib et al., 2018; Stieglitz & Dang-Xuan, 2012).

Response time was included as an outcome measure to evaluate the cognitive processing of political information due to past findings regarding the cognitive processing of information based on mood-consistency and the automatic processing of emotional sociopolitical concepts (Forgas & Bower, 1987; Lodge & Taber, 2005). Past research (Forgas & Bower, 1987) has shown that when participants were asked to recall and assess details of the characters they have previously read about, they spent less time in judging details that are consistent with their prior manipulated mood as compared to mood-inconsistent details even though they previously spent more time to learn about the mood-consistent details. In the context of political congruence, previous research (Lodge & Taber, 2005) examining the automaticity of emotion activation while processing political concepts has shown that participants reacted faster to affectively congruent political information and slower to affectively incongruent information. Therefore, response time has consistently been shown to be crucial in assessing the processing style of political information.

In addition to the main outcome variable of accuracy in assessing fake news (Weeks, 2015), the current dissertation therefore incorporated several direct measurements of attitudes in information processing (i.e., confidence in judgement, skepticism towards the political statement selected as true, and inclination to share the information online) and an indirect measurement of

cognitive processing style, the response time to reach a judgement, as additional outcome variables.

Finally, no prior research has conducted experimental research to examine how the discrete approach to emotion can scaffold on the dimensional approach to help describe the roles of various affective factors in partisan-motivated processing of misinformation. Although Cheung-Blunden and colleagues (2021) compared the dimensional and discrete perspectives of emotion in their study by examining the popularity of misinforming tweets from fake Russian and Iranian accounts based on their emotional sentiments—either categorized by valence (i.e., very positive to very negative) or coded to contain any of the five discrete emotions (i.e., anger, disgust, fear, joy, sadness, and surprise)—it was an observational study examining online engagements with a corpus of preexisting tweets from over a period of time instead of a controlled experiment. Thus, they could not examine the specific mechanisms behind the processing of tweets containing misinformation, nor were they able to assess whether the participants believed in the misinformation. Moreover, they were unable to confirm whether the Twitter (X) audiences who engaged with the tweets were actual human beings instead of fake accounts run by bots, which would allow for the artificial facilitation of tweet popularity and engagement (Tandoc, 2019). Furthermore, given that the emotional sentiments of each tweet were coded by the researchers, it was uncertain whether the audiences who engaged with the tweets perceived the same or similar emotions from the tweets without any form of manipulation check that is exclusively possible in a controlled lab experiment. Another issue with their method of coding the tweets' emotional sentiments is that the discrete emotions of the tweets were not classified in a mutually exclusive manner, meaning that each tweet could potentially be tagged with multiple types of emotions. While the non-mutually exclusive categorization of discrete

emotions is appropriate for this observational study, given that media content in natural settings can often evoke multiple emotions, this design does not allow the researchers to validly compare the popularity of tweets based on their emotion categorizations, as the categorizations are not independent of one another.

Given that findings from past research (Cheung-Blunden, 2021; Weeks, 2015) have deemed the dimensional framework to be overly simplistic in describing the effect of individual emotions on the processing of political information, the current dissertation adopts a multidimensional approach to study the effects of various positive and negative emotions by observing how valance and motivations within each discreet emotion can influence outcomes. Even though earlier research (Bradley et al. 2001; Cacioppo & Berntson 1994; Cacioppo & Gardner 1999; Cacioppo et al., 1999) has found that approach motivational system tends to activate in the context of positive emotion valence, while the withdraw motivational system tends to have a negative bias, later research (Cacioppo et al., 1999; Lang et al., 1997; Norris et al., 2010) found that valence and motivation dimension can activate independently. Rather than being two competing frameworks, the discrete framework (Keltner & Lerner, 2000) further expanded on the dimensional framework (Bolls, 2010; Nabi, 2010) and described unique cognitive appraisals and action tendencies based on the various dimensions that can be used to categorize emotions. Therefore, the predictions of this dissertation regarding the effects of various emotions (anger, fear, & joy) on misinformation processing will be based on the cognitive appraisals and action tendencies proposed by the discrete framework (Keltner & Lerner, 2000). Moreover, given the findings on anger and fear from past research examining misinformation processing (Cheung-Blunden, 2021; Weeks, 2015) and the limited findings on the appraisal effects of *induced* joy, this dissertation predicts that motivational intensity will

exert a greater influence than valence in shaping the cognitive processing of political misinformation.

Given that the discrete approach proposes that each emotion has its own unique appraisal tendencies when new information is being processed (Lerner & Keltner, 2000), this dissertation is interested in examining the effect of various negative and positive emotions such as anger, fear, and joy on the processing of political misinformation on their own. Before examining the interactive relationships between emotion condition, partisan bias, and affective polarization, a preliminary research question explored (RQ1) whether inducing various discrete emotions can directly evoke different types of effect on (a) accuracy in assessing political misinformation (from here on referred to as PM accuracy), (b) time taken to assess the veracity of political statements, (c) confidence in assessments of political statements, (d) skepticism towards the political statements selected as true, and (e) willingness to share the selected political statements after controlling for political knowledge.

To examine how discrete emotions with different valence can differentially impact the processing of misinformation through the interaction with partisan bias, this dissertation predicts that (H1) congruence of misinformation with partisan beliefs (Oyserman & Dawson, 2020; Sanchez & Dunning, 2021; Thompson-Swire et al., 2020) and affective polarization can jointly moderate the impact of emotion induction on accuracy of misinformation assessment through a three-way (emotion condition × congruence × affective polarization) moderated moderation model (Figure 1). In addition to accuracy of misinformation assessment, this three-way moderated moderation model is also being adopted by two other outcome variables that have been found to be frequently impacted by emotion in past research – response time to judge a statement and skepticism towards the selected news statements (Bower, 1981; Bless & Fieldler,

2006; Cheung-Blunden, 2021; Forgas, 1995; 2019; Keib et al., 2018; Schwarz & Clore, 1983; Stieglitz & Dang-Xuan, 2012; Vosoughi et al., 2018; Weeks, 2015). Due to the initial bias in cognitive processing when encountering confirmatory information according to motivated reasoning (Lodge & Taber, 2000; 2005), ideological congruency of misinformation with partisan beliefs was set as the primary moderator and level of affective polarization was set as the secondary moderator given that individual differences on this factor can influence the level of bias (Oyserman & Dawson, 2020; Sanchez & Dunning, 2021; Thompson-Swire et al., 2020).

Based on prior research on the roles of emotions like anger, fear, and joy in information processing (Cheung-Blunden, 2021; Roseman, 2011; Vosoughi et al., 2018; Weeks, 2015) and affective polarization (Lu & Lee, 2019; Sanchez & Dunning, 2021), this dissertation specifically predicts that (H1a) people who experience anger and are high on affective polarization will have the least accurate assessment of misinformation when the misinformation is congruent with personal beliefs, compared to other emotion conditions and those who rate lower on affective polarization. (H1b) People who experience joy and are higher on affective polarization will have more accurate assessment of misinformation than those who experience anger but will also have less accurate assessment than those who experience fear, regardless of the misinformation's congruence with personal political beliefs. Conversely, (H1c) compared to other emotion conditions and those who rate higher on affective polarization, people who experience fear and rate lower on affective polarization will have the most accurate assessment of misinformation, regardless of its congruence with personal political beliefs.

The same predictions for each emotion condition will be made for the outcome variable of time. (H2) The effect of emotion on the time took to assess political statements will be moderated by congruence of misinformation with personal beliefs and affective polarization

(Figure 1). Specifically, (H2a) Compared to other emotion conditions and those who rate lower on affective polarization, those who experience anger and are higher on affective polarization will take the least time to assess the veracity of political statements that are congruent with personal political beliefs. (H2b) Compared to other emotion conditions and those who rate higher on affective polarization, those who experience fear and are lower on affective polarization will take the most time to assess the veracity of political statements, regardless of their congruence with personal political beliefs.

This dissertation also predicts that (H3) the effect of emotion on confidence in assessment is exclusively moderated by affective polarization (Figure 2). Specifically, (H3a) those who experience anger and are higher on affective polarization have the highest confidence in their assessments of political statements. Conversely, this dissertation predicts that (H3b) those who experience fear and are lower on affective polarization will have the least confidence in their assessments of political statements.

Furthermore, based on prior research examining the impact of various discrete emotions (i.e., fear, anger, and joy) on the processing style of messages (MacKuen et al., 2010; Parker et al., 2010; Roseman, 2011; Suhay & Erisen, 2018; Tiedens & Linton, 2001; Vosoughi et al., 2018; Weeks, 2015), this dissertation predicts that (H4) the effect of emotion induction on skepticism towards political statements selected as true will be moderated by affective polarization and congruency of misinformation with personal beliefs (Figure 1). Specifically, (H4a) those who experience anger and are higher on affective polarization have the lowest skepticism towards the political statements selected as true when they evaluate politically congruent fake news. On the contrary, (H4b) those who experience fear and are lower on

affective polarization will be expected to have the highest skepticism towards political statements regarded as true, regardless of the congruency of the fake news with personal beliefs.

Finally, based on prior literature examining the influence of media messages containing various discrete emotions (anger, fear, and/or joy) on the tendency to share misinformation (Cheung-Blunden et al., 2021; Keib et al., 2018; Stieglitz & Dang-Xuan, 2012), this dissertation predicts that (H5) the effect of emotion on willingness to share the statement regarded as true is moderated by affective polarization (Figure 2). Specifically, (H5a) those who experience anger and are higher on affective polarization will be the most inclined to share the political statements regarded as true. Conversely, (H5b) those who experience fear and are lower on affective polarization will be the least inclined to share their selected political statements.

Method

Participants

Participants in the current study were 600 adults from the US (308 Female, 288 Male, 4 Other) obtained from the online survey platform Prolific (2025). A raw sample of 617 participants were initially recruited. A preliminary screening was conducted to exclude participants that did not attempt basic attention and/or emotion induction tasks. As a result, 17 participants in total were excluded from the final sample; 16 were excluded for not attempting the emotion induction writing task (turned in blank responses) and one participant was excluded for not attempting half of the outcome measures.

The study utilized the “Representative Samples Feature” to facilitate stratified random sampling on Prolific. This feature requests Prolific to gather study samples with demographics (i.e., age, sex, ethnicity, political orientation, etc.) that roughly mirror the US population according to the latest census data. Average age of the participants was 46 years, with a range

from 18 to 76 years. The majority of the participants identified as White/Caucasian (67.5% White/Caucasian, 16.67% African American, 6.5% mixed race, 5.17% Asian, 3.67% Hispanic, 0.33% Native American, and 0.17% other), and the average level of education is around associate's degree/trade school. The distribution of the participants' political orientation suggests bimodal distribution (Figure 4), with 12.83% reported being strongly conservative (rated 7), 28.83% lean conservative (rated 5-6), 19.5% moderate (rated 4), 24% lean liberal (rated 2-3), and 14.83% reported being strongly liberal (rated 1).

Power Analysis for Sample Size Estimation

Past research (Valentino et al., 2011) that had utilized an emotion induction method with similar format to the one adopted by this dissertation has estimated a small to medium effect size ($f = 0.2$) with a sample size of 411 participants (Cohen, 1988; 1992). To obtain more accurate estimations of effect size and sample size through power analysis, a pilot study of 35 participants was collected from the survey platform Prolific. The pilot study adopted a simplified design of the current study with only two emotion conditions (anger vs. control). Even though the overall model examining whether the effect of emotion on accuracy in assessment was moderated by congruence and affective polarization was found to be significant, $F(8, 26) = 7.41$, $p < 0.001$, $R^2 = 0.7$, none of the predicted moderation effects were detected. Both emotion conditions (anger vs. control) and partisan congruence (congruent vs. incongruent news) demonstrated significant ($p < 0.05$) main effects on assessment accuracy, and no significant interactions between any of the predictors were found. The effect size from the main effect of congruence ($\eta_p^2 = 0.59$) was utilized to perform a power analysis for the three-way moderation design with G*Power (Faul et al., 2009) and yielded an ideal sample size of $N = 600$ to reach 0.8 in statistical power (1-β.

Therefore, this dissertation collected a sample of at least 600 participants to ensure sufficient power for the predicted models and account for potential missing data.

Study Procedure

Participants volunteered to participate in the study through the online survey platform Prolific, which compensated them approximately $9 per hour (the rate varied slightly by completion time). Prolific guided the interested participants to the study's Qualtrics online survey link, through which they consented and completed the study subsequently. Once participants filled out their demographic information, they were asked to complete the emotion induction task, manipulation check, all the dependent measures, political orientation scale, affective polarization measure, and finally the political knowledge task, as presented in the respective order of the sections below. The means and standard deviations of all study variables, internal consistency (Cronbach's α) of all multi-item measures, and correlation matrix between all study variables were reported in Tables 1.1 and 1.2.

Measures

Emotion Induction Writing Task

To induce an emotional state, participants were asked to recall and write about something that caused them to experience a specific emotion during the past month. This method modified a common technique of autobiographical emotion recall by replacing the specific emotion to recall in the prompt instruction to the respective emotion (anger, fear, or joy) participants in the experimental conditions were assigned to and setting the time limit of the task to three minutes (usually between three to five minutes; Gable & Harmon-Jones, 2008; Keltner et al., 1993; Lerner & Keltner, 2001; Pham, 1998; Stack et al., 1985; Valentino et al., 2011). The main benefit of this method is that it is better at activating each unique emotion independently

compared to other more complex stimuli (i.e., video clips and music), which may be subjectively appraised by the participants and consequently generate various emotions based on how the stimulus relates to the participant's own unique situation (Lerner & Keltner, 2001). Of all 600 participants, 139 were randomly assigned to anger condition, 153 were assigned to fear condition, 141 were assigned to joy condition, and 167 were assigned to control condition. Participants were shown the following prompt: "Now we would like you to describe something during the past month that made you feel angry/fearful/happy (based on experimental condition). Please describe how you felt as vividly and in as much detail as possible. Examples of things that have made some people feel angry/fearful/joyful are an event that occurred in your personal life, a new experience, an idea that you have been thinking about, a specific person or animal, or statements made by someone. It is okay if you don't remember all the details, just be specific about what exactly it was that made you angry/fearful/joyful and what it felt like to be angry/fearful/joyful. Please take three minutes to write out your answer" (Isbell & Ottati, 2002; Valentino et al., 2011). Participants in the control condition listed objects in their bedroom (see Appendix A). This method allowed participants in all groups (experimental and control) to complete similar intervention tasks that varied only in emotion induced (or the lack thereof for the control). By tasking the control group with a writing prompt that required similar levels of self-reflection, time, and energy as the prompt of the experimental groups, this study was able to standardize the participatory experience of all groups as much as possible.

Manipulation Check for Intensity of Induced Emotion

After completing the intervention writing task, participants were asked to complete manipulation check (see Appendix B) that derived its 15 emotion adjectives from established emotion scales such as the Differential Emotions Scale (DES; Izard, 1977), the Multiple Affect

Adjective Check List (MAACL-R; Zuckerman & Lubin,1985), and research on the structure of emotion concepts (Shaver et al., 1987). The purpose of this scale is to assess the degree to which participants experienced each of the emotions anger, fear, and joy immediately after the respective emotion induction or control task that they were assigned to. Participants were asked to rate the extent to which they felt each of the 15 emotion adjectives on a scale of 1 ("*Not at all*") to 5 ("*Extremely*"). The three main emotions of interest, anger, fear, and joy, were each assessed with five similar emotion adjectives (i.e., "angry," "enraged," "irritated," "mad," and "annoyed," were all used to assess anger). The intensities of these three emotions were therefore calculated by averaging the scores of the five respective emotion adjectives that were assessing each emotion.

Political News Assessment

Political News Assessment is a 17-item measurement that assesses participants' propensity to regard pro-Democrat or pro-Republican statements as truthful (see Appendix C). This measure was modeled after another previous measure used by Sanchez and Dunning (2021) to assess the endorsement of misbeliefs, in which both fake news that favored the Democrats and those that favored the Republicans were presented in the measure alongside factual statements. Instead of directly discerning between facts and fake news, participants in their study were asked to rate their belief in each statement on a Likert scale (Sanchez & Dunning, 2021). Given that the current research focuses on the ability to differentiate between facts and misinformation on the same topic rather than on the tendency to endorse misbeliefs, each item of this measure instructed participants to select the factual statement from a pair of statements presenting different standpoints on the same issue.

After completing the emotion induction check, participants were randomly assigned to evaluate 17 pairs of statements that contain either pro-Democrat or pro-Republican fake news (322 assigned to pro-Democrat condition; 278 assigned to pro-Republican condition). For each item, participants were presented with the following question "Which of the following statements is true?" with two choices of political statements for answer (Sanchez & Dunning, 2021). One of the two statements is either a pro-Democrat or pro-Republican fake news, while the other statement option stated the fact on the same issue. For participants who were assigned to the pro-Democrat group, the option that contains fake news was always supportive of either the Democratic party, the party's major politicians or presidential candidates, or the party's advertised values, and the same structure was used for participants assigned to the pro-Republican group (see Appendix C for the complete list of items). Participants were instructed to select their answers as fast as possible without help from outside sources. On average, participants spent 22.77 seconds (*SD* = 18.17) on each question.

All facts and fake news were verified on the established factchecking websites Politifact.com (Politifact, 2025) and Factcheck.org (Annenberg Public Policy Center, 2025). An example of answer choices presented to participants in the group with pro-Democrat fake news includes the following options, where the first option is false: 1) "Joe Biden's campaign has never used TikTok because the app has been banned on all federal government devices;" and 2) "Joe Biden's campaign has an active TikTok account even after he issued the TikTok ban on all federal government devices." An example of answer choices presented to participants in the group with pro-Republican fake news includes the following options, where the second option is false: 1) "The Capitol riot on Jan 6th, 2021 involved many violent and heavily armed Trump supporters;" and 2) "The gathering at the US Capitol on Jan 6th, 2021 was a peaceful protest."

Calculation of Accuracy in Discerning Between Fake and Factual News

One point was added for each correct selection of the factual statement and incorrect assessments received zero. The final score for accuracy assessment was the tally of correct assessments, with a range of possible scores from 0 to 17.

Assessment Response Time

The response time for participants to reach a judgement of veracity for each news item was measured in seconds and collected through the hidden timing function of the online survey instrument Qualtrics. The average response time for all 17 assessment items was used for analysis.

Confidence in Assessment

For each news item, participants rated their confidence on their veracity assessment on a scale of 1 ("*extremely not confident*") to 6 ("*extremely confident*"; see Appendix F).

Skepticism

For each news item, participants rated their degree of skepticism towards the statement they just selected as true on a scale of 1 ("*completely not skeptical*") to 6 ("*highly skeptical*"; see Appendix F).

Willingness to Share Statement

For each news item, participants rated how likely they are to share the statement they have selected as true with acquaintances on a scale of 1 ("*extremely unlikely*") to 6 ("*highly likely*"; see Appendix F).

These three items (confidence, skepticism, and willingness to share the selected statement) were adopted from past research that assessed how emotion-induced information

processing impacts participants' cognitive style and gullibility towards new information (Fieldler et al., 1992; Forgas, 2019; Pennycook et al., 2015).

Political Orientation

Participants' political orientation (Sanchez & Dunning, 2021; Weeks, 2015) was assessed with a single item (see Appendix F) asking them to rate where they stood politically on a scale from 1 ("*strongly liberal*") to 7 ("*strongly conservative*").

Affective Polarization Feeling Thermometer

To measure the level of affective polarization, a feeling thermometer rating system (Lelkes & Westwood, 2017; Pew Research, 2016; Webster & Abramowitz, 2017) was used to assess favorability towards Democratic and Republican political elites (i.e., elected officials), ordinary voters, and the political parties on a scale of 0 (*very cold*) to 100 (*very warm*), with higher values indicating greater affective polarization (Druckman & Levendusky, 2019; Iyengar et al., 2019). For example, favorability towards political elites was measured by asking participants to rate a list of Democratic and Republican politicians (i.e., Joe Biden and Donald Trump for Democrat and Republican politicians respectively) using the feeling thermometer scale. For the questions about political elites, there was an option for participants to indicate that they have not heard of the politician. If the participant selected that option, that response was omitted from calculation. To cover the three components of party elites, voters, and political parties, this 14-item measure (see Appendix D) included 10 items that assessed favorability towards the party elites (five items for each party), two items that assess favorability towards voters (one item for each party), and two items that assess favorability towards the political parties (one item for each party; Sanchez & Dunning, 2021; Pew Research Center, 2016).

To calculate affective polarization the following approach was used. Partisan difference was first calculated by taking the absolute value of the difference between the respective counterparts from the two parties (i.e., Trump vs. Biden, Republican voters vs. Democrat voters, etc.). Given that the elites category has more than one pair of counterparts (five pairs), the absolute value of partisan difference was first averaged within the category. Finally, the means of partisan differences for the three categories (elites, voters, and party) were averaged again to produce a final score for affective polarization (Pew Research Center, 2016; Sanchez & Dunning, 2021).

Political Knowledge Task

The final task that the participants completed in the study was the Political Knowledge Task (Delli Carpini & Keeter, 1996; Nyhan & Reifler, 2010; Weeks, 2015), which was a covariate accounted for in similar prior research examining the effects of anger induction on the belief in political misinformation (Weeks, 2015). Prior research has demonstrated that political knowledge is associated with the belief in political misinformation and thus should be accounted for given that it is not explained by the moderators (Nyhan & Reifler, 2010). This task contains five items that measure participants' knowledge about the contemporary leader and partisan breakdown of Congress, partisan affiliation of the president who appointed the contemporary Chief Justice of the Supreme Court, the latest unemployment rate according to the US Bureau of Labor, and the contemporary U.S. Secretary of State (see Appendix E).

Participants received one point for each correct response to the knowledge questions and zero points for incorrect response. The final score of the political knowledge task was the sum of correct responses, with a range of possible scores from 0 to 5 (Delli Carpini & Keeter, 1996; Nyhan & Reifler, 2010; Weeks, 2015).

Calculation of Political Congruence between Fake News and Personal Belief

The calculation method for belief congruency between misinformation and participants' partisan beliefs was inspired by the Conceptual Similarity Judgement Scale (Brandt, 2022), which assessed participants' belief structure by asking them to rate the conceptual similarity between their own political attitudes and partisan identities and target belief statements that presented issue-based ideological messages (i.e., Supreme Court, COVID-19, etc.). Higher subjective congruence score indicated stronger alignment between the individual's belief system and the target belief presented by the message. In the present study, belief congruency was calculated on a scale of 1 (*highly incongruent*) to 7 (*highly congruent*) using participants' self-reported political orientation, which ranges on a scale of 1 (*strongly liberal*) to 7 (*strongly conservative*). Participants who rate themselves as politically neutral (4) automatically received a neutral score of 4 for political congruency. Participants were randomly assigned to assess either questions with pro-Democrat fake news options or questions with pro-Republican fake news options. If the participants were assigned to assess questions with fake news options that are incongruent with their ideology (i.e., someone who rated himself as strongly liberal [1] was assigned to assess questions with pro-Republican fake news options), the person's degree of political extremity, which is the absolute value of the difference between the reported score and the neutral score (i.e., $|1-4| = 3$), was subtracted from the neutral score (i.e., $4-3 = 1$). For example, if a Republican-leaning participant who reported herself to be 6 on the political orientation scale was assigned to assess questions with pro-Democrat fake news options, her political congruency calculation was 4 (neutral score) – ($|6-4|$) = 2, indicating high incongruence. Conversely, if the participants were assigned to assess questions with fake news options that are congruent with the participant's ideology (i.e., someone who rated himself as strongly

Republican [7] was assigned to assess questions with pro-Republican fake news options), the person's degree of political extremity (i.e., |7-4| = 3) was added to the neutral score (i.e., 4+3 = 7). For example, if a Democrat-leaning participant who reported herself to be 1 on the political orientation scale was assigned to assess questions with pro-Democrat fake news items, her political congruency calculation was 4 (neutral score) + 3 (|1-4|) = 7, indicating high congruence.

Results

Emotion Manipulation Check

To assess the efficacy of emotion induction and the intensity of the experienced emotion(s), a MANOVA was performed with SPSS 30 (IBM, 2024). Emotion condition was set as the independent variable, and the average score of anger, fear, and joy, as assessed by the five respective adjectives of each emotion, were set as the outcome variables in the MANOVA to compare the intensity experienced for each of the three emotions across four study groups (anger, fear, joy, and control). To compare participants' experience of the three emotions between different emotion conditions in the post-hoc analyses, Bonferroni corrected pairwise comparisons were conducted for each emotion. Results from MANOVA (Table 2.1) and post-hoc analyses (Table 2.2) revealed that across the four study conditions, anger condition consistently had the highest intensity of anger, fear condition consistently had the highest intensity of fear, and joy condition consistently had the highest intensity of joy (Table 2.3).

RQ1: Main Effect of Emotion Condition on the Five Dependent Variables

Before the moderation analyses were performed, preliminary analyses (RQ1) were conducted to explore the main effect of emotion condition on each of the five dependent variables, (a) accuracy in assessing political statements, (b) time taken to assess the veracity of political statements, (c) confidence in assessments of political statements, (d) skepticism towards

political statements, and (e) willingness to share the selected political statements. For each of the five outcome variables, a one-way ANCOVA was performed with SPSS 30 (IBM, 2024) with emotion condition as the independent variable and political knowledge as the covariate. Significant ANCOVA models were subsequently examined with Bonferroni adjustment for multiple comparisons.

Emotion condition did not significantly impact PM accuracy, $F(3,595) = 0.35$, $p = 0.79$, $\eta^2_p = 0.002$ (Table 3), time to assess statements, $F(3,595) = 0.43$, $p = 0.73$, $\eta^2_p = 0.002$ (Table 4), confidence in assessment, $F(3,595) = 2.02$, $p = 0.11$, $\eta^2_p = 0.01$ (Table 5), and skepticism, $F(3,595) = 0.14$, $p = 0.94$, $\eta^2_p = 0.001$ (Table 6). However, emotion condition was found to significantly affect willingness to share the selected political statement, $F(3,595) = 3.92$, $p = 0.009$, $\eta^2_p = 0.02$.

Bonferroni adjusted pairwise comparison on willingness to share indicated that there was a significant difference between control and joy condition, $t(595) = 2.06$, $p = 0.04$, $d = 0.31$ (Table 7.2). Specifically, control group ($M = 2.61$, $SD = 1.45$) was significantly higher than joy group ($M = 2.18$, $SD = 1.31$) in their willingness to share (Table 7.1).

H1: Congruence and Affective Polarization Moderating PM accuracy by Emotion

To assess whether congruence and affective polarization moderate the effect of emotion condition on PM accuracy, SPSS PROCESS Model 3 (for three-way moderation with two moderators) at 10,000 iterations for bootstrapping (Hayes, 2012; IBM, 2024) was used to probe for interaction effects, with congruence as the primary moderator, affective polarization as the secondary moderator, and political knowledge as the covariate. The three-way interaction of the moderated moderation model on PM accuracy was not significant, $\mathbf{\Delta}R^2 = 0.006$, $F(3, 583) = 1.57$, $p = 0.20$, $\eta^2_p = 0.007$ (Table 8). Accuracy in assessing misinformation was not significantly

impacted by the interactions between emotion conditions, congruence of the information with partisan belief, and affective polarization. No significant interactions between emotion conditions and any of the moderators were found (Table 9). It can be concluded that neither congruency nor affective polarization moderates the effect of emotion induction on PM accuracy, and therefore, H1 is not supported. However, the main effect of congruence on PM accuracy was found to be significant (Table 9), B = -0.65, SE = 0.14, 95% *C.I.* [-0.92, -0.38], $t(582) = -4.72$, $p < 0.001$ ($p = 2.91 \times 10^{-6}$), $\eta^2_p = 0.12$, indicating that the more congruent the political misinformation was with participants' political beliefs, the less accurate they were in assessing political misinformation when emotion condition, affective polarization, and political knowledge were controlled for (Figure 3). Given that none of the interactions in the moderated moderation model for PM accuracy were significant, all three sub-hypotheses (H1a, H1b, and H1c) comparing anger, fear, and joy condition on different levels of affective polarization and congruency were not supported.

H2: Congruence and Affective Polarization Moderating Time by Emotion

Once again, SPSS PROCESS Model 3 (for three-way moderation with two moderators) at 10,000 iterations for bootstrapping (Hayes, 2012; IBM, 2024) was used to assess whether congruence and affective polarization moderate the effect of emotion condition on time when controlling for political knowledge as the covariate. The three-way interaction of the moderated moderation model on time was not significant, $\mathbf{\Delta}R^2 = 0.002$, $F(3, 583) = 0.36$, $p = 0.78$, $\eta^2_p = 0.002$ (Table 8). The time took to assess political statements was not significantly impacted by the interactions between emotion conditions, congruence of the information with partisan belief, and affective polarization. No significant interactions between emotion conditions and any of the moderators were found (Table 10). It can be concluded that neither congruency nor affective

polarization moderates the effect of emotion induction on time, and therefore, H2 is not supported. Given that none of the interactions in the moderated moderation model for time were significant, both sub-hypotheses (H2a and H2b) comparing anger and fear condition on different levels of affective polarization and congruency were not supported.

H3: Affective Polarization Moderating Confidence by Emotion

SPSS PROCESS Model 1 (for simple moderation analysis) at 10,000 iterations for bootstrapping (Hayes, 2012; IBM, 2024) was used to assess whether affective polarization moderates the effect of emotion condition on confidence. The effect of emotion on confidence in judgement was moderated by affective polarization, $\mathbf{\Delta}R^2 = 0.01$, $F(3, 591) = 3.31$, $p = 0.02$, $\eta^2_p = 0.08$, when controlling for political knowledge (Tables 8 and 11.1). To further explore this significant moderation relationship in the context of the sub-hypotheses, Bonferroni adjusted pairwise comparison between the emotion conditions was conducted with R Studio (R Core Team, 2025).

H3a, which predicted that those who experience anger and are higher on affective polarization have the highest confidence in their assessments of political statements, was not supported. Even though anger condition reported the highest level of confidence ($M = 4.55$) when affective polarization was at the highest level of mean + 1 *SD* (25.56), it was not significantly higher than the other emotion conditions at the highest level of affective polarization. Pairwise comparison (Table 11.2) of confidence in judgement between emotion conditions at each level of affective polarization (mean - 1*SD*, mean, and mean + 1*SD*) revealed that anger condition ($M = 3.64$) was significantly lower than the control group ($M = 3.98$) at the lowest level of affective polarization (-25.56), $B = -0.42$, $SE = 0.15$, $t(590) = -2.84$, $p = 0.02$, $d =$

-0.23. Finally, it should be noted that anger, out of all emotion conditions, demonstrated the most difference in confidence at different levels of affective polarization (Figure 5).

H3b, which predicted that those who experienced fear and are lower on affective polarization would have the least confidence in their judgement of political statements, was not supported by the results. Pairwise comparison between emotion conditions at each level of affective polarization (mean – 1 *SD*, mean, and mean + 1 *SD*) only found that control group (M = 4.20) was significantly higher than fear condition (M = 3.95) in confidence at the mean level of affective polarization (0.0001), B = 0.30, SE = 0.10, $t(590) = 2.88$, $p = 0.02$, $d = 0.24$ (Table 11.2). Although not significant, anger (M = 3.64) was in fact lower than fear condition (M = 3.72) in confidence when affective polarization was at the lowest level.

H4: Congruence and Affective Polarization Moderating Skepticism by Emotion

SPSS PROCESS Model 3 (for three-way moderation with two moderators) at 10,000 iterations for bootstrapping (Hayes, 2012; IBM, 2024) was used to assess whether congruence and affective polarization moderate the effect of emotion condition on skepticism. The three-way interaction of the moderated moderation model on skepticism towards selected statements was not significant, $\mathbf{\Delta}R^2 = 0.002$, $F(3, 583) = 0.41$, p = 0.74, $\eta^2_p = 0.002$ (Table 8). Skepticism was not significantly impacted by the interactions between emotion conditions, congruence of the information with partisan belief, and affective polarization. No significant interactions between emotion conditions and any of the moderators were found (Table 12). It can be concluded that neither congruency nor affective polarization moderates the effect of emotion induction on skepticism, and therefore, H4 is not supported. However, main effect of affective polarization on skepticism was marginally significant, B = -0.006, SE = 0.003, 95% *C.I.* [-0.011, 0.0004], $t(583)$ = -1.95, $p = 0.05$, $\eta^2_p = 0.04$, indicating that participants with higher affective polarization were

less skeptical towards the political statements selected as true when emotion condition, congruency, and political knowledge were controlled for. Given that none of the interactions in the moderated moderation model for skepticism were significant, both sub-hypotheses (H4a and H4b) comparing anger and fear condition on different levels of affective polarization and congruency were not supported.

H5: Affective Polarization Moderating Willingness to Share by Emotion

SPSS PROCESS Model 1 (for simple moderation analysis) at 10,000 iterations for bootstrapping (Hayes, 2012; IBM, 2024) was used to assess whether affective polarization moderates the effect of emotion condition on willingness to share. The effect of emotion on willingness to share the statement regarded as true was moderated by affective polarization, $\mathbf{\Delta}R^2 = 0.02$, $F(3, 591) = 4.32$, $p = 0.005$, $\eta^2_p = 0.02$ (Tables 8 and 13.1). To further explore this significant moderation relationship in the sub-hypotheses, Bonferroni adjusted pairwise comparison between emotion conditions was conducted with R Studio (R Core Team, 2025).

H5a, which predicted that those who experienced anger and were higher on affective polarization would be the most willing to share the political statements selected as true, was supported by the results from pairwise comparison. Anger condition reported the highest willingness to share political statements selected as true ($M = 3.04$) when affective polarization was at the highest level ($M + 1\ SD = 25.56$). Pairwise comparison (Table 13.2) between emotion conditions at each level of affective polarization (mean – 1 *SD*, mean, and mean + 1 *SD*) revealed that anger ($M = 3.04$) was significantly higher than the control group ($M = 2.59$), $B = 0.17$, $SE = 0.22$, $t(591) = 3.23$, $p = 0.04$, $d = 0.07$, fear ($M = 2.24$), $B = 0.71$, $SE = 0.21$, $t(591) = 3.34$, $p = 0.01$, $d = 0.28$, and joy condition ($M = 2.12$), $B = 0.68$, $SE = 0.22$, $t(591) = 3.05$, $p = 0.01$, $d = 0.25$, at the highest level of affective polarization (Table 13.2). At the highest level of

affective polarization, participants who experienced anger are more willing to share the statements selected as true than all other conditions (Figure 6). Furthermore, anger condition (M = 2.15) was also significantly lower than the control group (M = 2.62) in willingness to share when affective polarization was at the lowest level (M - 1 SD = -25.56), B = -0.74, SE = 0.21, t(591) = -3.56, p = 0.002, d = -0.29. Of all the emotion conditions, anger once again demonstrated the most difference in willingness to share at different levels of affective polarization (Figure 6).

H5b, which predicted that those who experience fear and are lower on affective polarization would be the least inclined to share the political statements, was partially supported by the results from pairwise comparison. Even though compared to other emotion conditions, fear condition reported relatively lower willingness to share the political statements regarded as true across three levels of affective polarization (M = 2.20, 2.22, and 2.24 at mean - 1SD, mean, and mean + 1SD respectively), pairwise comparison between emotion conditions at each level of affective polarization revealed that fear (M = 2.20) was only significantly lower than the control group (M = 2.62), B = 0.56, SE = 0.21, t(591) = 2.70, p = 0.04, d = 0.22, when affective polarization was at the lowest level (Table 13.2). This result indicates that even though fear condition resulted in consistently low willingness to share across three levels of affective polarization, it was only significantly lower than the control group but not significantly different from the anger and joy conditions at the lowest level of affective polarization (Figure 6). Furthermore, control group (M = 2.61) was also significantly higher than the fear condition (M = 2.22) in willingness to share when affective polarization was at the mean level (~0), B = 0.55, SE = 0.15, t(591) = 3.77, p = 0.001, d = 0.31.

Interestingly, joy condition ($M = 2.18$) was significantly lower than the control group ($M = 2.61$) in willingness to share when affective polarization was at mean level, $B = 0.51$, $SE = 0.15$, $t(591) = 3.46$, $p = 0.003$, $d = 0.28$. This finding was not predicted by any of the proposed hypotheses.

Summary of Findings

The following statistical analyses were performed to examine the hypotheses proposed in this dissertation. To assess the efficacy of emotion induction and the intensity of experienced emotion(s), a MANOVA was performed with emotion condition as the independent variable and the average intensity of anger, fear, and joy, as assessed by the five respective emotion adjectives of each emotion, as the outcome variables. Bonferroni corrected pairwise comparisons were conducted to compare the experience of each emotion between different emotion conditions. Results from the analyses indicated manipulations from the emotion induction measure were successful for all study conditions. To explore the main effect of emotion condition on each of the following five outcome variables: (a) PM accuracy, (b) time to assess a statement, (c) confidence in assessment, (d) skepticism towards selected statement, and (e) willingness to share the selected statement, an ANCOVA with political knowledge as covariate was conducted for each outcome variable. Post-hoc analyses were performed on significant ANCOVA outcomes with Bonferroni adjusted pairwise comparisons. Subsequently, three moderated moderation analyses (aka three-way interaction) with emotion condition as the independent variable, congruence as the primary moderator, and affective polarization as the secondary moderator were performed on the outcome variables of PM accuracy, time, and skepticism. Finally, two simple moderation analyses with emotion condition as the independent variable and affective

polarization as the moderator were performed on the outcome variable of confidence and willingness to share.

Results from ANCOVA (for RQ1) revealed that emotion condition significantly affected confidence and willingness to share but not PM accuracy, time, and skepticism. Bonferroni adjusted pairwise comparisons in the post-hoc analyses indicated that control group was significantly higher than fear group in confidence and was higher than both fear and joy group in willingness to share. Indicating that the experience of fear and joy may have supressed confidence in judgement and willingness to share statements selected as true.

None of the predicted moderated moderation models (for H1, H2, and H4) had significant interactions, indicating that neither congruence nor affective polarization moderates the effect of emotion condition on PM accuracy, time, or skepticism. However, several main effects from the two moderators were found to be significant in the analyses of PM accuracy and time. Firstly, the analysis on PM accuracy revealed that the more congruent the political misinformation was with participants' political beliefs, the less accurate they were in assessing political misinformation when emotion condition, affective polarization, and political knowledge were all controlled for. The main effect from the three-way moderation analysis on skepticism also confirmed the direct effect found in the mediation analysis, that participants with higher affective polarization were less skeptical towards the political statements selected as true regardless of congruency or emotion and when political knowledge was controlled for.

Both simple moderation models on the outcome variables of confidence (H3) and willingness to share were found to be significant (H5). Specifically, affective polarization significantly moderated the effect of emotion condition on confidence when political knowledge was controlled for. Subsequent pairwise comparison revealed that both sub-hypotheses H3a,

which predicted that participants in anger condition who were also high on affective polarization were the most confident in their assessments, and H3b, which predicted that participants in fear condition who were also low on affective polarization were the least confident, were not supported. Despite the statistical insignificance, the estimated marginal means for both anger and fear conditions did trend in similar patterns predicted by H3a and H3b (Figure 5). Interestingly, pairwise comparison on confidence revealed that control group was more confident than anger condition at the lowest level of affective polarization and was also more confident than fear condition at the mean level of affective polarization.

Affective polarization significantly moderated the effect of emotion condition on willingness to share when political knowledge was controlled for. H5a, which predicted that participants in the anger condition who were also high on affective polarization were the most willing to share the selected statements, is partially supported by the post hoc results. Even though anger condition reported the highest willingness to share at the highest level of affective polarization, it was only significantly higher than the emotion conditions of fear and joy but not significantly different from the control group. When affective polarization was at the lowest level, anger condition was significantly lower than the control group in willingness to share. Out of all emotion conditions, anger condition have the highest confidence and willingness to share at the highest level of affective polarization and conversely, lowest confidence and willingness to share at the lowest level of affective polarization.

H5b, which predicted that participants in fear condition who were also low on affective polarization will be the least inclined to share the political statements, was also partially supported by the post hoc results. Even though fear condition reported consistently low willingness to share across three levels of affective polarization, it is only significantly lower

than the control group but not significantly different from the anger and joy conditions at the lowest level of affective polarization. Furthermore, fear condition was found to be significantly lower than control group in willingness to share when affective polarization is at the mean level. Interestingly, when affective polarization is at mean level, joy condition was revealed to be significantly lower than the control group in willingness to share while still being higher than fear condition (albeit not significant).

Finally, it should be noted that out of all emotion conditions, anger demonstrated the most difference in confidence and willingness to share at different levels of affective polarization (Figure 5 and 6). This indicates that the effects of anger on confidence and willingness to share are highly contingent on the level of affective polarization. Induced anger amplified confidence in assessment and willingness to share at elevated levels of affective polarization and attenuated confidence and willingness to share when affective polarization was low.

Discussion

The current dissertation investigated how various discrete emotions that differ along valence (positive vs. negative) and motivation dimensions (approach vs. withdraw) – anger, fear, and joy – can differentially impact the processing of political misinformation. Specifically, this dissertation focused on examining the interactive effects of various induced emotions, congruence of misinformation with participants' partisan beliefs, and level of affective polarization on the outcome variables that measures the processing of political misinformation: (a) accuracy in assessing political misinformation, (b) time took to reach judgement, (c) confidence in judgement, (d) skepticism towards statements selected as true, and (e) willingness to share statements selected as true. We hypothesized that compared to other emotion conditions and those with lower affective polarization, participants who experienced anger and are high on

affective polarization would be less accurate in assessing political misinformation that is congruent with partisan beliefs, spend less time to assess congruent misinformation, be more confident in their judgement, be less skeptical towards the statement they have selected as true when assessing congruent misinformation, and be more inclined to share the statement they have selected as true. Conversely, compared to other emotion conditions and those with higher affective polarization, we predicted that participants who experienced fear and are low on affective polarization would be more accurate in assessing political misinformation regardless of its congruence with partisan beliefs, spend more time to assess misinformation regardless of its congruence, be less confident in their judgement, be more skeptical towards the statement they have selected as true, regardless of the congruence between the assessed misinformation and partisan beliefs, and be less inclined to share the statement they have selected as true. Finally, given the limited literature on joy's effect in information processing (Cheung-Blunden et al., 2021; Harlé & Sanfey, 2010; Roseman, 2011, Vosoughi et al., 2018), we predicted that the effect of induced joy on accuracy in assessment would fall between the effects of anger and fear. Even though various literature has described the roles of these examined factors in the processing of misinformation (Oyserman & Dawson, 2020; Sanchez & Dunning, 2021; Thompson-Swire et al., 2020; Webster & Abramowitz, 2017; Weeks, 2015), no prior research has empirically compared the effects of anger, fear, and joy on the processing of political misinformation while accounting for the interactive effects from congruence of information with personal beliefs and affective polarization.

Confidence and Willingness to Share by Emotion Condition

This study found that various discrete emotions (anger, fear, and joy) demonstrated distinct effects on confidence in assessment of political misinformation and willingness to share

the selected statements. Out of all emotion conditions, fear condition reported the lowest confidence in judgement, but only control group reported significantly higher confidence than fear condition. This result is consistent with the discrete account of emotion by ATF, which describes the unique role of discrete emotions in determining attitudes (i.e., confidence) and cognitive processing styles (Lerner & Keltner, 2000; Lerner et al., 2015). According to ATF, fear can influence one to hold less confident attitudes when judging new information (Lerner & Keltner, 2000; Tiedens & Linton, 2001) given that this withdrawal emotion is characterized by the sense of threat, uncertainty, and diminished sense of control (Lu & Lee, 2019). Therefore, the current finding supports the ATF framework by demonstrating that induced fear can lower one's confidence in reaching a judgement about political misinformation.

The various induced emotions also demonstrated distinct influences on participants' willingness to share statements selected as true, with the control group reporting significantly higher willingness to share compared to both the fear and joy conditions. It should also be noted that out of all four emotion conditions, control group reported the highest willingness to share. The diminished willingness to share observed in the fear condition is consistent with past findings showing that fear can activate threat appraisals and risk avoidance, frequently resulting in reduced inclination to communicate (Valentino et al., 2011). Interestingly, participants in the joy condition also demonstrated diminished willingness to share compared to the control group. While positive affect may facilitate heuristic processing to avoid engagement with potentially harmful or consequential information, it may also decrease motivation to engage with potentially effortful or consequential information (Isen, 2008), which may help explain the diminished sharing behavior. In sum, these findings reveal that discrete emotions with completely different

valence and motivation dimensions, fear (negative-withdrawal) and joy (positive-approach) both appear to reduce the willingness to share political information.

The overall pattern demonstrated by the effects of emotion conditions on confidence and willingness to share is that the experience of various discrete emotions, especially fear, can lower confidence in judgement and attenuate the inclination to share political information.

Confidence: Effects of Emotion Condition Contingent on Affective Polarization

This study found that affective polarization significantly moderated the effect of emotion condition on confidence, although the pattern of interaction was revealed to be different from the hypothesized patterns (H3a and H3b). Despite the statistical insignificance, anger and fear varied in confidence across the three levels of affective polarization in similar patterns predicted by the sub-hypotheses. Participants in anger condition who had heightened affective polarization were the most confident in their assessments. Participants in fear condition who were also low on affective polarization had the second to the lowest confidence out of all emotion conditions (only higher than anger condition). In line with prior research, these nonsignificant findings suggest that discrete negative emotions differing in motivational orientation (approach vs. withdrawal) may interact with affective polarization in distinct ways to produce varying effects on confidence in judgment (Lerner & Keltner, 2000; Iyengar et al., 2012).

Fear condition was found to be less confident than control group when affective polarization is at mean level. Joy conditions tend to consistently lower confidence across all levels of affective polarization, but it is still higher than fear at mean and low levels of affective polarization. In line with the ATF framework (Tiedens & Linton, 2001; Lerner & Keltner, 2000), fear may have induced feelings of uncertainty and reservedness in judgement, especially when affective polarization is not high (Iyengar, 2012). This can in turn reduce confidence. The

uncertainty from fear is also known to encourage a more open-minded attitude by facilitating the deliberation of outside sources and broader range of perspectives (Parker et al., 2010; Tiedens & Linton, 2001), including those that disagrees with personal beliefs, resulting in the decrease in partisan bias and increase in the likelihood to consider outside sources in one's evaluation of political information (MacKuen et al., 2010; Marcus et al., 2011; Redlawsk et al., 2010).

Even though prior literature in ATF predicted that anger may evoke approach-oriented cognitive processing a sense of certainty (Tiedens & Linton, 2001; Lerner & Keltner, 2000), which can result in higher levels of confidence, anger condition in fact reported the lowest confidence out of all emotion conditions at the lowest level of affective polarization, making it significantly lower than control group in confidence. Notably, the anger condition exhibited the most pronounced differences in confidence across levels of affective polarization. Participants with high affective polarization in the anger condition reported the highest confidence, whereas those with low affective polarization in the anger condition reported the lowest confidence. This finding reveals that the impact of anger on confidence is highly contingent on the in-group/out-group distinction inherent to affective polarization (Iyengar et al., 2012). Induced anger amplified confidence in assessment at elevated levels of affective polarization and attenuated confidence when affective polarization was low. This finding reveals that identity-linked emotions like anger can evoke distinctly different effects on confidence depending on participants' attachment to a partisan identity (Holmes, 2004; Stets, 2005; Stets & Trettevik; 2014), as reflected by affective polarization. When individuals are strongly attached to their partisan identity, as in the situation of high affective polarization, identity-linked emotions like anger can enhance commitment to a group (Holmes, 2004; Iyengar et al., 2012; Van Bavel & Pereira, 2018). Anger may enhance commitment and loyalty towards party (aka in-group loyalty)

for people with high affective polarization (Van Bavel & Pereira, 2018), and this enhanced sense of partisan conviction can evoke a sense of certainty that easily result in heightened confidence.

Taken together, these findings indicate that the effect of discrete emotions on confidence in assessment of misinformation is better understood in the context of affective polarization. Specifically, the study findings indicate that identity-linked emotions such as anger can either strengthen or attenuate confidence depending on the strength of one's partisan identity, as reflected by affective polarization (Lerner & Keltner, 2000; Tiedens & Linton, 2001; Iyengar et al., 2012).

Willingness to Share: Effects of Emotion Condition Contingent on Affective Polarization

The distinctive impacts of anger, fear, and joy on willingness to share the selected statements were dependent on the moderating role of affective polarization. In accordance with prior literature that found emotional responses in the political context is strongly operated by partisan identity (Van Bavel & Pereira, 2018; Iyengar et al., 2012) (Iyengar et al., 2012; Van Bavel & Pereira, 2018), anger exhibited the most pronounced variability in willingness to share across levels of affective polarization. As Van Bavel and Pereira (2018) explained, emotion responses in the context of political information are strongly influenced by partisan identity, given that emotions simply do not emerge and exist independently during political experiences. Instead, the influences of these discrete emotions are determined by whether the information compliments or disparages one's favored party (i.e., congruence) and the strength of attachment towards the group (i.e., affective polarization). These factors that exert prominent impact on people's interpretation of political experiences are known as identity-based motives. When identity-based motives guide how people perceive and interpret political experiences, they can easily trigger volatile emotions such as anger.

Although angry participants with high affective polarization reported the highest willingness to share, as predicted by H5a, this effect was only significantly greater than those of fear and joy conditions, but not the control group. Angry participants with low affective polarization were significantly less willing to share the selected statement compared to the control group. These findings reveal that anger's impact on willingness to share is highly contingent on the activation of strong partisan identities at heightened affective polarization.

Unlike anger, fear displayed a more uniform impact on willingness to share across all levels of affective polarization. Despite being consistently low on willingness to share, fear was only significantly lower than the control group at the lowest and mean levels of affective polarization. These findings provided partial support for H5b, that fear condition has the lowest willingness to share at the lowest level of affective polarization. Prior literature has pointed out that fear tends to reduce willingness to engage in communication by emphasizing caution and uncertainty (Valentino et al., 2008; Lerner & Keltner, 2001; Lerner et al., 2003), and the hesitant and cautious approach towards the evaluation of political information in response to the sense of uncertainty may discourage the tendency to share the processed information. Even though fear did not significantly differ from anger or joy in share at the lowest level of affective polarization, its consistently low inclination to share indicates that threat-oriented, withdrawal emotions like fear may suppress the dissemination of political information, regardless of the level of affective polarization (Lerner & Keltner, 2001; Lerner et al., 2003).

Regardless of affective polarization, willingness to share was consistently low for the joy condition, with only fear condition being consistently lower. Joy condition did demonstrate a relatively intermediate pattern in willingness to share at meal level of affective polarization. Joyful participants with moderate affective polarization were significantly less willing to share

than the control group while still being higher than the fear condition in a non-significant manner. This finding is consistent with prior research demonstrating that while positive emotions can encourage reliance on heuristics, they do not necessarily enhance inclination to share political information unless paired with certain social motivation, such as sharing to increase popularity (Cheung-Blunden et al., 2021) or bond with members of a misinformation community (Bessarabova & Banas, 2023).

In summary, these findings suggest that anger is uniquely sensitive to the strength of partisan identity, as reflected by affective polarization (Iyengar et al., 2012; Van Bavel and Pereira; 2018). Induced anger enhanced willingness to share when partisan identity is strong at high affective polarization while attenuated sharing inclination when partisan identity is weak or nonexistent at low affective polarization. In contrast, fear was found to suppress willingness to share consistently regardless of the strength of partisan identity, while joy also tends to lower willingness to share in general but not to the degree of fear. Overall, these findings demonstrate the need to account for both emotional states and the strength of partisan in-group identity (affective polarization) in predicting one's inclination to share political information (Van Bavel & Pereira, 2018).

Relationship Between Affective Polarization and Congruence

Although the current study did not find an interactive relationship between affective polarization and congruence, participants with high affective polarization displayed greater certainty about their assessments of political statements, as demonstrated in the effects of affective polarization on confidence and skepticism. High affective polarization tends to intuitively drive individuals to trust any political statement that is congruent with personal beliefs, regardless of its actual veracity. Typically, misinformation that is highly congruent with

partisan beliefs either disparages the opposing party or compliments the favored party (Lodge & Taber, 2013; Taber & Lodge, 2006), both of which can easily help reinforce the features of out-group animosity and in-group favoritism (Iyengar et al., 2012; Lelkes, 2016). These key features of affective polarization encourage the processing style of motivated reasoning, the selective search and acceptance of information that supports the favored party and automatic dismissal of information that does not (Taber & Lodge, 2006). It can therefore be argued that high levels of affective polarization can facilitate an intuitive duality in the perception of political information. Individuals who are high on affective polarization may perceive all political statements as either attacking or promoting their favored party, even when they encounter neutral information (Lelkes, 2016; Druckman & Levendusky, 2019). Given that the comprehension of nuances presented in less polarized, more balanced information often requires more deliberative style of processing than identity-driven motivated reasoning (Taber & Lodge, 2006), it can be argued that individuals with high affective polarization may either misinterpret the nuance in relatively neutral information or completely ignore these types of information.

Facts are often nuanced, multifaced, and complex instead of bluntly taking a side, as demonstrated by the political facts describing economic figures from the Political News Assessment (Appendix C). It is therefore possible that participants with high affective polarization heuristically categorized any information that does not blatantly support their party or actively attack the opposing party as disparaging towards their party. In contrast, the congruence of misinformation with personal beliefs may not be as black and white for individuals who are lower on affective polarization, since they do not necessarily perceive political information through the framing of promoting vs. disparaging a certain political party. It should be noted that even though accuracy in assessing misinformation was not found to be

significantly influenced by affective polarization in the current study, it was significantly impacted by congruence of misinformation with partisan beliefs. The higher the congruence between the misinformation and participants' beliefs, the less accurate the assessments were. The degree of congruency is directly calculated from political orientation in this study. Therefore, those who reported more extreme political orientation (i.e., "Strongly liberal" or "Strongly conservative") tend to have more extreme values (i.e., 1 or 7) of congruency as well. Given that extreme political orientation is a key premise of high affective polarization, it should be noted that although the current study did not find any associations or any interactive effects between congruence and affective polarization on any of the outcome variables, this does not preclude them from the possibility of being associated in future research.

One technical explanation for the lack of association between congruency and affective polarization in the current study may be explained by the score calculation method for feeling thermometer measure, which has been commonly used in past research to assess affective polarization (Lelkes & Westwood, 2017; Pew Research, 2016; Webster & Abramowitz, 2017). This 14-item scale contains three categories: elites (10 items, 5 per party), voters (2 items, 1 per party), and party (2 items, 1 per party). Partisan difference was first calculated by obtaining the absolute value of the difference between the respective counterparts from the two parties (i.e., Trump vs. Biden). The absolute value of partisan difference was first averaged within category (only for elites, which has more than one pair of counterparts) before the means of partisan difference for the three categories were averaged again to produce a final score for affective polarization (Pew Research Center, 2016; Sanchez & Dunning, 2021). Instead of putting equal weight on each item, this score calculation method puts more weight on the items in the voters and party categories and significantly less weight on the items in the elites category.

Even though affective polarization is theoretically facilitated by partisan loyalty, which should track with political orientation, the basis for calculating congruency in this study, some researchers (Marchal & Watson, 2022) have argued that affective polarization may be mainly driven by ideological loyalty (i.e., MAGA conservatism) rather than by partisan loyalty (i.e., advocating for the Republican Party), especially given the recent misalignment between the agendas of political supporters and their favored party. Marchal and Watson (2022) observed that this phenomenon, also known as voter-party incongruence, might have been driven by the recent tendency of Western politicians to align themselves with a specific policy or ideological stance (i.e., strong libertarian/ anti-establishment stance) rather than with a political party. One example of voter-party incongruence can be observed in the popularization of the pejorative term RINO (Republican in Name Only) by supporters of far-right/libertarian politicians to criticize Republican politicians they deemed as misaligned with the party's ideology. Given the recent emergence of popular politicians who align themselves closer to an ideological stance rather than a specific political party, it is possible that participants' affective polarization may be mainly driven by a specific prominent politician rather than by the political parties or the voters. Therefore, an affective polarization measure that weighs more heavily on parties and voters rather than on political elites may not be appropriate for the current political landscape where partisan identities are often established on loyalty towards an ideology (i.e., MAGA) and/or a prominent politician promoting the favored ideology (i.e., Donald Trump) rather than loyalty towards a political party (i.e., GOP/Republican Party). The original emphasis on party and voters in the score calculation for the affective polarization measure may have made theoretical sense, given that affective polarization directly reflects partisan loyalty by definition (Iyengar, 2012; 2019). However, the anchor for political identity has gradually shifted from the party itself to

specific ideology and/or to the politicians advocating said ideology in recent years (Boxell et al., 2020; Bornschier, 2010). For instance, participants who identify themselves as strongly conservative on the political orientation scale, which assesses ideological loyalty, may not necessarily rate highly on affective polarization if they anchor their right-wing identity on positive feelings towards a specific politician (i.e., Trump) but not on other politicians, political parties, or their respective voters. Therefore, voter-party incongruence (Marchal & Watson, 2022) may provide a theoretical explanation to the lack of association between congruence (calculated from political orientation) and affective polarization in the current study.

Limitations and Future Directions

While this study has its major strengths, its findings must be interpreted in light of several limitations. One limitation of this study may be the emotion induction method adopted by this study. When completing the writing task to induce discrete emotions, participants may have difficulty in recalling events that evoke the target emotion, which could have reduced the intensity of emotion. Individual differences in emotional sensitivity, personality, attention span, study environment, and writing ability may also have influenced engagement with the task, potentially introducing variability in the effectiveness of the induction (Lerner & Keltner, 2000; Tiedens & Linton, 2001). The emotional states induced through writing may also be too ephemeral (Lerner & Keltner, 2001), which may limit their impact on subsequent measures. Future research could mitigate these issues by combining multiple methods of induction in addition to administering manipulation checks to ensure the intended emotional state is elicited. Finally, even though past research has demonstrated that inducing non-political anger can alter tendencies in political decisions (Ambroziak et al., 2022), it is possible that emotion conditions did not interact with congruence nor affective polarization in the moderation models to impact

the processing of political information due to the lack of association between incidental emotions evoked by personal experiences and the affective components of political information. Future research can incorporate political components (i.e., anger or fear-inducing political messages/media) as the method of emotion induction to make the induced emotion directly relevant to the affective components (i.e., political bias and affective polarization) in the processing of political information.

A second limitation of this study is the single-item measures implemented for some of the outcome variables (i.e., confidence, skepticism, share, and political orientation; Appendix F). While confidence, skepticism, and willingness to share were repeatedly answered 17 times for each item from the Political News Assessment, the repeated wording may have resulted in response fatigue. This issue may be resolved by reducing the total number of items on the Political News Assessment, thus reducing the complications from repetitive questions from the root. Although the single-item political orientation scale has been adopted from past research examining the effects of emotion states on processing of political misinformation (Weeks, 2015), it faces the same issues encountered by most single-item measures: (a) limited reliability; unable to assess internal consistency (i.e., Cronbach's α), (b) high likelihood of measurement error, (c) limited content validity, and (d) limited statistical power. To resolve this issue, future research can incorporate a well-tested political orientation scale with multiple items. Another measurement-related issue of this study is that the question wording of the manipulation check, "*Please rate the extent to which you feel each of the following emotions ranging from a scale of 1 (not at all) to 5 (extremely).*", should have emphasized participants' feeling at the moment (i.e., "currently feel") to make the manipulation check directly relevant to the prior induction.

Furthermore, it is standard research practice to include precise wording on timeframe when assessing the experience of the emotion in question (Watson et al., 1988).

A design issue with the current study is that while participants were encouraged to assess the statements in the Political News Assessment as fast as possible in the task instructions, their behaviors during the task were not monitored given the online nature of the study. Both knowledge-based tasks of the study, Political News Assessment and Political Knowledge Task, did not enforce a time limit to discourage missing data. Participants were essentially completing the tasks at their own pace, which may have allowed them the leisure to search for the answers online. Given that the design of the current dissertation is essentially an unmonitored online study, the only way to resolve this issue is to convert the study to in-person format. Furthermore, given that Prolific compensates participants based on the length of time they spent on the survey, longer time spent on the survey naturally yields higher compensation. This compensation policy may have encouraged participants to deliberately spend longer on the Political News Assessment, thus directly invalidating the outcome variable of response time. This issue may be resolved by either setting a time limit for the assessment task, displaying the timer on-screen during the task to create the illusion of time pressure, or conducting the study in-person.

When accounting for covariates, this study did not include demographic variables as covariates given that prior research on the processing of political misinformation (Cheung-Blunden et al., 2021; Martel et al., 2020; Weeks, 2015) also did not account for demographic variables as covariates. However, this dissertation did find that the demographic variables of age, gender, and education were correlated with several of the predictors and outcome variables (Table 1.2). Age was positively correlated with political orientation ($r = 0.1$; $p < 0.05$), affective polarization ($r = 0.2$; $p < 0.05$), political knowledge ($r = 0.12$; $p < 0.05$), and PM accuracy ($r =$

0.17; $p < 0.05$), and negatively correlated with skepticism ($r = -0.09$; $p < 0.05$) and willingness to share ($r = -0.17$; $p < 0.05$). Gender was also correlated with political knowledge ($r = -0.18$; $p < 0.05$) and confidence ($r = -0.11$; $p < 0.05$), with those who identified as female and others being less knowledgeable about politics and less confident in their judgements than those who identified as male. Finally, education level was positively correlated with political knowledge ($r = 0.16$; $p < 0.05$), PM accuracy ($r = 0.15$; $p < 0.05$), time ($r = 0.19$; $p < 0.05$), confidence ($r = 0.17$; $p < 0.05$), and willingness to share ($r = 0.2$; $p < 0.05$). Prior research (Edelmann & Vaisey, 2023) has found that education level tends to interact with gender to influence the political views of Americans, with gender differences in political orientation being greater when education is at college-level or higher. A recent survey by Pew Research Center (2025) has also found age-related differences in preferences for social media platform, with younger adults (age 18–29) being more likely than older adults to use platforms like Instagram, Snapchat, and TikTok, while older adults (age 65 or older) are more likely to use Facebook and YouTube compared to their younger counterparts. Given the differences in political content frequently found in these platforms, this may indicate that there is an age-related difference in the type of political misinformation audiences tend to be exposed to. Given the past findings on these three demographic variables (age, gender, and education) and the significant associations found between them and several study variables in this study, future research on this topic can include these three demographic variables as covariates in the analyses to account for their confounding effects on the processing of political misinformation.

The final limitation of this study is the unequal weight distribution of items between the three categories (elites, voter, and party) in the feeling thermometer measure for affective polarization. This measure puts significantly less weight on the items assessing feelings towards

political elites. Given the recent phenomenon of voter-party incongruence (Marchal & Watson, 2022), which may have caused the anchor for partisan identity to shift from the political parties to specific political ideologies and the politicians who align themselves with said ideologies, this measure may have been theoretically inadequate for assessing affective polarization. This measure may be improved by changing the scoring method. Instead of averaging the means of partisan differences from the three categories for the final score of affective polarization, the final score can be calculated by directly averaging the seven partisan difference scores calculated from seven pairs of partisan counterparts (for a total of 14 items). Removing the item categories from the steps of score calculation will distribute the weight of the final score equally across all items.

Future research can expand on the current study design by incorporating a broader range of discrete emotions that have been examined in misinformation literature (i.e., anxiety, sadness, and excitement) to determine whether the interactive effects with affective polarization in shaping misinformation processing can be observed in other emotions (Lee et al., 2022; Marcus et al., 2005; Weeks, 2015; Tahreem & Shakeel; 2025). In addition to the appraisal dimensions of valence and motivation, future research can also compare the effects of emotions on misinformation processing along other appraisal dimensions (i.e., certainty, control, required attention, or attribution of responsibility) to compare the effects of emotions along the cognitive evaluations evoked by different appraisal tendencies (Lerner & Keltner, 2001; Lerner & Tiedens, 2006; Smith & Ellsworth, 1985). Furthermore, given that the current study relied on a self-guided writing task to induce emotion, this manipulation design could introduce variability, such as disparate intensity of the induced emotion based on the recalled experience. Therefore, future research can standardize the induction experience and improve on the ecological validity of this

manipulation by incorporating multi-media stimulus such as voice recordings, video clips, or pictures, or utilizing more immersive methods such as staging a lab scenario (Kučera & Haviger, 2012). To investigate the length of the effects from the induced emotions and the evolution of the affective processing over time, adopting repeated measures, longitudinal, or experience-sampling designs can help establish whether the effects of various emotions on misinformation processing are ephemeral or can compound over time to impact habits in the consumption and processing of political misinformation. To address the moderating role of affective polarization on the effects of emotion on misinformation processing, future research can focus on exploring interventions that can effectively attenuate partisan animosity, encourage the acceptance of probative or corrective information (Marcus et al., 2005; Weeks, 2015), or foster inter-party empathy to investigate whether decreasing affective polarization can impact vulnerability to political misinformation. Given the significant effect of belief congruence on accuracy in assessing misinformation in the current study, future research can expand on this finding by exploring the potential motivational mechanisms underlying this relationship (Lodge & Taber, 2005), such the need for closure, identity protection, epistemic needs, social rewards, and need to belong, and whether they can enhance vulnerability to congenial misinformation. Although the present study revealed the moderating role of affective polarization on the affective processing of misinformation by anger and fear, future research could explore the interactive effects of related identity constructs, such as the concept of ideological polarization (Abramowitz, 2010; Iyengar & Westwood, 2015), which focuses on the strength of issue-based ideological identity rather than partisan identity, as in the case of affective polarization (Mason, 2018). This would help determine whether affective polarization is uniquely responsible for the moderation effect or part of a broader psychological profile. Finally, given that affective polarization can manifest

differently across different cultures and political systems (Harteveld, 2021; Kekkonen & Ylä-Anttila, 2021; Wagner, 2024), future studies could replicate this study design in non-US contexts. In addition to the manifestation of affective polarization, different cultures and political systems may also have disparate institutional elements (i.e., freedom of information, political freedom, media landscape, governmental structure, etc.) that can uniquely shape the affective processing of misinformation in that region (Xu, 2025). Cross-cultural comparisons would reveal whether the interactive effects between discrete emotions and affective polarization on misinformation processing found in the present study reflect a regional or universal psychological mechanism.

In conclusion, this dissertation further expands the literature on the affective processing of political misinformation by demonstrating that discrete emotions that differ along valence and motivation dimensions can have different impacts on the processing of political misinformation, especially when the strength of partisan identity (affective polarization) was accounted for. In accordance with the discrete account of emotion on misinformation processing (Lerner & Keltner, 2000; 2001; Nabi, 1999, 2002), anger and fear were found to have distinctive effects on confidence and willingness to share statements selected as factual. Given that anger is a key emotion to establishing and reinforcing political identity (Holmes, 2004), its effect on one's approach in processing political information is highly contingent on the strength of partisan identity. True to its cautious and reserved nature, fear consistently suppressed willingness to share political information, regardless of affective polarization level (Lerner et al., 2003). Finally, in line with the literature on motivated reasoning (Lodge & Taber, 2006; Thompson-Swire et al., 2020), higher congruence between political misinformation and participants' beliefs predicted less accurate assessment of misinformation. In combination, the findings demonstrated

the need to account for both temporary emotional states and the strength of partisan in-group identity when evaluating the cognitive processing of political misinformation (Iyengar et al., 2012; Van Bavel & Pereira, 2018). This dissertation strived to bridge a gap in research on the affective processing of misinformation by demonstrating the joint effects of discrete emotions and partisan bias on the processing of political information. In an increasingly segregated political landscape rife with political misperceptions caused by rampant misinformation, it is crucial to understand the factors that facilitate vulnerability to misinformation.

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List of Tables

Table 1.1 Measures Summary: Means and Standard Deviations by Condition and Cronbach's α

Condition		AP	PK	Cong.	PNA	Time	Conf.	Skep.	Share	MC
Anger	Mean	35.52	3.93	4.07	10.04	21.91	4.08	2.51	2.55	34.9
	SD	26.30	.83	1.92	3.30	16.63	1.01	.93	1.48	9.2
Control	Mean	37.52	3.73	3.99	9.99	22.87	4.20	2.49	2.61	30.0
	SD	25.09	1.00	2.06	3.68	19.33	.95	1.01	1.45	7.3
Fear	Mean	38.85	3.78	4.07	10.07	24.04	3.96	2.47	2.22	33.1
	SD	26.40	.95	2.06	3.55	20.35	.92	.90	1.23	9.5
Joy	Mean	38.37	3.66	4.09	10.15	22.12	3.97	2.51	2.18	31.7
	SD	24.56	1.01	1.92	3.33	15.62	1.03	.92	1.31	6.6
Total	Mean	37.60	3.77	4.05	10.06	22.77	4.06	2.50	2.40	32.3
	SD	25.56	.96	1.99	3.47	18.17	.98	.94	1.38	8.4
	α[1]	0.90	0.33		0.68					0.70

Note. AP = affective polarization; PK = political knowledge; cong. = congruence; PNA = Political News Assessment accuracy; conf. = confidence; skep. = skepticism; MC = manipulation check.

1. Only calculated for multi-item measures.

Table 1.2 Correlation Matrix of Demographics and All Study Variables

	Age	Gender	Edu.	Pol_Or	Cong.	AP	PK	PNA	Time	Conf.	Skep.	Share
Age	1	-.014	.130**	.103*	-.062	.200**	.116**	.171**	.037	.043	-.088*	-.174**
Gender	-.014	1	-.087*	.004	-.046	.035	-.178**	-.076	.028	-.113**	.023	.010
Edu.	.130**	-.087*	1	-.004	.034	-.001	.160**	.149**	.193**	.171**	-.023	.201**
Pol_Or	.103*	.004	-.004	1	-.161**	-.128**	-.018	.038	.090*	.047	.061	.088*
Cong.	-.062	-.046	.034	-.161**	1	.003	-.034	-.412**	.025	-.124**	.082*	.019
AP	.200**	.035	-.001	-.128**	.003	1	.121**	.061	.060	.276**	-.192**	.062
PK	.116**	-.178**	.160**	-.018	-.034	.121**	1	.206**	.043	.153**	-.163**	-.002
PNA	.171**	-.076	.149**	.038	-.412**	.061	.206**	1	.115**	.269**	-.188**	.023
Time	.037	.028	.193**	.090*	.025	.060	.043	.115**	1	.204**	-.025	.269**
Conf.	.043	-.113**	.171**	.047	-.124**	.276**	.153**	.269**	.204**	1	-.217**	.494**
Skep.	-.088*	.023	-.023	.061	.082*	-.192**	-.163**	-.188**	-.025	-.217**	1	.123**
Share	-.174**	.010	.201**	.088*	.019	.062	-.002	.023	.269**	.494**	.123**	1

Note. Edu. = education; Pol_Or = politcal orientation; cong. = congruence; AP = affective polarization; PK_total = political knowledge; PNA = PM accuracy; time = time spent per question for PM accuracy; conf. = confidence; skep. = skepticism; share = willingness to share
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 2.1 Manipulation Check MANOVA Results

Effect	Test Statistic	Value	F	df	p	η^2_p	NP
Intercept	Pillai's Trace	.94	3337.22[b]	3, 594	<.001	.94	10011.67
	Wilks' Lambda	.06	3337.22[b]	3, 594	<.001	.94	10011.67
	Hotelling's Trace	16.85	3337.22[b]	3, 594	<.001	.94	10011.67
	Roy's Largest Root	16.85	3337.22[b]	3, 594	<.001	.94	10011.67
Emotion Condition	Pillai's Trace	.58	47.48	9, 1788	<.001	.19	427.31
	Wilks' Lambda	.51	51.78	9, 1445.79	<.001	.20	367.81
	Hotelling's Trace	.81	53.15	9, 1778	<.001	.21	478.31
	Roy's Largest Root	.44	86.96[c]	3, 596	<.001	.30	260.88

Notes. NP = noncentrality parameter

a. Design: intercept + emotion condition
b. Exact statistics
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Computed using alpha = .05

Table 2.2 Manipulation Check MANOVA Pairwise Comparison

Dependent Variable	Condition (I-J)	Mean Diff. (I-J)	SE	p^b	95% LCI	95% UCI
Joy	Anger -Control	-.84*	.13	<.001	-1.20	-.49
	Anger - Fear	.11	.14	1.00	-.25	.47
	Anger - Joy	-1.31*	.14	<.001	-1.67	-.94
	Control - Anger	.84*	.13	<.001	.49	1.20
	Control - Fear	.95*	.13	<.001	.61	1.30
	Control - Joy	-.46*	.13	.00	-.81	-.11
	Fear - Anger	-.11	.14	1.00	-.47	.25
	Fear - Control	-.95*	.13	<.001	-1.30	-.61
	Fear - Joy	-1.42*	.14	<.001	-1.78	-1.06
	Joy - Anger	1.31*	.14	<.001	.94	1.67
	Joy - Control	.46*	.13	.00	.11	.81
	Joy - Fear	1.42*	.14	<.001	1.06	1.78
Anger	Anger - Control	1.39*	.11	<.001	1.11	1.67
	Anger - Fear	.93*	.11	<.001	.64	1.22
	Anger - Joy	1.43*	.11	<.001	1.13	1.72
	Control - Anger	-1.39*	.11	<.001	-1.67	-1.11
	Control - Fear	-.46*	.10	<.001	-.73	-.18
	Control - Joy	.04	.11	1.00	-.24	.32
	Fear - Anger	-.93*	.11	<.001	-1.22	-.64
	Fear - Control	.46*	.10	<.001	.18	.73
	Fear - Joy	.49*	.11	<.001	.21	.78
	Joy - Anger	-1.43*	.11	<.001	-1.72	-1.13
	Joy - Control	-.04	.11	1.00	-.32	.24
	Joy - Fear	-.49*	.11	<.001	-.78	-.21
Fear	Anger - Control	.43*	.11	<.001	.14	.72
	Anger - Fear	-.68*	.11	<.001	-.97	-.38
	Anger - Joy	.54*	.11	<.001	.23	.84
	Control - Anger	-.43*	.11	<.001	-.72	-.14
	Control - Fear	-1.11*	.11	<.001	-1.39	-.83
	Control - Joy	.10	.11	1.00	-.19	.39
	Fear - Anger	.68*	.11	<.001	.38	.97
	Fear - Control	1.11*	.11	<.001	.83	1.39
	Fear - Joy	1.21*	.11	<.001	.92	1.51
	Joy - Anger	-.54*	.11	<.001	-.84	-.23
	Joy - Control	-.10	.11	1.00	-.39	.19
	Joy - Fear	-1.21*	.11	<.001	-1.51	-.92

Note. Based on estimated marginal means. LCI = lower confidence interval; UCI = upper confidence interval.

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Table 2.3 Manipulation Check MANOVA Estimated Marginal Means

Emotion	Condition	Mean	SE	95% LCI	95% UCI
Joy	Anger	2.26	.10	2.07	2.45
	Control	3.10	.09	2.93	3.28
	Fear	2.15	.09	1.96	2.33
	Joy	3.56	.10	3.37	3.76
Anger	Anger	2.78	.08	2.63	2.94
	Control	1.39	.07	1.25	1.54
	Fear	1.85	.08	1.70	2.00
	Joy	1.36	.08	1.20	1.51
Fear	Anger	1.95	.08	1.79	2.11
	Control	1.52	.07	1.37	1.66
	Fear	2.62	.08	2.47	2.78
	Joy	1.41	.08	1.26	1.57

Note. LCI = lower confidence interval; UCI = upper confidence interval.

Table 3. Descriptive Statistics for PM Accuracy by Emotion Condition (N = 600)

Emotion	Mean	SD
Anger	9.87	3.25
Control	10.01	3.56
Fear	9.97	3.38
Joy	10.06	3.18

Table 4. Descriptive Statistics for Time by Emotion Condition (N = 600)

Emotion	Mean	SD
Anger	21.91	16.63
Control	22.87	19.33
Fear	24.04	20.35
Joy	22.12	15.62

Table 5. Descriptive Statistics for Confidence by Emotion Condition (N = 600)

Emotion	Mean	SD
Anger	4.08	1.01
Control	4.20	0.95
Fear	3.96	0.92
Joy	3.97	1.03

Table 6 Descriptive Statistics for Skepticism by Emotion Condition (N = 600)

Emotion	Mean	SD
Anger	2.51	0.93
Control	2.49	1.01
Fear	2.47	0.90
Joy	2.51	0.92

Table 7.1 Descriptive Statistics for Willingness to Share by Emotion Condition (N = 600)

Emotion	Mean	SD
Anger	2.55	1.48
Control	2.61	1.45
Fear	2.22	1.23
Joy	2.18	1.31

Table 7.2 ANCOVA Willingness to Share by Emotion Pairwise Comparison

Condition (I-J)	Mean Diff. (I-J)	SE	t(595)	p^b	95% LCI	95% UCI
Anger - Control	-0.053	0.16	-0.001	1.00	-0.47	0.37
Anger - Fear	0.33	0.16	1.20	0.23	-0.09	0.76
Anger - Joy	0.37	0.16	1.48	0.14	-0.06	0.81
Control - Fear	0.39	0.15	1.82	0.07	-0.02	0.79
Control - Joy	0.43*	0.16	2.06	0.04	0.01	0.84
Fear - Joy	0.04	0.16	-0.001	1.00	-0.38	0.46

Note. LCI = lower confidence interval; UCI = upper confidence interval. Covariate political knowledge was included in the analysis.

*. Mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Bonferroni

Table 8. Moderation Analyses Outcomes on the Five Dependent Variables (N = 600)

Dependent Variable: Moderation Models	**F**	**df1**	**df2**	***p***	**ΔR^2**	**η^2_p**
PM accuracy: Emotion × Congruency × AP	1.57	3	583	0.2	0.006	0.007
Time: Emotion × Congruency × AP	0.36	3	583	0.78	0.002	0.002
Confidence: Emotion × AP	3.31*	3	591	0.02	0.01	0.08
Skepticism: Emotion × Congruency × AP	0.41	3	583	0.74	0.002	0.002
Share: Emotion × AP	4.32**	3	591	0.005	0.02	0.02

Note. AP = affective polarization. Covariate political knowledge was included in the analyses.
**. Significant at the 0.01 level
*. Significant at the 0.05 level

Table 9. Moderation of Affective Polarization on PM Accuracy by Emotion (N = 600)

	Estimate	**SE**	**t(582)**	***p***	**95% LCI**	**95% UCI**
Intercept	7.9***	0.79	9.98	<0.001	6.35	9.45
Anger vs. Control	-0.14	0.35	-0.4	0.69	-0.83	0.55
Anger vs. Fear	0.09	0.35	0.26	0.79	-0.6	0.79
Anger vs. Joy	0.39	0.37	1.06	0.29	-0.33	1.11
Congruence (CG)[a]	-0.65***	0.14	-4.72	<0.001	-0.92	-0.38
Anger vs. Control × CG	-0.05	0.18	-0.29	0.77	-0.41	0.31
Anger vs. Fear × CG	0.11	0.19	0.59	0.55	-0.26	0.49
Anger vs. Joy × CG	0.21	0.2	1.05	0.3	-0.18	0.59
Affective Polarization (AP)[a]	0.01	0.01	0.7	0.49	-0.01	0.03
Anger vs. Control × AP	-0.01	0.01	-0.5	0.62	-0.03	0.02
Anger vs. Fear × AP	-0.01	0.01	-0.56	0.57	-0.03	0.02
Anger vs. Joy × AP	<0.001	0.01	0.01	0.99	-0.03	0.03
CG × AP	-0.01	0.005	-1.6	0.11	-0.02	0.002
Anger vs. Control × CG × AP	-0.01	0.01	-1	0.32	-0.02	0.01
Anger vs. Fear × CG × AP	-0.01	0.01	-1.17	0.24	-0.02	0.01
Anger vs. Joy × CG × AP	-0.01	0.01	-1.83	0.07	-0.03	<0.001
Political Knowledge	0.76***	0.13	5.78	<0.001	0.5	1.02

Note. LCI = lower confidence interval; UCI = upper confidence interval. Covariate political knowledge was included in the analysis.

a. Moderator was mean-centered.

***. Significant at the 0.001 level

**. Significant at the 0.01 level

*. Significant at the 0.05 level

Reference group = Anger

Table 10. Moderation of Affective Polarization on Time by Emotion (N = 600)

	Estimate	**SE**	**t(582)**	***p***	**95% LCI**	**95% UCI**
Intercept	10.35*	4.81	2.15	0.03	0.9	19.79
Anger vs. Control	2.2	2.15	1.02	0.31	-2.02	6.42
Anger vs. Fear	2.48	2.15	1.16	0.25	-1.73	6.7
Anger vs. Joy	0.98	2.22	0.44	0.66	-3.39	5.35
Congruence (CG)[a]	0.01	0.84	0.02	0.99	-1.64	1.66
Anger vs. Control × CG	0.33	1.11	0.3	0.77	-1.86	2.52
Anger vs. Fear × CG	0.29	1.17	0.25	0.8	-2.01	2.6
Anger vs. Joy × CG	0.51	1.2	0.43	0.67	-1.84	2.87
Affective Polarization (AP)[a]	0.06	0.06	1.07	0.29	-0.05	0.18
Anger vs. Control × AP	-0.07	0.08	-0.9	0.37	-0.23	0.09
Anger vs. Fear × AP	0.02	0.08	0.29	0.78	-0.14	0.18
Anger vs. Joy × AP	-0.11	0.09	-1.26	0.21	-0.28	0.06
CG × AP	-0.02	0.03	-0.69	0.49	-0.08	0.04
Anger vs. Control × CG × AP	0.01	0.04	0.18	0.85	-0.07	0.09
Anger vs. Fear × CG × AP	-0.003	0.04	-0.07	0.94	-0.08	0.08
Anger vs. Joy × CG × AP	0.04	0.04	0.88	0.38	-0.05	0.12
Political Knowledge	0.78	0.8	0.98	0.33	-0.78	2.35

Note. LCI = lower confidence interval; UCI = upper confidence interval. Covariate political knowledge was included in the analysis.

a. Moderator was mean-centered.

*. Significant at the 0.05 level

Reference group = Anger

Table 11.1 Moderation of Affective Polarization on Confidence by Emotion (N = 600)

	Estimate	**SE**	**t(590)**	***p***	**95% LCI**	**95% UCI**
Intercept	3.06***	0.24	12.64	<0.001	2.58	3.53
Anger vs. Control	0.19	0.11	1.74	0.08	-0.02	0.4
Anger vs. Fear	-0.11	0.11	-1.02	0.31	-0.32	0.1
Anger vs. Joy	-0.06	0.11	-0.54	0.59	-0.28	0.16
Affective Polarization (AP)[a]	0.02***	0.003	5.80	<0.001	0.01	0.02
Anger vs. Control × AP	-0.01*	0.004	-2.21	0.03	-0.02	-0.001
Anger vs. Fear × AP	-0.01*	0.004	-2.17	0.03	-0.02	-0.001
Anger vs. Joy × AP	-0.01**	0.004	-2.83	0.004	-0.02	-0.004
Political Knowledge	0.13**	0.04	3.23	0.001	0.05	0.21

Note. LCI = lower confidence interval; UCI = upper confidence interval. Covariate political knowledge was included in the analysis.

a. Moderator was mean-centered.

***. Significant at the 0.001 level

**. Significant at the 0.01 level

*. Significant at the 0.05 level

Reference group = Anger

Table 11.2 Moderation of Affective Polarization on Confidence by Emotion Pairwise Comparison

Contrast	Estimate	SE	t(590)	p^b
Affective Polarization at low level (*M* – 1*SD* = -25.56)				
Anger – Control	-0.42*	0.15	-2.84	0.03
Anger - Fear	-0.12	0.15	-0.78	1
Anger - Joy	-0.26	0.16	-1.64	0.61
Control - Fear	0.31	0.15	2.07	0.23
Control - Joy	0.17	0.15	1.09	1
Fear - Joy	-0.14	0.16	-0.89	1
Affective Polarization at mean level (*M* = 0.0001)				
Anger - Control	-0.19	0.11	-1.74	0.49
Anger - Fear	0.11	0.11	1.02	1
Anger - Joy	0.06	0.11	0.54	1
Control – Fear	0.3*	0.1	2.88	0.02
Control - Joy	0.25	0.11	2.36	0.11
Fear - Joy	-0.05	0.11	-0.47	1
Affective Polarization at high level (*M* + 1*SD* = 25.56)				
Anger - Control	0.04	0.15	0.29	1
Anger - Fear	0.34	0.15	2.23	0.16
Anger - Joy	0.38	0.16	2.35	0.12
Control - Fear	0.29	0.14	2.03	0.25
Control - Joy	0.33	0.15	2.19	0.17
Fear - Joy	0.04	0.15	0.24	1

*. Significant at the 0.05 level

b. Adjustment for multiple comparisons: Bonferroni

Table 12. Moderation of Affective Polarization on Skepticism by Emotion (N = 600)

	Estimate	**SE**	**t(582)**	***p***	**95% LCI**	**95% UCI**
Intercept	2.26***	0.24	9.53	<0.001	1.8	2.73
Anger vs. Control	0.07	0.11	0.7	0.48	-0.13	0.28
Anger vs. Fear	<-0.001	0.11	<-0.001	1	-0.21	0.21
Anger vs. Joy	0.04	0.11	0.35	0.73	-0.18	0.25
Congruence (CG)[a]	0.07	0.04	1.68	0.09	-0.01	0.15
Anger vs. Control × CG	-0.06	0.06	-1.09	0.28	-0.17	0.05
Anger vs. Fear × CG	-0.08	0.06	-1.33	0.18	-0.19	0.04
Anger vs. Joy × CG	-0.04	0.06	-0.74	0.46	-0.16	0.07
Affective Polarization (AP)[a]	-0.01	0.003	-1.95	0.05	-0.01	<0.001
Anger vs. Control × AP	-0.004	0.004	-0.89	0.37	-0.01	0.004
Anger vs. Fear × AP	-0.001	0.004	-0.2	0.84	-0.01	0.01
Anger vs. Joy × AP	-0.001	0.004	-0.26	0.79	-0.01	0.01
CG × AP	0.001	0.001	0.68	0.5	-0.002	0.004
Anger vs. Control × CG × AP	0.001	0.002	0.52	0.6	-0.003	0.005
Anger vs. Fear × CG × AP	-0.001	0.002	-0.53	0.6	-0.005	0.003
Anger vs. Joy × CG × AP	0.001	0.002	0.36	0.72	-0.003	0.005
Political Knowledge	-0.12**	0.04	-3.17	0.002	-0.2	-0.05

Note. LCI = lower confidence interval; UCI = upper confidence interval. Covariate political knowledge was included in the analysis.

a. Moderator was mean-centered.

***. Significant at the 0.001 level

**. Significant at the 0.01 level

*. Significant at the 0.05 level

Reference group = Anger

Table 13.1 Moderation of Affective Polarization on Willingness to Share by Emotion (N = 600)

	Estimate	**SE**	**t(590)**	***p***	**95% LCI**	**95% UCI**
Intercept	0.72*	0.34	2.14	0.03	0.06	1.39
Anger vs. Control	0.29	0.15	1.88	0.06	-0.01	0.58
Anger vs. Fear	-0.26	0.15	-1.74	0.08	-0.56	0.03
Anger vs. Joy	-0.23	0.16	-1.44	0.15	-0.53	0.08
Affective Polarization (AP)[a]	0.02***	0.004	3.75	<0.001	0.01	0.02
Anger vs. Control × AP	-0.02**	0.01	-3.08	0.002	-0.03	-0.01
Anger vs. Fear × AP	-0.02**	0.01	-3.04	0.002	-0.03	-0.01
Anger vs. Joy × AP	-0.02**	0.01	-2.93	0.004	-0.03	-0.01
Political Knowledge	0.01	0.06	0.11	0.92	-0.1	0.12

Note. LCI = lower confidence interval; UCI = upper confidence interval. Covariate political knowledge was included in the analysis.

a. Moderator was mean-centered.

***. Significant at the 0.001 level

**. Significant at the 0.01 level

*. Significant at the 0.05 level

Reference group = Anger

Table 13.2 Moderation of Affective Polarization on Willingness to Share by Emotion Pairwise Comparison

Contrast	Estimate	SE	t(590)	p^b
Affective Polarization at low level (*M* – 1*SD* = -25.56)				
Anger – Control	-0.74**	0.21	-3.56	0.002
Anger - Fear	-0.18	0.21	-0.87	1
Anger - Joy	-0.23	0.22	-1.06	1
Control – Fear	0.56*	0.21	2.7	0.04
Control - Joy	0.51	0.21	2.39	0.1
Fear - Joy	-0.05	0.22	-0.21	1
Affective Polarization at mean level (*M* = 0.0001)				
Anger - Control	-0.29	0.15	-1.88	0.36
Anger - Fear	0.26	0.15	1.74	0.5
Anger - Joy	0.23	0.16	1.44	0.9
Control – Fear	0.55**	0.15	3.77	0.001
Control – Joy	0.51**	0.15	3.46	0.003
Fear - Joy	-0.04	0.15	-0.25	1
Affective Polarization at high level (*M* + 1*SD* = 25.56)				
Anger - Control	0.17	0.22	0.79	1
Anger – Fear	0.71*	0.21	3.34	0.01
Anger – Joy	0.68*	0.22	3.05	0.01
Control - Fear	0.54	0.2	2.67	0.05
Control - Joy	0.51	0.21	2.43	0.09
Fear - Joy	-0.03	0.21	-0.14	1

**. Significant at the 0.01 level

*. Significant at the 0.05 level

b. Adjustment for multiple comparisons: Bonferroni

List of Figures

Figure 1. Congruence and Affective Polarization Moderating the Effect of Emotion on Accuracy/ Time/ Skepticism

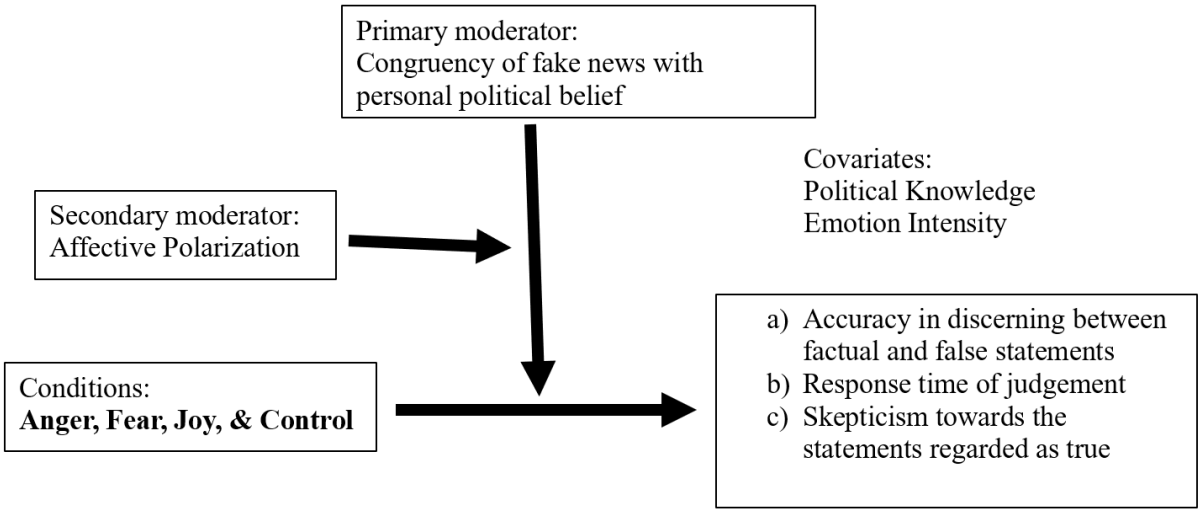


Figure 2. Affective Polarization Moderating the Effect of Emotion on Confidence/ Share

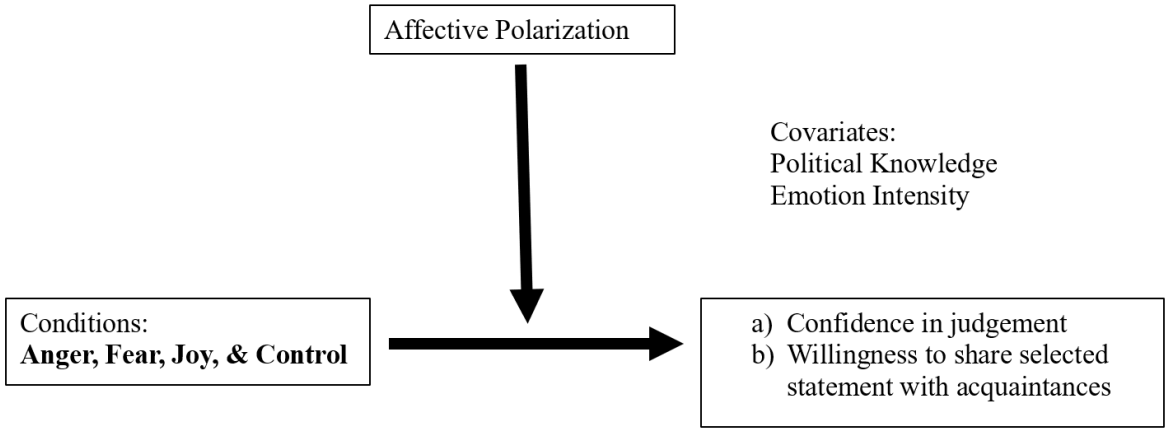
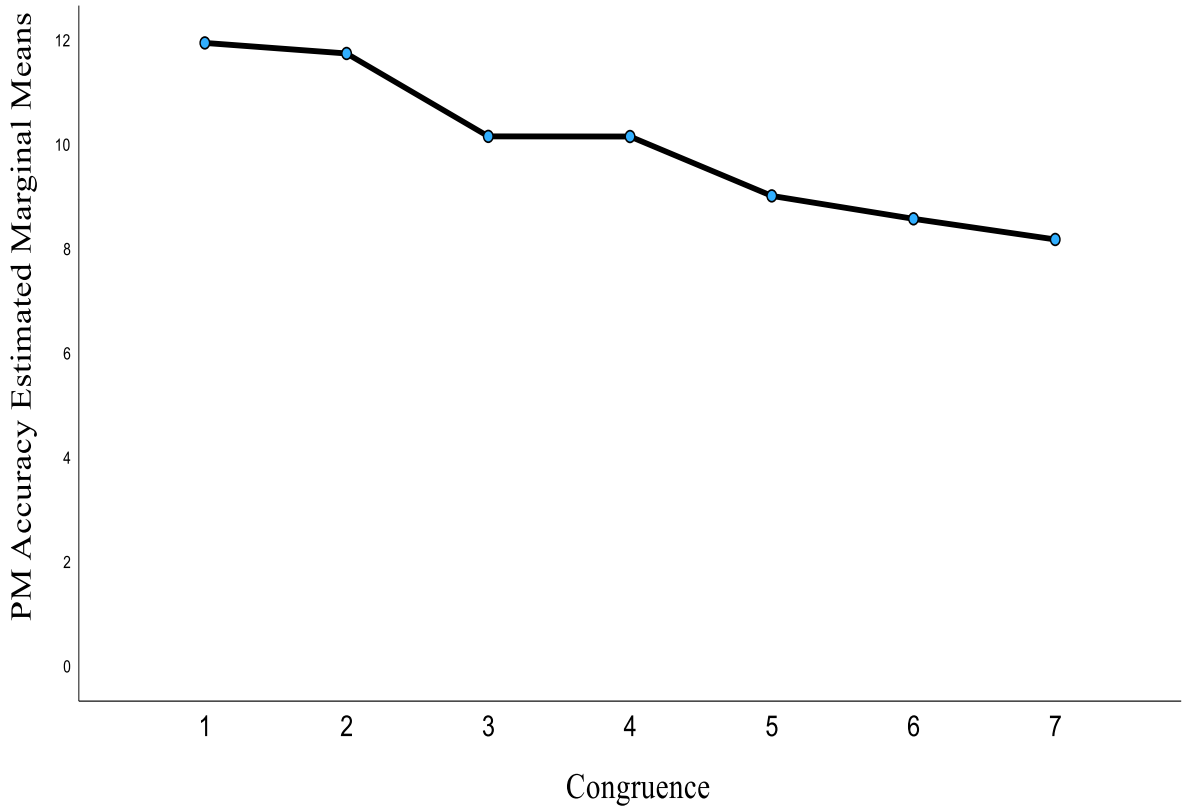


Figure 3. Main Effect of Congruence on PM Accuracy



Notes. Covariate was evaluated at the following value: political knowledge = 3.77

Figure 4. Political Orientation Sample Distribution

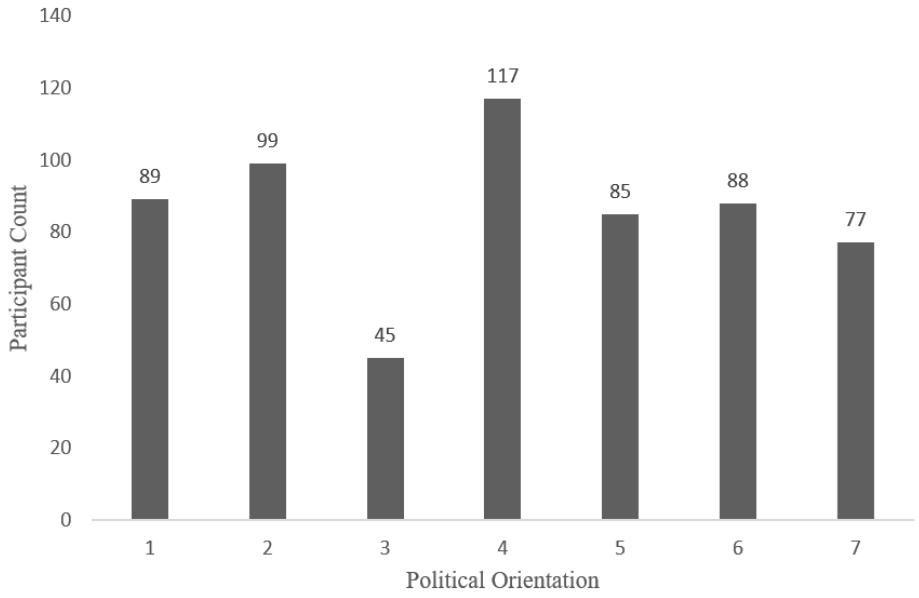


Figure 5. Moderation of Affective Polarization on Confidence by Emotion

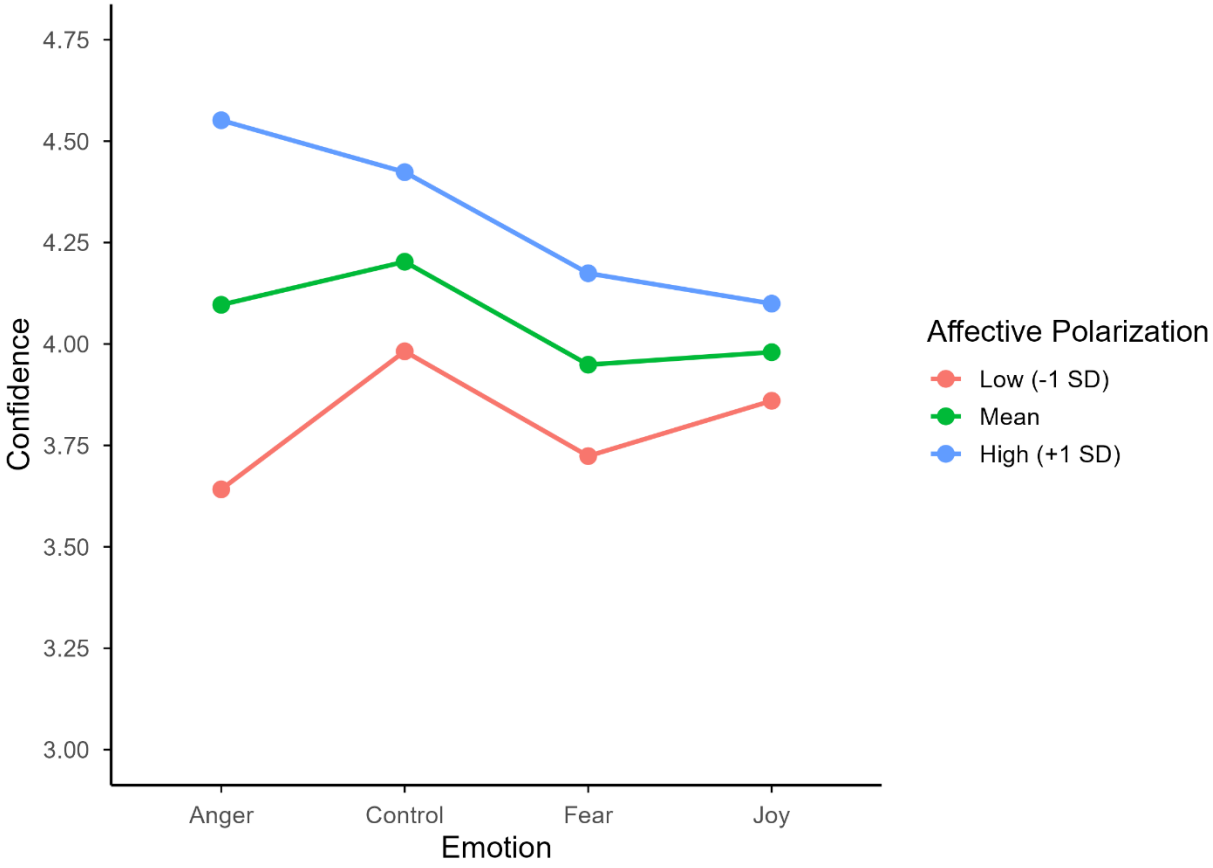
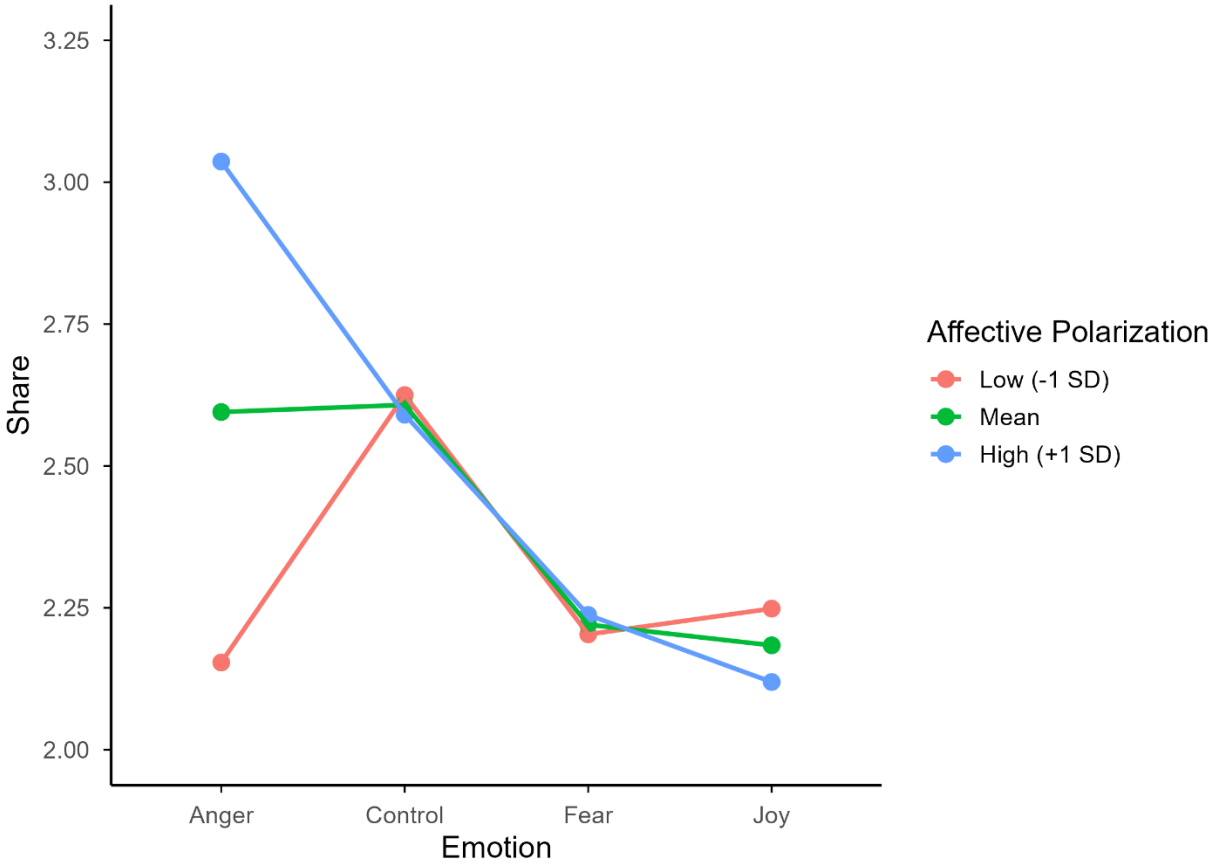


Figure 6. Moderation of Affective Polarization on Willingness to Share by Emotion



Appendix A
Emotion Induction and Control Writing Prompts

Anger Condition

Now we would like you to describe something that made you feel angry. Please describe how you felt as vividly and in as much detail as possible. Examples of things that have made some people feel angry are an event that occurred in your personal life, a new experience, an idea that you have been thinking about, a specific person or animal, or statements made by someone. It is okay if you don't remember all the details, just be specific about what exactly it was that made you angry and what it felt like to be angry. Please take three minutes to write out your answer. This page will automatically advance to the next after three minutes.

Fear Condition

Now we would like you to describe something that made you feel fearful. Please describe how you felt as vividly and in as much detail as possible. Examples of things that have made some people feel fearful are an event that occurred in your personal life, a new experience, an idea that you have been thinking about, a specific person or animal, or statements made by someone. It is okay if you don't remember all the details, just be specific about what exactly it was that made you fearful and what it felt like to be fearful. Please take three minutes to write out your answer. This page will automatically advance to the next after three minutes.

Joy Condition

Now we would like you to describe something that made you feel happy. Please describe how you felt as vividly and in as much detail as possible. Examples of things that have made some people feel happy are an event that occurred in your personal life, a new experience, an idea that you have been thinking about, a specific person or animal, or statements made by someone. It is okay if you don't remember all the details, just be specific about what exactly it was that made you happy and what it felt like to be happy. Please take three minutes to write out your answer. This page will automatically advance to the next after three minutes.

Control Condition

Please take three minutes to list out as many items as you can recall in your current living space. This page will automatically advance to the next after three minutes.

Appendix B

Emotion Induction Manipulation Check

Please rate the extent to which you feel each of the following emotions ranging from a scale of 1 (not at all) to 5 (extremely).

	Not at all				**Extremely**
Anxious	1	2	3	4	5
Annoyed	1	2	3	4	5
Happy	1	2	3	4	5
Scared	1	2	3	4	5
Mad	1	2	3	4	5
Pleasant	1	2	3	4	5
Enraged	1	2	3	4	5
Afraid	1	2	3	4	5
Fearful	1	2	3	4	5
Angry	1	2	3	4	5
Delighted	1	2	3	4	5
Irritated	1	2	3	4	5
Worried	1	2	3	4	5
Excited	1	2	3	4	5
Joyful	1	2	3	4	5

Emotion Adjectives Sorted by Conditions

Anger
Angry
Enraged
Irritated
Mad
Annoyed

Fear
Fearful
Anxious
Afraid
Scared
Worried

Joy
Joyful
Happy
Delighted
Pleasant
Excited

Appendix C
Political News Assessment Answer Key

Same question for all items: Which of the following statements is true?
Facts are underlined.

Condition 1: Questions with pro-Democrat fake news

1. During his presidency, Obama deported more noncitizens from the US than Trump did during his first term.
   During his first term, Trump deported more noncitizens from the US than Obama did during his presidency.

2. Trump's re-sharing of a 2018 Iranian post on his social media platform Truth Social is completely legal.
   Trump violated the Logan Act by re-sharing a 2018 Iranian post on his social media platform Truth Social.

3. The US is currently lagging behind the progress of most industrialized nations in reducing greenhouse gas emissions.
   The US has been making major progress in reducing greenhouse gas emissions, compared to most industrialized nations.

4. The unemployment rate in January 2024, during Biden's presidency, is more than one percent higher than it was in December 2019, during Trump's first presidency.
   The unemployment rate in January 2024, during Biden's presidency, is more than one percent lower than it was in December 2019, during Trump's first presidency.
   The unemployment rate in January 2024, during Biden's presidency, is about the same as it was in December 2019, during Trump's first presidency.

5. During his first term, Trump's administration successfully lowered poverty rates for African Americans and Hispanic Americans.
   During his first term, Trump's administration failed to lower poverty rates for African Americans and Hispanic Americans.

6. As many as 75% of the school shootings were executed with guns that were not secured in proper storage by the gun owner.
   The percentage of school shootings executed with guns that were not secured in proper storage by the owner is less than 75%.

7. The rate of overdose deaths was higher during Trump's first presidency than it was during Biden's presidency.
   The rate of overdose deaths was higher during Biden's presidency than it was during Trump's first presidency.

8. Joe Biden failed his campaign promise of supporting research efforts on reparations for slavery.

Joe Biden successfully kept to his campaign promise of supporting research efforts on reparations for slavery.

9. The claim that US government allowed drugs to flourish in inner cities to imprison more Blacks and Latinos is baseless.
   The US government allowed drugs to flourish in inner cities to imprison more Blacks and Latinos.

10. US citizenship is required to vote in US elections at all levels.
    Some US municipalities allow noncitizens to vote in local elections.

11. During the Civil Rights Era, Biden was arrested for protesting segregation in Lynnfield, Delaware.
    Biden has never been arrested for protesting segregation in Lynnfield, Delaware.

12. The vote tallies in the 2016 presidential election that resulted in Donald Trump's victory was legitimate.
    Russia compromised the vote tallies in the 2016 presidential election to get Donald Trump elected as president.

13. The Biden administration passed a new bill to help Americans with $15,000+ in credit card debt to write off their balance by as much as 50%.
    The claim that Biden administration passed a new bill to help Americans with $15,000+ in credit card debt to write off their balance by as much as 50% is a scam.

14. During his first term, President Donald Trump promoted the importance of getting vaccinated against COVID-19 on several occasions.
    President Donald Trump denied the importance of getting vaccinated against COVID-19 during his first term.

15. Unlike Trump, Hunter Biden was never indicted for any illegal activity.
    Hunter Biden was indicted on multiple occasions with criminal charges.

16. Joe Biden's campaign has never used TikTok because the app has been banned on all federal government devices.
    Joe Biden's campaign has an active TikTok account even after he issued the TikTok ban on all federal government devices.

17. The stock market hit a record high under both Biden's presidency and Trump's first presidency.
    The stock market hit a record high under Biden's presidency but not under Trump's first presidency.

The stock market hit a record high under Trump's first presidency but not under Biden's presidency.

Condition 2: Questions with pro-Republican fake news

1. Increase in immigrant population, both legal and illegal, is irrelevant to either party's performance in congressional seats or electoral votes.
   Increase in immigrant population, both legal and illegal, will give Democrats significant advantages in attaining congressional seats and votes in the electoral college.

2. Since election officials are legally not allowed to remove people (i.e., those who have passed or moved away) from voter rolls too quickly, it is normal and legal for some counties and states to have outsized voter rolls, which is when the total of active, pending, and inactive voters outnumber eligible registered voters.
   The fact that there were more registered voters than people who were legally eligible to vote in multiple counties across the US contributed to election fraud in the 2020 presidential election.

3. Kamala Harris is legally ineligible to run as US president because her parents were not citizens and were in the country on H-1 student visa when she was born.
   Kamala Harris was born on US soil and is therefore a natural-born citizen that can legally run as US president.

4. During her presidential debate with Donald Trump on Sept 10th, 2024, where candidates were not allowed props, pre-written notes, or interaction with their campaign staff during commercial breaks, Kamala Harris was fed information in real time from a pair of discreet wireless earbuds designed to look like pearl earrings (Nova H1 by Icebach Sound Solutions).
   Kamala Harris was wearing earrings from Tiffany & Co. during the presidential debate on Sept 10th, 2024, not discreet earbuds disguised as pearl earrings.

5. The 2020 presidential election was compromised by fraudulent mail-in ballots.
   All mail-in ballots cast in the 2020 presidential election were from legitimate voters.

6. The Capitol riot on Jan 6th, 2021, involved a violent and heavily armed mob of Trump supporters.
   The gathering at the US Capitol on Jan 6th, 2021, was a peaceful protest.

7. The World Health Organization's Pandemic Accord would give them legal authority over the US government to institute policies in America in the case of another pandemic.
   The World Health Organization's Pandemic Accord is irrelevant to the US government or any other country's sovereignty to mandate their own pandemic responses.

8. The earth is warming due to its changing distance from the sun and not due to carbon emissions.

The earth is warming due to carbon emissions and not due to its changing distance from the sun.

9. Almost all the jobs created under the Biden administration have gone to foreign-born workers.
   Employment rate of jobs created under the Biden administration is about the same for foreign-born workers and US citizens.

10. The US Supreme Court's overturning of Roe v. Wade made national right to abortion access in the US consistent with other developed nations, many of which also restrict abortion access like some of the US states.
    The US Supreme Court's overturning of Roe v. Wade eliminated the national right to abortion access in the US and made the US an outlier among developed nations, most of which have laws or court rulings ensuring national access to abortion.

11. Biden's administration ramped up efforts to moderate misinformation related to COVID-19 and its vaccines.
    President Biden was the first candidate in US history to use federal agencies to censor political speech of his opponents.

12. The unemployment rate in January 2024, during Biden's presidency, is more than one percent higher than it was in December 2019, during Trump's first presidency.
    The unemployment rate in January 2024, during Biden's presidency, is about the same as it was in December 2019, during Trump's first presidency.
    The unemployment rate in January 2024, during Biden's presidency, is more than one percent lower than it was in December 2019, during Trump's first presidency.

13. Joe Biden's migrant parole program required migrants in the program to pay for their own flights to Florida.
    Joe Biden's migrant parole program flew migrants across the southern border to Florida on tax dollars.

14. Under the Biden administration, illegal immigrants were being detained and deported at a similar rate as the previous administrations.
    Biden's executive actions on immigration allowed illegal immigrants to enter the US without being detained.

15. The stock market hit a record high under Biden's presidency but not under Trump's first presidency.
    The stock market hit a record high under Trump's first presidency but not under Biden's presidency.
    The stock market hit a record high under both Biden's presidency and Trump's first presidency.

16. Kamala Harris was seen posing with the disgraced music mogul Sean "P. Diddy" Combs in multiple photos.
    The photos of Kamala Harris posing with disgraced music mogul Sean "P. Diddy" Combs are all doctored and fake.

17. Biden had instituted an immigration policy that granted immunity from deportation to people who cross the U.S. border illegally during his presidency.
    During his presidency, Biden had been expelling, removing, or returning people who cross the U.S. border illegally, just like the past administrations did.

Appendix D
Affective Polarization Feeling Thermometer

Instructions: We would like you to rate how you feel towards the Republican and Democratic Parties, voters from each party, and politicians from each party on a scale of 0 to 100, which we call a "feeling thermometer". On this feeling thermometer scale, ratings between 0 and 49 degrees mean that you feel unfavorable and cold (with 0 being the most unfavorable/coldest). Ratings between 51 and 100 degrees mean that you feel favorable and warm (with 100 being the most favorable/warmest). A rating at the 50-degree mark means you have no feelings one way or the other.

If you have not heard of the politician in the question, please select the checkbox "I don't know who this is" on the side instead of using the slider.

1. How would you rate your feeling toward Democrat voters?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100

2. How would you rate your feeling toward Republican voters?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100

3. How would you rate your feeling toward Joe Biden?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

4. How would you rate your feeling toward Mitch McConnell?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

5. How would you rate your feeling toward Mike Johnson?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

6. How would you rate your feeling toward Nancy Pelosi?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

7. How would you rate your feeling toward George W. Bush (Jr.)?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

8. How would you rate your feeling toward Ken Martin?

coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

9. How would you rate your feeling toward Chuck Schumer?
coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

10. How would you rate your feeling toward Donald Trump?
coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

11. How would you rate your feeling toward Barack Obama?
coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

12. How would you rate your feeling toward Michael Whatley?
coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100
□ I don't know who this is.

13. How would you rate your feeling toward the Republican party?
coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100

14. How would you rate your feeling toward the Democratic Party?
coldest warmest
0-------10-------20-------30-------40-------50-------60-------70-------80-------90-------100

Appendix E
Political Knowledge Task

*Correct answer underlined.

Instructions: Please read each question carefully and answer to the best of your knowledge without conducting any research. If you have no prior knowledge of the subject in question, please make your best guess based on your intuition. Your response will be timed.

1. Which political party currently holds the majority in the House of Representatives?
    a. Republican
    b. Democrat

2. Who is the current Speaker of the House in Congress?
    a. Kevin McCarthy
    b. Nancy Pelosi
    c. Paul Ryan
    d. Mike Johnson
    e. Chuck Schumer

3. What is the political party of the president who appointed the current Chief Justice of the Supreme Court?
    a. Republican
    b. Democrat

4. What is the unemployment rate in US as of February 2025?
    a. Between 4.4-4.5%
    b. Between 4.1-4.2%
    c. Between 3.5-3.6%
    d. Between 3.2-3.3%
    e. Between 2.8-2.9%

5. Who is the current U.S. Secretary of State?
    a. Janet Yellen
    b. Lloyd Austin
    c. Marco Rubio
    d. William Burns
    e. John Kerry

Appendix F

Miscellaneous Single-item Measures

Confidence in Assessment

How confident are you in your answer to the previous question?

Very unconfident Very confident

1----------2----------3----------4----------5----------6

Skepticism

How skeptical are you towards the statement you've selected in the previous question?

Not skeptical at all Very skeptical

1----------2----------3----------4----------5----------6

Willingness to Share Statement

How likely are you going to share the statement you've selected in the previous question with your friends and family?

Not likely at all Extremely likely

1----------2----------3----------4----------5----------6

Political Orientation

Where do you stand politically on the scale below?

Strongly liberal	Moderately liberal	Somewhat liberal	Moderate	Somewhat conservative	Moderately conservative	Strongly conservative

1----------2----------3----------4----------5----------6----------7