Examining the effect of uncivil comments on endorsement of false political beliefs

Dissertation

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Abstract

Signifciant scholarly effort has been devoted to investigating the causes and effects of political misperception. However, the role of online comments in promoting political misperception has not received much of scholarly attention despite their significant influence on individuals' perception of issues (Anderson, Brossard, Scheufele, Xenos, & Ladwig, 2014). Prior research on the effect of uncivil political comments suggests that political incivlity often causes negative psychological and democratic outcomes, such as closed-mindedness (Hwang, Kim, & Kim, 2018) and experiences of negative emotions (Kim & Kim, 2019) as well as perceived polarization (Hwang, Kim, & Huh, 2014). What drives the effect of political incivility could be the increased political group identity salience, which could affect individuals' endorsement of false political beliefs. Drawing upon the Social Identification model of Deinviduation Effets (SIDE) (Reicher, Spears, & Postmes, 1995), this dissertation argues that the presence of incivility in online comments could promote endorsement of false political claims, particularly the ones belonging to one's ingroup, via increased level of political identity salience.

Three experimental studies were employed to test the effect of uncivil comments on endorsement of ingroup false beliefs and if the increased level of poliitcal identity slience in fact affects one's endorsement of false beliefs of their own group. Study 1 tested the effect of uncivil comments on political identity salience. Results provide no

support for the prediction. Study 2 tested direct effect of uncivil comments on endorsement of ingroup (false) beliefs. Study 2 present no support for the main effect of uncivil comments, but present a significant interaction effect of incivility of comments and political group identity on endorsement of misperception favored by Democrats. Study 3 examiend the direct effect of increased level of political group identity salience on endorsement of ingroup false beliefs. Results provide no support for the prediction. These three studies confirm that partisans' false beliefs are signifiantly influenced by their affiliated political Party, but demonstrate a lack of support for the effect of uncivil comments on endorsement of fasle beliefs and the role of political identity salience in the relationship.

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Chapter 1. Introduction

The persistence of political misperceptions can be significant harm for democracy by promoting political polarization based on inaccurate beliefs. Scholars have raised concerns over the prevalence of political misperception among the public. Therefore, several efforts have been made to understand why some people believe in false information that is not consistent with the best available scientific evidence, even when they are aware of the evidence.

Research suggests various sources of misperceptions, both external and internal sources. For instance, partisan media, an example of *external* source of misperception, are often blamed for promoting false political belief mainly due to their biased coverage of political news that often favor a certain political party (Garrett, Weeks, & Neo, 2016; Jamieson & Cappella, 2008; Sunstein, 2009). Partisan motivated reasoning (Kunda, 1990) has been also widely studied as a primary *internal* source of misperception. I believe that both of these two main sources of political misperception could be explained by the role of political group identity, which I believe play an important role in promoting false beliefs. First, when consuming partisan media, people learn about their in-party political elites' positions and get exposed to slanted presentation of political information (Feldman, Maibach, Roser-Renouf, & Leiserowitz, 2012; Hindman, 2009). As people repeatedly consume news via their pro-party media, accessibility of their political

ingroup's positions and political group identity would increase when encountering political information. This 'political group identity' explanation is also related to partisan motivated reasoning (Kunda, 1990; Lodge & Taber, 2013), which posits that partisans often engage in biased reasoning process that is driven by their directional goals. When individuals' political group identity becomes salient in a given situation, their directional goal of the reasoning process would be also influenced by their salient political group identity. That is, the salient political group identity would influence the subsequent reasoning process, which could also affect their acceptance of (false) political claims of their own ingroup as a form of their political group identity expression (Kahan, 2013). This could also explain why some people endorse false beliefs even when they are cognizant of the evidence that is not consistent with their own belief.

Considering the significant role of political group identity in influencing partisans' acceptance of false beliefs, we need to understand what other factors have contributed to endorsement of evidence-inconsistent claims, which could have been influenced by political group identity. I suggest that online uncivil comments have contributed to the increased effect of political group identity in increasing individuals' endorsement of false claims.

The extant literature suggests several reasons why it is important to understand the relationship of uncivil comments and political misperceptions. First of all, research showed that online comments are influential. Many people get to read online comments, particularly when they read political news (Stroud, Van Duyn, & Peacock, 2016). When reading online comments, people's understanding or perception of issues are sometimes

influenced by the surrounding comments (Anderson et al., 2014; Houston, Hansen, & Nisbett, 2011; Rosner, Winter, & Kramer, 2016), even their prejudicial attitudes toward a social group (Hsueh, Yogeeswaran, & Malinen, 2015). Online users can also infer public opinion by reading online comments (Lee & Jang, 2010), and the way people process media messages is occasionally influenced by the perceived public opinion (Lee & Jang, 2010) and online comments (Walther et al., 2011).

More importantly, some of the negative democratic consequences of exposure to uncivil comments (Hwang, Borah, Namkoong, & Veenstra, 2008; Hwang, Kim, & Kim, 2018) suggest the comments' effect on political misperceptions. For instance, when exposed to uncivil comments, people tend to become more resistant to opposing side's view (Hwang, Kim, & Kim, 2018) and be motivated to strengthen their own beliefs that are consistent with their own ideological views (Hwang, Borah, Namkoong, & Veenstra, 2008), which could increase likelihood of accepting claims belonging to one's ingroup. This may be partly due to the main feature of uncivil political comments, displaying disrespect toward the other side by highlighting negativity. Exposure to uncivil comments highlighting negativity toward each other is likely to increase comment readers' perception of intergroup differences, further increasing political group identity salience. As predicted by Turner's (1986) social categorization theory, such increased political group identity salience would make one's cognition or behavior to be governed by the salient group identity. Therefore, exposure to *uncivil* comments could contribute to the prevalence and persistence of false political beliefs of one's own group by increasing the role of political group identity salience in the relationship between the two.

Drawing upon the social identity approach (Tajfel & Turner, 1986) and the Social Identification of Deindividuation Effects (SIDE) model (Reicher et al., 1995), I suggest political group identity salience as underlying mechanism of the relationship between exposure to uncivil comments and endorsement of ingroup (false) beliefs. Uncivil political comments are likely to trigger comment readers' political ingroup identity salience, which further increase individuals' likelihood of endorsing claims that are perceived to be belonging to their ingroup, even when such beliefs are based on inaccurate claims.

The main purpose of this dissertation is to test the role of political group identity salience as a mechanism of the relationship between exposure to uncivil comments and endorsement of one's political in-group (false) beliefs. This dissertation contributes to the literature on political incivility and misperception in two ways. First, it advances our understanding of the possible causes of prevalence of political false beliefs by investigating the effect of exposure to uncivil comments. Second, findings of this research could contribute to the SIDE literature as one of the few studies attempting to examine online group behavior by not directly rendering social group identity salient. By examining the effects of uncivil online comments on group identity salience and group beliefs, this research tests 1) one of the social contexts where individuals' social group identity becomes salient, which is important part of the SIDE model, and 2) how the *nature* (i.e., being uncivil) of intergroup relationship interacts with individuals' online group behaviors. Lastly, testing political group identity salience as mechanism provides us insights on why people are often motivated to engage in reasoning process in a way

that is consistent with their political ideological views, particularly when they encounter uncivil political comments. In fact, Rains and his colleagues (2017) showed that some people use incivility as one way of performing their social group identity in intergroup context. If the use of political incivility could be one way of performing one's political group identity, it is vital to examine its effect on group identity as well, drawing upon the cognitive dimension of the Social Identification of Deindividuation Effects (SIDE) model (Reicher et al., 1995). I argue that testing this mechanism provides us a more comprehensive understanding of the linkage between political incivility and endorsement of one's ingroup beliefs, which also expands our understanding of causes of political polarization more broadly. If we find empirical support for this mechanism, findings of this dissertation can also help us comprehend how media outlets including a comment section would be associated with the persistence of political false beliefs.

Outline

This dissertation contributes to our understanding of why people would engage in a reasoning process that is significantly influenced by their political group identity by examining the effect of exposure to political uncivil comments on political group identity salience. Three studies were employed to test this theoretical mechanism. Study 1 aims to test the effect of uncivil comments on political identity salience. Study 2 examines the effect of exposure to uncivil comments on "depersonalization," whereby political group identity becomes more salient. Study 3 examines the influence of political group identity salience on endorsement of one's political ingroup beliefs by directly manipulating political group identity salience. Chapter 2 discusses the major concepts of the theoretical

model and reviews the literature associated with them. Afterwards, I present my hypotheses as well as my theoretical arguments for the suggested relationships. Chapter 3 provides the methodology used for four independent pretests. Chapter 4, 5, and 6 provides the same information for Main Study 1, 2, and 3, respectively. In Chapter 7, I provide a brief summary of the results and discuss implications of the findings.

Chapter 2. Theory

The persistence of political misperception is problematic given its significant effect on democratic outcomes. Accordingly, many scholars have attempted to understand causes and consequences of individuals' acceptance of political misinformation. However, communication-related features of online environment, such as comments, have not attracted much of scholarly attention in spite of the increased role of the Internet in spreading misinformation. Considering online comments' influence on individuals' perception of issues (Anderson at al., 2014), perception of polarization (Hwang et al., 2014), and psychological reactions (Hwang et al., 2018), examining the effect of uncivil comments on individuals' acceptance of false beliefs is important to advance our understanding of the persistence of political misperceptions. Prior to proposing specific predictions, this chapter begins by defining concepts, such as false beliefs and political incivility, and reviews literature associated with the effect of exposure to uncivil comments. Next, it reviews the Social Identification of Deindividuation Effects (SIDE) model (Reicher et al., 1995) and discusses how the SIDE model helps us understand the role of political group identity as mediator in the relationship between exposure to uncivil comments and endorsement of ingroup beliefs.

Beliefs and Attitudes

Before defining false political beliefs, it is useful to discuss the differences between 'attitude' and 'belief' in order to have a clear understanding of what 'beliefs' are. Political beliefs and attitudes both have been widely studied due to their significant implications for democratic consequences. Despite some overlapping characteristics between the two concepts, there are important conceptual differences between them.

First, attitudes are conceptualized as "an association between a given object and a given evaluation" (Fazio, Powell, & Herr, 1983, p.724). A given object can be an any issue, person (or a group of individuals), or situations, and an evaluative summary of an attitude object can range from negative to positive (Fazio, 2000). For example, a person's evaluation of a political candidate may be very cold, which means the person's attitude toward the candidate is negative. Such evaluation of the attitude object might have been influenced by several factors, such as various sources of information, for example, emotional experiences and beliefs (Fazio, 1993).

Whereas the evaluative summary of an object is the key feature of attitudes, beliefs are estimates that a given object (referent) possess specific attributes or characteristics or that a certain event will occur (Eagly & Chaiken, 1993, 1998). Using the same example above (a person being unfavorable toward a political candidate), a particular reason that person became unfavorable toward the political candidate may be because of that person's belief that the politician lied about economic plans. This specific estimate about the candidate's lie is categorized as a 'belief' while the person's negative evaluation of the candidate is 'attitude.'

Defining False Political Beliefs

False beliefs are defined as factual beliefs that are not supported by the best available evidence (Kuklinski, Quirk, Jerit, Schwieder, & Rich, 2000). When mental estimates about attributes of a given object or occurrence of an event are not consistent with the available evidence, such beliefs are viewed as 'falsehood.' One's "interpretation" of facts are also associated with political misperception (Gaines et al., 2007), particularly when such interpretation is driven by directional goal (Kunda, 1990). For example, some conservatives hold a false belief about the U.S. military's failure to discover weapons of mass destruction (WMD) after the 2003 invasion of Iraq by making inferences and interpreting the evidence in a way that is consistent with conservative ideological values. When such interpretation is not supported by the best available evidence, it is considered as a type of false belief.

False political beliefs are often more troubling than political ignorance. Those who believe in falsehoods tend to consider themselves as well-informed when they are not (Nyhan, 2010). Thus, it becomes particularly problematic when citizens' understanding of political information or when their political decision-making process is significantly influenced by false beliefs.

The existing literature has categorized false political beliefs into two types: 'demonstrably false beliefs' and 'beliefs that are unsubstantiated by the best available evidence' (Flynn, Nyhan, & Reifler, 2017). 'Demonstrably false beliefs' are beliefs that can be corroborated by the existing information. For example, believing in that "weapons of mass destruction were discovered in Iraq after the U.S. invasion in 2003" is

demonstrably false since the weapons were not discovered (Flynn et al., 2017, p.128). On the other hand, some false beliefs are not necessarily demonstrably false, but are not supported by the best available evidence, therefore, are considered as false. For instance, a belief that "Saddam Hussein hid or destroyed weapons of mass destruction before the U.S. invasion in 2003" is false because that claim cannot be verified by the available evidence (Flynn et al., 2017, p.128).

Scholars have introduced several terms that are related to 'false beliefs,' such as 'rumor' and 'conspiracy theories.' It is useful to clarify the differences of these terms. Rumor is defined as "unverified and instrumentally relevant information statements in circulation that arise in contexts of ambiguity, danger, or potential threat and that function to help people make sense [of] and manage risk" (DiFonzo & Bordia, 2006, p.13). One of the distinctive features of rumors is its rapid social transmission (Berinsky, 2015; DiFonzo & Bordia, 2006). Conspiracy theories are a set of premises that attempt "to explain some event or practice by reference to the machinations of powerful people, who attempt to conceal their role" (Sunstein & Vermeule, 2009, p. 205). Conspiracy theories are typically characterized by focusing on behavior of authoritative people.

In sum, false political beliefs refer to individuals' factual political beliefs that are not supported by the best available evidence, which this dissertation uses as the conceptualization of 'false political beliefs.' Believing in political rumor, or political conspiracy theories, or biased interpretation of facts could be all viewed as types of false beliefs given that they cannot be supported by the best available evidence.

False Political Beliefs and Political Group Identity

Many scholars have examined causes of the prevalence and persistence of false political beliefs. Broadly, there are external (e.g. media coverage or consumption of partisan media) and internal sources (e.g. motivated reasoning) of false political beliefs (Flynn et al., 2017). For instance, those who frequently consume partisan media (external source) are more likely to hold false political beliefs (Garrett et al., 2014) because partisan media often cover political matters in a slanted view; that is, consuming partisan media could mislead people's understanding of political matters and promote acceptance of unsubstantiated political claims. For instance, Fox News aired far more news stories that cast doubt on a scientific view on anthropogenic global warming (AGW) than stories that accept scientific claims supporting AGW (Feldman et al., 2014). Since pro-environmental policies threaten conservatives' core values, such as "economic growth, the spread of free markets, the maintenance of national sovereignty, and the continued abolition of governmental regulations" (McCright & Dunlap, 2011, p.160), Fox News aired news stories that are consistent with conservatives' anti-environmental movement. In fact, research showed that those who consumed conservative media were found to be less likely to accept global warming claims (Feldman et al., 2012). If the primary cause of one's persisting misperception is the frequent exposure to biased political information or misunderstanding of evidence, such misperception could be relatively easily corrected when given enough evidence and explanations. However, a more concerning case would be those who strongly believe in false claims even when they know the available evidence is not consistent with their own beliefs. This could be an example of the

influence of internal source of misperception, such as motivated reasoning driven by directional goals (e.g. one's motivation to stand with perceived ingroup's false belief).

I suggest that political group identity is related with both of these two sources of misperceptions – external and internal. More importantly, I argue that political group identity, influenced by both of these external and internal sources of misperceptions, can promote acceptance of false political beliefs that are associated with one's political in- and out-group identities. To use the conservative media's coverage of stories casting doubt on a scientific view on AGW, when people get repeatedly exposed to such conservative media's biased coverage of the issue, their awareness of the political in-group's ideological positions on AGW would be increased. Therefore, the impact of political group identity would be amplified when they encounter AGW-relevant information. Accordingly, political ideologues' group identity would become more accessible and salient when they encounter or process political information as they consume partisan media more frequently. If this is true, as the Social Identity theories (Tajfel & Turner, 1979; Turner, 1985) predict, one's salient political group identity would further influence their subsequent information processing and their political group behavior is likely to be influenced by the salient group identity. Garrett and his colleagues (2019) also found that frequent consumption of partisan media tend to increase affective polarization, which in turn, influenced increased political misperception about the opposing side's political candidate. Although there may be different reasons people experience hostility toward their political out-party, consuming

partisan media can make political group identity more salient, which also evokes downstream effects on false beliefs.

Internal sources of misperception, such as partisan motivated reasoning (Kunda, 1990), could be also explained by the role of political group identity. I believe that some people may engage in motivated reasoning driven by their desire to support their ingroup's beliefs, influenced by salient political ingroup identity when processing political information. The theory of motivated reasoning (Kunda, 1990) posits that individuals' motivation affects reasoning processes. According to Kunda (1990), when directional goals govern reasoning process, people engage in biased memory search and access relevant knowledge structures that help them reach their desired conclusion which is consistent with their directional goal. In other words, people would not accept correction of their false beliefs when their reasoning process is significantly ruled by their opinions or knowledge structure belonging to their political ingroup. As Kahan (2013) noted, when protection of one's ingroup membership becomes important, people would be more likely to endorse ingroup-affirming beliefs as a way of expressing their ingroup identity (Cohen, Bastardi, Sherman, Hsu, McGoey, & Ross, 2007). For example, when Republicans are given empirical evidence confirming human-caused climate change, instead of focusing on understanding the given information, some of them would be influenced by their ingroup's values and beliefs that are against the information. If their political group identity becomes salient in a situation where they are prompted to think about human-caused climate change, their political group identity would be likely to be increased (Turner, 1985), which may encourage them to endorse their perceived ingroup

beliefs. For these reasons, I argue that political group identity, which is closely related with each of these two factors, have significantly influenced individuals' acceptance of political ingroup (false) beliefs.

Since political group identity is one of primary social group identities (Greene, 1999), social identity theory (SIT) (Tajfel & Turner, 1979) can be a useful theoretical framework to unpack the role of political group identity salience in understanding partisans' false political beliefs. According to social identity theorists (Tajfel & Turner, 1979; Turner, 1985), salient social group identity influences individuals' cognitions and behavior. Accordingly, when one's political group identity becomes salient in a given situation, it is highly likely that their reasoning process would be influenced by their directional goal, protecting their in-group identity and related values. This prediction is based on the SIT's assumptions about individuals' desire to maintain positive self-concept and social ingroup identity and its main claim that even a mere cognitive social categorization encourage people to favor their ingroup and discriminate against their outgroup members. In other words, individuals' salient political group identity would influence their subsequent cognitive processing and behavior including their perceived political ingroup beliefs. Thus, salient political group identity would make people become more susceptible to claims that favor their political ingroup's attitudes and reject their outgroup-favored information. Since salient political group identity could motivate people to want to protect their ingroup values and identities, people would be more likely to be resistant to correcting their false beliefs (Kahan, 2013; Kunda, 1990).

Several scholars' attempts to correct misperceptions also reveal the importance of political group identity in promoting and attenuating the persistence of false political beliefs. While several attempts to correct misperception by presenting factual information were found to be unsuccessful (Nyhan & Reifler, 2010; Hart & Nisbet, 2012), Dixon and his colleagues (2017) demonstrated the positive effect of using targeted value-based message on improving acceptance of climate change claims. Dixon et al. (2017) found the effectiveness of messages highlighting the associated ideological values (free market solutions to climate change) in increasing acceptance of climate change claims among conservatives. When conservatives' ideological values were affirmed by the targeted message, they conformed to the message by accepting scientific claims (Dixon et al., 2017). The findings of this study indicate that one reason previous attempts to correct misperception (Nyhan & Reifler, 2010) failed might have been related with one's political group identity. Luong, Garrett, and Slater's (2019) study also revealed the effectiveness of using ideology-based framing approach in persuading individuals' science beliefs.

Since political group identity salience can influence individuals' acceptance of false political beliefs, it is important to understand some of the factors that affect individuals' political group identity salience when processing political information. In particular, due to the significantly increased role of online media in consuming political information (Pew, 2014), it is particularly important to examine which features of online media environment would influence political group identity when encountering political information. I argue that exposure to online uncivil political comments would increase

one's likelihood of accepting political ingroup-favoring false beliefs by increasing political group identity effect. Before further elaborating on how exposure to uncivil comments would increase the likelihood of endorsing false political beliefs via increased effect of group identity salience, it is necessary to conceptualize political incivility to understand main features of uncivil political comments.

Defining Political Incivility

Political Incivility

In my view, scholars have conceptualized incivility in two ways. First, the most predominant way of conceptualizing incivility is focusing on display of disrespect when resolving social conflicts (Carter, 1992; Funk, 2001). According to this conceptualization, any kind of verbal or nonverbal cues or expressions displaying disrespect would be considered incivility. Second, other scholars suggested that it is important to consider the role of (in)civility in fostering or impeding democratic outcomes when conceptualizing it. This view highlights that every respectful behavior may not be necessarily civil. That is, one can be polite, but uncivil at the same time, and vice versa. According to this view, "civility is communication guided by democratic principles of fairness, equal access, and recognition of the value of reasoning (reciprocity)" (Graf et al., 2017, p.4). Although there are differences between these two conceptualizations of incivility, considering empirical evidence showing negative effects of displaying disrespect on democratic outcomes (Borah, 2014; Hwang et al., 2014), nonverbal or verbal behaviors that violate democratic principles (including display of respect) is the key defining feature of incivility. What distinguishes these two conceptualizations is each view's emphasis on

different aspects of political incivility. The first conceptualization is focused on what incivility looks like whereas the second one is centered on what consequences of incivility are. Next, I will review conceptual roots of the two conceptualizations and the literature associated with each of these conceptualizations in more detail before turning to my conclusion about conceptualizing incivility.

It is worthwhile to note conceptual roots of the two conceptualizations I review (for a brief historical conceptual review, see Papacharissi, 2004). Both of the conceptualizations that have been used by most scholars are rooted in definitions of civil society that emerged during the 17th and 18th centuries. First, conceptualizing civility, focused on 'good manners' and 'morality', was stemmed from a bourgeois perspective, which "can be found in the principles of the American democratic model" (Papacharissi, 2004, p.264). For example, civility was seen as an important part of moral education in the writing of George Washington (Kesler, 1992). The first conceptualization is aligned with this conceptualization emphasizing good manners and morality. On the other hand, the second conceptualization is more aligned with Kant's idea that views civil society as "the locale where contestation between the public and private realm takes place (Schmidt, 1998)" (Papacharissi, 2004, p.264). This emphasizes an idea of civility that "reflect, but also helps to overcome the human need for individuality and solidarity; the desire to live with others but to also live as an individual" (p.264).

The first conceptualization describes incivility as a form of displaying disrespect. The most prevalent way of conceptualizing incivility is focusing on individuals' display of disrespect, which is closely associated with displaying 'good manners' (Funk, 2001;

Sapiro, 1999). Funk (2001) conceptualized incivility as "animosity" violating "norms of courtesy and reciprocity in resolving social conflict" (p.198). Sapiro (1999) also noted that the fundamental feature of civility includes "respect", "consideration", and "courtesy" (p.3). As respect and courtesy have become essential element of civility, political communication scholars have adopted these conceptualizations. For example, Mutz and Reeves' (2005) and Brooks and Geer's (2007) studies, which have been widely cited in political communication literature, are the most consistent with this conceptualization. According to this view, any communicative behaviors that display disrespect would be considered uncivil. The use of gratuitous or inflammatory words – words expressing disrespect, but not necessarily adding any substantive meaning, never apologizing for interrupting one another, and disrespectful nonverbal behaviors, such as rolling of the eyes, were examined as incivility in Mutz and Reeves (2005). Although this first approach seems to be closely associated with "showing good manners" or "courtesy", it is important to remember the distinction between "interpersonal politeness" and "civility" in political discourse. Particularly with respect to political discourse, displaying disrespect toward politically opposing side or political out-groups is likely to be motivated by undemocratic values or principles.

Second, another way of conceptualizing incivility is focusing on democratic outcomes of incivility. Shils (1992) and Papacharissi's (2004) conceptual definitions of incivility are examples of this approach. Shils' (1992) definition of civility highlights the importance of taking "a concern for the common good" (p.1), which is similar to Papacharissi's (2004) conceptual definition. For example, when people respectfully

express their unwillingness to hear their opposing side's opinions, their behavior is not necessarily disrespectful, but uncivil. Also, one can behave in a way that looks being respectful, but the person can be respectfully uncivil if that person violates democratic principles, such as verbally expressing threats to democracy (Papacharissi, 2004). It is also possible that impolite comments could be civil depending on situations, albeit uncommon. Using Brown and Levinson's (1999) conceptualization of politeness (politeness as saving individuals' positive and negative face), one can impose a threat to others' (those who hold an opposing view) face by not cooperating with them. If not cooperating with others is an impolite behavior, such impolite behavior would be considered civil, if that promotes deliberation, which would be considered to be conducive to achieve the common good.

Studying these different approaches is essential in understanding political incivility given that each conceptualization included an important feature of political incivility. However, the theoretical distinction does not mean that each conceptual definition refers to a different concept respectively. Rather, both conceptualizations essentially indicate the same concept, but focuses on slightly different aspects of incivility. Whereas the first conceptualization puts more emphasis on describing main features incivility, the second one focuses on the effects of incivility. Using the core ideas of these two conceptualizations, I suggest a conceptual definition of incivility as 'verbal or nonverbal behaviors displaying disrespect that threaten democracy by impeding a free exchange of differing political views,' which is similar to Coe et al.'s (2014) definition. In other words, political incivility arises when expressions of nonverbal or verbal acts –

including display of disrespect – hinder people from exchanging different political views or opinions, which would only promote a slanted or one-sided view among the public. In other words, when free and respectful exchange of different opinions is discouraged, only certain social groups of individuals' views would be likely to be reflected in public opinion.

(In)civility versus (Im)politeness

Civility is often confused with politeness since it has been understood as to be closely related with courtesy. Compared to civility, politeness is a broader concept that is applied to everyday life's social interaction and communication, not specifically limited to political context. Fraser's (1990) summary of different theoretical views on politeness would be useful in understanding the differences between (im)politeness and (in)civility. According to Fraser (1990), there are four different approaches in understanding politeness: 1) social-norm view, 2) conversational-maxim view, 3) face-saving view (Brown & Levinson, 1987; Goffman, 1971), and 4) conversational-contract view.

First, the social-norm view "reflects the historical understanding of politeness" as embraced by the Western cultures (Fraser, 1990, p.220). According to this view, polite behaviors are determined based on the social norms of the culture, primarily Western cultures. Accordingly, politeness is understood as to be associated with higher degree of formality.

Second, the 'conversational-maxim' view, drawing upon Grice's conversational theory (1989), assumes that conversationalists are rational and interested in being efficient when having conversation. The cooperative and conversational principles

established by Grice (1989) suggests strategies to maximize efficiency while minimizing conflicts when having conversation. Grice's (1975) general Cooperative Principle (CP) states that individuals should contribute to their conversation by saying what they should say at the time it should occur in a way that should be said. Whereas the CP strategies are meant to guide a smooth conversation, the principles also could suppress some thoughts and emotions for a smooth conversation.

The third one is 'face-saving view', stemming from Goffman's (1957) notion of 'face,' and Brown and Levinson's (1987) politeness theory that introduced the concept of 'positive face' and 'negative face.' Positive face refers to "the want of every member that his wants to be desirable to at least some others" (Brown & Levinson, 1987, p.101) whereas negative face refers to "the want of every competent adult member that his action be unimpeded by others" (p.62). Politeness theory (Brown & Levinson, 1987) explains politeness by discussing what acts impose threats to positive or negative face. In other words, nonverbal and verbal acts that threatens one's positive faces are considered impolite.

The fourth approach is conversational-contract view (Fraser & Nolen, 1981). This view also adopts Grice's (1975) cooperative principles and acknowledge the importance of Goffman's (1957) notion of face. According to the 'conversational-contract' view, when entering a conversation, "each party brings an understanding of some initial set of rights and obligations that will determine, at least the preliminary stages, what the participants can expect from the other(s)" (Fraser, 1990, p.232). As both parties have a conversation, there may or may not negotiate their conversational contract, such as rights

or obligations they expect to hold toward their partner. According to this view, in order to be polite, individuals should "operate within the then-current terms and conditions of the CC" (p.233).

These four different approaches of understanding politeness show that a distinction between politeness and civility is the desired outcome of the communicative acts (either verbal or nonverbal). Whereas politeness puts emphasis on having smooth flow of conversations and following the expected rules, civility requires positive democratic outcomes, such as free and respectful exchange of different opinions (Coe et al., 2014). Politeness prioritizes to minimize the likelihood of causing conflicts and maximize the efficiency of communication (i.e. conversational-maxim view). Therefore, interpersonal politeness as social or communication etiquette in general should not be deemed equivalent to civility because democratic principles or values would not be necessarily considered when people display politeness (Papacharissi, 2004). For example, being polite to others in everyday life's social interaction (Brown & Levinson, 1987) is likely to inhibit people from engaging in heated discussions, which would also discourage political deliberation (Stryker et al., 2016). In accordance with this distinction between politeness and civility, avoiding conversations about politically sensitive topics would be considered polite (Brown & Levinson, 1987), but not civil (Papacharissi, 2004). Papacharissi is a strong proponent for distinguishing between "incivility" and "politeness" by defining incivility as "collective impoliteness with consideration for the democratic consequences of impolite behavior" (p.267). She defines being polite is more about following etiquettes and good manners whereas being civil would require

individuals to follow democratic principles, which is also likely to lead to political deliberation, for example. She agreed with other scholars' conceptualization in that the core conceptual feature of incivility includes "impoliteness," but emphasizes that there could be situations where one can be respectful and polite on the surface level, but uncivil. She argues that in order to be considered incivility, there should be negative democratic outcomes (Papacharissi, 2004).

Political Intergroup Incivility and False Political Beliefs

Political misperceptions are often associated with the beliefs promoted by members of a common political party or political ideology. Thus, understanding the role of intergroup uncivil comments in studying political misperceptions is important considering the nature of 'intergroup' dynamics of such online comments. In fact, empirical findings of previous studies also suggest that examining political intergroup uncivil comments is relevant to understanding acceptance of political falsehoods that are aligned with one's political ingroup identity and ideological positions. For example, previous studies have shown negative psychological effects of uncivil comments, such as increased level of closed-mindedness, attitude extremity (Borah, 2014), and negative emotional reactions toward their political outgroup members (Hwang et al., 2018), which all seem to be associated with psychological reactance and rejection of false belief corrections. Accordingly, this dissertation examines the role of political intergroup incivility in promoting false political beliefs, focusing on political group identity salience as mediator. The next section describes how uncivil comments promote endorsement of false political beliefs via increased political group identity salience.

Uncivil Comments, Democratic Consequences, and False Political Beliefs

Online comments can be quite influential, particularly in regard to understanding and perception of online information. Exposure to uncivil political comments can result in detrimental outcomes, such as distorted perception of certain issues or negative affective responses toward the comment readers' political opposing party members. For instance, uncivil political intergroup comments could distort the comment readers' perception of the extent to which the two opposing political parties (or party members) are polarized (Hwang et al., 2014), which could further lower the readers' expectation for deliberation between the two parties (Hwang et al., 2014). Uncivil comments also tend to make the comment-readers become less open-minded and more hostile toward their political opponents (Hwang et al., 2018). Although the specific outcomes of previous studies are slightly different across the studies, I believe that the findings of the psychological effects of uncivil comments indirectly show the role of political group identity salience, which might have been increased by reading the uncivil intergroup comments. For instance, experiencing negative emotions (e.g., anger) and being close-minded toward one's outgroup members after seeing uncivil comment indicates psychological reactance toward their opposing side. Consisting of both affective (e.g. anger) and cognitive components (Quick & Stephenson, 2007), psychological reactance is closely associated with self-identity threat (Nurtagh, Gatersleben, & Uzzell, 2012). Such psychological reactance to ideologically dissonant views could impede people from listening to the other side, even when their ingroup beliefs are based on false claims. Thus, exposure to an exchange of uncivil comments between two political opposing sides

(e.g., Republicans versus Democrats) could bring negative consequences by impeding people from having an accurate understanding of political issues including their perception of their political in- and out-group members. In other words, negative psychological outcomes (e.g., being more closed-mindedness and experience of anger) could be seen as indicators of individuals' psychological reactance toward those who hold ideologically dissonant views attacking one's ingroup identity. Such reactance toward one's political opponents could contribute to individuals' endorsement of false political beliefs, particularly that either affirm their ingroup members' values or derogate their outgroup's views.

Social identity theories (Tajfel & Turner, 1979; Turner, 1985) provides a partial explanation for the relationship between uncivil comments and hostility toward one's political opposing side (Hwang et al., 2018). Since uncivil intergroup comments are typically characterized by negativity, the perceived intergroup differences could influence readers' ingroup favoritism via increased group identity salience, making people become less favorable toward their outgroup members. According to social identity theory (Tajfel & Turner, 1986), people strive to maintain positive self-concept and social identity, which would make them to be favorable toward their ingroup when their social group identity becomes salient to them. Thus, it is my contention that reading uncivil comments could encourage people to endorse false political beliefs of their political ingroup, as one way of favoring their ingroup's views by conforming to their ingroup beliefs. Given the focus of this dissertation is online comments, using the Social Identification of Deindividuation Effects (SIDE) model as theoretical framework, I describe how online

exposure to political uncivil comments would increase one's political identity salience, which is expected to subsequently affect their endorsement of political ingroup beliefs as a form of group conforming behavior. I begin by introducing the SIDE model.

The Social Identification of Deindividuation Effects (SIDE) model

The Social Identification of Deindividuation Effects (SIDE) model has been widely used by scholars when examining online social group behaviors. The theoretical root of the SIDE model is the idea of 'deindividuation,' which was initially introduced by Gustav Le Bon (1895/1995) to explain antisocial group behavior. The main claim of deindividuation theory is that anonymity decreases individuals' self-regulation and possibly causes a loss of selfhood, which could further increase the likelihood of engaging in disinhibited group behavior. However, Reicher and his colleagues (1995) pointed out that deindividuation theories do not provide appropriate explanations for some of the inconsistent findings of deindividuation research. By emphasizing the important role of situational norms in promoting group behaviors, Reicher and colleagues (1995) proposed the SIDE model. Drawing upon social identity approach (Tajfel & Turner, 1986; Turner, 1985), the SIDE posits that individuals' group conformity is not an outcome of socially deregulated behaviors, rather, it is an outcome of socially regulated behavior, which is significantly influenced by their enhanced social identity salience. That is, the SIDE emphasizes the important role of situational norms in promoting group conforming behaviors (Reicher et al., 1995).

One of the distinct features of early Computer-Mediated Communication (CMC) was visual anonymity and non-identifiability. Accordingly, much of the early research on

CMC has focused on examining online disinhibition and group phenomena, primarily focused on the lack of social cues approach (Kiesler, Siegel, & McGuire, 1984). The lack of social cues explanation of CMC effects (Kiesler et al., 1984) is consistent with the deindividuation theorists' (Zimbardo, 1979) claims regarding deindividuation effect in that some input variables, such as anonymity, decrease individuals' self-awareness and self-regulation, which could encourage online disinhibition. Later, the SIDE model was extended to explain computer-mediated communication group phenomena by claiming that online group behaviors are influenced by individuals' increased perception of social boundaries (Postmes, Spears, & Lea, 1998).

When Reicher and his colleagues (1995) proposed the SIDE model, they emphasized multiple layers of self, consisting of personal and social identity, consistent with social identity theorists' claims (Tajfel & Turner, 1982; Turner, 1985). According to the SIDE (Reicher et al., 1995), when individuals perceive that they are visually anonymous and when their social identity is rendered salient, they do not lose their selfhood completely. Rather, individuals' identity level shifts from a personal level to a social level, which is called 'depersonalization' by Turner (1985). When *depersonalization* occurs, people perceive themselves and others as representatives of a group, not distinct individuals (Turner, 1985). As individuals perceive themselves and others as representatives of a social group, their subsequent cognition and behavior will be significantly influenced by their salient social group identity, not their personal identity (Turner, 1985).

The SIDE model consists of two dimensions: cognitive dimension and strategic dimension (Spears & Postmes, 2015). Cognitive dimension of the SIDE focuses on how "anonymity of/within" the in-group members enhances social group effect. That is, the cognitive dimension of the SIDE predicts that relative scarcity of individuating information (visual anonymity) and group immersion will trigger depersonalization. The SIDE noted that it is not always the case that visual anonymity leads to depersonalization; individuals' group identity needs to be rendered salient (Lea & Spears, 1991, 1992). Subsequently, depersonalization would make people to become more sensitive to their salient social identity, which heightens social group effect. That is, the more individuals' social group identity becomes salient to them, the more likely they will be influenced by their perceived social group behaviors. The second dimension, the strategic dimension of the SIDE focuses on how opportunities or constraints provided by situations can be used by individuals to behave in a way that is consistent with their perceived social group identity. For example, visual anonymity would allow individuals to engage in group behaviors that are situationally normative to their in-group, even when such behaviors can be seen antinormative to their outgroup members.

The main argument of the SIDE is that when people perceive that they are visually anonymous and their group identity becomes salient, they are likely to perceive oneself and others as representatives of a social group. According to the SIDE model, depersonalized individuals are likely to behave in ways that are more socially regulated. Although the SIDE has been a useful theoretical framework for examining online group phenomena by focusing on visual anonymity and the directly rendered salient identity,

the model does not offer explanations for other conditions where individuals' behaviors could be socially regulated online, such as situations where social identity becomes salient, primarily influenced by social cues priming group identity, but not necessarily by the amount of individuating information. Based on a few empirical studies (Lea & Spears, 1991, 1992), the SIDE theorists emphasized the important role of (primed) group identity salience on depersonalization, but the relevant theoretical claims were not made explicitly. In order to have a better understanding of online group behaviors, we need to better understand which factors of online environment, such as social cues, could trigger depersonalization in examining group beliefs. In the next section, I revisit the theory of intergroup social categorization (Turner, 1985), particularly the antecedents of depersonalization, to identify key features of social features of online environment and how that is relevant in understanding the uncivil comment effects on false beliefs.

Revisiting antecedents of depersonalization of the SIDE model. The initial motivation for developing the SIDE model was to provide theoretical explanations for deindividuation effects research by drawing upon social identity approach (Reicher et al., 1995). It is understandable that the model focused on the effect of visual anonymity and group immersion on social group behavior (visual anonymity and group immersion were the two major factors that were considered to have influence on deindividuation effects) (Postmes, Spears, & Lea, 1998). However, due to the SIDE model's emphasis on these two factors, the original SIDE does not provide clear theoretical explanations for situations where individuals show group conformity when the amount of individuating information is not necessarily related with the given situation (Lee, 2004). Thus, it is

important to take social factors into account in understanding depersonalization by revisiting Turner's (1986) initial conceptualization of depersonalization.

Antecedents of depersonalization. According to Turner (1985), antecedents of depersonalization include 1) determinants of formation of the ingroup and outgroup and 2) determinants of enhanced group identity salience. Two aspects of formation of groups include the emergent social categorization based on perceived intragroup similarities and intergroup differences and internalization of preformed group classifications. According to Turner (1985), people form their in- and out-group based on perceived intragroup similarities and intergroup differences and the perceived intergroup differences should be greater than perceived intragroup differences (termed 'meta-contrast' principle). The second antecedent, determinants of social group identity salience, is influenced by the function of a) accessibility or "perceptual readiness" of a group identity and b) fit, referring to "the extent to which reality matches with criteria define the group category" (Turner, 1985, p.103). The two major determinants of accessibility are 1) one's "past learning of what tends to go with what in the environment," and 2) "the person's current search requirements, imposed by needs, goals, values, ongoing activities, and task orientations, etc." (Turner, 1985, p.102). For example, the accessibility of the political group increases when the individual reads news reported from the perspective of the in-group. The level of fit becomes high when the way a Republican speak and behave matches with characteristics of Republican, such as being politically conservative, supporting Republican party candidates, and voting for Republican party.

Based on the antecedents of depersonalization (Turner, 1985), I suggest that the key-defining feature of situations promoting depersonalization is 'providing social group identity cues' priming intragroup similarities or intergroup differences that are expected to influence formation of group membership and increase in group identity salience. As Turner elaborated (1985), formation of ingroup membership and the increased level of perception of social identity salience would foster depersonalization, which means individuals' cognitive activities and behavioral actions become influenced by their social group identity. For example, exposure to partisan media providing a number of political group identity cues is likely to prime individuals' partisan identity and decrease their self-perception of personal identity. Similarly, exposure to political uncivil comments highlighting intergroup differences would be considered as political group identity cues priming individuals' political group identity.

Political Uncivil Comments as Social Group Identity Cue and Group-Directed Threat and Depersonalization

The SIDE (Reicher et al., 1995) suggests several reasons to expect that exposure to uncivil comments will lead to depersonalization. First, one of the conditions leading to depersonalization is a reduction in individuating information. This is often expressed in the form of 'visual anonymity' (Lee, 2006). Compared to face-to-face setting, the Internet users would perceive relatively higher level of visual anonymity when reading comments in an online setting where they access relatively reduced amount of individuating information about online commenters. Although the amount of individuating information about other online users would vary depending on specific media platform each person

uses, the overall quantity of individuating information available in online setting in general is relatively smaller than that is available in face-to-face settings.

Next, exposure to uncivil intergroup comments is expected to enhance individuals' political group identity salience by increasing accessibility of their political group identity and perception of intergroup differences. When reading uncivil comments highlighting intergroup conflicts, individuals' perception of either intergroup differences or intragroup similarities would increase, possibly leading to a clearer perception of group membership and distinction between the two groups (Turner, 1985). In fact, Hwang et al.'s (2014) study showed that people who read uncivil comments (compared to those who read civil ones) perceive that two political parties are significantly more polarized and more social distance between the two parties. Civil intergroup comments still present differing views on certain issues while expressing their ideas in respectful ways that do not ignore the opposing side's views. In contrast, uncivil intergroup comments imply disrespect toward the outgroup by using derogatory words indicating that the commenters are not interested in listening to the other side's views. Accordingly, reading such uncivil messages from both political sides would significantly increase the extent to which people perceive the intergroup differences. Accordingly, exposure to uncivil intergroup comments is likely to increase readers' political group identity salience more than civil comments would do by increasing readers' perception of intergroup differences. This claim is also supported by empirical evidence demonstrating the effect of uncivil comments on political group identity salience. For example, uncivil comments evoke negative emotions toward political opponents and make people become more

closed-minded (Hwang et al., 2018). Therefore, I expect that exposure to political incivility will increase the level of individuals' perception of intergroup differences, which could further lead to enhanced political group identity salience, meaning they perceive themselves and others as representative of a political group rather than idiosyncratic individuals. Thus, I propose the following hypothesis:

H1: Exposure to uncivil political comments will increase individuals' political identity salience.

According to the SIDE model, when people are depersonalized, where individuals' political group identity salience increases, they are more likely to conform to their ingroup behavior.

H2: Increasing political identity salience will increase endorsement of (false) ingroup beliefs.

Increased political group identity salience is the primary theoretical mechanism this dissertation aims to test. Along with the increased political group identity salience, individuals' perception of uncivil comments as a group-directed threat further explicate the relationship of political uncivil comments, political identity salience, and false beliefs. To my knowledge, there is no empirical evidence that supports the direct relationship of political identity salience and endorsement of false belief. However, research on political incivility and emotions shows that uncivil comments are likely to be perceived as a group identity threat. First, the functional theories of emotion (Lazarus, 1991; Lerner & Keltner, 2000; Smith & Ellsworth, 1985) postulate that discrete emotions are associated with certain cognitive appraisals and action tendencies (Frijda, 1987). Specifically, both anger

and anxiety tend to be elicited by perceived threat to the ego's identity. What distinguished anger from anxiety is its associated cognitive appraisal, the perceived level of "certainty" of the identity threat. That is, individuals are more likely to feel angry when they are certain about the perceived identity threat (Lazarus, 1991). In fact, when exposed to uncivil comments, individuals reported that they experience stronger negative emotions, such as anger (Gervais, 2015) or aversion toward their political opponents (Hwang et al., 2018). It is expected that when individuals are exposed to uncivil claims attacking their ingroup, they would feel that their out-group discussion partners threaten their in-group values or attitudes, which also evoke negative affective reactions.

According to Ellemers, Spears, and Doosje (2002), when people perceive a group-directed threat, committed group members are typically motivated to highlight one's ingroup homogeneity (Doosje et al., 1995), intergroup differences (Spears et al., 1999), and self-stereotyping (Spears et al., 1997). Therefore, if uncivil comments are perceived as a group-directed threat, it is likely that individuals who identify themselves as either Republican or Democrat would be motivated to endorse perceived ingroup beliefs, as a way of increasing homogeneity of their political ingroup (Doosje et al., 1995) or differentiating themselves from political outgroup members (Spears et al., 1999). The following hypotheses are proposed to test the effect of uncivil comments on endorsement of political beliefs of own group:

H3: Exposure to uncivil comments will increase individuals' endorsement of (false) ingroup beliefs.

Chapter 3. Pretests

Prior to launching three main studies, four independent pretests were performed to test each of the following: 1) perception of four false beliefs, 2) perception of messages correcting the four false beliefs, 3) effectiveness of comments manipulation, and 4) effectiveness of political group identity prime manipulation. All samples were recruited from the OSU School of Communications student research participant pool (C-REP). The samples of these pretests were non-overlapping. Only those who identify themselves as either Republican or Democrat were eligible to participate in the studies. Students learned about these studies through their enrollment in the C-REP participant pool. C-REP credits were given to those who participated in each study, regardless of whether or not they completed it.

Pretest 1

Pretest 1 was conducted to test individuals' perception of four different false beliefs, particularly their familiarity with each of the four false statements, perceived political leaning of the statements, and belief inaccuracy. The selection of false statements was based on several criteria. First, given the goal of this dissertation is studying the role of political group identity salience in promoting endorsement of *ingroup* false beliefs, false beliefs that are typically favored by each political group (Republican and Democrat) were selected. That is, two republican-favored false beliefs and two Democrat-favored false beliefs were chosen. Republican-favored false beliefs refer to false claims that Republicans are likely to be predisposed to believe. Second, two

different issues (one political and one scientific issue) were selected for each political group's false beliefs as stimulus sampling to increase external and construct validity (Wells & Windschitl, 1999). Lastly, these specific four issues – 'climate change,' 'voter fraud,' 'nuclear power,' and 'Russian election tampering' – were chosen based on prior research (Nisbet, Cooper & Garrett, 2015; Garrett, 2019; Garrett, Sude, & Riva, 2020) and the existing data showing partisan division on the scientific issues (Pew, 2018). As a result, the following four false belief statements were tested: 1) Human-caused climate change is a 'made-up' catastrophe (Republican-favored science false claim); 2) There were illegal votes cast in the 2016 U.S. Presidential election (Republican-favored political false claim); 3) Nuclear power contributes to increasing greenhouse gas emissions (Democrat-favored scientific false claim); 4) Russia's attempts to directly alter vote tallies in the 2016 election probably succeeded (Democrat-favored political false claim). These beliefs were used because they are known to be polarized and evidence is unambiguous.

Sample

The data were collected from January 7 to February 2, 2020. A total of 102 participants completed the study, but 93 participants were included in the analyses after excluding cases that did not pass the screening questions (political identification and attention check question). The mean age of the sample was 20.27 (SD = 3.16), approximately 79.6 % were female, and 69.9 % were Democrats.

Procedure

Every participant was asked about each of the four statements, but the order of the issue presented to each participant was randomized. Participants were first asked to report their perceived accuracy of false statement. Then, they were asked about their familiarity with the statement and perceived political leaning of the statement. Participants repeated this procedure a total of four times.

Measures

Familiarity with False Beliefs. Participants were asked to indicate how often they have heard of the following statement on a 7-point scale from 1 (never) to 7 (many times).

Belief Inaccuracy. Participants were asked to indicate their perceived accuracy of each of the statements on a 7-point scale from 1 (definitely false) to 7 (definitely true). Higher values on the scale represent greater inaccuracy in assessing the claims.

Political Leaning of False Beliefs. Participants were asked to indicate the extent to which each belief statement is aligned with either conservative or liberal political view on a 7-point scale from 1 (strongly aligned with Democrats) to 7 (strongly aligned with Republicans) with the midpoint of 4 (neither Democrats nor Republicans).

Results

Familiarity with False Beliefs. The four false beliefs exhibited comparable familiarity. Overall, respondents indicated that they are fairly familiar with most of the belief statements including ‘climate change’ (Republicans: $M = 5.25$, $SD = 1.38$;

Democrats: $M = 5.86$, $SD = 1.46$), 'voter fraud'(Republicans: $M = 5.43$, $SD = 1.67$; Democrats: $M = 4.89$, $SD = 1.97$), and 'Russian's election tampering' (Republicans: $M = 4.82$, $SD = 2.28$; Democrats: $M = 5.62$, $SD = 1.75$). Compared to the other statements, participants were relatively less familiar with the nuclear power statement (Republicans: $M = 3.57$, $SD = 2.10$; Democrats: $M = 3.78$, $SD = 1.80$).

Belief Inaccuracy. Both Republicans and Democrats seemed to hold accurate beliefs about the human-caused climate change claim although Democrats ($M = 1.40$, $SD = 1.03$) seemed to be much more certain about their accurate belief than Republicans ($M = 2.93$, $SD = 1.39$), which indicates significant partisan differences in belief inaccuracy of the climate change claim, $t\ (91) = 5.90$, $p = .001$. Regarding the 'nuclear power and greenhouse gas emission' claim, both Republicans ($M = 4.43$, $SD = 1.60$) and Democrats ($M = 4.74$, $SD = 1.54$) indicated that they are not sure about the accuracy of the claim and the difference between the two political groups was not significant, $t\ (91) = 0.88$, $p = .38$. Regarding the voter fraud false statement, Democrats ($M = 4.40$, $SD = 1.51$) were slightly more likely to believe that there were illegal votes cast in the 2016 U.S. presidential election than Republicans ($M = 3.36$, $SD = 1.79$) and the difference was statistically meaningful, $t\ (91) = -2.89$, $p = .005$. Lastly, Democrats were ($M = 5.29$, $SD = 1.34$) much more likely to believe that Russian successfully tampered with the U.S. election than Republicans ($M = 3.29$, $SD = 1.30$). There was a significant difference in belief inaccuracy between Republicans and Democrats, $t\ (91) = -6.67$, $p < .001$.

Political Leaning of False Beliefs. Both Republicans and Democrats perceived that the climate change false claim is aligned with Republicans' view (Republicans: $M =$

4.39, *SD* = 1.77, Democrats: *M* = 5.82, *SD* = 1.85), but Democrats perceived that the claim is strongly aligned with Republicans' view more than Republicans did, *t* (91) = -3.44, *p* = .001. In terms of the voter fraud claim, both sides perceived that the claim is neutral or slightly more aligned with Democrats' views (Republicans: *M* = 3.32, *SD* = 2.34, Democrats: *M* = 3.75, *SD* = 2.20) and the difference between Democrats' and Republicans' perception of the political leaning of the statement was not significant, *t* (91) = -.85, *p* = .40. The nuclear power claim was perceived to be more aligned with Democrats' view as intended (Republicans: *M* = 2.93, *SD* = 1.46, Democrats: *M* = 3.12, *SD* = 1.17) and the difference was not significant, *t* (91) = -.68, *p* = 50. Lastly, both sides (Republicans: *M* = 2.89, *SD* = 1.85; Democrats: *M* = 2.35, *SD* = 1.62) thought that the Russian election tampering false claim is more closely aligned with Democrats' views as intended. There was no significant difference in perceived political leaning of the statement between Republicans and Democrats, *t* (91) = 1.41, *p* = .16.

Pretest 1 Conclusion

The findings of pretest 1 showed that participants are familiar with most of the false claims, but they are less familiar with the nuclear power claim compared to the other issues. However, since the level of familiarity with the nuclear statement was not significantly low, I decided to proceed with using the nuclear statement as originally planned. The results also revealed that individuals' belief inaccuracy and perception of the 'voter fraud' and 'nuclear power' claims are not consistent with what I expected. Although I hoped people to think that the voter fraud claim is more aligned with Republicans' view and that the nuclear power claim is aligned with Democrats' view, the

results revealed that people perceive those statements are rather neutral. However, I decided to proceed with using these four falsehoods for the following reasons.

First, regarding the voter fraud claim, previous study showed partisan differences in belief inaccuracy on the voter fraud claim. Garrett, Sude, and Riva (2020) showed that Republicans are much more likely to believe the voter fraud false claim than Democrats by the results of their pretest and main study. Pretest 1 might have not been able to detect the partisan differences because of a relatively small sample size and the unique characteristics of college student sample (Henrish, Heine, & Norenzayan, 2010).

Although the findings indicated there is no partisan difference in belief inaccuracy about the nuclear power claim, there are a couple reasons I can use this false claim to test my hypothesis about the relationship of uncivil comments and endorsement of falsehoods belonging to one's political ingroup. First, the results of pretest 1 also showed that both Republicans and Democrats tend to think that the false claim is aligned with Democrat's view than Republicans' view. Thus, for the purpose of my dissertation, it is more important that Democrats perceive the false claim as something to be aligned with their ingroup position than how much they are being actually inaccurate about the false claim. My dissertation tests whether seeing uncivil comments influence individuals' endorsement of their false belief, particularly when such belief is perceived to be their ingroup belief. Second, the existing survey data (Pew, 2018, 2019) suggest that Republicans are slightly more favorable toward the usage of nuclear power plants than Democrats are; According to Pew reports (2018, 2019), Republicans (about 60%) tend to support expansion of nuclear power plants slightly more than Democrats (about 38%-

40%) do, which indicates Republicans' favorability toward nuclear power. Finally, given the purpose of this dissertation is understanding the effect of uncivil intergroup comments on endorsement of ingroup false beliefs, it is still worthwhile to test the uncivil comment effect on nuclear power belief that is not extremely divided along partisan lines regarding their belief inaccuracy. That is, using nuclear power claim would allow us to examine the extent to which uncivil intergroup comments exert negative influence on comment readers' false belief when the readers themselves do not have a strong pre-existing attitude on the issue. Since the manipulated partisan comments reflect each political group's view on the given issue, participants should be able to infer their political ingroup's belief tendency by reading the comments. The results of pretest 3 confirmed this expectation by showing that participants' perception of political leaning of each comment is matched with the intended political leaning of each comment.

Pretest 2

The aim of pretest 2 was to examine individuals' perception of articles, specifically perceived easiness of understanding the messages and perceived political leaning of the messages. The purpose of pretesting the messages was to ensure that participants can easily understand the messages and to examine how people would perceive the political leaning of the message presented in each article.

Sample

The data were collected from January 8 to February 4, 2020. A total of 89 participants completed the study, but 68 participants' responses were included in the

analyses (21 cases were excluded from the analyses for not passing the screening questions: political identification and attention check question). The mean age of the sample was 20.76 (*SD* = 3.77), approximately 72.1 % were female (26.5% male), and 61.8 % were Democrats.

Procedure

Participants were first asked to read a randomly selected article and answer several questions about the article. They repeated this procedure a total of four times on a different issue each time. Each news article covers one of the four false beliefs (climate change, voter fraud, nuclear power, and Russian election tampering). The order of the articles presented to each participant was randomized.

Stimuli & Measures

Article stimuli. Four different articles correcting each false belief were written at 12th-grade reading level based on real articles and fact-check reports. Each article discusses a misconception about each of the four issues and provides explanations correcting that misconception. The '*climate change*' article says that human-caused climate change is not a 'made up catastrophe'. The article provides scientific evidence supporting the claim that climate change is real and that human activities significantly contributed to climate change. The '*voter fraud*' article explains that voter fraud is very rare based on available evidence by explaining that the opposing side's claims are based on misinterpretation of the data. The '*nuclear power*' article explains that operating nuclear power plants does not produce greenhouse gases. The article further states that

nuclear power can be helpful in reducing the amount of greenhouse gases produced by burning fossil fuels. The '*Russian election tampering*' article discusses what available evidence suggests about Russia's efforts to tamper with voting machines in the 2016 U.S. Presidential election. The article explains why the photo of a damaged seal on a voting machine (from Daily Kos) does not suggest Russian tampering and also mentions national security agency report about cyber-attacks in 2016. Articles can be found in appendix B.

Easiness of Understanding the Messages. Participants were asked to indicate how easy or hard the message of the news article was to understand on a 7-point scale from 1 (very hard) to 7 (very easy).

Credibility of Evidence. Participants were asked to indicate how credible the evidence provided in the article was to them on a 7-point scale from 1 (not at all) to 7 (very credible).

Political Leaning of Article Messages. Participants will be asked to indicate the degree to which the message presented in the article is aligned with either Democrat's or Republican's political view on a 7-point scale from 1 (strongly aligned with Democrats) to 7 (strongly aligned with Republicans).

Results

Participants indicated that all the articles are fairly easy to understand. The mean of easiness of understanding the message was around 5 across the four issues. Regarding perceived credibility of the evidence used in the political messages, both sides' (Republican dans Democrats) ratings were similar across the two messages. That is, the

extent to which both Republicans and Democrats perceive the evidence's credibility of the voter fraud message was not significantly different from one another (Republicans: *M* = 4.31, *SD* = 1.29; Democrats: *M* = 4.90, *SD* = 1.72), *t* (66) = -1.52, *p* = .13. The same pattern was found in participants' perception of credibility of the evidence used in the Russian election tampering message (Republicans: *M* = 4.42, *SD* = 1.42; Democrats: *M* = 4.45, *SD* = 1.40), *t*(66) = -.08, *p* = .93. However, the level of perceived credibility of the evidence of scientific messages differed by participants' political identification. Democrats tend to perceive the evidence used in the science message is pretty credible (climate change: *M* = 6.15, *SD* = .96; nuclear power: *M* = 5.33, *SD* = 1.37) compared to Republicans (climate change: *M* = 4.58, *SD* = 1.70; nuclear power: *M* = 4.46, *SD* = 1.21). The difference was statistically significant in both messages, climate change, *t* (65)=-4.8, *p* <.001, and nuclear power, *t* (66) = -2.66, *p* = .01.

In terms of perceived political leaning of the messages, most articles were perceived as neutral except the 'climate change' article. The 'voter fraud' (Republicans: *M* = 3.88, *SD* = 1.71; Democrats: *M* = 3.52, *SD* = 1.88) and the 'nuclear power' articles were perceived as neutral (Republicans; *M* = 3.92, *SD* = .89; Democrats: *M* = 3.60, *SD* = 1.15). The message about Russian's election tampering was perceived to be aligned with Democrats by Republicans (*M* = 3.88, *SD* = 1.63), but it was perceived to be aligned with Republicans by Democrats (*M* = 5, *SD* = 1.64). The 'climate change' message (was perceived to be aligned with Democrats by both sides (Republicans: *M* = 3.27, *SD* = 1.31; Democrats: *M* = 2.57, *SD* = 1.31).

Pretest 2 Conclusion

The results of pretest 2 indicate that the message stimuli can be used without significant concerns. First, most of these messages are perceived to be fairly easy to understand. Next, individuals' perception of the three messages – 'voter fraud,' 'nuclear power,' and 'Russian election tampering' – is not clearly divided along partisan lines. This is understandable in that each message corrects a specific false belief, that is typically favored by a political group, and provide relevant evidence. Given the purpose of including these messages is to improve mundane realism of experimental studies, this finding is not concerning. Lastly, partisan differences were found in credibility of the evidence used in scientific messages. This finding is consistent with prior research on the ideological differences in trust in science (McCright, Dentzman, Charters, & Dietz, 2013), which suggests that conservatives tend to be less trustful of 'impact scientists,' scientists working on the environmental effects of modern society, such as climate scientists. Although the role of perceived credibility of evidence used in the correction message in promoting false beliefs is not the main concern of this dissertation, it is useful to know this partisan difference.

Pretest 3

Pretest 3 was performed to test whether the manipulated comments are perceived as intended by testing 1) if (un)civil comments are perceived to be (un)civil, 2) if comments are perceived as the comments participants encounter in the real world, 3) and if partisan comments are perceived as intended. Given the main studies of this

dissertation were designed to test the influence of uncivil comments on either ingroup-favored versus outgroup-favored false beliefs, pretest 3 also employed a 2 (civil vs. uncivil comments) X 2 (Republican- vs. Democrat-favored falsehoods) design. Republican-favored falsehoods include 'climate change' and 'voter fraud' whereas Democrat-favored falsehoods include 'nuclear power' and 'Russian election tampering.' For Republicans, Republican-favored falsehoods are ingroup-favored falsehoods whereas Democrat-favored falsehoods are outgroup-favored falsehoods. It was ensured that half of Republicans and Democrats respectively get exposed to their ingroup-favored falsehoods and the other half get exposed to outgroup-favored falsehoods.

Sample

A total of 214 participants completed the study. For the same reason described in pretest 1 and 2, only those who identified themselves as either Republican or Democrat whom passed the attention check question were included in the analyses, which resulted in a sample size of 120. The mean age of the sample was 20.07 (SD = 1.67), approximately 63.3% were female, and 64.2% were Democrats.

Procedure

Pretest 3 consists of two parts. Part 1, the first half of the survey, asked participants to assess a collection of comments. Part 2 asked them to assess perceived political leaning of each comment that they read in Part 1. Participants were first randomly assigned to one of the four conditions (civil comments about Republican-favored falsehood, civil comments about Democrat-favored falsehood, uncivil comments

about Republican-favored falsehood, and uncivil comments about Democrat-favored falsehood). Participants were asked to read a set of (either civil or uncivil) comments and assess collection of the comments. They were asked to indicate a) the extent to which the collection of comments are (un)civil and b) the degree to which they think each comment looks like something they might encounter when reading online news. Participants repeated this procedure one more time on a different topic (the second topic was decided based on the condition each participant was assigned to). The order of the issues presented to each participant was randomized. Afterwards, in part 2, participants evaluated the same comments they read in part 1 individually. They were asked to indicate the extent to which that they feel each comment favors either Democrats' view or Republicans' view on a 7-point scale from 1 (strongly favors Democrats' view) to 7 (strongly favors Republicans' view). When answering these questions, participants were shown one comment at a time. Finally, they answered a series of questions including political interest and demographic information at the end of the survey.

Stimuli & Measure

Stimuli Comments. Following my conceptualization of political incivility – focusing on display of disrespect, and based on previous research on uncivil comments (Stromer-Galley, 2007; Kenski, Coe, & Rains 2014; Silva, Mondal, Correa, Benevenuto, & Weber, 2016), uncivil comment was operationalized as follow: the use of uncivil language that are 1) clearly insulting toward others or 2) threatening to restrict others' freedom of speech. Since my dissertation focuses on the effect of exposure to incivility on political group identity salience, all the manipulated comments (either civil or uncivil)

were directed at participants' political outgroup (e.g. Democrat's comments directed at Republicans and vice versa).

Careful consideration was taken in manipulating comments. Comments were written based on real comments that are extracted from the relevant YouTube clips' (e.g., news clips covering the four false claims) comment threads. The content and length of each comment was equivalent across the experimental conditions. The content of the comments is mostly based on the claims made in each article. A few comments express their feeling towards other commenters as some real comments do. Uncivil comments include commenters' (political) out-group attack, which is clearly directed at the opposition. Similar types of uncivil words were used across the different topic conditions other than a few political insults labeling a specific political ideologue, such as 'libtard' or 'wingnut'. The comments include grammatical errors as many comments do in reality.

A total of eight comments (four favoring Democrats and four favoring Republicans) were shown under each news article. To take into account the order of the commenters' inferred political identity shown to participants, the first commenter of science news articles expresses Democrat's viewpoint whereas the first commenter of the political news articles favors Republicans' position of the issue (see appendix C for comments stimuli).

Perception of (In)civility. The extent to which uncivil comments were perceived to be uncivil was measured by asking the following three questions: 1) "Please indicate the extent to which you feel that the comments are disrespectful of other individuals or their ideas"; 2) "Please indicate the extent to which you feel the comments restrict others'

freedom to express their own ideas"; 3) "Please indicate the extent to which you feel the comments are uncivil." Answer options range from not at all (1) to very much (7).

Authenticity of Comments. Participants were asked to indicate the extent to which they think the comments are real, not fabricated. They were asked to answer the following question: "Do you think these comments look like something that you might encounter when reading online news? Please indicate the extent to which you think the comments are realistic." Answer options range from 1 (not at all) to 7 (very much).

Political Leaning of Comments. Participants were asked to indicate the extent to which they feel that each statement favors a particular political group – either Republicans or Democrats, from 1 (strongly favors Republicans' view) to 7 (strongly favors Democrats' view), with the midpoint of 4 (neither Democrats nor Republicans).

Results

Pretest 3 examined 1) the extent to which uncivil comments are perceived to be uncivil, 2) if the perception of incivility of comments vary by the issues (ingroup-favored falsehoods versus outgroup-favored falsehoods) 3) how realistic the manipulated comments look like, and 4) whether political leaning of each comment is perceived as intended. First, uncivil comments are perceived to be significantly more uncivil than civil comments, regardless of the issue participants were assigned to. In other words, uncivil comments were perceived to be disrespectful of other individuals or their ideas and restricting others' freedom significantly more than civil ones across the four different issues (see appendix D for detailed mean comparisons of perceived incivility of comments).

It was also examined whether the extent to which participants perceive the level of incivility of the comments vary depending on the issue they were exposed to. A 2 (civil versus uncivil comments) X 2 (ingroup-favored belief vs. outgroup-favored belief) Analysis of Variance (ANOVA) was run to test this interaction effect. Across the issues, the results showed a significant main effect of uncivil comments, meaning that uncivil comments were perceived to be more uncivil than civil comments regardless of whether participants were exposed to the belief issue that their ingroup members are likely to be predisposed to believe or not (more details can be found in Appendix E).

Next, the stimuli comments were perceived to be authentic, meaning participants think that the comments looks like something they might encounter when reading online news (Climate change: M = 5.84, SD = 1.26; Voting fraud: M = 5.89, SD = 1.34; Nuclear Power: M = 5.08, SD = 1.58; Russian election tampering: M = 5.38, SD = 1.56).

Lastly, participants perceived political leaning of each comment as intended. Republican-favored comments were perceived to be favoring republicans' side (Democrat-favored falsehoods: M = 5.56, SD = .99; Republican-favored falsehoods: M = 5.22, SD = .85) than Democrat-favored comments (Democrat-favored falsehoods: M = 3.35, SD = .82; Republican-favored falsehoods: M = 2.56, SD =.57). Since participants were exposed to both Republican-favored and Democrat-favored comments, a series of paired t-test was run. The results showed that the difference in perceived political leaning of the comments between Republican-favored and Democrat-favored comments was significant across all the four issues. (Nuclear power: t (63) = 7.09, p < .001; Russian election tampering: t (63) = 14.85, p < .001; climate change: t (55) = 12.80, p < .001;

voter fraud: t (55) = 13.87, $p < .001$). This indicates that the manipulation of political leaning of each comment was successful.

Pretest 3 Conclusion

Overall, the results of pretest 3 showed the manipulation of comments was successful. First, uncivil comments were perceived to be significantly more uncivil than civil comments. Both Republicans' and Democrats' perceived of incivility of comments remained consistent regardless of the issue condition they were exposed to (either ingroup-favored falsehoods or outgroup-favored falsehoods). Manipulation of political leaning of each comment was also effective; individuals perceived both of the Republicans' and Democrats' comments as intended. Lastly, all comments were perceived to be realistic, which indicates participants think that the comments look like something they might encounter in the real world.

Pretest 4

Sample

The purpose of pretest 4 is to test the effectiveness of political group identity prime manipulation. A total of 142 participants completed the study, but 120 cases were included in the analyses after excluding 20 cases that did not pass the additional screening questions (political identity and attention check questions). The mean age of the sample was 20.42 (SD = 3.47), approximately 75.8% were female, and 70% were Democrats.

Procedure

Each participant was first asked to answer a set of questions, including their political identification and prior news use, and asked to complete a distractor task, 'finding differences task' (see Appendix F for details). The purpose of including the 'prior news use' questions and the distractor task was to attenuate the potential effect of priming participants' political identity as they were asked about their political predispositions in the beginning of the survey. It was essential to know participants' political identification to ensure the equal distribution of Republicans and Democrats across the experimental conditions.

Participants were randomly assigned to one of the two conditions (political group identity versus personal identity) where they were asked to complete a writing task, which was designed to prime either their political group identity or personal identity. Upon completing the writing task, every participant was asked to answer a set of questions checking the identity prime manipulation. At the end of the survey, they were asked to answer a series of questions including perceived importance of political group identity, political identity salience, political identity strength, and demographic information.

Measures

Experimental Manipulation of Political Group Identity Salience (vs. Personal Identity Salience). The instructions varied depending on the condition each participant was assigned to. The instructions were adapted from existing research (Reynolds et al.,

2001; Unsworth & Fielding, 2014). First, those assigned to *political group identity* (PGI) condition were given the following writing task: "In this study we are interested in the opinions of different people concerning a variety of issues. In particular, the aim is to make comparisons between those who support the Democratic Party and those who support the Republican Party. First, we are interested in what characteristics describe people who support the Democratic Party compared to people who support the Republican Party. What are three words that characterize people who support the Democratic Party? What are three words that characterize people who support the Republican Party?" Those assigned to the *personal identity* (PSI) condition were given the following writing task: "In this study we are interested in the opinions of different people concerning a variety of issues. In particular, the aim is to make comparisons between your own opinions and those of other individuals. First, we are interested in what characteristics describe you as a unique individual compared to other people with whom you are familiar (e.g., friends, family, acquaintances). What are three words that describe individuals whom like you and whom you are familiar with? What are three words that characterize you as a unique individual?"

Manipulation Check. Scholars have employed different approaches to measure social (or political) group identity salience. Given the difficulty of capturing political identity salience by self-report measures, I employed the following three measures to check the effectiveness of political identity salience manipulation.

Perceived Importance of Political Group Identity. This measure was adapted from prior research – Cheek & Briggs' (2013) aspects of identity questionnaire and

Wojcieszak and Garrett's (2018) approach that they used as a manipulation check of national identity prime. Participants were provided a list of qualities of political ideologues (Republicans and Democrats) and those of individual personality. Then, they were asked to indicate the extent to which each quality is important to their self-identity from 1 (not important to my sense of who I am) to 5 (extremely important to my sense of who I am). The list consists of a total of twenty qualities, ten political group (either Republican or Democrat) qualities and ten individual characteristics (see Appendix G for the list of items). Individuals' responses to the political group identity qualities were averaged to create an index of the perceived importance of political group identity (M = 3.98, SD =.69). Their responses to individual characteristics were also averaged to create an index of the perceived importance of personal identity (M = 3.93, SD =.67). Afterwards, individuals' perceived political group identity was compared between those who assigned to political group identity condition and those assigned to personal identity condition.

Political Identity Salience. Following Haslam et al.'s (1999) approach, political group identity salience was measured by asking participants to answer how important being a Republican (or a Democrat) is to them on a 7-point scale, from 1 (Not at all) to 7 (Very much). This is based on an assumption that political ingroup membership would be more important to people when their political group identity was salient. Individuals' political identity salience was measured at two time points, before and after their exposure to the identity manipulation task. In order to capture the changes in political identity salience before and after participants' completion of the manipulation task, the

difference was calculated by subtracting individuals' pre-manipulation political identity salience from their post-manipulation political identity salience (M = -.35, SD = .75).

Political Identity Strength. Following Kelly's (1989) approach, political group identity strength was also used as another measure of manipulation check. Participants were asked to answer the following question before and after their exposure to the identity prime manipulation: "At this moment, how much do you feel that you identify with Democratic (or Republican) Party?" Answer options range from 1 (Not at all) to 7 (A great deal). The difference was calculated by subtracting individuals' pre-manipulation political identity strength from their post-manipulation identity strength (M = -.17, SD = .73).

Results

The effectiveness of political group identity (PGI) prime manipulation was tested by examining its effect on three different variables as manipulation check: 1) perceived importance of political group identity qualities, 2) political identity salience difference between pre- and post-manipulation, and 3) political identity strength difference between pre- and post-manipulation.

First, there was no significant difference in perceived importance of political group identity (PGI) between PGI condition (M = 3.98, SD = .76) and personal identity (PSI) condition (M = 3.98, SD =.60), t (118) = -.06, p = .95. However, the average difference in political identity salience between pre-manipulation (PGI: M = 4.40, SD = 1.40; PSI: M = 4.70, SD = 1.51) and post-manipulation (PGI: M = 4.17, SD = 1.37; PSI: M = 4.21, SD = 1.59) was statistically significant, t (118) = 1.98, p = .05. In other words,

on average, the extent to which the level of political group identity salience decreased was greater among those who were assigned to PSI condition (M = -.49, SD = .71) than those who assigned to PGI condition (M = -.22, SD = .77). Lastly, there was no significant difference in the difference of pre- and post-manipulation political identity strength between PID (M = .15, SD = .72) and PSI condition (M = -.19, SD =.52), t (117) = .41, p = .68.

Pretest 4 Conclusion

Although the two manipulation check measures revealed no support for the effectiveness of the manipulation, political identity salience measure showed the manipulation was effective in making differences in the level of political group identity salience between those assigned to the PSI and PGI condition. On average, the extent to which individuals' political identity salience level changed was greater among those who assigned to PSI condition than those assigned to PGI condition. However, the manipulation did not successfully increase political identity salience of those assigned to PGI condition. Thus, I cannot conclude that the political group identity prime was effective in increasing political group identity salience given the average level of political identity salience decreased overall. It might be that personal identity prime manipulation was more successful in increasing personal identity salience, making the difference in the difference of pre- and post-manipulation political identity salience seem significant. Having said that, this manipulation was used in the main study for a few reasons. First, there is a possibility of a ceiling effect given that all participants' baseline political group identity salience was not low (M = 4.54, SD = 1.45), which might have made it hard to

further increase. Second, previous studies (Bergh, Akrami, & Ekehammar, 2011; Reynolds et al., 2001; Unsworth et al., 2014) showed this manipulation has worked as intended. One possible reason that this manipulation did not work in this pretest 4 is that participants were asked about their political group identity in the beginning of the survey, which might have primed all participants' political group identity. To my best knowledge, previous studies (Bergh, Akrami, & Ekehammar, 2011; Reynolds et al., 2001; Unsworth et al., 2014) using this manipulation did not ask participants' relevant social identity prior to exposure to the manipulation. It would have been better to re-test a different manipulation, but given the limited time, I proceeded with this political identity manipulation in testing the effect of political group identity salience on false beliefs in Study 3.

Chapter 4. Study 1

Purpose

The main purpose of Study 1 is to examine the effect of exposure to uncivil comments on individuals' political group identity salience (H1). Study 1 was initially designed as a 2 (civil versus uncivil comments) X 2 (measuring political group identity, PGI, and a set of political identity salience measures[1], PIS, prior to incivility manipulation versus measuring PGI and PIS after the manipulation) study to test the effectiveness of political incivility manipulation and the effect of measuring PGI and PIS prior to manipulation[2]. However, the results of the soft-launch data showed that measuring PGI, PIS, and political identity strength prior to participants' exposure to uncivil comments might alter the effect of uncivil comments on political identity salience. Based on the preliminary analyses using the soft-launch data, instead of using the whole sample of the study, I decided to use half of the sample – only those assigned

[1] Political identity salience measures include a) political identity salience and b) political identity strength measures. However, for those who were first exposed to the comment manipulation, political identity strength was measured only after answering affective responses questions.

[2] Those who were assigned to the 'prior to exposure to the comment manipulation' condition were asked to report their political group identity, political identity salience, and political identity strength before they get exposed to comments stimuli. Afterwards, they were asked about their emotions and open-mindedness toward their political opponents and their political identity strength, again. Participants who were assigned to the 'after exposure to the comment manipulation' condition were first exposed to comments manipulation. Afterwards, they were asked to report their political group identity and identity salience. Then, they were asked to report emotions, open-mindedness toward their political opponents, and political identity strength.

to the conditions where they were asked about PGI and PIS *after* the manipulation – to simply test the effect of uncivil comments on political identity salience. More detailed procedures and a summary of the soft-launch results are discussed at the end of chapter 4. The subsequent description of the study sample and procedure is based on the subsample of the study.

Sample and Participants

The data were collected from March 30 to Apr 23, and from May 14 to June 12, 2020. Participants were recruited through the OSU School of Communications student research participant pool (C-REP). The recruitment procedure is the same as pretests. A total of 151 completed the study, but only those assigned to the conditions where they were asked about PGI and PIS *after* the manipulation were examined. A total of 54 participants were included in the analyses after excluding participants who indicated that they are neither Republican nor Democrat and those who said they did not pay attention to the study. The mean age for this subsample was 20.70 (SD = 2.51) and 63% percent were female. A majority of the participants were White (66.7%), followed by African American (11.1%), Asian (24.1%), and American Indian/Alaska Native (1.9%). About 63% were Democrats.

Procedure

A posttest-only experiment was employed to test the effect of uncivil comments on political identity salience using the following false beliefs: Human-caused climate change is a 'made-up catastrophe' (science topic 1); Nuclear power contributes to

increasing greenhouse gases (science topic 2); Millions of illegal votes were cast in the 2016 U.S. elections (political topic 1); Russia's attempts to directly alter vote tallies in the 2016 U.S. election probably succeeded (political topic 2).

Participants were first randomly assigned to one of the four conditions (measuring PGI and PIS [before/after] exposure to [civil/uncivil] comments), but only those who were asked about their PGI/PIS after their exposure to comments were examined. Each participant was first asked to answer questions about their news use and complete a distractor task asking them to find differences between two pictures. Afterwards, they were asked to read a randomly selected news story (out of four news stories – 'climate change,' 'nuclear power,' 'voter fraud,' and 'Russian election tampering') and either uncivil or civil comments. After reading the news article and comments, they were asked to answer a series of questions including political group identity and political identity salience to assess the effect of uncivil comments.

Stimuli

***News article*s**

Pretested news articles (pretest 2) were used. Articles can be found in Appendix B.

Uncivil comments

Study 1 used the pretested comments (pretest 3). In addition to the pretested partisan comments, two politically neutral comments were added to each condition. Those who assigned to Republican-favored falsehoods condition and Democrat-favored condition saw the same politically neutral comments. A total of ten comments (four

favoring Democrats, four favoring Republicans, and two politically neutral comments) were shown under each news article. To take into account the order of the commenters' inferred political identity shown to participants, the first commenter of science news articles expresses Democrat's viewpoint whereas the first commenter of the political news articles favors Republicans' position of the issue. All comments used in the study can be found in Appendix C.

Example comments. Pro-climate change uncivil commenter begins with "if you deny human-caused climate change, your f@#$%^& stupid!". An example of uncivil comment denying the 'climate change claim' was something like "This so-called evidence is biggest f@#$%^& con job in the last 100 years". Two comments in each condition were politically neutral, such as "*what's the truth?"* and "*I'm confused."*

Survey Items

Distractor Task (News Consumption Frequency and Finding Differences Task)

As a distractor task, all respondents were asked to report their news use (see appendix A for detailed measure) and compare two pictures for a minute and asked to report how many differences they saw before they were shown a news article and comments. The purpose of having respondents complete this task was to minimize the potential priming effect of political group identity questions for those who answered the questions before they get exposed to the stimuli (see Appendix D for details).

Measures

Political Identification. Respondents were asked to indicate whether they usually think of themselves as a Republican, a Democrat, an independent, or something else.

Those who selected "independent" option were asked if they think of themselves as closer to either Republican or Democratic Party. Those who said they are "something else" were asked to type out what that would be. Only those who indicated that they are either Republican or Democrat were included in the analyses. About 34.5% of the sample were Republicans.

Political Identity Salience. Political group identity salience (Haslam, Oakes, Reynolds, & Turner, 1999) was measured by asking participants to indicate how important being a Republican (or a Democrat) is to them on a 7-point scale, from 1 (not at all) to 7 (very much) (Republicans: M = 3.90, SD = 1.62; Democrats: M = 4.42, SD = 1.68).

Results

Manipulation Check

A manipulation check was performed to test if uncivil comments manipulation was successful. The extent to which uncivil comments were perceived to be uncivil was measured by asking the following questions: 1) "Please indicate the extent to which you feel that the comments are disrespectful of other individuals or their ideas"; 2) "Please indicate the extent to which you feel the comments restrict others' freedom to express their own ideas"; 3) "Please indicate the extent to which you feel the comments are uncivil." Answer options range from 1 (not at all) to 7 (very much). The order of the questions was randomized.

The results of a series of independent-samples t-tests showed that the incivility manipulation was successful. First, those who read uncivil comments (M = 5.44, SD =

1.58) felt that the comments are disrespectful of other individuals or their ideas significantly more than those who read civil comments ($M = 4$, $SD = 1.39$) , t (108) = 3.57, $p = .001$. The uncivil comments ($M = 4.04$, $SD = 1.93$) were perceived to be more restricting others' freedom to express their own ideas than civil comments ($M = 3.29$, $SD = 1.44$), but the difference was not statistically significant, t (52) =1.60, $p = .12$. The extent to which those who were assigned to uncivil condition felt the comments are significantly more uncivil ($M = 4.93$, $SD = 1.75$) than those who were assigned to civil condition ($M = 3.52$, $SD = 1.16$), t (52) = 3.48, $p = .001$.

Main Analyses

The influence of uncivil comments on political identity salience was examined by running an independent-samples t-test. The results showed that individuals' level of political identity salience was almost identical across the conditions. The difference in participants' political identity salience between those seeing uncivil comments ($M = 4.15$, $SD = 2.01$) and civil comments ($M = 4.19$, $SD = 1.36$) was not significant, t (52) = -.08, $p = .94$.

Post-hoc Analyses

As post-hoc analysis, additional analyses were run to examine the effect of uncivil comments on personal identity salience (personal identity salience measure can be found in Appendix A). According to the theory of social categorization (Turner, 1985), when depersonalized, individuals tend to become more influenced by their social group identity, therefore, relatively less influenced by their personal identity. The results of an independent-samples t-test revealed that there was a significant difference in participants'

personal identity salience between those seeing uncivil comments (M = 5.96, SD =.74) and those seeing civil comments (M =4.98, SD = 1.28), t (52) = 3.47, p =.001. When participants saw uncivil comments, their level of personal identity salience increased compared to those who saw civil comments.

Soft-Launch Data & Preliminary Analyses

As briefly explained in the beginning of this chapter, Study 1 was initially designed to test a) whether measuring political group identity (PGI) and political identity salience (PIS) prior to participants' exposure to uncivil comments alters the effect of political incivility manipulation and b) whether the experimental manipulation of political uncivil comments works as predicted. One of the main goals of Study 1 was to make sure uncivil comment manipulation works as intended before launching Study 2. Prior to launching Study 2, it was important to test whether measuring PGI and PIS prior to or after participants' exposure to uncivil comments alters any effect of political incivility manipulation. This is because the initial purpose of Study 2 was testing the influence of uncivil comments on political identity salience (mediator) and its subsequent influence on endorsement of false beliefs of one's own group.

If preliminary analyses show that measuring PIS influences the way participants respond to the comment manipulation, a slight modification needs to be made to the Study 2 design as well as to the goal of Study 1. Even though Study 2 was not designed to measure PIS prior to the comment manipulation, if asking participants' PIS influences the way they respond to uncivil comments, it is highly likely that the way participants answer questions about political (or politicized scientific) beliefs would be influenced by

their answers to the PIS measure right after reading (un)civil comments. Therefore, preliminary analyses were conducted with the soft-launch data.

A total of 76 cases (19 cases per condition) were collected at the time preliminary analyses were conducted. Based on prior research on the effect of political incivility (Borah, 2014; Gervais, 2015; Hwang et al., 2018), individuals' affective responses and open-mindedness toward their political opponents were measured as outcome variables that are expected to be closely related with political identity salience. The inclusion of these relevant variables was based on an assumption that individuals' affective responses toward their political outgroup members becomes intense when their political group identity salience increases. Thus, I examined if the extent to which (un)civil comments influence individuals' affective responses and open-mindedness differ depending on whether they were asked about their PGI and PIS prior to the experimental manipulation. The direct effect of uncivil comments on political identity salience was not examined in purpose because it was initially planned to be tested in Study 2.

A series of 2-way ANOVAs were performed for 1) negative emotions and 2) open-mindedness toward political opponents with incivility of comments (uncivil vs. civil comments) and the timing of measuring PGI and PIS (PGI and PIS [before/after] exposure to [civil/uncivil] comments). The results showed that the degree to which participants affectively respond to (un)civil comments varied depending on the conditions of measuring PGI/PIS either prior to or after their exposure to manipulation. In other words, the effect of uncivil comments on the negative emotions toward their political opponents differed depending on when participants were asked about their PIS – either

prior to their exposure to uncivil comments or right before they are asked about their emotions toward their political opponents. Therefore, it is reasonable to expect that if I ask participants' political identity salience after exposing them to uncivil comments, but before measuring false political beliefs, having them to think about their political group identity might alter the effect of uncivil comments on endorsement of false beliefs. In other words, measuring PIS right after participants' exposure to uncivil comments may influence the extent to which they endorse their ingroup or outgroup-favored falsehoods as they are primed to think about the importance of their group identity to themselves.

As a result, a slight modification was made to both of Study 1 and Study 2 to test each path of the mediation in a cleaner way. Study 1 only tests the effect of uncivil comments on political identity salience (H1) by using the subsample. Accordingly, Study 2 tests the direct effect of uncivil comments on endorsement of false beliefs (H3).

Chapter 5. Study 2

Purpose

Study 2 aims to test the effect of uncivil comments on individuals' endorsement of false beliefs (H3). This hypothesis was tested by using both of Democrats' and Republicans' common false beliefs. The same four issues were used as in Study 1. When testing the effect of intergroup uncivil comments on acceptance of these false claims, considering political leaning of each issue, it is necessary to test the extent to which individuals' beliefs are influenced by whether the given claim is their ingroup-favored or outgroup-favored falsehoods. To be clear, ingroup-favored issues are false beliefs that individuals are likely to be predisposed to believe. For Republicans, ingroup-favored issues are 'climate change' and 'voter fraud' and Democrat-favored issues include beliefs about 'nuclear power' and 'Russian election tampering.' Thus, Study 2 employs a 2 (between: civil comments vs. uncivil comments) X 2 (between: Republican-favored falsehoods vs. Democrat-favored falsehoods) design. It was ensured that half of both Republicans and Democrats get exposed to ingroup-favored falsehoods and the other half get exposed to their outgroup-favored falsehoods.

Sample and Participants

The data were collected from May 1 to May 3, 2020. Participants were recruited from Dynata based in the United States. The research firm Dynata was used to recruit a sample that is diverse and as representative as possible of the target population. Given the purpose of the dissertation is examining political group identity and false beliefs, only Republicans or Democrats were eligible to participate in the study. The recruited participants were adults who are 18 years old or older, either Republicans or Democrats, and who have access to the Internet. All participants received a reasonable level of reward from Dynata for their participation in the study.

A total of 400 participants completed the study. The sample size used for the analyses was 395 after excluding several responses including those who reported that they did not pay attention to the study. Approximately half of the sample were male (47.8%) and the mean age was 55.70 (*SD* = 16.04). A majority of the participants were White (84.1%), followed by African American (7.6%), Asian (6.1%), other (2.5%), American Indian/Alaska Native (1.3%), and Native Hawaiian/Pacific Islander (0.5%). About 49.9% of the participants were Republicans.

Procedure

A 2 (between: civil comments vs. uncivil comments) X 2 (between: ingroup-favored issues vs. outgroup-favored issues) post-test only experiment was performed to test the effect of uncivil comments on endorsement of political ingroup (false) beliefs (H3). After providing consent, participants first reported their political affiliation and

prior news use, and completed a distractor task where they were asked to find differences between the two pictures. The purpose of having participants report prior news use and complete the distractor task was to minimize the potential priming effect of the political identification question prior to their exposure to political incivility manipulation. Next, participants were randomly assigned to one of the four conditions: 1) ingroup-favored issues with civil comments, 2) ingroup-favored issues with uncivil comments, 3) outgroup-favored issues with civil comments, or 4) outgroup-favored issues with uncivil comments. The proportion of the number of Republicans and Democrats was almost identical across the conditions (e.g., 48.2-51.5% Republicans and 48.5% - 51.8% Democrats in each condition).

Participants in each condition were first exposed to one of the two news articles (either science or political topic) and a total of 10 comments under the article. Like Study 1, the comments consist of four pro-Republican, four pro-Democrat, and two neutral comments. Only the tone of the comments (civil versus uncivil) and the favored political group of false beliefs (either Republican-favored or Democrat-favored) were varied by conditions. Participants were first asked to read an article and the comments. Then they were asked about their beliefs on the topic they read. Once they finished answering the belief questions about the first article, they were asked to read the second article and repeated the same procedure, but on a different topic. The order of the articles presented to each participant was randomized. Afterwards, participants were also asked about their political identity salience and strength. At the end of the survey, all participants were asked to report demographic information and were thanked for their participation.

Stimuli

News Articles

Study 2 used the pretested news articles (pretest 2). News articles can be found in Appendix B.

Uncivil comments

Study 2 used the same comments as in Study 1 (see Appendix C).

Survey Items

Distractor Task (News Consumption Frequency and Finding Differences Task)

The same task was used as in Study 1 (see Appendix A for news use measure and Appendix F for details about the 'finding differences' task).

Measures

Political Identification. Political identification was measured by asking participants to indicate whether they usually think of themselves as a Republican (49.9%), a Democrat (50.1%), an independent, or something else. Those who selected "independent" option were followed by another question asking if they think of themselves as closer to either Republican or Democratic Party. Those who said they are "something else" were asked to type out what that would be. Those who selected either "independent" or "something else" were excluded from continuing with the study.

Endorsement of False Beliefs. Participants were asked to indicate the extent to which they strongly agree or disagree with a mixture of true and false claims about the selected issues. Answer options range from 1 (strongly disagree) to 7 (strongly agree).

Participants were asked about four statements per issue. The belief issues asked to each participant were determined by the experimental condition they were assigned to. For example, those who assigned to Democrat-favored misperception were asked about nuclear power and Russian's election tampering whereas those who assigned to Republican-favored misperception condition were asked about their beliefs about climate change and voter fraud issues. Participants' responses to the accurate claims were reverse-coded so that higher values on the scale represent greater inaccuracy in assessing these claims. The four items of each issue were averaged to create an index of each issue's false belief.

Falsehoods Favored by Republicans (Climate Change and Voter Fraud). Participants' responses to misperception of each of the two issues – 'climate change' and 'voter fraud' – were averaged to create an index of misperception about each issue. Afterwards, misperception about climate change and voter fraud were averaged to create an index of Republican-favored misperception (M = 3.12, SD = 1.21, α =.80).Considering the main goal of this dissertation is to test the effect of uncivil comments on misperception belonging to one's political ingroup, individuals' misperception about the two different issues, but belonging to the same political ingroup, were combined.

To measure climate change beliefs, participants were asked to indicate the extent to which they agree or disagree with the following statements: : A) Most climate scientists believe that human activity is causing climate change; B) Human activity is an important factor contributing to increases in the average surface temperature of the Earth; C) Climate change is made up by globalists to instill fear; D) Climate change has not

caused any detrimental effect on the earth (M =2.79, SD =1.45, α =.83). The first two accurate statements were reverse-coded items.

Participants' misperception about voter fraud was measured by asking them to indicate the extent to which they agree or disagree with the following statements: A) There is no good evidence that non-citizens vote in large numbers in the U.S.; B) Voter fraud is very rare; C) Double voting is widespread in the U.S.; D) Votes cast by people who died in an election year are often legitimate (M = 3.44, SD = 1.35, α = .64). Except the third statement (C), all the other statements were accurate claims, so reverse-coded.

Falsehoods Favored by Democrats (Nuclear Power and Russian Election Tampering). Participants' misperception of each of the two issues – 'nuclear power' and 'Russian election tampering' – was averaged to create an index of misperception about each. Then, for the same reason described above (in the Republican-favored misperception measure), their false beliefs about nuclear power and Russian's election tampering were averaged to create an index of falsehoods favored by Democrats (M = 3.38, SD = .94, α = .74).

Nuclear power belief was measured by asking participants to answer the extent to which they agree or disagree with the following claims: A) Generating power with nuclear energy instead of coal would help reduce greenhouse gas emissions; B) Nuclear power produces much less greenhouse gas than coal power stations; C) Nuclear power plants produce greenhouse gases as a by-product of their operation; D) Nuclear power plants emit much more greenhouse gases than fossil fuel sources do (M = 3.02, SD = 1.11, α = .71). The first two statements were reverse-coded items.

To measure beliefs about Russian's tampering with the U.S. election**,** following statements were given to participants : A) Since the 2000 election, American voting procedures have only become safer; B) Because state standards differ, tampering with election results is very difficult; C) It is highly likely that a foreign power, including Russia, could directly alter American election outcomes by targeting voting procedures, including voting machines; D) Broken seals on voting booths observed in the 2016 election indicated at least some tampering (M = 3.75, SD = 1.14, α = .66). The first two accurate statements were reverse-coded items.

Results

Manipulation Check

A manipulation check was conducted to test if uncivil comments manipulation was effective. The same questions used in Study 1 were used to check if the uncivil comments experimental manipulation worked as intended. The results of a series of independent-samples t-tests showed that the incivility manipulation was successful. Overall, participants who were assigned to uncivil condition felt the comments are significantly more uncivil (M = 4.46, SD = 1.84) than those who were assigned to civil condition (M = 3.30, SD = 1.74), t (391) = 6.44, p < .001. Specifically, the extent to which people felt the comments are disrespectful of other individuals or their ideas were significantly higher among those who read uncivil comments (M = 4.49, SD = 1.92) than those who read civil comments (M = 3.55, SD = 1.79), and the difference was significant, t (391) = 5, p < .001. The uncivil comments (M = 3.78, SD = 1.90) were perceived to be

more restricting others' freedom to express their own ideas than civil comments (M = 3.29, SD = 1.90), and the difference was significant, t (393) = 2.51 p = .01.

Main Analyses

Two separate 2-way ANOVAs were performed for 1) falsehoods favored by Democrats ('Nuclear power,' and 'Russian election tampering') and 2) falsehoods favored by Republicans ('Climate change,' and 'Voter fraud') with incivility of comments (uncivil vs. civil comments) and favored political group of each issue (ingroup or outgroup) as independent variables. As post-hoc analyses, additional two-way ANOVAs were performed to see if the effects of uncivil comments and the favored political group of issues on endorsement of false belief differ by the four issues.

Falsehoods Favored by Republicans (Climate Change and Voter Fraud).

Overall, the effect of uncivil comments on endorsement of falsehoods favored by Democrats was not significant, F (1, 193) = .25, p =.62, partial η^2 = .001. However, not surprisingly, the effect of favored political group of the issue was found to be significant, F (1, 193) = 69.86, p <. 001, partial η^2=.25, meaning Democrats tend to be more accurate about their beliefs about climate change and voter fraud than Republicans. There was no significant interaction effect of uncivil comments and political affiliation of the false beliefs, F (1, 193) = 1.16, p = .28, partial η^2=.006. That is, Democrats' beliefs about climate change and voter fraud claim remain almost identical regardless of incivility of comments (uncivil: M = 2.55, SD = .97; civil: M = 2.47, SD = 1.04). Republicans' beliefs about those issues become slightly more accurate when they saw uncivil comments (M =

3.58, *SD* = 1.06) compared to those who saw civil comments (*M* = 3.82, *SD* = 1.14), however, the difference was not statistically significant.

Falsehoods Favored by Democrats (Nuclear Power and Russian's Election Tampering). There was no main effect of uncivil comments on individuals' Democrat-favored false beliefs, *F* (1, 183) <.001, *p* = .99, partial η^2< .001. There was no significant difference in belief inaccuracy between Republicans (those assigned to outgroup-favored falsehoods) and Democrats, *F* (1, 183) = 2.18, *p* =.14, partial η^2=.01. However, a significant interaction effect of uncivil comments and the favored political group of the issues was found, *F* (1, 183) = 8.12, *p* = .005, partial η^2=.042. That is, the relationship between uncivil comments and endorsement of falsehoods favored by Democrats is contingent on one's party affiliation. Both Democrats and Republicans were influenced by incivility of comments, but differently than I predicted. For Republicans who are not likely to be predisposed to believe false claims about nuclear power and Russian's election tampering, reading uncivil comments made them become less accurate about their beliefs on the issues they read (*M* = 3.44, *SD* =.78) than those who read civil comments (*M* = 3.06, *SD* = .94). In contrast, when Democrats read uncivil comments, they tend to become more accurate about their beliefs on the issues they read (*M* = 3.27, *SD* = .93) than Democrats who read civil comments (*M* = 3.65, *SD* = .99). In other words, Democrats seeing uncivil comments are more likely to accept that Russians did not alter the vote tally and that nuclear power does not contribute to increase in greenhouse gas emissions. Republicans seeing uncivil become less accurate about these beliefs than those seeing civil ones. Rather than increasing Democrats' level of endorsement of false beliefs

favored by their ingroup, uncivil comments made Democrats become more accurate about their beliefs about nuclear power and Russian election tampering. In contrast, for Republicans, reading uncivil comments made them to be less accurate about their beliefs about those issues. See Appendix H for interaction plots.

Table 1

Study 2 Means with Standard Deviations of Democrat-favored and Republican-favored Falsehoods by Incivility of Comments and the Favored Political Group of False Beliefs

	Falsehoods favored by Democrats (Nuclear Power & Russian Election tampering)			Falsehoods favored by Republicans (Climate change & Voter Fraud)		
	In- or Outgroup	Uncivil Comments	Civil Comments	In- or Outgroup	Uncivil Comments	Civil Comments
Democrats	Ingroup	3.27 (.93)	3.65 (.99)	Outgroup	2.55 (.97)	2.46 (1.03)
Republicans	Outgroup	3.44 (.78)	3.06 (.94)	Ingroup	3.58 (1.06)	3.82 (1.14)

Post-hoc Analyses (Analyses by Issues)

Since pretest results showed the issues used as stimulus sampling are slightly different from one another in terms of individuals' perception of their political leaning and belief inaccuracy, additional analyses were conducted to see the interaction effect of incivility and political affiliation of the false belief issues differs by issues. Thus, a series of 2-way ANOVAs were run.

First, there was no main effect of uncivil comments on individuals' endorsement of false beliefs favored by their ingroup across the four issues. Except the nuclear power belief, each belief statement's favored political group significantly affected endorsement of false beliefs (climate change, vote fraud, and Russian's election tampering). Democrats (Climate change: $M = 2.20$, $SD = 1.20$; Voter fraud: $M = 3.83$, $SD = 1.16$) were less likely to endorse false claims about climate change and voter fraud than Republicans (Climate change: $M = 3.35$, $SD = 1.45$; Voter fraud: $M = 4.05$, $SD = 1.24$). Regarding the false belief about Russian's election tampering, Democrats were more likely to endorse the false claim ($M = 3.99$, $SD = 1.18$) than Republicans ($M = 3.49$, $SD = 1.03$).

There was a significant interaction effect of uncivil comments and the favored political group of the issue on participants' endorsement of false belief about nuclear power issue only, $F(1, 187) = 15.01$, $p < .001$, partial $\eta^2 = .07$. That is, Democrats (those who are likely to be predisposed to believe nuclear power false claim) who read uncivil comments become more accurate about their belief about nuclear power decreasing greenhouse gases ($M = 2.62$, $SD = 1.17$) than those who read civil comments ($M = 3.33$, $SD = .93$). In contrast, Republicans who read uncivil comments become less accurate about their nuclear power belief ($M = 3.27$, $SD = 1.06$) than those who read civil comments ($M = 2.77$, $SD = 1.13$).

Although the interaction effect of incivility and the political group favorability of the given issue was significant only in nuclear power belief, the results revealed similar patterns across the two conditions of falsehoods favored by Democrats. That is, when

people read correction message that their ingroup members are likely to be predisposed *not* to believe, reading uncivil intergroup comments associated with the message was helpful in decreasing their belief inaccuracy. For example, similar interaction effect pattern was found in individuals' Russian election tampering belief, F (1, 186) = 1.38, p = .24, partial η^2 = .007, although the results are not statistically significant. That is, Democrats seeing uncivil comments become more accurate (M = 3.91, SD = 1.12) about their belief about Russian election tampering than those seeing civil comments (M = 4.06, SD = 1.24). In contrast, Republicans seeing uncivil comments (M = 3.60, SD = .99) become less accurate about the belief than those seeing civil comments (M = 3.36, SD = 1.08). However, the differences were not found to be significant. See Table 2 and 3 for all means and standard deviations in Appendix I. More details about the post-hoc analyses can be found in Appendix J.

Chapter 6. Study 3

Purpose

Study 3 aims to test the effect of political group identity prime (versus personal identity) on individuals' endorsement of false beliefs. To establish the causal influence of the mediator, it is necessary to directly manipulate the mediator, political identity salience. Study 3 is therefore designed to test this by employing a post-test only experimental design using the same four issues as in Study 1 and Study 2.

Most experimental studies testing depersonalization effect based on the Social Identification model of Deindividuation effect (SIDE) manipulated depersonalization (salient group identity) by varying the amount of individuating information shared among the participants (Lee, 2006) or directly telling them about their ingroup membership (see Postmes, Spears, & Lea, 2002). This is based on an assumption that individuals would become depersonalized when their social group identity salience increases, which is assumed to be influenced by the relatively reduced amount of individuating information and the primed group membership and identity. However, relatively enhanced level of social group identity salience can make people feel depersonalized (e.g. making them perceive themselves and others as representatives of a group) as they become significantly influenced by their salient social group identity (Turner, 1985). Kelly (1989) showed that activation of one's social group identity salience causes depersonalization,

which increases their group identity salience relative to their personal identity salience. Thus, this study employs previous studies' approach (Kelly, 1989; Reynolds, Turner, Haslam, & Ryan, 2001; Unsworth & Fielding, 2014) to increase political group identity salience.

Sample and Participants

A total of 396 participants were recruited from Dynata based in the United States from Apr 12 to Apr 28, 2020. The recruitment procedure is the same as Study 2. The recruited participants were adults who are 18 years old or older, who have access to the Internet, and either a Republican or a Democrat. Approximately 50% of the sample were male (48.4%) and the mean age was 53.72 (SD = 16.31). A majority of the participants were White (85%), followed by African American (7.1%), Asian (6%), other (2.5%), and American Indian/Alaska Native (1%). Half of the participants were Republicans.

Procedure

A 2 (personal identity vs. political identity prime) X 2 (between: ingroup-favored issues vs. outgroup-favored issues) online survey experiment was conducted to test the effect of the increased political identity salience on endorsement of false beliefs (H2), and whether the effect differs by the favored political group of the issue. Like Study 2, the two topics (science and politics) and the two issues per topic (science: climate change and nuclear power, politics: voter fraud and Russian election tampering) were used as a form of stimulus sampling. For Democrats, ingroup-favored issues include 'climate change'

and ‘voter fraud’ and Republican-favored issues include ‘nuclear power’ and ‘Russian election tampering.’

Participants were randomly assigned to one of the four conditions: 1) personal identity prime with Democrat-favored issue beliefs, 2) personal identity prime with Republican-favored issue beliefs, 3) political identity prime with Democrat-favored issue beliefs, or 4) political identity prime with Republican-favored issue beliefs. After providing consent, participants were asked to report their political identification and prior news use and complete a writing task that was designed to prime and increase either personal identity or political group identity salience. After completing the writing task, participants were asked to read a randomly selected news article and answer a set of questions regarding their belief about the issue they read. Once they finished answering questions about the selected issue, they were asked to read another article and repeat the same procedure, but on a different issue. All participants were asked to answer a series of questions including demographics and thanked for their participation.

Stimuli

News Article

Study 3 used the same news articles as in Study 1 and 2. Articles can be found in Appendix B.

Experimental Manipulation of Political Group Identity Salience (vs. Personal Identity Salience)

Study 3 used the pretested manipulation of political group identity prime (tested in pretest 4). Detailed instructions can be found in pretest 4 (p. 53).

Survey Items

Measures

Endorsement of False Beliefs. The same items were used to measure individuals' endorsement of false beliefs as in Study 2 (see appendix A for the specific wording of the questions). A total of four items were used to measure false belief about each topic. Those four items were averaged to form an index of each issue's false belief (Climate change: $M = 2.62$, $SD = 1.47$, $\alpha = .82$; Voter fraud: $M = 3.25$, $SD = 1.55$, $\alpha = .76$; Nuclear power: $M = 3.02$, $SD = 1.14$, $\alpha = .67$; Russian's election tampering: $M = 3.71$, $SD = 1.22$, $\alpha = .61$). Like Study 2, given the main goal of this dissertation is testing the effect of uncivil comments on misperception belonging to one's political ingroup, two types of false beliefs measure were created by political group. That is, 'falsehoods favored by Republicans' were created by averaging participants' responses to 'nuclear power' and 'Russian election tampering' measures (Falsehoods favored by Republicans: $M = 2.93$, $SD = 1.35$, $\alpha = .85$). 'Nuclear power' and 'Russian election tampering' items were averaged to create an index of 'falsehoods of favored by Democrats' ($M = 3.37$, $SD = .92$, $\alpha = .66$).

Manipulation Check (Political Group Identity Salience & Political Identity Strength). Political group identity salience was used as a manipulation check. Political group identity salience was measured in two ways. First, participants were also asked to answer how important being a Republican (or a Democrat) is to them on a 7-point scale, from 1 (not at all) to 7 (very important) ($M = 5.62$, $SD = 1.58$). Political group identity

strength was also used as another measure of manipulation check. Participants were asked to answer the following question before and after their exposure to the identity prime manipulation: "At this moment, how much do you feel that you identify with Democratic (or Republican) Party?" Answer options range from 1 (Not at all) to 7 (A great deal) (M = 5.60, SD = 1.53).

Results

Study 3 Manipulation Check: Political Group Identity Prime

A manipulation check was performed to test if political identification prime manipulation was effective. The extent to which participants' political group identity was salient was measured by asking about political identity salience (M = 5.59, SD = 1.46) and strength (M = 5.61, SD = 1.53). A series of independent-samples t-tests showed that the political identity prime manipulation was not successful. Regardless of the condition each participant was assigned to, participants' political group identity was salient (Political group identity condition: M = 5.53, SD = 1.50; Personal identity condition: M = 5.65, SD = 1.43), t (389) = -.83, p =.41. No significant difference in political identity strength was found between political group identity and personal identity conditions (Political group identity condition: M = 5.52, SD = 1.61; Personal identity condition: M = 5.71, SD = 1.54), t (388) = -1.28, p =.20.

Main Analyses

The manipulation check failed, but it is possible that the effect of political group identity prime had a shorter effect, fading away before participants were asked to report their political group identity salience. Therefore, the following analyses were performed

to test whether political group identity prime affects individuals' likelihood of endorsing false beliefs (H2). Two separate 2 (between: political group identity prime vs. personal identity prime) X 2 (between: ingroup-favored issues vs. outgroup-favored issues) between-subjects Analysis of Variances (ANOVAs) were run to test the effect of priming political group identity on individuals' endorsement of false beliefs: 1) Democrat-favored issue false beliefs and 2) Republican-favored issue false belief. Post-hoc analyses were also run for each issue separately.

Falsehoods Favored by Republicans (Climate Change and Voter Fraud). Political group identity prime (versus personal identity prime) did not influence the endorsement of false beliefs, F (1, 191) =.96, $p.$ = .32, partial η^2=.005. However, Democrats (M = 2.22, SD = 1.08) were significantly less likely to endorse false beliefs about climate change and voter fraud issues, F (1, 189) = 77.90, p < .001, partial η^2=.29, than republicans (M = 3.67, SD = 1.19). This is not surprising that the issues are aligned with Democrats' overall beliefs. There was no interaction effect of political group identity prime and political affiliation of the issues, F (1, 191) = 1.27, p = .26, partial η^2=.007.

Falsehoods Favored by Democrats (Nuclear Power and Russian Election Tampering). There was no significant main effect of political group identity prime on endorsement of false beliefs favored by Democrats, F (1, 198) = 2.54, p = .11, partial η^2=.01 (PID: M = 3.47, SD =.83; PSI: M = 3.27, SD =.99). There was significant main effect of favored political group of falsehoods, F (1, 198) = 8.44, p = .004, partial η^2=.04, (Republicans: M = 3.18, SD = .92; Democrats: M = 3.55, SD = .88). That is, Democrats

were more likely to endorse false claims about the nuclear power and Russian election tampering claims than Republicans. The interaction effect of political group identity prime and political group identity on participants' beliefs about the republican-favored issues was not significant, F (1, 194) = .02, p = .89, partial $\eta^2 < .001$.

Post-hoc Analyses

As post-hoc analyses, a series of 2-way ANOVAs were run to examine the effect of political group identity prime on endorsement of false beliefs by the four issues separately. There was no main effect of political group identity prime and no significant interaction effect. Except the nuclear power claim, favored political group of the issue significantly influenced participants' endorsement of false beliefs (climate change, voter fraud, and Russian election tampering). As expected, when the false belief is favored by one's political ingroup (e.g. climate change and voter fraud for Democrats, Russian election tampering for Republicans), individuals reported more accurate beliefs than when the false belief is not aligned with their political ingroup's view. Detailed results of the post-hoc analyses can be found in Appendix K.

Chapter 7. Discussion

Many scholars have raised concerns over the consequences of the widespread political misinformation as well as the rise of political incivility. Since the role of the Internet in political information consumption has significantly increased, it is essential to understand the effect of social and technological factors of online media, which contributed to prevalence and persistence of political misperceptions and the influence of political incivility. This dissertation aims to expand our knowledge on the role of uncivil comments in promoting false political beliefs, particularly beliefs that partisans are likely to be predisposed to believe, by focusing on several political and scientific issues.

A number of studies have attempted to understand causes of the prevalence of political falsehoods and identify external and internal factors associated with acceptance of political misinformation (Flynn et al., 2017; Garrett, 2019; Garrett et al., 2019; Garrett, Weeks, & Neo, 2016; Kunda, 1990; Nyhan & Reifler, 2019). However, the effect of online comments, particularly uncivil ones, has not received much of scholarly attention in regard to its influence on reception of false beliefs. Research showed that a fair amount of online comments include uncivil words (Coe et al., 2014; Su et al., 2018) and individuals' affective (Gervais, 2015) and cognitive responses to uncivil comments (Anderson et al., 2014; Borah, 2013; Hwang et al., 2018) seem to be associated with individuals' psychological reactance toward one's political outgroup beliefs or opinions.

Thus, I believe it is imperative to examine what roles uncivil comments play in promoting political misperceptions to have a better understanding of individuals' acceptance of false beliefs.

This dissertation tests the effect of uncivil comments on endorsement of false beliefs using four different issues, two Republican-favored and two Democrat-favored falsehoods. Republican-favored falsehoods refer to false belief that Republicans are likely to be predisposed to believe, and vice versa for Democrat-favored falsehoods. The Social Identification model of Deindividuation (SIDE) model (Postmes et al., 1998) predicts that the lack of individuating information and the rendered social group identity makes people to be *depersonalized*, meaning they become significantly influenced by their salient social group identity rather than personal identity. When depersonalized, individuals' cognitions and behaviors would be governed by their relevant social group identity, therefore, their behavior becomes more socially regulated (Postmes et al., 1998; Reicher et al., 1999)

Drawing upon the SIDE model and the theory of social categorization (Turner, 1985), which the SIDE model is heavily based on, this dissertation proposed to test if exposure to uncivil comments enhances one's political group identity salience, which could further promote individuals' acceptance of false beliefs that their ingroup members are likely to be predisposed to believe. I predicted that uncivil comments, which could be considered as a group-directed threat highlighting intergroup differences, would be likely to increase political ingroup identity salience. The increased political ingroup identity salience would further lead to endorsement of one's ingroup beliefs, regardless of

whether their ingroup belief is based on accurate claims or not. These hypotheses were tested using three experimental studies. The first study tested the influence of uncivil comments on political ingroup identity salience. The second study tested the effect of uncivil comments on endorsement of false beliefs. The third study examined whether the increased political group identity salience promotes endorsement of false beliefs. I provide a brief summary of the results and then discuss implications of findings.

Summary of Results

The results of study 1 showed no support for the influence of uncivil comments on political group identity salience (H1). Study 2 provides no support for the influence of uncivil comments on endorsement of false beliefs that they are predisposed to believe (H3). However, the results of study 2 demonstrated a significant interaction effect of uncivil comments and the favored political group of the issues (whether the belief issue was ingroup-favored or outgroup-favored) on endorsement of false beliefs favored by Democrats, but not false beliefs favored by Republicans. That is, the effects of incivility on endorsement of Democrat-favored falsehoods were contingent on the individual's political party affiliation. However, the direction of the influence of uncivil comments on endorsement of Democrat-favored false beliefs was opposite of the predictions. That is, when exposed to Democrat-favored misperceptions, Republicans seeing uncivil comments became less accurate about the false beliefs that are typically favored by members of their out-group members (Democrats). In contrast, when Democrats read uncivil comments after reading the message correcting false beliefs that their ingroup members are likely to believe, they reported more accurate beliefs about the issues than

those who read civil comments. The significant interaction effect seems to be mostly driven by the nuclear power belief since post-hoc analyses revealed that only the nuclear power issue condition showed a statistically significant interaction effect. Lastly, study 3 findings showed no evidence that political group identity salience influences partisans' endorsement of false beliefs, regardless of whether the issue is in favor of their ingroup or outgroup. Implications of these findings are discussed.

Uncivil Comments, Political Group Identity Salience, and Endorsement of False Beliefs

The main contribution of this dissertation is to demonstrate that uncivil intergroup comments affects the extent to which people endorse false beliefs and that the effect varies by whether the false belief is aligned with one's political ingroup's views or not. Overall, there was a lack of support for the predictions made about the effect of uncivil comments on false beliefs. What this dissertation showed are cases how uncivil intergroup comments interact with political group members' beliefs. As predicted in the hypotheses, although indirectly, both Republicans and Democrats were *less* likely to endorse their outgroup-favored falsehoods. The extent to which they endorse their ingroup-favored falsehoods were significantly influenced by their political identification. Interestingly, the results demonstrated that both Republicans and Democrats seemed to be persuaded by their opposing side's view, when they were asked about Democrat-favored falsehoods and exposed to uncivil intergroup comments, even when their opposing side's view supports false claims. This effect was found to be prominent among Democrat-favored falsehoods, particularly when the issue people were exposed is something that

they are relatively less familiar with (i.e., nuclear power claim). Although the proposed hypotheses were not framed as an interaction effect, the contingent relationship of uncivil comments, endorsement of *ingroup* false beliefs was posited in the hypotheses. In other words, the hypotheses predicted that people would be more likely to endorse their *ingroup* beliefs, but less likely to endorse their political outgroup-favored false beliefs.

Overall, the results revealed a lack of support for the predictions made about the influence of uncivil comments on political identity salience and endorsement of false beliefs. Here, I describe several explanations on why this happened. I start by offering explanations for the null finding on the effect of uncivil comments on political identity salience. First, if the theory accurately predicted the effect of uncivil comments on increased political identity salience, it may be that there were methodological issues that made it fail to detect the effect. If this was the case, one possibility is that the uncivil comment induction was not strong enough to generate significant effect on their political identity salience. The manipulation of uncivil comments was found to be effective in making difference in perception of incivility of the comments, but it may have not been strong enough to increase political group identity salience in this research examining *political* beliefs. In fact, some participants in pretest 3 commented that the comments are pretty realistic, but they see much more aggressive and vulgar comments in the real world.

Second, it should be noted that there might have been some effects caused by the Coronavirus Disease 2019 (COVID-19) crisis that has occurred in the December of 2019 and has continued to spread across the world. The data collection of main studies started

from March to mid-June of 2020. Unfortunately, this is when the COVID-19 started to spread across the United States. The COVID-19 pandemic probably has affected many of the participants' psychological status, such as health concerns and financial anxiety. Also, President Donald Trump's remarks on COVID-19 might have also increased participants' political identity salience. If participants' political identity salience has already increased because of external factors that are not under the researcher's control, this might have caused a 'ceiling effect,' meaning participants' level of political identity has reached the highest possible score on the measurement. If this was the case, such effect probably made it difficult to accurately measure the effect caused by the experimental manipulation.

Next, study 2 demonstrated both Democrats and Republicans seemed to be persuaded by their political out-group's beliefs when exposed to uncivil comments. This effect was only found in people's beliefs about Democrat-favored falsehoods (nuclear power and Russian election tampering claims). This prediction was primarily based on the SIDE model and the theory of social categorization (Turner, 1985). Uncivil intergroup comments highlighting intergroup conflicts were predicted to enhance political identity salience by increasing intergroup differences compared to intragroup similarities. Assuming uncivil comments increase political identity salience, perceiving uncivil comments attacking ingroup as a group-directed threat was suggested as a theoretical explanation for the relationship between uncivil comments and endorsement of false beliefs. That is, encountering comments attacking one's ingroup are likely to be perceived as a group-directed threat as their political identity salience increases, which

could also increase the likelihood of endorsing one's ingroup belief as a way of highlighting their ingroup homogeneity (Doosje et al., 1995) and self-stereotyping (Spears et al.,1997; Turner, 1985), when they are highly committed to their ingroup (i.e., when their identity strength is strong) (Ellemers et al., 2002). However, the results did not support this prediction. There are several ways to explain why some people would endorse their political *outgroup* false beliefs when exposed to uncivil comments.

In fact, reading participants' ingroup members' uncivil comments might have reduced the extent to which participants identify with their other ingroup members. Reading uncivil comments of one's ingroup could make people to distance from the commenters belonging to the political ingroup. If this was the case, uncivil comments probably failed to increase perception of intragroup similarities and intergroup differences, which are closely related with political group identity salience and the concept of meta-contrast (Turner, 1985). Post-hoc analyses of study 2 revealed that the level of *personal* identity salience was significantly higher among those who read uncivil comments than those who read civil comments. Reading one's ingroup members' uncivil comments directed at outgroup members might have made them not want to strongly identify with the ingroup members. This social behavior can be explained by one of the principles of social identity theory (Tajfel & Turner, 1979) that people are driven to maintain positive social identity. For example, when participants read ingroup members' uncivil comments directed at their outgroup members, they would want to differentiate themselves from other ingroup members if such uncivil comments are perceived anti-normative. Accordingly, as people distance themselves from their ingroup, their ingroup

commitment level would decrease. According to Ellemers and her colleagues (2002), when people perceive a threat, but if they are not committed in their ingroup, they are likely to attempt to leave their ingroup because such threat is perceived as a personal threat rather than a group-directed threat. This theoretical explanation is also supported by Druckman et al.'s (2019) study where they showed that people tend to be motivated to distance themselves from their ingroup when their ingroup members violate norms (e.g. incivility presented in partisan media).

If seeing ingroup members' uncivil comments decreased their political group identity salience and rather increased personal identity salience, why were the participants persuaded by their political opponents' uncivil comments? Prior research on the relationship between discrete emotions, including anger, and persuasive appeal suggests that anger expression sometimes work effective as persuasive appeal. According to Calanchini, Moons, and Mackie (2016), anger expression is perceived as a threat and such anger expressions encouraged people to engage in analytical processing of the persuasive appeal, even when the given issue is not of high relevance. Assuming the readers perceived the uncivil comments as expressions of anger, reading outgroup members' uncivil comments might have led people to consider their outgroup members' uncivil comments as a personal threat, rather than a group-directed threat (since their political group identity is not salient at the moment), and feel their arguments as something serious or something that they need to pay attention to.

This significant interaction effect of incivility and political group identity on endorsement of Democrat-favored falsehoods was primarily driven by the nuclear power

belief. The interaction was found to be significant when predicting individuals' nuclear power belief, but not the 'Russian election tampering' belief. Also, the direction of the incivility effect on endorsement of false belief was the opposite of predictions; both Republicans and Democrats were persuaded by the opposing side instead of supporting their perceived ingroup beliefs. This finding has some implications for the effect of political incivility on false beliefs that are not particularly politically charged, particularly the effect of political incivility in attenuating political ingroup bias. Although the nuclear power claim was selected based on partisan differences in their support for the expansion of nuclear power plants (Pew, 2019), pretest 1 showed that most people are relatively less familiar with the issue compared to the other three issues. In addition, the correlation matrices (Table 5 & 6) also showed that belief inaccuracy of the nuclear power claim is not significantly correlated with respondents' political ideology whereas the other three issues are.

Failure of Political Group Identity Salience Prime Manipulation

One of the main goals of this dissertation is testing the role of political group identity salience in the relationship between uncivil comments and false beliefs. Study 3 specifically aimed to test the effect of increased political group identity salience on endorsement of (false) ingroup beliefs by directly manipulating individuals' political group identity. However, the manipulation failed, and the findings revealed a lack of support for the hypothesis (H2). Here are several speculations on why the political group (versus personal) identity prime did not work out as intended.

First, the usage of political and politicized scientific issues might have primed all participants' political identity including those who assigned to personal identity condition. It is extremely difficult to completely avoid priming political identity salience given the purpose of this dissertation was studying the role of political group identity in promoting false *political* beliefs. Although the same experimental manipulation has been successfully used in other fields, such as social and political psychology (Haslam et al., 1999; Unsworth et al., 2014), having participants read a message about the chosen political issue possibly primed their political identity. If this was the case, at the time people were asked about their beliefs about each issue, most of them must have been influenced by their primed political ingroup identity while reading the messages, which have made it difficult to detect differences in the extent to which the identity prime manipulation influences participants' political group identity salience and their endorsement of ingroup beliefs. In fact, the results of soft-launch data of study 1 (p. 66) also show how sensitive individuals' identity salience could be. Despite its small sample size, the way people respond to negative emotion questions differed by whether they were asked to answer political group identity and identity salience measures prior to or right after their exposure to the comment manipulation (uncivil versus civil comments).

In addition, as described in the prior section, there were significant external factors, such as COVID-19, which might have influenced the participants' psychological status when the study 3 data were collected. Most participants' political identity salience might have been already high even before they were exposed to the identity prime manipulation, which might have resulted in a 'ceiling effect.' In fact, the results showed

somewhat consistent pattern that the level of identity salience of those assigned to political group identity (PGI) condition is slightly higher that of those assigned to personal identity (PSI) condition. The usage of stronger induction might have generated the effect of the political identity manipulation.

Lastly, one of the big assumptions made for study 3 was that all participants would perceive their ingroup-favored falsehoods as their political ingroup members' beliefs. For instance, I assumed many people already knew Democrats' and Republicans' position on climate change claim as the pretest 1 demonstrated. However, it may not be all participants are aware of each political group's position on the selected issues. It was also assumed that people can infer their ingroup beliefs by reading the comments based on the results of pretest 3. However, it may have not been the case.

Limitations

As the first study attempting to investigate the relationship between uncivil intergroup comments and false political beliefs, this research provides insight into the effect of online political incivility. However, there are several limitations that must be addressed. First, the primary limitation of this research is the weak experimental manipulation (political group identity prime). Given the aim of this dissertation was examining the role of political group identity salience in promoting false *political* beliefs, it would have been better if more efforts had been taken to use a stronger induction of political identity salience to examine the effect. However, as described above, the extremely unusual social situation, the global health crisis (COVID-19) and the political

climate in the U.S., probably made it more difficult to detect the intended effect of the manipulation.

Another limitation relates to the experimental design, specifically the selection of stimuli. Considering the goal of this research is to examine the effect of uncivil comments on false beliefs by mimicking the real world setting as much as possible, this dissertation employed real false beliefs that are already prevalent. However, it was difficult to select false beliefs that are perfectly comparable between Republican-favored falsehoods and Democrat-favored falsehoods in terms of individuals' level of belief inaccuracy and familiarity.

Future Research

The first two main studies showed a lack of significant effect of uncivil comments on political identity salience (H1) and endorsement of (false) ingroup beliefs (H3). It is difficult to know if the theoretical prediction was wrong or if the limitations of the experimental design made it hard to detect the effect predicted by the theory. To better examine the role of political group identity in the relationship, the relevant theoretical assumptions would need to be tested. Specifically, the extent to which ingroup members' uncivil comments directed at their political opponents influence readers' perception of ingroup homogeneity or intragroup similarities would need to be examined to fully understand the effect of uncivil *intergroup* comments on group beliefs.

The results of this dissertation raise important questions regarding the effect of uncivil comments on endorsement of false beliefs. For instance, if seeing incivility from one's own group could decrease their level of group commitment, this raises an important

question that needs to be addressed in the future research. For instance, given a significant amount of incivility in conservative media relative to liberal media (Sobieraj & Berry, 2011), it would be important to examine the degree to which uncivil comments are found in liberal versus conservative online media and whether such differences make any impact on partisans' acceptance of false beliefs of their own ingroup. For example, if Republicans get exposed to uncivil comments from Democrats directed at their ingroup members, but not encounter so much uncivil comments from their ingroup that attack their outgroup members, it can significantly increase their acceptance of their ingroup false beliefs instead of being persuaded by the opposing side.

In addition, future research should address how different social features of online media environment, such as social cues (e.g., likes or recommendation button), would interact with individuals' perception of uncivil comments, and how that further influences their endorsement of false beliefs of their political ingroup. Visible social cues are important features of online media, which is closely related with social group identity and their group identity salience. Prior research has shown the important role of social endorsement online in various outcomes, including individuals' online news selection processes (Messing & Westwood, 2012). Particularly when studying intergroup behavior, the way people perceive their ingroup members' uncivil behavior would be influenced by such social cues, which could further affect the extent to which they conform to the perceived ingroup behavior.

Conclusion

Political incivility and the prevalence of political misperceptions can be detrimental for democracy, particularly by promoting political polarization (Asker & Dinas, 2019; Kim & Kim, 2019). Prior research on the negative psychological effect of uncivil comments has suggested a possible relationship of uncivil comments and acceptance of false claims, partly driven by the influence of political identity salience. However, the role of online *uncivil* comments in promoting political misperception has been understudied. Thus, this dissertation tests how seeing uncivil intergroup comments could promote partisans' acceptance of ingroup (false) beliefs.

This research demonstrates that endorsement of political and politicized scientific falsehoods (that are typically favored by one's political ingroup) can be sometimes influenced by uncivil comments. In most cases where partisans are already familiar with the false beliefs favored by their ingroup, they tend to endorse their ingroup-favored misperception because they are likely to be predisposed to believe such false claims. However, when exposed to a false claim that they are relatively less familiar with, reading uncivil intergroup comments may work as a persuasive appeal, which could influence their acceptance of claims made by the opposing side. The results clearly show that uncivil comments affect comment readers' false beliefs, but several important questions remain to be answered about the mechanism of the effect and relationships.

Bibliography

Anderson, A. A., Brossard, D., Scheufele, D. A., Xenos, M. A., & Ladwig, P. (2014). The "Nasty Effect:" Online Incivility and Risk Perceptions of Emerging Technologies. *Journal of Computer-Mediated Communication, 19*(3), 373-387

Asker, D., & Dinas, E. (2019). Thinking fast and furious: Emotional intensity and opinion polarization in online media. *Public Opinion Quarterly, 83*(3), 487-509.

Bergh, R., Akrami, N., & Ekehammar, B. (2012). The compatibility of personality and social identity processes: The effect of gender identity on neuroticism. *European Journal of Personality, 26*(3), 175-181.

Berry, J. M., & Sobieraj, S. (2013). *The outrage industry: Political opinion media and the new incivility.* Oxford University Press.

Berinsky, A. J. (2015). Rumors and health care reform: Experiments in political misinformation. *British Journal of Political Science.* http://doi.org/10.1017/S0007123415000186

Borah, P. (2014). Does It Matter Where You Read the News Story? Interaction of Incivility and News Frames in the Political Blogosphere. *Communication Research, 41*(6), 809-827.

Brooks, D. J., & Geer, J. G. (2007). Beyond negativity: The effects of incivility on the electorate. *American Journal of Political Science, 51*(1), 1 – 16.

Brown, P., & Levinson, S. C. (1987). Politeness: Some universals in language usage (Vol. 4). Cambridge University Press.

Carter, S.L. (1998) *Civility: Manners, Morals, and the Etiquette of Democracy.* New York: Basic Books

Coe, K., Kenski, K., & Rains, S. A. (2014). Online and uncivil? Patterns and determinants of incivility in newspaper website comments. *Journal of Communication, 64,* 658 – 679.

Cohen, G. L., Sherman, D. K., Bastardi, A., Hsu, L., McGoey, M., & Ross, L. (2007). Bridging the partisan divide: Self-affirmation reduces ideological closed-mindedness and inflexibility in negotiation. *Journal of personality and social psychology, 93*(3), 415.

Delli Carpini, M. X., & Keeter, S. (1996). *What Americans know about politics and why it matters.* Yale University Press.

DiFonzo, N., & Bordia, P. (2006). Rumor psychology: Social and organizational approaches. Washington, DC: American Psychological Association.

Dixon, G., Hmielowski, J., & Ma, Y. (2017). Improving climate change acceptance among U.S. conservatives through value-based message targeting. *Science Communication*, *39*(4), 520 – 534.

Doosje B, Ellemers N, & Spears R. (1995). Perceived intragroup variability as a function of group status and identification. *Journal of Experimental Psychology*, *31*, 410–436

Eagly, A. H., & Chaiken, S. (1993). *The Psychology of attitudes.* Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual review of psychology, 53*(1), 161-186.

Fazio, R. H. (2000). Accessible attitudes as tools for object appraisal: Their costs and benefits. In G. R. Maio & J. M. Olson (Eds.), *Why We Evaluate: Functions of Attitudes*, (pp. 1-36). Mahwah, NJ: Lawrence Erlbaum Associates.

Fazio, R. H., Chen, J. M., McDonel, E. C., & Sherman, S. J. (1982). Attitude accessibility, attitude-behavior consistency, and the strength of the object-evaluation association. *Journal of experimental social psychology, 18*(4), 339-357.

Fazio, R. H., Powell, M. C., & Herr, P. M. (1983). Toward a process model of the attitude–behavior relation: Accessing one's attitude upon mere observation of the attitude object. *Journal of Personality and Social Psychology, 44*(4), 723-735.

Feldman, L., Maibach, E. W., Roser-Renouf, C., & Leiserowitz, A. (2012). Climate on cable: The nature and impact of global warming coverage on Fox News, CNN, and MSNBC. *International Journal of Press/Politics, 17*(1), 3–31. doi:10.1177/1940161211425410.

Feldman, L., Myers, T. A., Hmielowski, J. D., & Leiserowitz, A. (2014). The mutual reinforcement of media selectivity and effects: Testing the reinforcing spirals framework in the context of global warming. *Journal of Communication*, *64*, 590 – 611.

Flynn, D. J., Nyhan, B., & Reifler, J. (2017). The nature and origins of misperceptions: Understanding false and unsupported beliefs about politics. *Political Psychology, 38*, 127-150.

Fraser, B. (1990). Perspectives on politeness. *Journal of Pragmatics, 14*(2), 219 – 236.

Fraser, B., & Nolen, W. (1981). The association of deference with linguistic form. *International journal of the Sociology of Language, 1981*(27), 93-110.

Frijda, N. H. (1986). *The emotions*. New York, NY: Cambridge University Press.

Funk, C. (2001). Process performance: Public reaction to legislative policy debate. In J. R. Hibbing & E. Theiss-Morse (Eds.). *What is it about government that Americans dislike?* (pp. 193 – 204). New York: Cambridge University Press.

Gaines, B. J., Kuklinski, J. H., Quirk, P. J., Peyton, B., & Verkuilen, J. (2007). Same facts, different interpretations: Partisan motivation and opinion on Iraq. *Journal of Politics,* 69(4), 957–974.

Garrett, R. K. (2019). Social media's contribution to political misperceptions in US Presidential elections. *PloS one, 14*(3), e0213500.

Garrett, R. K., Gvirsman, S. D., Johnson, B. K., Tsfati, Y., Neo, R., & Dal, A. (2014) Implications of Pro- and Counterattitudinal information exposure for affective polarization. *Human Communication Research*, *40*, 309 – 332.

Garrett, R. K., Long, J. A., & Jeong, M. S. (2019). From partisan media to misperception: Affective polarization as mediator. *Journal of Communication, 69*(5), 490 – 512.

Garrett, R. K., Sude, D., & Riva , P. (2020). Toeing the Party lie: Ostracism promotes endorsement of partisan election falsehoods, *Political Communication, 37*(2), 157-172,

Garrett, R. K., Weeks, B. E., & Neo, R. L. (2016). Driving a wedge between evidence and beliefs: How online ideological news exposure promotes political misperceptions. *Journal of Computer-Mediated Communication*, *21*(5), 331 – 348.

Goffman, E. (1971). *Interaction ritual.* New York: Doubleday.

Graf, J., Erba, J., & Harn, R-W. (2017). The role of civility and anonymity on perception of online comments. *Mass Communication and Society*, DOI: 10.1080/15205436.2016.1274763

Grice, P. (1989). *Studies in the way of words.* Cambridge, MA: Harvard University Press.

Gervais, B. T. (2015). Incivility online: Affective and behavioral reaction to uncivil political posts in a web-based experiment. *Journal of Information Technology & Politics, 12*, 167 – 185.

Greene, S. (1999). Understanding party identification: A social identity approach. *Political Psychology, 20*(2), 393-403.

Le Bon, G. (1895). *The crowd: A study of the popular mind*. London: T. Fisher Unwin.

Hart, P. S., & Nisbet, E. C. (2012). Boomerang effects in science communication: How motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies. *Communication Research*, *39*(6), 701 – 723.

Haslam, S. A., Oakes, P. J., Reynolds, K. J., & Turner, J. C. (1999). Social identity salience and the emergence of stereotype consensus. *Personality and Social Psychology Bulletin, 25*(7), 809-818.

Hatfield, E., Cacioppo, J., & Rapson, R. L. (1993). Emotional contagion. *Current Directions in Psychological Science*, *2*(3), 96–100. doi:10.1111/1467-8721.ep10770953.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature, 466*(7302), 29-29.

Hindman, D. B. (2009). Mass media flow and differential distribution of politically disputed beliefs: The belief gap hypothesis. *Journalism & Mass Communication Quarterly, 86*(4), 790 – 808.

Houston, J. B., Hansen, G. J., & Nisbett, G. S. (2011). Influence of user comments on perceptions of media bias and third-person effect in online news. *Electronic News*, *5*(2), 79 – 92.

Hsueh, M., Yogeeswaran, K., & Malinen, S. (2015). "Leave your comment below": Can biased online comments influence our own prejudicial attitudes and behaviors? *Human Communication Research, 41*(4), 557-576.

Huckfeldt, R., Mendez, J. M., & Osborn, T. (2004). Disagreement, ambivalence, and engagement: The political consequences of heterogeneous network. *Political Psychology*, *25*, 65 – 95.

Hwang, H., Borah, P., Kang, N., & Veenstra, A. (May, 2008). *Does civility matter in the blogosphere? Examining the interaction effects of incivility and disagreement on citizen attitudes.* Paper presented at the annual convention of the International Communication Association, Montreal, Canada.

Hwang, H., Kim., Y., & Huh, C. U. (2014). Seeing is believing: Effects of uncivil online debate on political polarization and expectations of deliberation. Journal of Broadcasting & Electronic Media, 58(4), 621 – 633.

Hwang, H., Kim, Y., & Kim, Y. (2018). Influence of discussion incivility on deliberation: An examination of the mediating role of moral indignation. *Communication Research*, 1 – 28. DOI: 10.1177/0093650215616861

Jamieson, K. H., & Cappella, J. N. (2008). Echo chamber: Rush Limbaugh and the conservative media establishment. Oxford University Press.

Kahan, D. M. (2013). Ideology, Motivated Reasoning, and Cognitive Reflection: An Experimental Study. *Judgment and Decision Making, 8,* 407-424.

Kelley, C. (1989). Political identity and perceived intragroup homogeneity. *British Journal of Social Psychology*, *28*(3), 239 – 250.

Kesler, C.R. (1992) 'Civility and Citizenship in the American Founding', in E.C. Banfield (ed.) *Civility and Citizenship*, pp. 57–74. New York: PWPA (Professors World Peace Academy).

Kiesler, S., Siegel, J., & McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist, 39*(10), 1123-1134.

Klein, O., Spears, R., & Reicher, S. (2007). Social identity performance: Extending the strategic side of SIDE. *Personality and Social Psychology Review*, *11*, 28 – 45.

Kuklinski, J. H., Quirk, P. J., Jerit, J., Schwieder, D., & Rich, R. F. (2000). Misinformation and the currency of Democratic citizenship. *Journal of Politics, 62*(3), 790–816.

Kunda, Z. (1990). The case for motivated reasoning. *Psychological bulletin, 108*(3), 480 – 498.

Lazarus, R. S. (1991). *Emotion and adaptation*. New York, NY: Oxford University Press.

Lea, M., & Spears, R. (1991). Computer-mediated communication, de-individuation and group decision-making. *International journal of man-machine studies, 34*(2), 283- 301.

Lea, M., & Spears, R. (1992). Paralanguage and social perception in computer-mediated communication. *Journal of Organizational Computing, 2,* 321 – 341.

Lee, E.-J. (2004). Effects of visual representation on social influence in computer-mediated communication: Experimental tests of the Social Identity Model of Deindividuation Effects. *Human Communication Research, 30*(2), 234 – 259.

Lee, E.-J. (2006). When and how does depersonalization increase conformity to group norms in computer-mediated communication? *Communication Research*, *33*(6), 423 – 447.

Lee, E.-J. (2007). Deindividuation effects on group polarization in computer-mediated communication: The role of group identification, public self-awareness, and perceived argument quality. *Journal of communication, 57*(2), 385-403.

Lee, E.-J., & Jang, Y. J. (2010). What do others' reactions to news on Internet portal sites tell us? Effects of presentation format and readers' need for cognition on reality perception. *Communication Research*, *37*(6), 825 – 846.

Lerner, J. S., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality and Social Psychology*, 81, 146–159.

Lodge, M., & Taber, C. S. (2013). *The rationalizing voter.* New York, NY: Cambridge University Press.

Luong, K. T., Garrett, R. K., & Slater, M. D. (2019). Promoting persuasion with ideologically tailored science messages: A novel approach to research on emphasis framing. *Science Communication*, *41*(4), 488 – 515.

Mackie, D. M. (1986). Social identification effects in group polarization. *Journal of Personality and Social Psychology, 50*(4), 720-728.

McCright, A. M., & Dunlap, R. E. (2011). The politicization of climate change and polarization in the American public's view of global warming, 2001-2010. *Sociological Quarterly, 52*, 155-321.

McCright, A. M., Dentzman, K., Charters, M., & Dietz, T. (2013). The influence of political ideology on trust in science. *Environmental Research Letters 8*:1–9.

Murtagh, N., Gatersleben, B., & Uzzell, D. (2012). Self-identity threat and resistance to change: Evidence from regular travel behaviour. *Journal of Environmental Psychology, 32*(4), 318-326.

Mutz, D. C., & Reeves, B. (2005). The new videomalaise: Effects of televised incivility on political trust. *American Political Science Review, 99*(1), 1 – 15.

Nisbet, E. C., Cooper, K. E., & Garrett, R. K. (2015). The partisan brain: How dissonant science messages lead conservatives and liberals to (dis)trust science. *The ANNALS of the American Academy of Political and Social Science*, *658, 36 – 66.*

Nisbet, E. C., Cooper, K. E., & Garrett, R. K. (2015). The partisan brain: How dissonant science messages lead conservatives and liberals to (dis)trust science. *The ANNALS of the American Academy of Political and Social Science, 658*, 36 – 66.

Nyhan, B. (2010). Why the "death panel" myth won't die: Misinformation in the health care reform debate. *The Forum. 8*(1).

Nyhan, B., & Reifler, J. (2010). When corrections fail: The persistence of political misperceptions. *Political Behavior*, *32*, 303 – 330.

Papacharissi, Z. (2004). Democracy online: Civility, politeness, and the democratic potential of online political discussion groups. *New Media & Society*, *6*(2), 259 – 283.

Pew Research Center (October, 2014). "Political Polarization and Media Habits". Retrieved from https://www.pewresearch.org/wp-content/uploads/sites/8/2014/10/Political-Polarization-and-Media-Habits-FINAL-REPORT-7-27-15.pdf

Pew Research Center (May, 2018). "Majorities See Government Efforts to Protect the Environment as Insufficient" Retrieved from https://www.pewresearch.org/science/2018/05/14/majorities-see-government-efforts-to-protect-the-environment-as-insufficient/

Pew Research Center (November, 2019). "U.S. Public Views on Climate and Energy" Retrived from https://www.pewresearch.org/science/2019/11/25/u-s-public-views-on-climate-and-energy/

Pham, M. T. (2007). Emotion and Rationality: A Critical Review and Interpretation of Empirical Evidence. *Review of General Psychology, 11*(2), 155-178.

Phillips, T., & Smith, P. (2004). Emotional and behavioural responses to everyday incivility: Challenging the fear/avoidance paradigm. *Journal of Sociology, 40*, 378-399.

Postmes, T., Spears, R., & Lea, M. (1998). Breaching or building social boundaries?SIDE-effects of computer-mediated communication. *Communication Research,25*(6), 689 – 715.

Quick, B. L., & Stephenson, M. T. (2007). Further evidence that psychological reactance can be modeled as a combination of anger and negative cognitions. *Communication Research, 34*(3), 255-276.

Rains, S. A., Kenski, K., Coe, K., & Harwood, J. (2017). Incivility and political identity on the Internet: Intergroup factors as predictors of incivility in discussions of news online. *Journal of Computer-Mediated Communication, 22,* 163 – 178.

Reicher, S., Spears, R., & Postmes, T. (1995). A social identity model of deindividuation phenomena. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol.6, pp.161 – 198). Chichester, UK: Wiley.

Reynolds, K. J., Bizumic, B., Subasic, E., Turner, J. C., Branscombe, N., Mavor, K. I., & Batalha, L. (2012). Social identity and personality processes: Non-aboriginal Australian identity and neuroticism. *European Journal of Social Psychology, 42*(2), 252-262.

Rosner, L., Winter, S., & Kramer, N. C. (2016). Dangerous minds? Effects of uncivil online comments on aggressive cognitions, emotions, and behavior. *Computer in Human Behavior*, *58*, 461-470.

Schmidt, J. (1998). Civility, enlightenment, and society: Conceptual confusions and Kantian remedies, *American Political Science Review 92*, 419–48.

Shils, E. (1992). Civility and civil society. In E. C. Banfield (Ed.) *Civility and citizenship* (pp. 1–16). New York: PWPA (Professors World Peace Academy).

Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology, 48,* 813-838.

Silva, L., Mondal, M., Correa, D., Benevenuto, F., & Weber, I. (2016, March). Analyzing the targets of hate in online social media. *In Tenth international AAAI conference on web and social media.*

Spears, R., Doosje, B., & Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: the role of group identification. personality and social psychology bulletin, 23 (5), 538-553.

Spears, R., Doosje, B., & Ellemers, N. (1999). Commitment and the context of social perception. In N. Ellemers, R. Spears, & B. Doosje (Eds.), *Social identity: Context, commitment, content* (p. 59–83). Blackwell Science.

Spears, R., & Postmes, T. (2015). Group identity, social influence, and collective action online. S. Shyam Sundar (Ed.) *The handbook of the psychology of communication technology*— pp. 23--46).

Stromer-Galley, J. (2007). Measuring deliberation's content: A coding scheme. *Journal of public deliberation, 3*(1).

Stroud, N. J., Van Duyn, E., & Peacock, C. (2016). *News commenters and news comment readers. Engaging News Project.* Retrieved from https://engagingnewsproject.org/wp-content/uploads/2016/03/ENP-News-Commenters-and-Comment-Readers1.pdf

Stryker, R., Conway, B. A., & Danielson, J. T. (2016). What is political incivility?. *Communication Monographs, 83*(4), 535-556.

Sunstein, C. R. (2009). *Going to extremes: How like minds unite and divide*. Oxford University Press.

Sunstein, C. R., & Vermeule, A. (2009). Conspiracy theories: Causes and cures. *Journal of Political Philosophy, 17*(2), 202-227.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of inter-group behavior. In S. Worchel & W. G. Austin (Eds.), *The psychology of intergroup relations* (pp. 7-24). Chicago: Nelson-Hall.

Turner, J. C. (1985). Social categorization and the self-concept: A social cognitive theory of group behavior. In E. J. Lawler (Ed.), *Advances in group processes: Theory and research* (Vol. 2, pp. 77–121). Greenwich, CT: JAI Press.

Unsworth, K. L., & Fielding, K. S. (2014). It's political: How the salience of one's political identity changes climate change beliefs and policy support. *Global Environmental Change, 27*, 131-137.

Valentino, N. A., Hutchings, V. L., Banks, A. J., & Davis, A. K. (2008). Is a worried citizen a good citizen? Emotions, political information seeking, and learning via the Internet. *Political Psychology*, *29*(2), 247 – 273.

Walther, J. B. (2011). Theories of computer-mediated communication and interpersonal relations. The handbook of interpersonal communication, 4, 443-479.

Zimbardo, P. G. (1969). The human choice: Individuation, reason, and order vs. deindividuation, impulse and chaos. In W. J. Arnold & D. Levine (Eds.), *Nebraska symposium on motivation* (pp. 237-307). Lincoln: University of Nebraska Press.

Appendix A. Measures

Affective responses toward political in- and outgroup members (Hwang et al., 2018)

[Answer options: not at all (1), a great deal (7)]

[RANDOMIZE THE ORDER OF THE EMOTIONS: ANGER, DISGUST, COMTEMPT]

(1) How strongly did the comments make you feel *anger* toward your political opposing Party?

(2) How strongly did the comments make you feel *disgust* toward your political opposing Party?

(3) How strongly did the comments make you feel *contempt* toward your political opposing Party?

Open-mindedness toward one's political out-group (Hwang et al., 2014)

Please indicate the extent to which you agree or disagree with the following statements.

[Answer options: strongly disagree (1), strongly agree (7)]

[RANDOMIZE THE ORDER]

(1) I felt more open to the views differing from my position on the issue.

(2) I got a better understanding of those who disagree with me on the issue.

[News Use] [Answer options: never (0), 7 (every day)]

(1) During a typical week, how many days do you watch news on television?

(2) During a typical week, how many days do you news on television read news in newspapers?

(3) During a typical week, how many days do you listen to news on the radio?

(4) During a typical week, how many days do you read news on online news websites?

(5) During a typical week, how many days do you read news on social media?

[Personal Identity Salience] Please indicate the degree to which they agree with the following statements. [Answer options: strongly disagree (1), strongly agree (7)] [RANDOMIZE THE ORDER OF THE STATEMENTS]

(1) I see myself as someone with individual characteristics

(2) I am different from other people

(3) I feel like a unique person.

[Demographic Information]

Age. Please indicate your age. [Numerical Entry Box]

Sex. Please indicate your sex.

a. Male

b. Female

c. Prefer not to respond

Ethnicity. Please select your ethnicity (You can select more than one option)

a. White

b. Black/African American

c. American Indian/Alaska Native

d. Asian

e. Native Hawaiian or Pacific Islander

f. Other

Political Ideology. When talking about politics, how would you describe your political views? [Answer options: very liberal (1), very conservative (7)]

Political Interest. How interested are you in politics and public affairs? [Answer options: not at all (1), very interested (7)]

Attention check question. It is very important to us that you were focused on this study while completing it. Were you able to give the study your full attention? There is no penalty if the answer is no, but it is very helpful to us to know the truth.

(1) Yes, I gave the study my full attention.

(2) No, I did not give the study my full attention.

[Endorsement of False Beliefs Measure]

All participants were asked to answer questions regarding the news article they were exposed to. Participants were asked to indicate the extent to which they disagree or agree with a series of statements.

Climate Change

How strongly do you agree or disagree with the following statements? Answer options range from "strongly disagree" (1) to "strongly agree" (7) for the following statements. [Randomized]

a) Most climate scientists believe that human activity is causing climate change.

b) Human activity is an important factor contributing to increases in the average surface temperature of the Earth.

c) Climate change is made up by globalists to instill fear.

d) Climate change has not caused any detrimental effect on the earth.

Voting Fraud

How strongly do you agree or disagree with the following statements? Answer options range from "strongly disagree" (1) to "strongly agree" (7) for the following statements. [Randomized]

a) There is no good evidence that non-citizens vote in large numbers in the U.S.

b) Voter fraud is very rare.

c) Double voting is widespread in the U.S.

d) Votes cast by people who died in an election year are often legitimate.

Nuclear Power

How strongly do you agree or disagree with the following statements? Answer options range from "strongly disagree" (1) to "strongly agree" (7) for the following statements. [Randomized]

a) Generating power with nuclear energy instead of coal would help reduce greenhouse gas emissions.

b) Nuclear power produces much less greenhouse gas than coal power stations.

c) Nuclear power plants produce greenhouse gases as a by-product of their operation.

d) Nuclear power plants emit much more greenhouse gases than fossil fuel sources do.

Russian Election Tampering

How strongly do you agree or disagree with the following statements? Answer options range from "strongly disagree" (1) to "strongly agree" (7) for the following statements. [Randomized]

a) Since the 2000 election, American voting procedures have only become safer.
b) Because state standards differ, tampering with election results is very difficult.
c) It is highly likely that a foreign power, including Russia, could directly alter American election outcomes by targeting voting procedures, including voting machines.
d) Broken seals on voting booths observed in the 2016 election indicated at least some tampering.

Appendix B. Article Stimuli

Republican-favored Falsehoods: Article 1 (Science)

Climate Change is not 'made up' [364 words]

Comprehensive national and international reports have offered warnings about the impacts of climate change. According to the United Nations report, climate change is threatening seafood supplies by heating the oceans dramatically. Not only that, climate change is fueling cyclones and floods and posing profound risks to the hundreds of millions of people living along the coasts.

But a post liked by thousands on Instagram and shared repeatedly throughout social media claims climate change isn't real. It says climate change is a "made-up catastrophe used by globalists to instill fear and guilt to tax, regulate, and remove our freedoms while pretending to be saving the planet." There's a lot to unpack in that statement. However, we'll focus on the core falsehood: that climate change is a "made-up catastrophe."

Climate change is actually understood through a large body of scientific evidence that has been gathered over many years. The theory of the greenhouse effect has been repeatedly proven since it was first proposed in 1824.

Today, NASA notes, studies show that "97 percent or more" of active climate scientists believe human-caused warming is occurring. The agency calls the fact that "Earth's climate is warming" a matter of "scientific consensus."

The 2018 National Climate Assessment (NCA) states that "global average temperature has increased by about 1.8°F from 1901 to 2016." It further says that "observational evidence does not support any credible natural explanations for this amount of warming; instead, the evidence consistently points to human activities, especially emissions of greenhouse or heat-trapping gases, as the dominant cause."

The U.N.'s Intergovernmental Panel on Climate Change found that it is extremely likely that the majority of the increase in global average surface temperature between 1951 and 2010 was due to human activities. Specifically, the increase has been influenced by human-produced greenhouse gases such as carbon dioxide, methane and nitrous oxide.

The U.N.'s 2018 special report warns of worsened risks, if trends continue. The worsened risks would include sea-level rise, loss of biodiversity, species extinction, crop loss, and limits on water supplies and economic growth. But to say climate change is a "made-up catastrophe" is to ignore the scientific conclusions established by actively publishing climate scientists from around the world.

Republican-favored Falsehoods: Article 2 (Politics)

No evidence that illegal votes were cast in the 2016 U.S. Presidential election [462 words]

President Trump argues that our electoral system is threatened by double voting, and by votes cast by dead people and noncitizens. According to him, "voter fraud is very, very common." It isn't, according to numerous studies. To the contrary, there is strong evidence that voter fraud is very rare.

Double voting occurs when a person votes more than once in an election. A team of researchers wanted to see how common this is. The researchers came from several prominent universities, including Harvard and Stanford. They worked together to scour election records. They were searching for voters who share a name and birth date. The number of duplicates is high, but that isn't evidence of double voting. The Birthday Paradox helps explain why. In a room of 23 people, there's a 50-50 chance that two will have the same birthday. By the same logic, in a country with millions of voters, duplicates will occur by chance in very large numbers. Analyzing 130 million ballots cast in the 2012 presidential election, the researchers estimate that only about 0.02 percent of votes cast were duplicate votes.

Trump has also cited a 2012 Pew Charitable Trust report as evidence that "dead people" vote in large numbers. But that's not what the report says. People who vote do sometimes appear in Social Security records as having died before Election Day. But this isn't evidence of widespread fraud. Almost all of these citizens voted using absentee ballots. They then died later in the election season. Others were flagged as dead because officials confused their names or mistook stray pen marks on checklists of voters.

In another report often cited by Trump, a pair of Old Dominion University professors examined data from an election study managed by Harvard and MIT. The researchers mistakenly interpreted the data to mean that 2.2% of non-citizens voted in 2010. Harvard researchers, more familiar with the data, explained that this estimate reflects mistakes made by people taking the survey. Individuals participating in the multi-year study would sometimes check the wrong box next to citizenship in one year. If someone was a citizen for several years, there is no reason they would suddenly become a non-citizen. Of the participants who consistently reported being non-citizens, none voted.

"The best facts we can gather to assess the magnitude of the alleged problem of voter fraud show that, although millions of people cast ballots every year, almost no one knowingly and willfully casts an illegal vote in the United States today," Lorraine Minnite, a Professor of Political Science at Rutgers University, writes in her book *The Myth of Voter Fraud*.

In short, voter fraud is very rare. Careful examination of voter records in a wide variety of ways offers consistent evidence that only eligible American citizens are voting.

Democrat-favored Falsehoods: Article 1 (Science)

Nuclear Power does not contribute to Climate Change [356words]

Most Americans understand that coal and gas are the biggest contributors to air pollution and climate change. Also, most people correctly identify wind and solar as clean energy sources. However, awareness on the energy-pollution-climate change connection among other fuels is more mixed. For example, the 2019 American Climate Perspective Survey shows that half of Americans falsely believe that nuclear energy contributes to climate change.

Nuclear power is generated by splitting atoms to release the energy held at the core, or nucleus, of those atoms. This process, nuclear fission, generates heat that is directed to a cooling agent—usually water. The resulting steam spins a turbine connected to a generator, producing electricity.

There are some stages of the nuclear process that use fossil fuels. For example, fossil fuels are sometimes used when building a nuclear power plant, but the amount of greenhouse gases released during any of those stages is less than what is emitted by power plants that use fossil-based fuels.

A “comparative life-cycle assessment” can help us better understand the significance of gas emissions from nuclear power. This assessment allows us to compare the amount of gas emitted by nuclear power to other energy sources. It shows the total greenhouse gas emissions per kilowatt-hour (kWh) of electricity.

One of the most comprehensive assessments was conducted by the Öko Institute in Germany. It is based on 10 years of research in the GEMIS (Global Emission Model for Integrated Systems) database. The GEMIS’ data showed that nuclear power produces about the same amount of greenhouse gases as electricity produced from various renewable sources. Also, the amount of greenhouse gases released by nuclear power is much less than that produced by fossil fuel sources. For example, nuclear power emits about 12 times less amount of gases than gas power stations. And it produces about 30 times less gas emissions than coal power stations.

The bottom line is the nuclear power can help reduce carbon dioxide emissions that contribute heavily to global warming. That could be important in large developing economies like China's and India's, which would otherwise rely heavily on burning large quantities of dirty coal and oil.

Democrat-favored Falsehoods: Article 2 (Politics)

No evidence that Russia altered vote tallies in the 2016 U.S. Presidential election [457 words]

Although Russia tried to tamper with voting machines, the evidence suggests that their efforts failed. Still, many who opposed Trump in the 2016 election are worried that the election results were fixed in his favor. For example, the liberal news site Daily Kos carried a photo of a damaged seal on a voting machine with a headline suggesting that someone tampered with the device.

When the rumor-debunking website Snopes followed up, there was a simple explanation. A manager with the firm that supplied the machine explained that a technician simply forgot to replace a warranty seal.
In terms of protecting the vote, those seals don't mean anything. "These are warranty seals used by technicians and should not be confused with security seals that the county would have used on Election Day," the manager wrote.

Each state sets its own standards for protecting the vote. They use different voting machines. They use different ways to double-check the accuracy of the count. Some states require photo identification and others don't. Cybersecurity experts say this variation alone makes systemic hacking unlikely. It would take too much work to penetrate enough systems to have any effect on the outcome.

Still, some people are worried. In June 2017 a classified National Security Agency report was leaked. The report shows that Russian intelligence carried out cyberattacks in 2016 on a company that supplies software for voting machines in eight states. But the report contains no evidence that any votes were changed as a result of the hack.

Voting systems analyst Philip Stark at the University of California, Berkeley says, "There's been no evidence of widespread voter fraud or widespread malfunction of equipment." Thad Hall agrees. Hall has co-authored several leading books and reports on election systems. He said that the 2000 election led to significant improvements. Many states now link their voter rolls to their driver's license database. They have also invested in more training for election workers. "Elections have become much more professional," Hall said. "There might be mistakes, but pulling off large-scale fraud would be a lot harder today."

During the hearing into his private conversations with President Trump, former FBI Director James Comey also weighed in on this issue. He testified that he had no doubt that the Russians attempted to interfere in the 2016 presidential election. He indicated that the Russians were behind hacking the email systems of the Democratic National Committee and Democratic Congressional Campaign Committee. He also confirmed that Russians initiated a cyber intrusion in state voter files.

But when asked whether Comey was confident that no votes cast in the 2016 presidential election were "altered", Comey responded with confidence: "When I left as director, I had seen no indication of that whatsoever." Comey's position on that has not changed.

Appendix C. Comments Stimuli

Republican-favored Falsehood 1 – Climate Change Comments

Civil Comments

- It strikes me some people still believe human-caused climate change is a hoax
- I don't understand why so many Republicans question climate change..
- Im not convinced by the evidence
- What's the truth?
- Could you read the article carefully and stop questioning climate change??
- I still think climate change by man is made up…what's happening now happened 100 years ago
- How can you think climate change is a hoax? i want to understand, but I just don't get it
- How in the world do people believe human activity affect climate change?
- Lol I cant believe some of you actually believe something like this article
- I'm confused

Uncivil Comments

- if you deny human-caused climate change, your **f@#$%^& stupid**![3]

[3] Bold words are uncivil words.

- Cant stand these **stupid wingnuts** anymore…The republicans deny everything
- This so-called evidence is **biggest f@#$%^& con job** in the last 100 years
- What's the truth?
- Stop questioning climate **change you're honestly a piece of garbage** please do something productive
- Climate change by man is **total BS**..what's happening now happened 100 years ago you **morons**
- WTF you seriously believe that climate change is a hoax? yall are **the most retarded people Ive ever seen**
- how the **f#$%^** do people think that human activity affect climate change?
- lmfao yall must be so **dumb**…**who the hell** believes something like this article???
- I'm confused

Republican-favored Falsehood 2 – Voter Fraud Comments

Civil Comments

- I don't buy this article…
- Trump is accurate when he talks about voter fraud!!!
- confusing
- republicans are biased against the facts, but I hope they see the facts soon
- I cant believe some of you think there were no illegal votes. People let anyone vote with an ID in cali and in cali, anyone can get an ID
- Republicans need to carefully read the details

- When are democrats going to admit the truth? Illegal votes should be dead!!
- Why are republicans still complaining? Trump won he has more important things to do than this
- If you read the article, you should know voter fraud is rare
- So did it happen or not?

Uncivil Comments

- this article is so clearly **BS directly from your lovely left**
- listen **morons**, Trump is accurate when he talks about voter fraud!!!
- confusing
- **facts are hard for Republicans**, but **they will soon learn what fools they have become**
- **WTF** who thinks that there were no illegal votes? you are the **stupidest people Ive ever seen** People let anyone vote with an ID in cali and in cali ANYONE can get an id, **STUPID**
- Republicans **don't care about the details**, they just **think in terms of their own narcissistic trends**
- When are you **freaking libtards** going to admit the truth? Illegal votes should be dead!!
- Ugh why are **repukes** still complaining?? Trump won he has better **shit** to do than this
- If you still think there was voter fraud after reading this article, you probably **don't have a brain**

- So did it happen or not?

Democrat-favored Falsehood 1 – Nuclear Power Comments

Civil Comments

- how in the world do people believe nuclear decreases gas emissions??
- I'm not convinced by the evidence
- I don't understand why Democrats can't see the benefits of nuclear…
- Lol How can you believe nuclear power does not contribute to co2 emissions?
- I can't understand those who oppose nuclear energy because all energy in the universe is ultimately nuclear
- it strikes me you think nuclear power is helping solve climate change
- Nuclear is the only solution that makes sense when you do the math
- I can't understand those who oppose nuclear energy because all energy in the universe is ultimately nuclear

Uncivil Comments

- how the **f#$%^** do people believe that nuclear power helps climate change?
- This so-called evidence is biggest **f@#$%^& con job**
- Cant stand these **stupid libtards** denying nuclear anymore…**The democrats knows nothing**
- What's the truth?
- lmfao you must be so dumb…**who the hell** believes nuclear doesn't contribute to co2 emissions?

- Nuclear is the only solution that makes sense **when you have a brain** to do even the simplest of calculations
- **WTF** you seriously believe that nuclear helps solve climate change? You are **the most retarded people** Ive ever seen
- Nuclear is the only solution that makes sense **when you have a brain** to do even the simplest of calculations, **stupid liberals**
- if you oppose nuclear energy, **your f@#$%^& stupid**! all the energy in the universe is ultimately nuclear
- I'm confused

Democrat-favored Falsehood 2 – Russian Election Tampering Comments

Civil Comments

- If you read the article, you should know our election was not hacked by a foreign country
- Why are democrats still complaining? The election is over let's move on
- confusing
- I'm not persuaded by this article
- Dems need to carefully read the details…
- I can't believe some of you actually think that Russians didn't interfere the election
- democrats are biased against the facts, but I hope they see the facts soon

- Well, sometimes it's hard to know what to believe with everything the CIA and FBI are saying
- When are republicans going to admit the truth?? Russian bots certainly helped trump to be elected
- so did it happen or not?

Uncivil Comments

- If you still think our election was hacked after reading this article, you probably **don't have a brain**
- why are **freaking libtards** still complaining? you lost get over it
- confusing
- This article is so **clearly BS directly from your lovely right**
- Democrats **don't care about the details**, they just **think in terms of their own narcissistic trends**
- **WTF** who doesn't believe that Russians interfered the election? **So stupid**
- **facts are hard for Democrats**, but they will soon learn **what fools they have become**
- Well, **who the hell** believes anything the CIA or FBI says?? **liars**
- When are **repukes** going to admit the truth? Russian bots elected **dump trump** as president
- so did it happen or not?

Screenshot of Comments Stimuli

Appendix D. Means and Standard Deviations of Perceived Incivility of Comments by Comment Incivility (Pretest 3)

Table 3

Means and Standard Deviations of Perceived Incivility of Comments by Comment Incivility

	Perceived Incivility of Comments Measures								
	Display of Disrespect			Restricting Freedom			Being Uncivil		
	M (*SD*)			M (*SD*)			M (*SD*)		
False Belief Issues	Civil	Uncivil	*t* (*df*)	Civil	Uncivil	*t* (*df*)	Civil	Uncivil	*t* (*df*)
Climate Change	4.04 (1.79)	6.28 (1.31)	5.38 (54)***	3.56 (1.78)	5.08 (1.78)	3.15 (53)***	3.41 (1.47)	6.24 (1.02)	3.15(53)**
Voter Fraud	4.15 (1.46)	6.11 (1.03)	5.71 (52)***	3.48 (1.65)	4.83 (1.79)	2.92 (54)**	3.70 (1.54)	5.90 (1.08)	6.20 (54)***
Nuclear Power	3.74 (1.48)	5.94 (1.37)	6.12(61)***	3.06 (1.53)	4.03 (2.02)	2.12(61)*	3.35 (1.28)	5.78 (1.26)	7.57(61)***
Russian Election Tampering	3.84 (1.53)	5.84 (1.35)	5.53(61)***	3.06 (1.50)	4.06 (1.81)	2.37(61)*	3.39 (1.38)	5.44 (1.46)	5.72(61)***

Notes. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

Appendix E. Perception of Uncivil Comments by Falsehoods (Republican-favored versus Democrat-favored false beliefs)

Republican-favored False Beliefs

Comments about Climate Change False Belief

There was a significant main effect of uncivil comments on perceived incivility of comments, F (1, 51) = 30.18, $p < .001$, partial $\eta^2 = .37$. Participants assigned to incivility condition perceived the comments significantly more uncivil (M = 5.85, SD = 1.43) compared to those assigned to civil condition (M = 3.67, SD = 1.49). The type of falsehood (ingroup-favored falsehood or outgroup-favored falsehood) did not influence their perception of uncivil comments about climate change false claim, F (1, 51) = .16, p = .70. Perception of incivility of comments was not influenced by political group identity of participants, F (1, 51) = .60, p =.44, partial η^2=.01.

Comments about Voter Fraud

There was a significant difference in perception of incivility of comments between those assigned to uncivil comments condition (M = 5.61, SD = 1.27) and civil condition (M = 3.77, SD = 1.21), F (1, 50) = 28.48, $p < .001$, partial η^2=.36. Perception of incivility of comments did not differ by the favored political group of the voter fraud false claim, F (1, 50) = .16, p = .69, partial η^2=.003. That is, both Democrats and Republicans perceived uncivil comments more uncivil than civil comments. There was no significant interaction effect of incivility of comments and political affiliation of the false belief, F (1, 50) = 1.04, p = .31, partial η^2=.02.

Democrat-favored False Beliefs

Comments about Nuclear Power False Belief

There was a significant main effect of uncivil comments on perceived incivility of comments, F (1, 51) = 30.18, p < .001, partial η^2= .37. Uncivil comments were perceived to be significantly more uncivil (M = 5.25, SD = 1.20) than civil comments (M = 3.39, SD = 1.21). Political affiliation of the nuclear power claim (Democrat) did not influence participants' perception of uncivil comments, F (1, 51) = .16, p = .70. In other words, there was no significant difference in perception of incivility of comments between Democrats (M = 4.43, SD = 1.53) and Republicans (M = 4.16, SD = 1.52). Uncivil comments were perceived to be uncivil regardless of political group identity of participants, F (1, 51) = .60, p =.44, partial η^2=.01.

Comments about Russian Election Tampering False Belief

There was a significant difference in perception of incivility of comments between those assigned to uncivil comments condition (M = 5.61, SD = 1.27) and civil condition (M = 3.77, SD = 1.21), F (1, 50) = 28.48, p < .001, partial η^2=.36. Perception of incivility of comments did not differ by participants' political group identity, F (1, 50) = .16, p = .69, partial η^2=.003. There was no significant interaction effect of incivility of comments and political affiliation of the false belief, F (1, 50) = 1.04, p = .31, partial η^2=.02.

Appendix F. Distractor Task

As part of this study, we would like to better understand how you process images.

Please take one minute to compare the two pictures shown on the next page, counting how many differences you can see. After the minute is up, the images will be removed and you will be asked to enter the number of differences you spotted.

Count how many differences you see. You have one minute.

[Two pictures will be shown here]

How many differences between the two pictures shown did you see? [Text Entry]

Appendix G. Perceived Importance of Identity Measure

Now, we will ask you a series of questions about your attitudes and feelings. There are no right or wrong answers. Please just tell us your opinions. There are different ways in which people think about themselves. These items describe different aspects of identity. Please read each item carefully and consider how it applies to you. Fill in the blank next to each item by choosing a number from the scale below:

1 = Not important to my sense of who I am

2 = Slightly important to my sense of who I am

3 = Somewhat important to my sense of who I am

4 = Very important to my sense of who I am

5 = Extremely important to my sense of who I am

[1 – 20 will be shown to Republicans & 1-10 & 21 – 30 will be shown to Democrats]

[The order of the options will be randomized]

1. My sense of humor
2. Enjoying the hobbies I enjoy
3. My job and/or career path
4. The places to which I have travelled
5. My unique personality
6. My appearance (hair, height, etc.)

7. The food I like
8. My unique experiences
9. My outlook on life
10. The way I spend my free time
11. Being Republican
12. Being a conservative
13. Respecting family values
14. Respecting authority
15. Being patriotic
16. Standing with my group, family, nation
17. Valuing traditions
18. Striving to live in a noble way
19. Being pure and decent
20. Believing in God, a higher being
21. Being Democrat
22. Being a liberal
23. Wanting the equality of all people
24. Valuing fairness
25. Avoiding harm to others
26. Doing the right things to ensure fair treatment for all
27. Caring for someone weak or vulnerable
28. Compassion for those who are suffering

29. Protecting others

30. Kindness and gentleness

Appendix H. Interaction Plots for Study 2

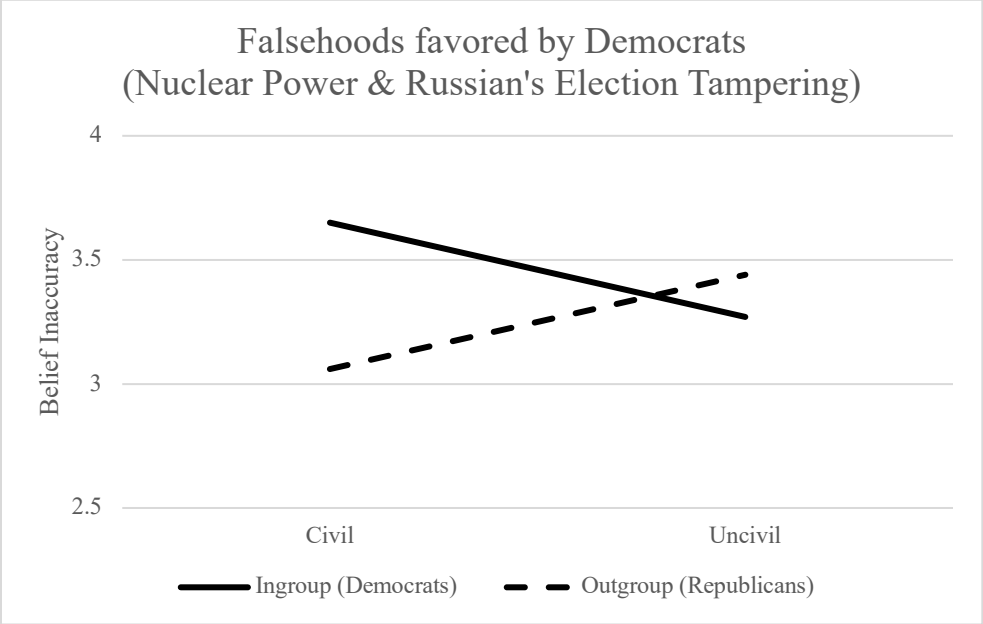

Figure 1 Interaction between Incivility of Comments and Political Identity to Predict Endorsement of Falsehoods favored by Democrats

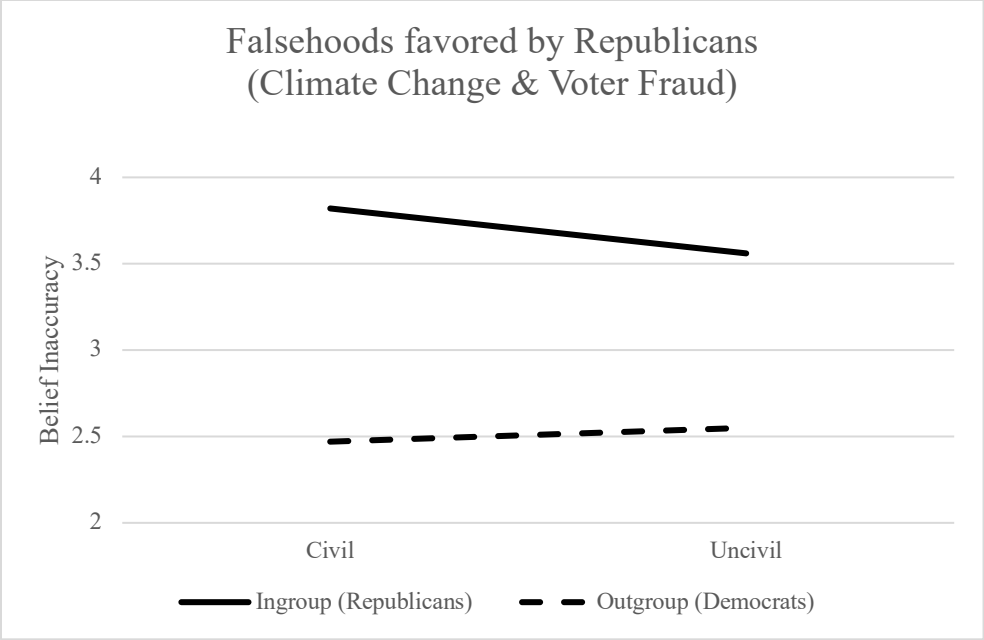

Figure 2 Interaction between Incivility of Comments and Political Identity to Predict Endorsement of Falsehoods favored by Republicans

Appendix I. Study 2 Means and Standard Deviations of False Beliefs by Incivility of Comments and Political Group Identity

Table 2

Study 2 Means and Standard Deviations of Republican-favored False Belief Inaccuracy by Incivility of Comments and Political Group Identity

	Climate Change		Voter Fraud	
	Uncivil Comments	Civil Comments	Uncivil Comments	Civil Comments
Democrats (Outgroup)	2.19 (1.14)	2.19 (1.26)	2.92 (1.23)	2.75 (1.09)
	n = 51	*n* = 49	*n* = 51	*n* = 49
Republicans (Ingroup)	3.09 (1.41)	3.61 (1.46)	4.04 (1.27)	4.02 (1.23)
	n = 51	*n* = 51	*n* = 51	*n* = 51

Table 3

Study 2 Means and Standard Deviations of Democrat-favored False Belief Inaccuracy by Incivility of comments and Political Identity

	Nuclear Power		Russians' Election Tampering	
	Uncivil Comments	Civil Comments	Uncivil Comments	Civil Comments
Democrats (Ingroup)	2.62 (1.17) *n* = 45	3.23 (1.09) *n* = 53	3.92 (1.12) *n* = 45	4.06 (1.23) *n* = 53
Republicans (Outgroup)	3.31 (.93) *n* = 52	2.77 (1.13) *n* = 44	3.57 (1.00) *n* = 52	3.35 (1.07) *n* = 44

Appendix J. Study 2 Post-hoc Analyses

The Interaction Effect of Incivility of Comments and Political Affiliation of False Beliefs by Issues

Falsehoods Favored by Republicans

Climate Change False Belief. There was no main effect of uncivil comments on false belief about climate change, F (1, 195) = 2.21, p = .14, partial η^2=.01, (Uncivil: M = 2.63, SD = 1.35; Civil: M = 2.95, SD = 1.54). However, political group affiliation of the climate change false belief (Republican-favored false hood) significantly influenced participants' belief inaccuracy, F (1, 195) = 37.04, p < .001, partial η^2=.16, meaning Democrats (M = 2.20, SD = 1.20) were less likely to endorse the false claim than Republicans (M = 3.35, SD =1.45). There was no difference in belief inaccuracy between those seeing uncivil comments and those seeing civil comments, regardless of whether each participant's group position is matched with the favored group of the issue or not, F (1, 195) = 1.73, p =.19, partial η^2=.009.

Voter Fraud False Belief. There was no main effect of uncivil comments on false belief about voter fraud, F (1, 195) = .49, p = .49, partial η^2=.003 (Uncivil: M = 3.49, SD = 1.37; Civil: M = 3.40, SD = 1.33). However, political group affiliation of the voter fraud claim (Republican-favored falsehood) significantly influenced participants' belief inaccuracy, F (1, 195) = 51.40, p < .001, partial η^2=.21. That is, Republicans (M = 4.05, SD = 1.24) were more likely to endorse voter fraud false claim than Democrats (Democrats: M = 3.83, SD = 1.16). There was no interaction effect of incivility of

comments and favored political group of the belief, F (1, 195) =.16, p =.69, partial η^2=.001.

Falsehoods Favored by Democrats

Nuclear Power False Belief. Incivility of comments did not significantly influence on endorsement of false belief about nuclear power, F (1, 187) = .09, p =.77, partial η^2<.001 (Uncivil: M = 3, SD = 1.10; Civil: M = 3.27, SD = 1.06). Political affiliation of the belief did not significantly influence individuals' endorsement of nuclear power false belief, F (1, 187) = .45, p = .50, partial η^2=.002. A significant interaction effect of uncivil comments and political affiliation of participants on individuals' 'nuclear power' belief was found, F (1, 187) = 15.01, p <. 001, partial η^2=.07. That is, Democrats, who are likely to be predisposed to believe nuclear power false claim, become more accurate about their belief about nuclear power decreasing greenhouse gases when reading uncivil comments (M = 2.62, SD = 1.17), compared to when reading civil comments (M = 3.27, SD = 1.06). In contrast, Republicans who read uncivil comments become less accurate about their nuclear power belief (M = 3.32, SD = .93) than those who read civil comments (M = 2.77, SD =1.13).

Russian Election Tampering False Belief. Political alignment of the false claim (Democrat-favored falsehood) significantly influenced individuals' endorsement of Russian election tampering false belief, F (1, 186) = 9.79, p = .002, partial η^2=.05. That is, Democrats were more likely to endorse the Russian election tampering claim (M = 3.99, SD = 1.18) than Republicans (M = 3.49, SD = 1.03). There was no significant interaction effect of uncivil comments and favored political group of the false belief on

individuals' endorsement of false belief about Russian election tampering, F (1, 186) = 1.38, p =.24, partial η^2=.007. But the interaction pattern was similar to that of nuclear power false belief. The mean of Republicans' belief inaccuracy about Russian election tampering was higher (M = 3.57, SD = 1) among those seeing uncivil comments than those seeing civil comments (M =3.35, SD =1.07). Democrats showed the opposite pattern. Democrats' reported beliefs were slightly more accurate when they read uncivil comments (M = 3.92, SD =1.12) than when they read civil comments (M = 4.06, SD =1.23).

Appendix K. Study 3 Post-hoc Analyses

Study 3 Post-hoc Analyses: The effect of Political Group Identity Prime on Endorsement of False Beliefs by Issues

Falsehoods favored by Republicans

Climate Change False Belief. No significant difference in participants' climate change false belief was found between those who were assigned to political group identity (PGI) condition ($M = 2.58$, $SD = 1.49$) and those assigned to personal identity (PSI) condition ($M = 2.65$, $SD = 1.47$), F (1, 188) = .03, p =.87, partial η^2<.001. However, political affiliation of false belief (Democrats) significantly influenced individuals' endorsement of climate change false belief, F (1, 188) = 64.94, $p < .001$, partial η^2= .26. That is, Republicans, who are more likely to be predisposed to believe the climate change false claim, ($M = 3.39$, $SD = 1.38$) tend to report higher level of belief inaccuracy than Democrats ($M = 1.89$, SD = 1.16). There was no interaction effect of political group identity prime and the favored political group of the issue, F (1, 188) = .52, p = .47, partial η^2=003 (Democrats in PGI: $M = 1.95$, $SD = 1.21$; Democrats in PSI: M=1.84, SD=1.13; Republicans in PGI: $M = 3.30$, $SD = 1.46$; Republicans in PSI: M = 3.46, $SD = 1.32$).

Voter Fraud False Belief. There was no main effect of political group identity on participants' endorsement of false beliefs about voter fraud (PGI: $M = 3.09$, $SD = 1.53$;

PSI: *M* = 3.41, *SD* = 1.56), *F* (1, 187) =2.08, *p* = .15, partial η^2=.01. However, favored political group of the belief influenced participants' voter fraud belief inaccuracy, *F* (1, 187) =46.51, *p* < .001, partial η^2=20. Republicans (M = 3.95, *SD* = 1.37) reported higher level of belief inaccuracy than Democrats (*M* =2.57, *SD* = 1.40). No interaction effect was found, *F* (1,187) = 1.27, *p* = .26, η^2=.007 (Democrats in PGI: *M* =2.54, *SD* = 1.43; Democrats in PSI: *M* = 2.60, *SD* = 1.40; Republicans in PGI: *M* = 3.68, *SD* = 1.42; Republicans in PSI: *M* = 4.20, *SD* = 1.30).

Falsehoods favored by Democrats

Nuclear Power False Belief. No significant difference in participants' nuclear power false belief was found between those who were assigned to personal identity condition (*M* = 2.91, *SD* = 1.12) and those assigned to political group identity condition (*M* = 3.13, *SD* = 1.16), *F* (1, 196) = 1.72, *p* =.19, partial η^2 = .009. The favored political group of the nuclear power false claim did not exert any effect on participants' belief inaccuracy about nuclear power, *F* (1, 196) = .16, *p* = .69, partial η^2=.001 (Outgroup-favored, Republicans: *M* = 3.05, *SD* = 1.21; Ingroup favored, Democrats: *M* = 3.05, *SD* = 1.08). There was no interaction effect of political group identity prime and political group favorability of the belief on endorsement of false belief about nuclear power, *F* (1, 196) = .18, *p* =.68, partial η^2=.001 (Democrats in PGI: *M* = 3.13, *SD* = 1.24; Democrats in PSI: *M* = 2.85, *SD* = 1.17; Republicans in PGI: *M* = 3.13, *SD* = 1.08; Republicans in PSI: *M* = 2.98, *SD* = 1.08).

Russian Election Tampering False Belief. Individuals' belief inaccuracy about Russian's election tampering was not influenced by political group identity salience, *F* (1,

195) = 1.37, p=.24, partial η^2= .007 (PGI: *M* = 3.81, *SD* = 1.20; PSI: *M* = 3.61, *SD* = 1.25). Political affiliation of the issue significantly influenced participants' likelihood of endorsing false beliefs about Russian's election tampering, *F* (1, 195) = 16.85, *p* < .001, partial η^2=.08. That is, Democrats (*M* = 4.05, *SD* = 1.19) were more likely to endorse false beliefs about Russians' election tampering than Republicans (*M* = 3.36, *SD* = 1.16). There was no interaction effect of political group identity salience and the favored political group of the issue, *F* (1, 195) = .04, *p* =.85, partial η^2< .001. (Democrats in PGI: *M* = 4.16, *SD* = 1.10; Democrats in PSI: *M* = 3.94, *SD* = 1.27; Republicans in PGI: *M* = 3.45, SD=1.20; Republicans in PSI: *M* = 3.28, *SD* =1.14).

Appendix L. Correlation Matrices

Table 4

Study 1 Zero-order correlation

	Political Ideology	Political Interest	News (politics)	News (science)	Anger toward political opponents	Disgust toward political opponents	Contempt toward political opponents	Open-mindedness	Perceived incivility (PI) (disrespect)	Perceived incivility (PI) (restricting freedom)	Personal Identity salience (PSI)	Political Identity Salience (PIS)	Political Identity strength (PIST)
Political Ideology	1												
Political Interest	-.121	1											
News (politics)	-.050	.868**	1										
News (science)	.018	.535**	.555**	1									
Anger	-.237*	.215*	.237*	.060	1								
Disgust	-.277**	.247**	.226*	.136	.780**	1							
Contempt	-.209*	.312**	.344**	.139	.623**	.551**	1						
Open-mindedness	.357**	-.169	-.094	.067	-.024	-.053	.014	1					
PI (disrespect)	-.193*	.164	.140	.206*	.303**	.245**	.242*	-.062	1				
PI (freedom)	.221*	.054	.127	.112	.113	.030	.246**	.249**	.181	1			
PSI	.096	.244*	.159	.142	-.189*	-.110	-.174	.014	.241*	-.008	1		
PIS	.036	.413**	.345**	.388**	.463**	.440**	.240	.001	.265*	-.017	.160	1	
PIST	-.106	.397**	.341**	.274**	.348**	.338**	.204*	-.158	.177	.062	.108	.815**	1

Notes. $^{**}p < .01$, $^{*}p < .05$

Table 5

Study 2 Zero-order correlation

	Political Ideology	Political Interest	News (politics)	News (science)	Perceived incivility (PI) (disrespect)	Perceived incivility (PI) (restricting freedom)	Personal Identity salience (PSI)	Political Identity strength (PIST)	Political Identity Salience (PIS)	Climate belief	Voter belief	Nuclear belief	Russian belief
Political Ideology	1												
Political Interest	-.021	1											
News (politics)	.005	.880**	1										
News (science)	-.020	.612**	.679**	1									
PI (disrespect)	-.030	-.033	-.010	.141**	1								
PI (freedom)	.091	.057	.038	.143**	.503**	1							
PSI	.017	.250**	.267**	.263**	.088	.154**	1						
PIST	.023	.187**	.212**	.102*	.055	.030	.109*	1					
PIS	.067	.285**	.290**	.129*	.038	.136**	.083	.706**	1				
Climate belief	.452**	-.075	-.131	-.169*	-.089	.153*	-.019	.018	-.047	1			
Voter belief	.446*	-.167*	-.176*	-.202**	-.070	.036	-.216**	.113	.035	.490**	1		
Nuclear belief	.081	-.212**	-.195**	-.052	.102	.396**	.011	-.034	-.052	c	c	1	
Russian belief	-.167*	-.037	-.014	.079	.141	.162*	.024	-.031	-.019	c	c	.381**	1

Notes. $^{**}p < .01$, $^{*}p < .05$, c. Cannot be computed because at least one of the variables is constant

Table 6

Study 3 Zero-order correlation

	Political Ideology	Political Interest	Climate belief	Voter belief	Nuclear belief	Russian belief	Personal Identity salience (PSI)	Political Identity Salience (PIS)	Political Identity strength (PIST)
Political Ideology	1								
Political Interest	.069	1							
Climate belief	.524**	.045	1						
Voter belief	.451**	-.019	.578**	1					
Nuclear belief	-.008	-.275**	c	c	1				
Russian belief	-.251**	-.031	c	c	.219**	1			
PSI	.002	.272**	-.007	-.072	-.044	.036	1		
PIS	.009	.358**	.093	.025	.088	-.108	.283**	1	
PIST	.005	.392**	.139	.053	.029	-.029	.257**	.773**	1

Notes. $^{**}p < .01$, $^{*}p < .05$, c. Cannot be computed because at least one of the variables is constant