HOW DO NEWS FRAMES INFLUENCE MASS POLITICAL POLARIZATION?

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ABSTRACT

Communication scholars are beginning to pay more attention to the role of media in political polarization with studies on the effects of partisan media and selective exposure on polarization. However, the way media portray political reality may also cause mass political polarization. This dissertation attempts to explore how journalistic routine leads to political polarization. News media and journalists tend to focus on political conflicts between major parties rather than on issue content. Does this concerning news reporting behavior encourage the psychological processes of polarization?

By linking framing effect theory with social identity and self-categorization theories, this study explores how news frames affect political polarization of audiences through party identification processes. The theories of social identity and self-categorization suggest that intergroup conflict makes group identity salient, and when group identity is salient, it becomes a basis for perception and judgment. Based on that, this dissertation empirically examined the process of [political conflict news frame → party identity salience → political polarization] by manipulating group cue and level of conflict in a news story about genetically modified foods in a 2 (group cue: political frame vs. scientific frame) × 2 (level of conflict: conflict frame vs. consensus frame) web-based experiment (N = 367).

The results showed that political conflict news frame positively affected party identity salience, perceived polarization, and attitude polarization, but did not influence affective polarization. In addition, mediation tests suggested that party identity salience did mediate the
effects of political conflict news frame on perceived polarization and attitude polarization. However, a mediating effect of party identity salience on affective polarization was not found.

This study empirically showed that political conflict news frames can accentuate party identity salience when partisan audiences process the news story and that party identity salience is a key factor in explaining partisan audiences’ political polarization over an issue. Political conflict news frame plays an important role as a contextual/situational factor that momentarily increases people’s political identity salience, resulting in perceptual and attitudinal political polarization. Theoretical and practical implications as well as directions for future study are discussed.
DEDICATION

This dissertation is dedicated to everyone who has made this journey possible.
LIST OF ABBREVIATIONS AND SYMBOLS

$df$  Degrees of freedom: number of values free to vary after certain restrictions have been placed on the data

$F$  Fisher’s $F$ ratio: A ratio of two variances

$M$  Arithmetic mean

$N$  Sample size

$p$  Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value

$r$  Pearson product-moment correlation

$SD$  Standard deviation

$SE$  Standard Error

$t$  Computed value of $t$ test

$\eta^2$  the proportion of variance that is accounted for

$<$  Less than

$>$  Greater than

$=$  Equal to

$\%$  Percent

ANOVA Analysis of variance

GMF Genetically Modified Foods
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CHAPTER 1

INTRODUCTION

Republicans and Democrats have become more divided along ideological lines. Partisan antipathy has become deeper and more extensive, and animosity toward the opposing party is also broader and deeper than in the last two decades (Pew Research Center, 2014). Communication scholars have suggested various factors to explain this phenomenon of political polarization. In the current media landscape, increasingly partisan media and intensifying selective exposure invoke partisan identities by which audiences understand issues through the lens of partisanship and form polarized opinions following their predispositions (Garrett et al., 2014; Levendusky, 2013; Mutz, 2006; Price, 1989; Smith & Searles, 2012; Stroud, 2010).

However, there have been few studies on how political polarization is affected by the media’s presentation of political reality, not just by partisan media, but also by journalistic practices of news reporting. As prior studies on news framing effects suggest, the way people understand an issue is likely to vary depending on how a given issue is presented in the news media. That is, the news frames that journalists use provide citizens with a basic tool kit of ideas they can apply to thinking and talking about politics and public affairs (Gamson, 1992). Given that news frames serve to limit and direct the things audiences consider when they think about politics (Tewksbury, Jones, Peske, Raymond, & Vig, 2000), systematic investigation of how news frames can contribute to political polarization would broaden our understanding of the role of news media in political polarization.
How do the media portray or frame the political world in general? Scholars have expressed concern that news media and journalists tend to focus on political conflicts between the two major parties rather than on issue content (Cappella & Jamieson, 1997; Mutz, 1995; Patterson, 1993). These conflict news frames make complex and substantive debates into a simplistic two-sided competition between individuals, groups, or institutions by emphasizing friction (Bennett, 1996; Patterson, 1993). If the news media present an issue or a policy as a political conflict between Republicans and Democrats, audiences can perceive the issue to be more politically polarized and may consequently develop more polarized perceptions, affects, and attitudes.

This expectation can be explained by social identity theory (Tajfel, 1978; Tajfel & Turner, 1986). Intergroup conflict is one of the strongest factors in making group identity salient (Grant, 1991; Sherif, 1966; Tajfel & Turner, 1979). When group identity is salient, it becomes a basis for social perception and judgment (Tajfel, Billig, Bundy, & Flament, 1971; Reid, 2012). In particular, a conflict situation can act as a threat to an ingroup from the outgroup and be more likely to lead to biased perception (Hornsey & Imani, 2004; Hornsey, Oppes, & Svensson, 2002). Along this line of reasoning, news frames that heighten political conflict between two parties may lead to mass political polarization.

Corresponding to recent growing concerns about political polarization, the overall purpose of this dissertation is to explore whether and how media’s political conflict news frames make people’s perception, emotion, and attitude on social issues and/or policies more politically polarized. This study predicts a process: [political conflict news frame \( \rightarrow \) party identity salience \( \rightarrow \) political polarization]. The present study predicts that the effects of political conflict news frames are not limited to one facet of political polarization. Perceptual, emotional and attitudinal aspects of political polarization are examined throughout the study.
In order to gain a thorough understanding, Chapter 2 will review the literature related to this process. Four broad aspects are reviewed: the role of media in political polarization, how political conflict news frames influence political polarization, the underlying cognitive process of the framing effect on political polarization, and party identification effects on individual-level political polarization.

First, the “media and political polarization” section reviews the role of media in political polarization. Previous studies show that increasing partisan media and selective exposure can lead people to have more extreme views or feelings that reinforce their political predisposition, resulting in mass political polarization.

Second, the “political conflict frame and political polarization” section reviews scholars’ concerns about the tendency of media to highlight aspects of political confrontation between opposing political groups. This study defines a news frame that highlights tension or conflict between opposing political groups as a “political conflict frame” and suggests possible effects of this frame on political polarization.

Third, the “underlying cognitive processes of framing effect on political polarization” section argues that political conflict news frames make party identity more salient, and this makes individuals see the world in terms of political ingroup-outgroup dynamics. This party identification process leads people to have more politically polarized perception, affect, and/or attitude. Studies about the psychological mechanism of framing and social identity theory are reviewed to explain the arguments.

The fourth section reviews party identification effects on three types of political polarization. As an outcome of the debate over the extent of elite and mass levels of political polarization, alternative conceptualizations of political polarization have been proposed recently,
such as affective polarization and perceived polarization (Iyengar, Sood, & Lelkes, 2012; Van Boven, Judd & Sherman, 2012). In this study, the concept of political polarization is separated into three different levels: perceived polarization (people’s belief that Republicans and Democrats in general have polarized views along party lines), affective polarization (dislike for the opposing party increases), and attitude polarization (individuals’ issue position becomes more polarized in line with their party’s position).

So far, studies have investigated different types of political polarization separately (e.g., Garrett et al., 2014; Levendusky & Malhotra, 2013), rather than in a synthesized manner. So, it is not clear whether a certain factor/situation has similar effects on all different types of political polarization or affects only some types of polarization variables but not others. For example, Hwang, Kim, and Huh (2014) showed that exposure to polarized online discussion (i.e., uncivil online debates) did not have a significant effect on attitude polarization, but it did have a significant effect on perceived polarization, which led to decreased positive expectation for public deliberation. Thus, this study attempts to explore whether the political conflict news frame affects all three types of political polarization (i.e., perceptual, emotional, and attitudinal) or only certain types. It is hoped that such examination of the theoretical generality of the proposed mechanism through internal replication across three types of political polarization can strengthen the validity of the study findings.

Chapter 3, the method section, presents the experimental design, procedure, and measurements used in the study. In order to examine the process of [political conflict news frame → party identity salience → political polarization], the study will employ a 2 (group cue: political frame vs. scientific frame) × 2 (level of conflict: conflict frame vs. consensus frame) web-based experiment. At first, the study empirically examines the effects of a political conflict
frame by manipulating group cue and level of conflict in a news story. Political frame (in comparison with scientific frame) is manipulated to examine whether the mere trigger of party identity can influence political polarization. On top of that, conflict frame (in comparison with consensus frame) is manipulated in order to examine whether the highlighted conflict situation can interact with party cue and lead to more intergroup biases and polarization based on social identity theory. Furthermore, the current study examines whether party identity is actually salient through the political conflict frame, and if it is, whether it leads to political polarization. Therefore, the experiment employs a lexical task and measure of participants’ reaction time for a mediation test on salience of party identity.

Subsequently, Chapter 4, the results section, reports statistical results of analyses according to eleven hypotheses. It consists of five analyses of framing effects on party identity salience, perceived polarization, affective polarization, attitude polarization, and mediation tests.

Finally, the discussion in Chapter 5 offers a review of the results and a discussion of the theoretical and practical implications of the study, limitations, and directions for future studies.

In summary, this study is inspired by a concern about journalistic practices which often highlight political conflict. This experimental study can add insights for journalistic practice as well as elucidate the media’s political role in terms of how an issue is considered with political lenses and its effects on political polarization. Media reporting with political conflict frames that highlight politicians’ voices and inter-party conflict can make people think about issues as a type of political strife and may thus deprive publics of an opportunity to think more about the issue or content of a policy per se. Of course, a policy inherently includes party-related aspects, but media’s reporting activity which emphasizes political strife can interrupt deliberation about the
issue itself. In particular, this study shows how political conflict news frames produce mass political polarization, whether it is attitudinal, affective, and/or perceptual.
CHAPTER 2
LITERATURE REVIEW

Media and Political Polarization

Political polarization means increasing ideological differences between the two major political parties and increasing ideological homogeneity within the parties, meaning that the distributions on a liberal-conservative scale lie at the two extremes, not near the center (Fiorina & Abrams, 2008; Theriault, 2013). There is ample evidence of political polarization at an elite level (e.g., Fleisher & Bond, 2004; Hetherington, 2001; Layman, Carsey, & Horowitz, 2006; McCarty, Poole, & Rosenthal, 2006). Over the last quarter-century, elected representatives and activists from the major parties have become more ideologically distinct from one another and more homogeneous within parties (McCarty et al., 2006). Policy gaps between Democrats and Republicans in government (Poole & Rosenthal, 2001; Stonecash, Brewer, & Mariani, 2003), ideological splits between the two parties in Congress (Fleisher & Bond, 2000), and the differences of party activists between Democrats and Republicans on economic, racial, and cultural issues (Layman, Carsey, Green, Herrera, & Cooperman, 2010) have been widening.

However, there is mixed evidence on polarization at the mass level. Although some scholars have detected little or no indication of increased mass polarization (Fiorina & Abrams, 2008; Fiorina, Abrams, & Pope, 2005; Levendusky, 2009), others argue that as party elites become more divided, they send more extreme ideological cues to voters such that ordinary people are more likely to adopt their party’s position on issues (Abramowitz, 2010). Layman and
Carsey (2002b) argue that people will adjust their political views to align with those of the party they support. Therefore, ordinary Democrats and Republicans become more polarized along their ideological or party lines (Jacobson, 2006; Levendusky, 2009). Some evidence shows that the number of ideological moderates has declined, and the average distance between the ideological self-placement of non-activist Democrats and Republicans has increased (Abramowitz & Saunders, 2008; Campbell, 2008; Jacobson, 2000).

Media may play an important mediating role in these mixed findings about mass level political polarization. Media outlets provide viewers with an echo chamber of politicians’ party-oriented or issue-oriented cues. This leads the mass public to think about new issues or politics on the basis of partisan elite views, which can facilitate mass polarization (Hetherington, 2001; Sunstein, 2009; Zaller, 1992). For instance, Rutchick, Smyth, and Konrath (2009) showed a possibility of the effects of media portrayals on polarization. Their experimental findings revealed that the media exaggerated the red-blue electoral map to forcibly categorize states’ political attitudes in binary fashion, leading participants to have more polarized perceptions, even when numeric data suggested less division.

There is a view that media might logically influence levels of mass political polarization. Previous studies have investigated how media factors (e.g., partisan media/media fragmentation) and audience factors (e.g., selective exposure) influence polarization. With the rise of cable television, talk radio, and the Internet, America has begun to return to its more partisan roots. A number of partisan outlets available to viewers explicitly advocate a particular point of view. Empirical findings have revealed mainstream news outlets’ ideological differences. Specifically, Fox News coverage is more likely to depict Republicans positively, and Democrats negatively than either CNN or MSNBC (Holtzman, Schott, Jones, Balota, & Yarkoni, 2011; McLemore,
Kim, Mohini, & Morton, 2013). Scholars argue that partisan media will engender attitudinal polarization because like-minded news programs invoke partisan identity so that viewers understand issues through the lens of partisanship (Goren, Federico, & Kittilson, 2009; Price, 1989). For instance, Levendusky (2013) found that partisan media outlets polarize viewers by making relatively extreme citizens more extreme. In particular, consumers of partisan media (Fox News for conservative and MSNBC for liberal) are more likely to be strong Republicans or Democrats. This influences voting behavior such that MSNBC viewers are more than ten times as likely to report having voted for Barack Obama for President.

Furthermore, the current media landscape offers more choices and is more fragmented in response to the audience’s selective news consumption tendencies (Stroud, 2008; Webster, 2005). Partisan audiences tend to select media that lean to their views. For example, Republicans are more likely to watch a right-leaning news channel like Fox News, while Democrats are more likely to be viewers of the left-leaning MSNBC, CNN, and/or NPR (Iyengar & Hahn, 2009; Stroud, 2010). In particular, the Internet allows people to select news items they want to read or watch and to avoid dissenting perspectives (Garrett, 2009; Stromer-Galley, 2000). Greater choice in political news sources is related to political polarization because people tend to choose what they are exposed to based on their own predispositions, and the news they expose themselves to reinforces or intensifies their preexisting views (Bennett & Iyengar, 2008; Tewksbury, 2006). Studies on selective exposure or biased assimilation with respect to mass media suggest that exposure to like-minded information is related to biased interpretation when processing political news contents and contributes to more extreme opinions (see Mutz, 2006; Sunstein, 2001, 2009; Warner, 2010). Stroud (2010) found that liberal Democrats and conservative Republicans consume more liberal and conservative media outlets respectively and hold more polarized
attitudes relative to other Democrats and Republicans. Garrett et al. (2014) also revealed that partisans’ tendency to engage in selective exposure leads to more polarized attitudes toward other partisans or candidates.

In addition to media factors and audience factors that previous studies dealt with, this study investigates what kinds of message factors facilitate mass political polarization. The following section discusses one possible message factor that appears frequently in political news coverage: prevalent journalistic practices of highlighting political conflicts as opposed to consensus between two major parties.

**Political Conflict Frame and Political Polarization**

Media plays a crucial role in constructing reality in our lives. Pictures in our heads are largely formed by information from diverse media and have enormous influence over how we see the world and what action we take in it. Such pictures in our heads or perceived reality formed by mass media allow us to make sense of people, groups, events, and issues and further influence judgments, decisions, and behaviors (see Mutz, 1998). Compared with outright propaganda, agenda-setting and priming effects demonstrate how mere coverage of an issue can affect public opinion (Jacobs & Shapiro, 1994; Krosnick & Kinder, 1990; McCombs & Shaw, 1972). Framing is another possible mass media influence, but it focuses more on the effects of media content rather than mere attention to an issue or a problem (Gamson, 1992; Iyengar, 1991; Nelson, Clawson, & Oxley, 1997).

The theory of framing effects suggests that how an issue is presented, or framed, influences how people process the information, how they think about that issue, and further their attitude and decision making. Conceptually, news framing is a way of organizing an idea or story
line so that it provides meaning or context to what the issue or event is about (Gamson & Modigliani, 1989). According to the theoretical definition of framing from Tankard (2001, p. 100), “a frame is a central organizing idea for news content that supplies a context and suggests what the issue is through the use of selection, emphasis, exclusion, and elaboration.” Entman (1993) mentioned that issue framing is the process of selecting and highlighting certain facets of events or issues over their alternatives so that it leads to a particular interpretation or evaluation and a preferred solution.

Media outlets and journalists frame a news story by using words, images, phrases, and presentation styles in a certain way. The media frame sets up the way audiences understand, interpret, and react to the political issue, event, or person (Chong & Druckman, 2007; Scheufele, 1999). In particular, research on framing has shown that individuals respond differently to news coverage depending on which aspects of conflict are highlighted in news stories, (e.g., Cappella & Jamieson, 1997; Price, Tewksbury, & Powers, 1997; Shah, Domke, & Wackman, 2001). Researchers recently have increasingly focused on what social and psychological factors or circumstances make the framing effect more likely or less likely to occur (Brewer & Gross, 2005; Chong & Druckman, 2007; Druckman, 2001a, 2001b, 2004; Druckman & Nelson, 2003; Sniderman & Theriault, 2004). For example, framing effects are attenuated when individuals are tied with heterogeneous social networks (Druckman & Nelson, 2003), an untrustworthy media outlet carries the message (e.g., The National Enquirer; Druckman 2001a), or multifaceted information is presented (Brewer & Gross, 2005; Chong & Druckman, 2007; Druckman & Nelson, 2003; Sniderman & Theriault, 2004). Individual-level political and psychological factors such as motivation (Druckman & Nelson, 2003), political knowledge (Brewer, 2003), and prior attitudes (Brewer, 2001; Iyengar, 1991) also seem to impact framing effects.
News media present political reality by highlighting aspects of political confrontation. As Bennett (2012) indicated, one of the flaws in the American news style is the overwhelming tendency to downplay the big pictures of social, economic, or political issues in favor of human trials, tragedies, and triumphs as well as to simplify complex policy information and the complicated workings of government institutions. Instead, the media concentrate on political combat over issues:

Conflict bias is heightened media attention to events that directly reflect or indirectly suggest a conflict, a disagreement, or a confrontation. This differs from a political bias in news, which is considered favoritism toward one candidate or another, which the media are accused of regularly. News media are likely to cover conflict in general; in the specific context of political campaigns, news media are more likely to focus on conflict between candidates, to the detriment of other topics of news coverage. (Conners, 2016, p. 115)

The increasing number of news channels from cable networks to Internet sources causes competition between news channels to hook audiences. In order to get audience attention, news outlets or journalists tend to emphasize conflict and focus on disagreement rather than consensus, and even perhaps to portray a divide as being wider than actually exists (see Conners, 2016; Benoit, Hansen, & Stein, 2004). Previous examinations of news coverage of the presidential debates in 2000, 2004, 2014 found that it heightened political conflict, focusing more on attacks and defenses of candidates than on their remarks or accomplishments (Conners, 2016; Reber & Benoit, 2001).

The strategy frame or game frame of news reporting also heavily emphasizes conflict and controversial aspects of politics. Politics is represented as a game and the actual substance of
politics and the policy issues fall out of focus (Lawrence, 2000; Patterson, 1993). Mutz (2006) also pointed out the strategic aspects of media coverage, which tend to emphasize the role of political consultants and advertising campaigns rather than cover the quality of candidates or their agendas. Similarly, scholars criticize “horse-race” coverage that focuses on who is winning and who is losing in an election (Jamieson, 1992; Robinson & Sheehan, 1983).

Scholars are concerned about strategy and game frames in public policy news because of its potentially destructive consequences such as overshadowing substantive issue-based coverage (Cappella & Jamieson, 1997; Patterson, 1993), undermining informed citizen engagement (Graber, 1994), and causing political cynicism (Cappella & Jamieson, 1997; de Vreese & Semetko, 2002; Kerbel, Apee, & Ross, 2000; Strömbäck & Dimitrova, 2006). Similarly, political conflict frames shift audience attention away from what is really going on about an issue and toward the party conflicts surrounding the issue. This can make people dislike each other and lead to more polarized views. From this perspective, this study predicts that prevailing journalistic practices highlighting aspects of political confrontation may make polarized perceptions and responses more likely to occur.

**Underlying Cognitive Processes of Framing Effect on Political Polarization**

**Identity Salience**

Individuals can categorize or classify themselves in particular ways in relation to other social categories. This process is called self-categorization or identification. Through a social comparison process, people categorize the self, the ingroup, and the outgroup (McCall & Simmons, 1978; Turner, Hogg, Oakes, Recher, & Wetherell, 1987; see Stets & Burke, 2000 for
review). They psychologically identify their ingroup in a given context and draw on readily accessible social categorization (Hogg & Reid, 2006).

Identity salience is a state characterized by heightened sensitivity to identity-relevant stimuli. In other words, salience means that individuals are more “ready” to perceive and process information relevant to elaborated or interconnected categories (Ruble et al., 2004 p. 43). When individuals process identity-related information and categorize themselves based on identity-related criteria, identity would become salient. Increased processing of identity-relevant information is most pronounced when the pertinent social identity is activated (Forehand, Deshpandé, & Reed, 2002, p. 1086).

According to social identity theory, identity salience is highly variable. It is a situational and momentary activation of the individual’s various identities. Chattaraman, Rudd, and Lennon (2009) identified three factors that influence identity salience:

1) situational factors or explicit social contexts that make an individual aware of his/her social identification; 2) contextual factors (e.g., reference group symbols, visual images—national flags) that make an individual process information based on the implicitly activated social identity; and 3) dispositional factors such as strength of association between the self-concept and the social identity. (p. 827)

For example, previous studies showed that situational/contextual factors such as the ethnic composition of one’s social situation (Stayman & Deshpande, 1989; Wooten, 1995) and cultural cues in advertisements (Forehand & Deshpandé, 2001) made social identity momentarily salient.

Salience of a particular social identity influences perceptions, attitudes, and behaviors (Abrams, 1994; Hogg, 1992). Once a certain social identity becomes salient, individuals tend to have a common perspective on reality, and that leads them to share norms, values, and goals with
other ingroup members (Dick, Wagner, Stellmacher, & Christ, 2005; Haslam, Oakes, Reynolds, & Turner, 1999; Turner, 1982).

**Political conflict frame and party identity salience**

Operationally, there are several approaches to measure media frames. Many studies of framing effects focus on the message contents, that is, how facts and ideas are assembled into messages (Lee, McLeod, & Shah, 2008). This line of research compares, for example, episodic versus thematic frames (Iyengar, 2011; Springer & Harwood, 2015), issue versus strategy frames (Cappella & Jamieson, 1997; de Vreese, 2004), or protest versus debate frames (McLeod & Hertog, 1999). Thematic news frames usually deal with the in-depth background using statistics, while episodic news frames are more likely to depict issues using individuals’ personal instances or specific events (Iyengar, 2011, p. 253). Iyengar (1987, 1991) revealed that respondents assigned responsibility for crime, poverty, and unemployment to society when the issue was described with a thematic frame, but assigned responsibility to individuals when the issue was depicted with an episodic frame. Compared with issue-based news coverage, strategic news coverage focuses more on disagreement between parties, candidates, or other groups and emphasizes poll results. Strategic news coverage has been shown to affect political cynicism (Cappella & Jamieson, 1997; Valentino, Buhr, & Beckmann, 2001) and political mobilization (Norris, 2000).

Other framing effect studies address various elements that might cause framing effects. The “media package” approach (Gamson & Modigliani, 1989) suggests that keywords and common language can be used to identify a particular frame. A multidimensional approach (Swenson, 1990) measures several elements or dimensions of news coverage such as gender of the writer, placement of the article, terms used to refer to the given issue, and the morality
orientation of the article. Similarly, Tankard (2001) defined framing as specific elements in a news story. He identified a list of frames including headlines, photographs, selection of sources or affiliations, selection of quotes, statistics, concluding statements or paragraphs. In addition to traditional story-presentation variables, these lists are useful for measuring or manipulating frames in the current news media environment.

As Cappella and Jamieson (1997) suggested, frames that have identifiable conceptual and linguistic characteristics are commonly observed in journalistic practice. When dealing with controversial issues, journalists tend to cover competing aspects in a balanced way, giving all sides relatively equal time or space and avoiding identifying which side has better solutions. This “issue dualism” has been considered fair and objective coverage (Patterson, 1993; Terkildsen, Schnell, & Ling, 1998). Nevertheless, subtle differences in the presentation of information through the practice of framing in journalism can influence people’s political attitudes (e.g., Higgins, 1996; Hwang, Gotlieb, Nah, & McLeod, 2007; Pan & Kosicki, 2005; Price & Tewksbury, 1997).

“Framing is a cognitive process in which the message affects how individuals weigh existing considerations (i.e., political orientations and relevant attitudes/beliefs)” (Lee, McLeod, & Shah, 2008, p. 695). Individuals are easily affected by frames because accessible information in memory (more recent or memorable information) is more easily used to form opinions (Fiske & Taylor, 1991; Petty & Cacioppo, 1986; Zaller & Feldman, 1992). Literature on the cognitive process of framing effects suggests five factors: availability, applicability, activation, accessibility, and usability (see Anderson, 1983; Higgins, 1996; Price & Tewksbury, 1997; Tversky & Kahneman, 1973). As the message is processed, relevant schemas are triggered (activation). In order for activation to occur, a particular schema and its components are stored in
memory as a necessary condition (*availability*). The message and an individual’s stored knowledge and schema should match well (*applicability*). Once activated, relevant schemas become more accessible for subsequent judgments or cognitive tasks (*accessibility*). Finally, the particular schemas should be relevant or appropriate to use. *Usability* moderates the relationship between activated schemas and subsequent judgments. If applicable information is more accessible through repeated exposure to certain frames, it influences people’s decision making (Price & Tewksbury, 1996).

Framing is also a process of selection and salience (see Entman, 1993 for review). By making information more noticeable, memorable, or meaningful to the audience, salience makes individuals selectively pay attention to the specific aspects of a message and activate related information, thereby influencing subsequent interpretations and judgments (Entman, 1993; Higgins, 1989; Hwang et al., 2007; Taylor & Thompson, 1982; Tewksbury et al., 2000). Indeed, news frames make certain considerations more salient by highlighting specific values, facts, or other considerations, thus promoting a particular direction of problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for an issue (Druckman, 2001a; Entman, 1993; Fiske & Taylor, 1991; Nelson, Clawson, & Oxley, 1997).

What if news coverage highlights tension or conflict between opposing political groups (in this case, Republicans and Democrats)? According to the social identity approach, a particular identity among several social identities (e.g., race, gender, religion, party identity, etc.) is often activated and becomes salient in an individual’s mind depending on the situation (Turner & Reynolds, 2010). Political identity may become “situationally” more salient when individuals are exposed to political conflict frames in news: people perceive greater between-group differences and less within-group differences resulting from news coverage that features conflict
frames. Since people have a tendency to adopt a position to maintain an identity, and so long as an identity is salient, simply knowing the position of partisans on a political issue is often sufficient to form one’s attitude.

**Party identity salience and intergroup judgments**

Polarization means there is difference in terms of perception, attitude, or affect between members of social groups defined on the basis of nominal parameters (e.g., gender, race, age). A greater difference indicates a greater degree of polarization between two groups (see DiMaggio, Evans, & Bryson, 1996; Page & Shapiro, 1992, chapter 7).

Increasing polarization and increasing partisanship are not the same thing. It is impossible for an individual to polarize, but an individual can become more partisan, either in her attitudes, in her political feelings, or in her voting behavior. If an individual becomes more partisan, the distance between her and those who identify with the opposite party increases, creating between-party polarization. (Prior, 2007, p. 217-218).

Along this line, political polarization should be understood in the context of intergroup relations such as the differences between Republican and Democratic party identifiers. Compared to individual aspects such as issue position or policy preference, political polarization is grounded in intergroup dynamics (Iyengar et al., 2012).

Social identity theory (Tajfel, 1978, 1981; Tajfel & Turner, 1986) has been widely applied to explain this phenomenon in intergroup relations (e.g., Abrams & Hogg, 1990; Haslam, Oakes, Mcgarty, Turner, & Onorato, 1995; Hogg & Abrams, 1990; Mcgarty, Turner, Hogg, David, & Wetherell, 1992; Turner, Wetherell, & Hogg, 1989). This theory argues that intergroup conflict arises from psychological processes of perceptual categorization, social comparison, and identity enhancement. Individuals classify themselves into distinct groups of “us” and “them” in
competitive terms. The mere perception of belonging to two distinct groups (social categorization per se) is sufficient to trigger a bias favoring the ingroup over the outgroup in evaluation and behavior. The perceptual categorization process is meaningful in that the individual’s perceived representative social group highlights similarities within the group and differences between the ingroup and outgroup (Hogg, 2005). Greater persuasive effects are expected when the message comes from someone who shares the message recipient’s group membership (Abrams & Hogg, 1990; McGarty, Haslam, Hutchinson, & Turner, 1994; Thompson, 1990; Wilder, 1990) or value system (Rohan, 2000). However, this effect can be more or less pronounced depending on the circumstances.

There is a tendency to evaluate ingroup members positively and outgroup members negatively (Fein & Spencer, 1997; Jetten, Spears, & Manstead, 1999; Mullen, Brown, & Smith, 1992). Such tendencies are commonly referred to as ingroup favoritism and outgroup derogation, respectively. Researchers argue that ingroup favoritism and outgroup derogation are more pronounced in situations involving a threat to the individual’s identity (Branscombe & Wann, 1994; Corneille, Yzerbyt, Rogier, & Buidin, 2001; Roccas & Brewer, 2002; Rubin & Hewstone, 1998). According to theories of group identification, self-categorization (Turner et al., 1987), and social identity (Tajfel & Turner, 1986), individuals are likely to reinforce and maintain their identity when they experience a threat to their social identity in some way, such as when they receive negative information about their identified group performance or perceive that their group has come under attack (de Hoog, 2013; Ellemers, Spears, & Doosje, 1997; Hogg & Abrams, 1990; Roccas & Brewer, 2002).

The negative impact of situationally induced or perceived group threat on intergroup attitudes is well established (e.g., Meeus, Duriez, Vanbeselaere, Phalet, & Kuppens, 2009;
Stephan & Renfro, 2002; Stephan & Stephan, 2000; Stephan, Renfro, Esses, Stephan, & Martin, 2005). Basically, group members respond to social identity threats in a way that makes their group look better and makes the outgroup or the source of the threats look worse (Branscombe & Wann, 1994; Ellemers et al., 1997; Hewstone, Rubin, & Willis, 2002). Therefore, when people are confronted with an ingroup threat situation, a defensive motivation is induced that leads to biased information processing and in turn affects the evaluation of the information (de Hoog, 2013). For example, people are more defensive about criticism from outgroup members than from ingroup members (Hornsey & Imani, 2004; Hornsey et al., 2002) and perceive outgroup criticisms as less accurate than ingroup criticisms (O’Dwyer, Berkowitz, & Alfeld-Johnson, 2002). Moreover, there is empirical evidence that people expect that outgroup members will discriminate or compete against them if they have a chance (Insko, Schopler, Hoyle, Dardis, & Graetz, 1990; Vivian & Berkowitz, 1992).

In the context of politics, party information is an important group cue. News coverage about public policies frequently attaches party labels and tells which party’s candidates or policymakers support or oppose the policy. Previous studies have shown that policy attitudes are responsive to party labels, especially for economic, foreign policy, technical, or unfamiliar issues. In many cases, political identifiers show increased support for policies when their preferred party supports the policy, whereas opposing party labels decrease policy support (Bartels, 2008; Cohen, 2003; Kam, 2005; Zaller, 1992). Cohen (2003) found that both liberal and conservative participants rely more on information about the reference group than on policy content in their attitudes. Participants even denied having been influenced by the stated position of Democrats and Republicans, believing that their opinions followed from an apprehension of policy content. In addition, participants assumed the position of their group as their own when reference group
information was available and gave no weight to objective policy content. Similarly, Bergan (2012) found that party labels operate to increase policy support among favored party members while decreasing support among opposite party members when there are no expectations about the party’s position on the policy.

In addition to party cue, a political conflict situation can cause political polarization. Findings on message effects show that exposure to counter-attitudinal messages often leads to negative feelings toward the other side (de Dreu & van Knippenberg, 2005) and opinion polarization (Edwards & Smith, 1996; Lerner & Tetlock, 1999). Research on disconfirmation bias also shows that people attempt to belittle or denigrate others’ arguments against preexisting attitudes or positions, which often leads to defensive bolstering and opinion polarization (Edwards & Smith, 1996; Howard-Pitney, Borgida, & Omoto, 1986; Taber & Lodge, 2006).

As Price (1989) indicated, the salience of group membership is increased by the presentation of group conflict in the message because “recipients of the message are cued to think of themselves and others in relation to the issue primarily as members of those groups rather than as isolated persons” (p. 203). When social identity is salient, people may behave as category members, display attitudes they ought to hold (i.e., that are normative of the group), and are more influenced by ingroup than outgroup sources (Abrams & Hogg, 1990; Smith & Hogg, 2008; Turner, 1991). In an intergroup context when one’s social identity is highly salient, it is likely that people will make intergroup judgments based on what they know about their ingroups (Robbins & Krueger, 2005). Layman and Carsey (2002b) even showed that adjustments of party identity or issue positions occur only when respondents perceive elite-level issue differences. When people make a decision based on the group, there is a tendency to shift toward more extreme attitudes or decisions from their initial positions (Flint, Hernandez-Marrero, &
Wielemaker, 2006; Lamm, 1988), and group polarization can interact with framing effects (Cheng & Chiou, 2008).

**Party Identification Effects on Three Types of Political Polarization**

Evidence regarding elite polarization is quite consistent in the literature (Fleisher & Bond, 2001; Hetherington, 2001; McCarty, Poole, & Rosenthal, 2006), but there is mixed or inconsistent evidence about mass level polarization (see Fiorina & Abrams, 2009 for review). Iyengar et al. (2012) argued that this may be due to how researchers define the concept of political polarization. Previous studies on political polarization mainly focus on attitude polarization. However, alternative concepts of polarization have recently started to be considered, such as affective polarization (Iyengar et al., 2012; Garrett et al., 2014) and perceived polarization (Levendusky & Malhotra, 2013; Hwang et al., 2014). Different types of political polarization have their own implications. Beyond actual attitude polarization, the media’s over-representation of political confrontation may distort people’s perception of political polarization as well as induce intergroup hostility. The perception of social reality is important in that it influences cognitions, emotions, and behaviors. As previous studies showed, affective polarization and perceived polarization (even if people’s actual attitude is not polarized) produce meaningful consequences for the political process, such as a spiral of silence (Noelle-Neumann, 1974; 1985) and low expectation of deliberation (Hwang et al., 2014). However, a direct comparison of each type of polarization has not been convincingly done. Therefore, this study attempts to investigate three different dimensions of political polarization as dependent variables: perceived polarization, affective polarization, and attitude polarization.
Perceived Polarization

Researchers on social identity have found evidence that people overestimate the difference between their own and other groups (see Hogg & Abrams, 1988). A derivative of ingroup bias is to make people think their own side is better, less biased, more moderate, and realistic while seeing the other side as extreme and diametrically opposed (Keltner & Robinson, 1993; Maoz, 2003). The concept of “false polarization” is the difference between perceived polarization and actual polarization (Lelkes, 2016; Westfall et al., 2015), and the tendency of individuals to overestimate the extremity of the attitudes of the people involved (Keltner & Robinson, 1996; Monin & Norton, 2003; Robinson, Keltner, Ward, & Ross, 1995). Although people on both sides hold relatively moderate positions, they believe that others, both ingroup and outgroup, hold more extreme attitudes than they really do, and therefore the gap between the two sides is believed to be larger than the actual gap.

According to van Boven, Judd, and Sherman (2012), perceived political polarization is grounded in categorization processes, including social categorization, self-categorization, and naïve realism (p. 85). They summarized as follows: social categorization accentuates perceptions of differences between Republicans and Democrats (Corneille & Judd, 1999; Seyle & Newman, 2006), self-categorization highlights distinctiveness between the political ingroup and outgroup (Turner, et al., 1987), and naïve realism (Ross & Ward, 1996) highlights distinctions between the self and other people. People tend to see their political attitudes and ideological positions as coming from unbiased, rational reasoning processes, whereas they see others’ attitudes as influenced by biased, self-interested, and ideological reasoning (Griffin & Ross, 1991; Pronin, Gilovich, & Ross, 2004; Sherman, Nelson, & Ross, 2003). Therefore, people see others’ views
as more extreme than their own, which leads to false polarization of beliefs (Robinson, Keltner, Ward, & Ross, 1995).

In the case of politics, Westfall and colleagues’ (2015) analysis of 30 years of national survey data from the American National Election Study revealed that people in the United States consistently overestimate polarization between the attitudes of Democrats and Republicans. A series of experiments showed that both sides overestimated the views of typical or average members of the opposing side on several ideological issues such as abortion, the death penalty, and multicultural education (e.g., Keltner & Robinson, 1993; Robinson, Keltner, Ward, & Ross, 1995).

Do media contribute to perceived polarization? Media portrayals do not exactly reflect reality. Compared to actual crime reports, media often over-represent Blacks and Latinos as lawbreakers, while Whites are more likely to be portrayed as law defenders on television news (Dixon & Linz, 2000). In the case of politics, media often present colored red and blue electoral maps showing dividedness, but the differences in political and cultural attitudes between “red states” and “blue states” are not as strong as media represent them with this binary (Fiorina et al., 2005; Seyle & Newman, 2006). Levendusky and Malhotra (2013) argue that perceived polarization exceeds actual polarization (called “false polarization”), and extensive media coverage of political polarization is to blame. Their research findings show that the media’s depiction of the public as polarized induces false polarization and affective polarization, but not actual issue-based polarization.

**Affective Polarization**

Recently, scholars have paid attention to emotional reactions in polarization. Affective polarization is “the extent to which feeling (affect) toward candidates or political parties is
separating such that people increasingly like their own party and dislike (or even hate) the opponent” (Jennings, Galarza, & Warner, 2016, p. 83). The concept of affective political polarization includes an aspect of contempt and hatred toward the opposing political group (Garrett et al., 2014; Iyengar et al., 2012). This group-based emotion is related to the perceptions of “us” versus “them” (Tajfel & Turner, 1979; Iyengar et al., 2012). Iyengar and colleagues (2012) apply social identity theory to document increasing affective polarization. Social identity theory asserts that social identification spurs intergroup bias in group emotions such as increase in not only positive but also negative affect toward the outgroup. Thus, party identification is a necessary element in testing how partisans view each other as a disliked outgroup. Lelkes (2016) reviewed the trend of polarization at the mass level from 1972 to 2012 and found that changes of feeling thermometers have been driven almost entirely by feelings toward the out-party.

Television news tends to be more emotionally extreme because polarized political discourse and angry opposition make for compelling news that audiences pay attention to (Mutz, 2006). Mutz and Reeves (2005) conducted an experiment. In the civil version, candidates spoke calmly and showed mutual respect by using polite discourse. In contrast, in the uncivil version, they raised their voices and engaged in impolite discourse. Their participants showed a more intensely negative attitude toward the “other side” when they were exposed to the uncivil version as well as greater polarization in their perceptions of “us” versus “them.” Similarly, Iyengar et al. (2012) found that both Republicans and Democrats increasingly dislike each other, and exposure to a message attacking the outgroup reinforces partisans’ biased views of their opponents. Lelkes, Iyengar, and Sood (2013) also found that since the launch of the conservative-oriented partisan Fox News channel in 1996, there have been higher levels of affective polarization among Republicans.


**Attitude Polarization**

The most popularly studied dimension of polarization is attitude polarization (or opinion polarization). Political attitude polarization is the tendency of individuals to change their issue positions to be less centrist and to increase the extremity of the most politically relevant attitudes because people tend to change their issue positions to make them consistent with their party identity (Layman & Carsey, 2002b; Levendusky, 2009; Prior, 2013). Bafumi and Shapiro (2009) found that the mean positions of Democrats and Republicans and liberals and conservatives is increasingly divided on a large set of political issues, including abortion, gay rights, the role of religion, race, and civil rights.

Polarization is a result of opinion change in the direction of the ingroup position (Doise, 1969; Friedkin, 1999). Individuals conform to the ingroup opinion on a political issue. The psychology literature explains people’s conformity in terms of accuracy goals (Ahn, Huckfeldt, & Ryan, 2010; Druckman & Nelson, 2003), desire for group affiliation (Green, Palmquist, & Schickler, 2002), and positive self-concept maintenance (Brewer & Roccas 2001; see Cialdini & Goldstein, 2004 for review). Political conformity generally conceptualizes that political attitudes have changed to match social norms or political group norms (Huckfeldt, Johnson, & Sprague, 2004; Levitan & Verhulst, 2015; Mutz 1998; Sinclair 2012; Suhay 2015).

When faced with uncertainty over an issue, individuals monitor group opinions through interpersonal communication or mass communication. Rather than forming attitudes about policy independently, individuals form their attitude in concert with the groups they belong to (Bullock et al., 2002; Price, 1988). Therefore, it can be inferred that knowing the ingroup position contributes to attitude polarization. Studies of political attitudes have shown that party cues activate latent partisan biases on nonpartisan issues and move opinion to be consistent with
ingroup position (Cohen, 2003; Druckman, 2001b; Goren, Federico, & Kittilson, 2009; Kam, 2005).

Politically uncertain individuals follow their knowledgeable peer groups or political elites for their political opinions (Ahn et al. 2010, 2014; Druckman & Nelson 2003; Lupia and McCubbins 1998; Ryan 2010, 2011). In this sense, individuals who are uncertain or undecided about an issue might rely on party information in news coverage. Scholars argue that elite polarization makes it easier for people in general to notice the differences between Republicans and Democrats, which makes people change their opinions accordingly (Hetherington, 2001; Fiorina et al., 2005; Levendusky, 2004). The political conflict frame is indeed a noticeable transmitter that tells the political ingroup’s and outgroup’s issue positions.

Self-categorization theory (Turner et al., 1987) posits that social identity is the key to ingroup conformity and between-group polarization. When a relevant social identity is salient, individuals will seek to be prototypical group members, which means their attitudes and behaviors resemble those of ingroup members and are distinguished from those of outgroup members (Turner, 1991). Thus, people tend to conform to their ingroup’s attitudinal and behavioral norms (Abrams et al., 1990; Wood, Pool, Leck, & Purvis, 1996). Based on social comparison and/or self-categorization, individuals conform to the ingroup norm or position and change their attitude or produce more extreme positions (Friedkin, 1999). Mackie (1986) found opinions to be more extreme within group conditions than in individual conditions. Similarly, studies on group discussion show that people tend to express moderate opinions when they do not know other group members’ issue positions, but as group discussion reveals the desirable tendency, they polarize their opinions (Zuber, Crott, & Werner, 1992). Further, greater polarization and more acceptance of extremists were found in the presence of a rival group than
in its absence (Doise, 1969).

**Effects of political conflict news frame on each types of polarization**

According to the social identification and self-categorization approaches, the three types of polarization are closely related with intergroup relations and the cognitive basis of stereotyping and prejudice. Party identification effects, which are situationally caused by political conflict frames presented in the media, might be consistent with any types of political polarization, even if the level of each type of polarization can be different. According to the social identity and self-categorization theory, under conditions of social category or identity salience, people come to perceive others more as members of certain social groups than as unique individuals. When people are exposed to political conflict news frames, their party identity becomes salient and therefore their perceptions and emotions toward members of the opposing party would be more polarized.

In addition to stereotyping other groups (i.e., perceived polarization and affective polarization), group identification processes spur self-stereotyping. The social identity and self-categorization theories also assert that people come to see themselves as an ingroup member rather than a unique person when a certain social identity is salient. Therefore, one’s attitude about an issue would be more polarized along his/her party line when party identity is activated. In sum, whether the outcome is perceptions or emotions toward a group or one’s own issue attitude, the underlying mechanism of political polarization caused by political conflict frames in news reporting might be consistent.

Even if the underlying mechanism of the political conflict frame works in a consistent way on perceived, affective, and attitude polarization, there is a possibility that the level of actual political polarization and perceived polarization can be different. Although the context is
different, some studies have shown that ideological sorting is responsible for increased anger, but
issue position in the mass public shows relatively smaller increases in polarization (Fiorina &
Abrams, 2008; Levendusky, 2009; Mason, 2013). In an uncivil online discussion context, Hwang
et al. (2014) found significant perceived polarization but not attitude polarization. Given that few
studies directly compare the level of each type of polarization, this study intends to explore the
effects of political frame on political polarization in terms of three different aspects (i.e., issue
polarization, affective polarization, and perceived polarization) as separate dependent variables
and compare them to identify whether and to what extent the media is responsible for each of
these polarization dimensions. This comparison of three types of political polarization can also
enhance the validity of the proposed mechanism (political conflict news frame → party identity
salience → political polarization).

**Study Context and Hypotheses**

Disagreement or conflict in politics is frequent, especially among the various political
parties because of their ideological differences (Levitt, 1996) or political power dynamics (Cox
& McCubbins, 1993; Kiewiet & McCubbins, 1991; Rohde, 1991). However, scholars have
expressed concerns about the concentration on conflict-oriented news coverage of politics, which
often emphasizes friction between political parties. Critics complain that over-representing
conflict news frames tends to ignore the consensus process and make an issue look like a
simplistic two-sided competition or dualism rather than offering substantive debate or diverse
perspectives on complicated issues (Barnhurst & Mutz, 1997; Bennett, 2012; Cappella &
Jamieson, 1997). This trend is observable across media platforms including public broadcasting
(Kerbel et al., 2000) and national network news (Bystrom & Dimitrova, 2014). Especially in the
current media landscape, competition between numerous media channels including traditional
text
media and new media instigates the use of conflict news to get audience attention. This study
expects that news frame is a potential contributory factor to invoke mass political polarization. In
particular, this dissertation empirically tests whether and how political conflict framing of a news
message can affect political polarization.

A framing effect occurs when a story frame affects people’s understanding and
interpretation of a specific issue (Gamson, 1992). If a news story portrays a conflict between two
political parties on an issue, audiences may activate their party identity rather than any other
identity. As a result, as social identity theorists posit, party identity salience makes individuals
more biased about ingroup and outgroup members and causes them to interpret the issue based
on intergroup prejudice (see Oakes, 1987 and Gaertner, Dovidio, Anastasio, Bachman, & Rust,
1993). This hypothetical process of the effects of political conflict frames on political
polarization will be examined in this study with four hypotheses.

This study investigates whether and how a political conflict news frame makes political
identity salient in audiences’ mind (i.e., political conflict news frame → party identity salience)
by examining the effects of the two elements of political conflict news frame: presence of
political party cue and level of conflict. First, if an issue is framed politically with the presence
of political party cues, political identity will be salient rather than other social identities. In
previous experimental studies, source cues play a role in issue frames. Hartman and Weber (2009)
found that framing effects occur for strong identifiers when the ideology of the speaker matches
the respondent’s ideology. A simple manipulation using partisan cues of “Republicans” or
“Democrats” altered participants’ attitude. Each issue—especially if the issue is related to
policy—can have several considerations at the same time. For example, debates over alternative
energy can be a political issue, scientific issue, or economic issue depending upon the key actors in the news coverage. If the issue is described as a debate among political actors in a news story, so that the issue is framed around political events, then it can be perceived by audiences as a political issue. Likewise, if a news story describes the issue as a debate among scientists, audiences are more likely to think of it as a scientific issue. In this sense, this study experimentally manipulates group cue (party cue quoting Republicans’ and Democrats’ arguments vs. cue of scientists in a news story) in order to verify which identity will be salient.

In addition, a group conflict situation can intensify the group identification process. According to social identity theory, conflict or competition between in- and outgroups increases the salience of the competing group identities and thus prompts the group identification process and polarization (Tajfel & Turner 1979). To test the effects of group conflict in combination with exposure to the party cue on salience of party identity, the second message factor of group conflict is manipulated by highlighting conflict (i.e., conflict frame) or consensus (i.e., consensus frame) of the two opposing sides. In sum, this study employed a between-subject factorial design: group cue (party cue vs. scientist cue) and level of group conflict (conflict vs. consensus). The following hypotheses regarding the underlying cognitive psychological process of framing effects on party identity salience are proposed:

**H1a:** Party identity will be more salient when participants are exposed to a political frame than when they are exposed to a scientific frame.

**H1b:** The effect of party cue on party identity salience will be greater when participants are exposed to a conflict frame than when they are exposed to a consensus frame.

According to the theories of social identity and self-categorization, under conditions of social category or identity salience, people come to perceive others more as exemplars or
members of social groups to which they belong than as unique individuals. Studies also show that such group categorization processes in social perception often lead to polarized perceptions (e.g., overestimation of differences between ingroup and outgroup) and polarized emotions toward ingroup and outgroup members (e.g., ingroup favoritism). In this sense, political conflict frames may provoke biased ingroup-outgroup perception and emotions. As shown in Tajfel and Turner’s (1986) studies, the mere presence of group identity information can spark the biases associated with ingroup-outgroup cognition and emotions. Therefore, the following hypothesis is proposed:

**H2a:** Perceived polarization will be greater when participants are exposed to a political frame than when they are exposed to a scientific frame.

Affect is an important aspect of mass polarization in that the perception of “us” versus “them” is directly related to group-based impulses (Iyengar et al., 2012; Tajfel & Turner, 1979). Political news frames, which make political party the most meaningful cue, may incite positive emotions toward one’s supported party members and hostile emotions toward the opposing party members. This is hypothesized as:

**H3a:** Affective polarization will be greater when participants are exposed to a political frame than when they are exposed to a scientific frame.

Beyond stereotyping other people in a group, the theories of social identity and self-categorization asserts that group identification processes spur a process of self-stereotyping. Under conditions of social identity salience, people come to see themselves more as the interchangeable exemplars of a social category than as unique personalities defined by their differences from others. Under these conditions a perceiver directly bases his or her own attitudes, behavior, and beliefs on the norms, goals and needs of a salient ingroup. The mere
presence of an ingroup source cue has been shown to lead to increased acceptance of ingroup norms, especially when the group’s position on the issue is clear (Deutsch & Gerard, 1955; Mackie, Gastardo-Conaco, & Skelly, 1992). As previous studies show, people tend to follow ingroup position more extremely in the situation of their ingroup identity being salient (e.g., Friedkin, 1999; Mackie, 1986; Zuber, Crott, & Werner, 1992). In this study, it is expected that individuals’ issue position will become more polarized to follow their party position. Thus, the effect of party cue on attitude polarization is suggested:

H4a: Attitude polarization will be greater when participants are exposed to a political frame than when they are exposed to a scientific frame.

Furthermore, a conflict situation or opposition from outgroup members could be seen as an external threat that heightens the salience of intergroup differences (Hornsey, Oppes, & Svensson, 2002). As these differences become more salient, intergroup processes are engaged more intensely (Stangor, Lynch, Duan, & Glas, 1992). Intergroup conflict appears frequently in news coverage. Even if a news story reports the views of each side evenly, exaggerated depictions of conflict can produce meaningful intergroup consequences such that people may believe compromise is unlikely and the differences between parties are deep and intractable. They may then be led to be more supportive of the ingroup position and opposed to the outgroup position. Enhanced party identification in conflict situation contributes to group stereotyping processes in terms of intergroup attitude (Doise, 1969; Friedkin, 1999; Mackie, 1986), affect (Garrett et al., 2014; Iyengar et al., 2012), and perception (Hogg & Abrams, 1988; Keltner & Robinson, 1993; Robinson et al., 1995). From this perspective, H2b-4b predict an interaction effect of party cue and the level of conflict.
**H2b:** The effect of party cue on perceived polarization will be greater when participants are exposed to a conflict frame than when they are exposed to a consensus frame.

**H3b:** The effect of party cue on affective polarization will be greater when participants are exposed to a conflict frame than when they are exposed to a consensus frame.

**H4b:** The effect of party cue on attitude polarization will be greater when participants are exposed to a conflict frame than when they are exposed to a consensus frame.

In addition, the basic assumption of the effects of political conflict framing on political polarization is the party identification process through the salience of party identity, which is based on social identity theory. Whether it is perceived, affective, and/or attitudinal, polarization occurs through intergroup processes. Exposure to news messages highlighting political confrontation can make the audience’s party identity more salient so that they are more likely to base their perception, emotion, and attitude on their party identity, resulting in political polarization of perception, emotion, and attitude. Hypotheses 2c-4c are proposed to test this mediation process:

**H2c:** The salience of party identity will mediate the effects of news frame on perceived polarization.

**H3c:** The salience of party identity will mediate the effects of news frame on affective polarization.

**H4c:** The salience of party identity will mediate the effects of news frame on attitude polarization.
CHAPTER 3

METHODS

Experimental methodology is especially useful for studying the psychological processes underlying media effects because of its ability to isolate the causal impact of communication factors on political attitudes and behavior. The direct manipulation of media content, coupled with random assignment of subjects to treatment and control conditions, produces strong inferences about specific elements of a message that alter emotions, attitudes, and behaviors (Valentino, Hutchings, & White, 2002, p. 77). Therefore, this study conducted a web-based experiment to test the hypotheses about the extent and nature of news frame effects on political polarization among news readers. The study employed a 2 (group cue: political frame vs. scientific frame) × 2 (level of conflict: conflict frame vs. consensus frame) between-subject design.

Participants

Amazon’s Mechanical Turk (MTurk) is a crowdsourcing web service that coordinates the supply and demand of tasks that require human intelligence to complete. Investigators can create and post any task that can be done at a computer such as surveys, experiments, writing, and so on. Participants can browse available tasks and are compensated for each task they complete. MTurk is an especially useful platform for running online experiments because of its following benefits: (a) MTurk participants are slightly more demographically diverse than standard Internet samples
or college samples; (b) the cost of using MTurk is low, but this does not affect data quality regardless of compensation rates, and the built-in payment mechanism makes it easy to compensate participants; (c) MTurk offers a fairly stable pool of potential participants and participants can be recruited rapidly; (d) obtained data from MTurk are as reliable as those obtained via traditional methods, that is, relatively high-quality data can be obtained via MTurk (Buhrmester, Kwang, & Gosling, 2011). In fact, researchers in a variety social science fields such as psychology, sociology, and economics have used MTurk to conduct behavioral experiments (Mason & Suri, 2012).

Participants were recruited through MTurk in this study. MTurk provides a random ID to the survey collection so that participants are not identifiable to the investigator. When participants sign up with MTurk, they are given a URL for the web-based experiment. Participants click on the URL to participate at their convenience. For participating in this study, they received US$0.75 through MTurk’s compensation system.

Statistical power is an important consideration when designing an experiment and deciding on sample size. Small sample size has little power to reject the null hypothesis, but too large sample size might waste time and resources for minimal gain. Power analysis and sample size calculation programs have become popular options for the proper design of experiments. In this study, statistical power analysis was performed by using the “G*Power” program to determine how many participants would be needed to enable reliable statistical judgments (see Faul, Erdfelder, Lang, & Buchner, 2007 for a review of the G*Power program). With effect size $f = 0.15$, $\alpha = 0.05$, power level = 0.8, and the number of experimental groups = 4, the power analysis showed that a minimum sample size of 351 would be required for this study. In light of the potential for unreliable responses, wrong answers to the manipulation check questions,
independent sample exclusion, and/or missing data, 705 participants complete the survey through MTurk.

**Manipulation**

The issue of genetically modified food (GMF) was used as a context for examining how news message frame influences political polarization. This issue was chosen because it is a controversial issue that has both supporting and opposing positions and because it is not a well-known issue so that audiences may not have strong pre-existing attitudes or beliefs about it (Hallman, Hebden, Aquino, & Cuite, 2003; Tegegne, Aziz, Bhavsar, & Wiemers, 2013). GMF comes from plants or animals that have had their genes altered using the tools of biotechnology with the purpose of expressing desired traits, such as pest resistance or herbicide tolerance. GMF technology is intended to increase productivity and food supply. America is the largest producer of GMF, harvesting about 43% of the world’s GM crops in 2013. Corn, soy, canola, and sugar beets are the most common GMF in America (Hallman, Cuite, & Morin, 2013).

The experimental news article is about a controversy over the issue of GMF. Although the news story was fabricated, the controversial points regarding GMF were based on real arguments reported by mainstream news. One side claimed beneficial aspects of GMF, whereas the other side argued problems with GMF. The news article described the arguments of the two conflicting sides in a balanced way (e.g., assigning similar length for each side). The news story was designed to look identical to the format of the real Associated Press online news site to achieve ecologically natural circumstances. All other possible confounding features of the news article, such as lists of latest news headlines, photos, and advertisements were deleted. Appendix A shows the stimulus news page.
The basic outline of the news story is that the Food and Drug Administration (FDA) held a conference regarding policy on genetically modified foods. One side features scientists or politicians who advocate the use of GMF, arguing that the scope of the genetically modified foods policy should expand to include seafood and meat and highlighting the benefits of genetically modified foods. The other side contains scientists or politicians who argue that there is something fundamentally problematic with GMF, raise concerns about current GMF policy, and oppose approving the use of genetically engineered animals for human consumption.

Two sets of experimental conditions for investigating the effects of political conflict frame were manipulated: group cue and level of conflict in the news story. First, in order to examine the role of party cue in the party identification and political polarization process, the group cue in the news story (i.e., politicians vs. scientists) was manipulated. The manipulated news story quoted arguments from two opposing sides of the issue regarding why each side supported or opposed GMF. For the political frame condition, the group cues of political parties (i.e., Republican Party and Democratic Party) were used for framing the controversy as a political confrontation about GMF. For the scientific frame condition, the news story was the same, but the group cues of Republican Party and Democratic Party was replaced with two opposing groups of scientists so that the news story can be perceived as an argument between scientists, not politicians.

Level of conflict was manipulated as the second component of the political conflict frame. For the conflict frame, the news story highlighted confrontation between the two groups, while in the consensus frame, the story highlighted consensus between the two groups by showing that the discussion on GMF was intended to find a middle ground. For example, the political consensus frame used wording such as “Genetically modified foods are still a controversial topic
between Republicans and Democrats, but they have been working to find a compromise.” In contrast, the political conflict frame used the sentence, “The conference ended in acrimony as bitterly divided Republicans and Democrats traded verbal attacks and insults.” The scientific consensus frame used “Genetically modified foods are still a controversial topic between scientists, but they have been working to find a compromise,” while the scientific conflict frame used “The conference ended in acrimony as bitterly divided scientists traded verbal attacks and insults.” Appendixes B-E contain the full transcripts of the news articles for each condition. The words and sentences in boldface show how the news stories in each condition were differently manipulated.

Administration

The experimental survey was designed using Qualtrics. Participants accessed the online experiment at their convenience through MTurk. Participation was completely voluntary. This was not a lab-based experiment, so other strategies were needed to check whether participants were paying enough attention to the experimental survey. To do this, when participants failed attention check questions (e.g., insert “please select ‘somewhat disagree’ for this answer” in the middle of other questions) and/or when they read manipulated news article for less than 25 seconds, they were automatically forced to exited from the survey so that their answers were not used for the data analyses.

In the web-based experiment, participants were asked to complete an informed consent form with a brief description of the study. Before being exposed to the manipulated news article, they were asked attitude questions related to the issue. After that, they were shown one of four randomly assigned online newspaper stories: 1) political conflict frame (political party cue with
highlighted group conflict); 2) political consensus frame (political party cue with highlighted
group consensus); 3) scientific conflict frame (cue of scientists with highlighted group conflict);
4) scientific consensus frame (cue of scientists with highlighted group consensus). After
exposure to the frame manipulation, participants were given questionnaires inquiring about their
perceptions, emotions, attitudes, party identity, and demographics. After finishing the experiment,
participants were given the investigators’ contact information and thanked. The complete survey
questionnaires and instructions are in Appendix F.

Sample Selection

In order to confirm that the manipulated group cue and the level of conflict were
recognizable enough to be perceived as different frames, two manipulation check questions were
included. After exposure to the stimulus news story, participants were asked to indicate the
perceived level of conflict using a 7-point scale ranging from 1 = “not at all conflicted” to 7 =
“highly conflicted” ($M = 5.49, SD = 1.37$). An independent samples $t$-test established that
participants in the conflict condition indeed perceived the level of conflict to be significantly
stronger ($M = 5.83, SD = 1.38, n = 346$) than those in the consensus condition ($M = 5.16, SD =
1.27, n = 359$), $t(-6.68), p < .001$.

In addition, participants were asked to identify the group that is the main actor of the
scenario on the GMF issue among four options (scientists, politicians, college students, and
national business associations). Of the total of 705 participants, 563 (79.9%) participants
correctly identified the main actor in the story to which they were exposed. Specifically, 259
(74.9%) participants in the political frame condition correctly identified the main actor, while
304 (85.9%) in the scientific frame condition correctly remembered the main actor. After the
manipulation check, data from participants who did not correctly identify the main actor of the GMF issue in the news story were excluded from the analysis.

The goal of this study was to investigate the effect of political conflict news frames on political polarization. The expected key mediating factor of this effect is party identity salience, and the study attempted to examine the process of [political conflict news frame $\rightarrow$ party identity salience $\rightarrow$ political polarization]. Using social identity theory as a foundation, the polarization study compared two opposing groups of party identifiers to look at party identity salience and political polarization. Therefore, the data for participants who identified themselves as independent ($n = 123$) were additionally excluded from the analysis along with data from those who incorrectly answered the manipulation check questions. After these exclusions, the data from 367 partisan participants were used for the main analyses.

With the final sample of 367 participants, an additional manipulation check was conducted to examine whether the message manipulation of conflict level affected participants’ perception of intergroup conflict using an independent samples $t$-test. Participants in the conflict condition perceived a greater level of conflict ($M = 6.15, SD = 1.12, n = 182$) than those in the consensus condition ($M = 5.38, SD = 1.16, n = 185$), $t(-6.47), p < .001$.

**Measurements**

**Party Identity**

Study participants were asked to indicate their party identity on a 7-point scale, with 1 = strong Republican, 4 = independent, and 7 = strong Democrat ($M = 4.39, SD = 1.98$). As mentioned earlier, because the study compares two different groups of party identifiers, the data for participants who identified themselves as independent ($n = 123$) were excluded from the
analysis. Besides independent, participants consisted of strong Republican \((n = 21)\), Republican \((n = 78)\), weak Republican \((n = 54)\), weak Democrat \((n = 71)\), Democrat \((n = 83)\), and strong Democrat \((n = 60)\). For the analyses, a dummy variable of party identity was constructed by coding Republican participants (i.e., strong Republicans, Republicans, and weak Republicans) as 0 \((n = 153)\) and Democratic participants (i.e., strong Democrats, Democrats, and weak Democrats) as 1 \((n = 214)\).

**Salience of Party Identity**

Certain types of media messages (e.g., attitude-consistent messages, see Knobloch-Westerwick, 2012) can activate political self-concept and make political identity salient, which in turn promotes political polarization (Garrett et al., 2014). This experimental study attempted to test whether a certain media frame actually makes party identity salient.

Salience was assessed using a measure of accessibility. Aron et al. (2001) developed a reaction time measurement technique that would provide a somewhat more direct measure of the cognitive process. Reaction time (also called response time) is commonly used in psychology for measuring accessibility. The reaction time measure looks at the speed with which persons responded to social category information (see Ruble et al., 2004 for review). Usually researchers ask participants to do some word identification or categorization tasks as quickly as possible among randomly ordered target words and filler words and then compare the sample means of the time taken to complete a task. Quicker reaction represents greater accessibility (e.g., Bassili, 1995; Comello & Slater, 2011). Smith and Henry (1996) used a reaction time measure based on the perspective of social identity and self-categorization theories. Participants were asked to make self-descriptive judgments, and the results showed that participants reported shorter
response time and made fewer errors when their cognitive representation of the self and an ingroup are matched.

Utilizing the cognitive accessibility measure from previous studies (e.g., Fazio, 1990; Nelson, Clawson, & Oxley, 1997; Valentino, Hutchings, & White, 2002), this study employed a lexical task to measure participants’ reaction time. Immediately after viewing the experimental news message, participants were asked to discriminate between words and nonsense letter strings that flashed on the computer screen. If it was a word, participants were asked to press the “D” key for YES, and if it was a nonsense letter string, to press the “F” key for NO. They were not allowed to click the mouse because moving the mouse cursor requires time and could have contaminated the response time detection. Participants were asked to perform this task “as quickly and accurately as possible” and were given several trial letter strings for practice. A randomized series of letter strings were then flashed on the center of the screen, one at a time. Five words were intended to be party-relevant, including “politics,” “republican,” “democrat,” “liberal,” and “conservative,” and science-relevant, including “science,” “gene,” and “biology.” Non-group identity filter words were also shown as distractors, including “car,” “yellow,” and “mountain.” Nonsense letter strings included “awor,” “clipr,” “dryck,” “fsapt,” “gammr,” “poprq,” “seltf,” and “lramp.”

The length of time between the appearance of the letter string and the key being pressed by the participants was recorded by the computer. The basic assumption of this task was that participants would take less time to identify party-related words when party identity was salient and activated ($M = 405.29$ milliseconds, $SD = 135.56$ milliseconds for party-relevant words, ranging between a minimum of $163.40$ to a maximum of $871.00$ milliseconds; $M = 525.93$ milliseconds, $SD = 582.32$ milliseconds for non-party related words, ranging between a
minimum of 160.83 to a maximum of 8552.50 milliseconds; $M = 650.60$ milliseconds, $SD = 507.88$ milliseconds for nonsense letter strings, ranging between a minimum of 167.88 to a maximum of 6445.63 milliseconds).

**Perceived Polarization**

To measure perceived polarization, Westfall et al. (2015) used the American National Election Studies’ (ANES) longitudinal survey data asking respondents to place each party on a 7-point scale (1 = most liberal position; 7 = most conservative position) on a variety of issues, then subtracted the mean Democratic position from the mean Republican position. Similarly, in their experimental study, Hwang et al. (2014) measured perceived polarization by asking participants to think about typical Republicans and Democrats and then estimate how strongly they support or oppose a given issue. This study applied the same measure and asked participants to estimate typical Republicans’ and Democrats’ issue position on GMF on a scale of 1 (strongly oppose) to 7 (strongly support) with the value of 4 as neutral ($M = 4.69$, $SD = 1.70$ for the perceived Republicans’ opinion; and $M = 3.45$, $SD = 1.58$ for the perceived Democrats’ opinion). The perceived polarization was constructed by calculating an absolute value of the difference between participants’ reported values of the perceived Republicans’ opinion and Democrats’ opinion ($M = 1.96$, $SD = 1.98$).

**Affective Polarization**

This study utilized the scales of affective polarization by Iyengar et al. (2012) and Garrett et al. (2014) to measure in- and outgroup feeling thermometer ratings and stereotypes of trait ratings. Participants were first asked about their feelings towards both “The Democrat” ($M =

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1 In order to hide the goals of the study, four dummy targets were added asking the participants to judge what typical men, women, scientists, and college students think about the issue. To minimize question order bias, questions about all six target groups including Republicans and Democrats were presented in a random order.
4.45, \(SD = 1.91\)) and “The Republican” \((M = 3.93, \ SD = 1.99)\) on a thermometer scale ranging from 1 (“very unfavorable/dislike” toward the group), 4 (does not feel particularly unfavorable or favorable toward the group), to 7 (“very favorable/like” feelings toward the group). \(^2\) Then, political ingroup and outgroup feelings were constructed based on participants’ party affiliation. Participants’ reported feeling toward Republicans was used for political ingroup feeling among Republican participants and as political outgroup feeling among Democratic participants. Following the same logic, their feeling toward Democrats was used as political outgroup feeling among Republican participants and as political ingroup feeling among Democratic participants \((M = 5.60, \ SD = 1.20 \text{ for the feeling thermometer of ingroup}; \text{ and } M = 2.78, \ SD = 1.52 \text{ for the feeling thermometer of outgroup})\). Finally, affective polarization was calculated as the absolute value of the difference between participants’ feelings towards the political ingroup and outgroup \((M = 2.87, \ SD = 1.97)\).

In addition, stereotypes of trait ratings were measured. Participants were asked to indicate their ratings about both “The Democrats” and “The Republicans” separately in terms of the following lists of trait description \((1 = \text{strongly disagree}, 7 = \text{strongly agree})\): patriotic, intelligent, honest, open-minded, generous, closed-minded, hypocritical, selfish, and mean. Favorable trait evaluation was constructed by taking the average value of the positive traits (i.e., patriotic, intelligent, honest, open-minded, and generous) and the reverse-coded value of the negative traits (i.e., closed-minded, hypocritical, selfish, and mean) \((M = 4.02, \ SD = 1.23 \text{ for the trait rating toward the Republican}; \text{ and } M = 4.53, \ SD = 1.28 \text{ for the trait rating toward the Democrat})\). Then, ingroup and outgroup favorable evaluation were constructed based on their reported party

\(^2\) Participants were also asked to report their feelings toward four additional dummy groups (i.e., men, women, scientists, and college students) in order to conceal the goals of the study. Again, to minimize question order bias, questions about all six target groups including Republicans and Democrats were presented in a random order.
affiliation. For participants who identified themselves as Republicans, their evaluations towards Republicans were used as ingroup favorable evaluation and evaluations towards Democrats as outgroup favorable evaluations. For participants who identified themselves as Democrats, their evaluations towards Democrats were used as ingroup evaluations and evaluations towards Republicans as outgroup evaluations ($M = 5.04, SD = .97$ for the trait rating of ingroup; and $M = 3.51, SD = 1.08$ for the trait rating of outgroup). Polarization of favorable trait evaluation was measured by calculating the absolute value of the difference between participants’ favorable evaluation of political ingroup and outgroup members ($M = 1.57, SD = 1.51$).

**Attitude Polarization**

Previous studies on attitude polarization measured an aggregate level of polarization, that is, showing whether the differences between Democrats and Republicans on an issue have been growing using longitudinal survey data (e.g., DiMaggio et al., 1996; Layman & Carsey, 2002). In contrast, in an experimental setting, pre-post testing has been used to test individuals’ attitude polarization at the within-subject level (e.g., Levendusky, 2013). Since this study is interested in whether a news story makes party identity salient in news readers’ minds and thus instigates the readers to support their political party’s issue position more, a measure of attitude conformity was constructed by measuring how much participants changed their attitudes on the issue toward their party issue position after they were exposed to the manipulated news story with pre- and post-attitude measures.

Participants were asked to indicate their overall attitude about GMF using a 7-point scale (1 = strongly disagree with GMF, 7 = strongly agree with GMF) before and after their exposure to the manipulated news article (pre-test: $M = 3.54, SD = 1.70$; post-test: $M = 3.62, SD = 1.71$). Since Republicans advocate GMF while Democrats oppose GMF and the manipulated news
story depicts such political parties’ real positions on the issue, pre- and post-support for party issue position were constructed by recoding participants’ pre- and post-issue attitude values to match their political party’s issue position such that the highest support score indicates that participants strongly support their party’s issue position, whereas the lowest support score indicates that participants strongly oppose their party’s issue position (pre-test: $M = 4.00$, $SD = 1.77$; post-test: $M = 4.12$, $SD = 1.75$). For example, for the participants who identified themselves as Republicans, the measure of pre- and post-support for party issue position took the score of issue attitude which measured the level of pro-GMF attitude; in contrast, for the participants who identified themselves as Democrats, the scores of issue attitude (i.e., pro-GMF attitude) were reverse-coded to form support for party issue position.

Finally, the measure of attitude conformity was constructed to investigate whether the manipulations in effect make participants align their issue attitude with their supported party’s issue position by subtracting the post-support value for party issue position from the pre-support value. Positive conformity scores indicated that individuals had shifted their attitude in the direction of their supported party’s issue position after exposure to the stimulus news story, a zero score indicated that participants had not changed their issue position after news exposure, and negative conformity scores indicated that individuals showed attitude change against their supported party’s issue position after news exposure ($M = .12$, $SD = .82$, range from -6 to 6).
CHAPTER 4
RESULTS

Sample

This study compared two opposing party identifiers to examine the effects of political conflict frame on party identity salience and political polarization. After excluding self-identified independents \((n = 123)\) from the analysis, the final sample of the study was 367 Republicans \((n = 153)\) and Democrats \((n = 214)\). The following is a brief review of the final sample’s demographic statistics.

The mean age of participants was 38 years old \((SD = 16 \text{ years})\), with a reported range from 17 to 87 years old. There were 232 females and 135 males. The race of participants was as follows: White/Caucasian \((n = 307, 83.7\%)\), Hispanic \((n = 19, 5.2\%)\), African American \((n = 16, 4.4\%)\), Asian \((n = 11, 3.0\%)\), and a race other than those listed above \((n = 14, 3.8\%)\).

Participants were asked about their education level as well. A total of 33.8\% \((n = 124)\) of participants reported having some college experience (no 4-year degree), 27\% \((n = 99)\) reported being a college graduate (B.S., B.A., or other 4-year degree), and 18.5\% \((n = 68)\) reported postgraduate training/professional school after college (toward a Masters/Ph.D., Law or Medical school). Other participants were as follows: High school graduates \((n = 59, 16.1\%)\), technical, trade or vocational school after high school \((n = 13, 3.5\%)\), high school incomplete \((n = 3, 0.8\%)\), and lower or none 1-8 \((n = 1, 0.3\%)\).
Participants were also asked to report their marital status. A total of 42.8 (n = 157) of participants were single or never married, 25.6% (n = 94) were married with children, 10.9% (n = 40) were married without children, 9.3% (n = 34) were divorced, 7.9% (n = 29) were living with a partner, 2.2% (n = 8) were widowed, and 1.4% (n = 5) were separated.

Statistics of participants’ religion were as follows: Protestant/other Christian (n = 144, 39.2%), none (n = 117, 31.9%), Catholic (n = 64, 17.4%), other non-Christian (n = 26, 7.1%), Jewish (n = 9, 2.5%), Mormon (n = 5, 1.4%), and Muslim (n = 2, 0.5%).

Participants’ occupations were diverse and included student (n = 59, 16.1%), educational services (n = 36, 9.8%), retail trade (n = 28, 7.6%), arts, entertainment or recreation (n = 24, 6.5%), health care or social assistance (n = 22, 6.0%), professional, scientific or technical services (n = 21, 5.7%), information (n = 20, 5.4%), finance or insurance (n = 19, 5.2%), admin, support, waste management or remediation services (n = 11, 3.0%), manufacturing (n = 10, 2.7%), transportation or warehousing (n = 9, 2.5%), construction (n = 8, 2.2%), management of companies or enterprises (n = 8, 2.2%), real estate or rental and leasing (n = 8, 2.2%), utilities (n = 4, 1.1%), accommodation or food services (n = 4, 1.1%), forestry, fishing, hunting, or agriculture support (n = 3, 0.8%), wholesale trade (n = 2, 0.5%), mining (n = 1, 0.3%), and other (n = 68, 18.5%).

Lastly, total family income before taxes are as follows: less than $10,000 (n = 19, 5.2%), $10,000 to under $20,000 (n = 23, 6.3%), $20,000 to under $30,000 (n = 39, 10.6%), $30,000 to under $40,000 (n = 40, 10.9%), $40,000 to under $50,000 (n = 40, 10.9%), $50,000 to under $75,000 (n = 63, 17.2%), $75,000 to under $100,000 (n = 52, 14.2%), $100,000 to under $150,000 (n = 45, 12.3%), $150,000 or more (n = 44, 12.0%).
Preliminary Analyses

First of all, normal distribution was determined for party identity salience, (skewness = .79, kurtosis = .36), perceived polarization (skewness = .43, kurtosis = -1.23), affective polarization (skewness = .03, kurtosis = -1.19 for feeling thermometer; skewness = 1.03, kurtosis = .33 for stereotypes trait ratings), pre-attitude (skewness = .26, kurtosis = -.70), and post-attitude (skewness = .09, kurtosis = -.86). Therefore, correlations among key dependent variables were analyzed to review the relationships. Pearson correlation coefficients tests were run because the dependent variables for the present study were scales. As seen in Table 1, significantly negative correlations were found between party identity salience and perceived polarization ($r(367) = -.200, p < .001$) and attitude polarization ($r(367) = -.231, p < .001$) because party identity salience indicates shorter reaction time. Perceived polarization and attitude polarization also showed significant positive correlations ($r(367) = .311, p < .001$). Although each affective polarization measure—feeling thermometer and stereotypes trait ratings—showed significant positive correlations with each other ($r(367) = .638, p < .001$), the feeling thermometer and stereotypes trait ratings did not show any significant correlations between party identity salience ($r(367) = -.038, p > .05$ for feeling thermometer; $r(367) = -.031, p > .05$ for stereotypes trait ratings), perceived polarization ($r(367) = .095, p > .05$ for feeling thermometer; $r(367) = .006, p > .05$ for stereotypes trait ratings), and attitude polarization ($r(367) = .060, p > .05$ for feeling thermometer; $r(367) = -.016, p > .05$ for stereotypes trait ratings).
Table 1. Correlation coefficients for dependent variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>1. Party identity salience</td>
<td></td>
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<td></td>
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<tr>
<td>2. Perceived polarization</td>
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<td></td>
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<tr>
<td>- .200***</td>
<td></td>
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<tr>
<td>3. Affective polarization (feeling thermometer)</td>
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<tr>
<td>- .038</td>
<td>.095</td>
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<td>4. Affective polarization (stereotypes trait ratings)</td>
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<tr>
<td>- .031</td>
<td>.006</td>
<td>.638***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Attitude polarization</td>
<td>- .231***</td>
<td>.311***</td>
<td>.060</td>
<td>- .016</td>
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</tbody>
</table>

***Correlation is significant at the .001 level (2-tailed)

Effects of Political Conflict Frame on Party Identity Salience

H1a predicted that political frame (vs. scientific frame) would increase the salience of party identity, and H1b predicted an interaction of group cue (political frame vs. scientific frame) and the level of conflict (conflict frame vs. consensus frame) on party identity salience. These were tested by examining group mean differences in participants’ reaction time on a lexical task. More specifically, the study predicted that participants who saw the article with a political frame would show significantly faster reaction times to political party-related words than those who were exposed to the scientific frame (H1a), and such party cue effect would be greater in the conflict frame condition (H1b).

A two-way analysis of variance (ANOVA) was performed to test the main effect of group cue (H1a) and the interaction effect of group cue and level of conflict (H1b) on salience of party identity with the two experimental factors as independent variables and the reaction time as a dependent variable. Means and standard deviations of reaction time for each condition are reported in Table 2.
Table 2. Means and standard deviations of reaction time (milliseconds)

<table>
<thead>
<tr>
<th></th>
<th>Political Frame</th>
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<th>Science Frame</th>
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<tbody>
<tr>
<td></td>
<td><em>M</em></td>
<td><em>SD</em></td>
<td></td>
<td><em>M</em></td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>351.80</td>
<td>114.80</td>
<td>(n = 88)</td>
<td>424.46</td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>421.79</td>
<td>135.32</td>
<td>(n = 87)</td>
<td>420.27</td>
</tr>
</tbody>
</table>

Compared to the scientific frame condition (*M* = 422.32, *SD* = 138.69, *n* = 192), participants exposed to the political frame (*M* = 386.60, *SD* = 129.89, *n* = 175) recorded significantly faster reaction times to party-related words, \([F(1,363) = 6.573, \ p < .05, \ \eta_p^2 = .018]\). Thus, the main effect of political frame on party identity salience was supported (H1a). The main effect of conflict frame on reaction time also showed that participants exposed to the conflict frame (*M* = 389.33, *SD* = 138.75, *n* = 182) had faster reactions than those who saw the consensus frame (*M* = 420.99, *SD* = 130.84, *n* = 185), and the difference was statistically significant \([F(1,363) = 5.624, \ p < .05, \ \eta_p^2 = .015]\).

The interaction effect of the political framing effect on party identity salience was significant as expected \([F(1,363) = 7.149, \ p < .01, \ \eta_p^2 = .019]\) (H1b). Table 3 shows the results of the ANOVA for the main and interaction effects of group cue and level of conflict on party identity salience. More specifically, post-hoc pair-wise comparison tests using Sidak revealed that in the conflict frame condition, participants who were exposed to the political party cue recorded significantly shorter reaction times (*M* = 351.80, *SE* = 14.15) than those who were exposed to the cue of scientists (*M* = 424.46, *SE* = 13.69) \([F(1,363) = 13.622, \ p < .001, \ \eta_p^2 = .036]\). However, the difference between the participants who were exposed to the political party...
cue (\(M = 421.79, SE = 14.23\)) and the scientists cue (\(M = 420.27, SE = 13.41\)) was not significant in the consensus frame condition.

The findings of the significant moderation effect of conflict level suggest that the effect of political frame on partisan participants’ salience of party identity are contingent upon the nature of intergroup relations described in the news reports: under the condition in which the in- and outgroup tried to reach intergroup consensus, political party cue did not increase the salience of party identity among partisan participants, while it did increase identity salience when participants were exposed to a conflict news frame in which the in- and outgroup had acrimonious conflict with each other. In sum, both H1a and H1b were supported, suggesting that the political conflict news frame did meaningfully influence party identity salience (see Figure 1 for the interaction pattern).

Table 3. Two-way ANOVA for main and interaction effects on party identity salience

<table>
<thead>
<tr>
<th>Sources</th>
<th>df</th>
<th>MS</th>
<th>(F)</th>
<th>(p)</th>
<th>(\eta_p^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group cue</td>
<td>1</td>
<td>115791.64</td>
<td>6.573</td>
<td>.011</td>
<td>.018</td>
</tr>
<tr>
<td>Level of conflict</td>
<td>1</td>
<td>99067.42</td>
<td>5.624</td>
<td>.018</td>
<td>.015</td>
</tr>
<tr>
<td>Group cue × Level of conflict</td>
<td>1</td>
<td>125937.84</td>
<td>7.149</td>
<td>.008</td>
<td>.019</td>
</tr>
<tr>
<td>Error</td>
<td>363</td>
<td>17614.99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 1. Interaction effects of group cue and level of conflict on party identity salience.

Note. Party identity salience was measured by participants’ reaction times to party-related words (range from 163.40 to 871.00 milliseconds). Quicker reaction times to party-related words indicate greater party identity salience.

Effects of Political Conflict Frame on Perceived Polarization

H2a and H2b suggested that the political conflict frame affects perceived polarization. Perceived polarization was measured by the difference between perceived typical Republicans’ opinion and Democrats’ opinion. Means and standard deviations of perceived typical Republicans’ opinion and Democrats’ opinion in each condition are reported in Table 4. H2a predicted that participants in the political frame condition (vs. scientific frame) would show greater perceptual difference between typical Republicans and Democrats than participants in the
scientific frame, and H2b predicted that the effect of party cue on such perceived polarization would be greater in the conflict frame condition than in the consensus frame condition.

Table 4. Means and standard deviations of perceived typical Republicans’ and Democrats’ opinion

<table>
<thead>
<tr>
<th></th>
<th>Perceived typical Republicans’ opinion</th>
<th>Perceived typical Democrats’ opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>SD</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Frame</td>
<td>5.57</td>
<td>1.28</td>
</tr>
<tr>
<td>Scientific Frame</td>
<td>3.98</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>($n = 88$)</td>
<td>($n = 88$)</td>
</tr>
<tr>
<td>Consensus Frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Frame</td>
<td>5.07</td>
<td>1.5</td>
</tr>
<tr>
<td>Scientific Frame</td>
<td>4.24</td>
<td>1.68</td>
</tr>
<tr>
<td></td>
<td>($n = 87$)</td>
<td>($n = 87$)</td>
</tr>
</tbody>
</table>

A two-way ANOVA was performed to test the main effect of group cue (H2a) and the interaction effect of group cue and level of conflict (H2b) on perceived polarization with the two experimental factors as independent variables and the difference between perceived typical Republicans’ opinion and Democrats’ opinion as a dependent variable. Means and standard deviations of perceived polarization (i.e., the difference between perceived typical Republicans’ opinion and Democrats’ opinion) for each condition are reported in Table 5.
Table 5. Means and standard deviations of perceived polarization

<table>
<thead>
<tr>
<th></th>
<th>Political Frame</th>
<th>Science Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>3.22</td>
<td>1.88</td>
</tr>
<tr>
<td>(n = 88)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>2.40</td>
<td>2.00</td>
</tr>
<tr>
<td>(n = 87)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A main effect of political frame on perceived polarization showed that participants in the political frame condition did indicate higher perceived polarization ($M = 2.81, SD = 1.98, n = 175$) than those who were in the scientific frame condition ($M = 1.18, SD = 1.62, n = 192$), and the difference was statistically significant [$F(1,363) = 76.968, \ p < .001, \ \eta^2_p = .175$] (H2a). However, a main effect of the conflict frame on perceived polarization was not detected [$F(1,363) = 2.526, \ p > .05, \ \eta^2_p = .007$], although greater perceived polarization was reported when participants were exposed to the conflict frame condition ($M = 2.10, SD = 2.05, n = 182$) as opposed to the consensus frame condition ($M = 1.81, SD = 1.90, n = 185$).

Consistent with H2b, the interaction effect of the political and conflict frames on perceived polarization was statistically significant [$F(1,363) = 7.716, \ p < .01, \ \eta^2_p = .021$]. Table 6 shows the results of the ANOVA for the main and interaction effects of group cue and level of conflict on perceived polarization. As Figure 2 illustrates, the conflict frame produced a greater difference in perceived polarization between the political frame group and the science frame group than did the consensus frame, although the political frame did produce greater perceived polarization than the science frame for both the conflict [$M = 3.22, SE = .19$ for political frame; $M = 1.06, SE = .18$ for science frame; $F(1,363) = 66.251, \ p < .001, \ \eta^2_p = .154$] and consensus...
These findings about the interaction effect imply that the effect of party cue on partisan perception of political polarization was amplified when the news coverage portrayed the political in- and outgroup as confronting each other acrimoniously compared with when the news coverage portrayed the two groups as seeking consensus. In sum, H2a and H2b were confirmed, indicating that a political conflict news frame positively influences participants’ perceived polarization (see Figure 2 for interaction pattern).

Table 6. Two-way ANOVA for main and interaction effects on perceived polarization

<table>
<thead>
<tr>
<th>Sources</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group cue</td>
<td>1</td>
<td>244.55</td>
<td>76.968</td>
<td>.000</td>
<td>.175</td>
</tr>
<tr>
<td>Level of conflict</td>
<td>1</td>
<td>8.02</td>
<td>2.526</td>
<td>.113</td>
<td>.007</td>
</tr>
<tr>
<td>Group cue × Level of conflict</td>
<td>1</td>
<td>24.52</td>
<td>7.716</td>
<td>.006</td>
<td>.021</td>
</tr>
<tr>
<td>Error</td>
<td>363</td>
<td>3.18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 2. Interaction effects of group cue and level of conflict on perceived polarization

*Note.* Perceived polarization was measured by the difference between perceived typical Republicans’ opinion and Democrats’ opinion with absolute value (range from 0 to 6)

**Effects of Political Conflict Frame on Affective Polarization**

H3a predicted that participants in the political frame condition (vs. scientific frame) would show greater affective polarization than participants in the scientific frame, and H3b predicts that the effect of party cue on affective polarization will be greater in the conflict frame condition. Affective polarization was measured in two ways: 1) the difference of in- and outgroup thermometer ratings, and 2) the difference of stereotypes of trait ratings between the political ingroup and outgroup. The means and standard deviations of in- and outgroup thermometer ratings and stereotypes of trait ratings in each condition are reported in Table 7 and Table 8.
Table 7. Means and standard deviations of in- and outgroup thermometer ratings

<table>
<thead>
<tr>
<th>Table 7</th>
<th>Outgroup thermometer ratings</th>
<th>Ingroup thermometer ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>SD</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Frame</td>
<td>2.94</td>
<td>1.45</td>
</tr>
<tr>
<td>(n = 87)</td>
<td>(n = 87)</td>
<td></td>
</tr>
<tr>
<td>Scientific Frame</td>
<td>2.69</td>
<td>1.49</td>
</tr>
<tr>
<td>(n = 94)</td>
<td>(n = 94)</td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Frame</td>
<td>2.69</td>
<td>1.65</td>
</tr>
<tr>
<td>(n = 86)</td>
<td>(n = 86)</td>
<td></td>
</tr>
<tr>
<td>Scientific Frame</td>
<td>2.79</td>
<td>1.51</td>
</tr>
<tr>
<td>(n = 98)</td>
<td>(n = 98)</td>
<td></td>
</tr>
</tbody>
</table>

Table 8. Means and standard deviations of in- and outgroup stereotypes of trait ratings

<table>
<thead>
<tr>
<th>Table 8</th>
<th>Outgroup thermometer ratings</th>
<th>Ingroup thermometer ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>SD</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Frame</td>
<td>3.76</td>
<td>1.06</td>
</tr>
<tr>
<td>(n = 88)</td>
<td>(n = 88)</td>
<td></td>
</tr>
<tr>
<td>Scientific Frame</td>
<td>3.28</td>
<td>1.02</td>
</tr>
<tr>
<td>(n = 94)</td>
<td>(n = 94)</td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Frame</td>
<td>3.45</td>
<td>1.10</td>
</tr>
<tr>
<td>(n = 87)</td>
<td>(n = 87)</td>
<td></td>
</tr>
<tr>
<td>Scientific Frame</td>
<td>3.54</td>
<td>1.10</td>
</tr>
<tr>
<td>(n = 98)</td>
<td>(n = 98)</td>
<td></td>
</tr>
</tbody>
</table>

A two-way ANOVA was performed to test the main effect of group cue (H3a) and the interaction effect of group cue and level of conflict (H3b) on affective polarization. The experimental manipulations served as independent variables. The difference between feeling thermometer score for political ingroup and outgroup and the difference between stereotypes of trait ratings for political ingroup and outgroup were the dependent variables.

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In the case of the feeling thermometer measure, the main effect of the political frame on the difference between feeling thermometer score for political ingroup and outgroup showed that participants in the scientific frame condition indicated a slightly higher difference of feeling thermometer \((M = 2.97, SD = 1.98, n = 192)\) than those who were in the political frame condition \((M = 2.76, SE = 1.94, n = 175)\), but the difference was not statistically significant \([F(1,363) = .291, \ p > .05, \eta_p^2 = .003] (H3a)\). The main effect of the conflict frame on the difference of feeling thermometer showed a greater score in the conflict frame condition \((M = 2.88, SD = 1.91, n = 182)\) than in the consensus frame condition \((M = 2.86, SD = 2.02, n = 185)\), but the difference was not statistically significant \([F(1,363) = .001, \ p > .05, \eta_p^2 = .000]\). Moreover, the interaction effect was not significant \([F(1,363) = 1.050, \ p > .05, \eta_p^2 = .003] (H3b)\). Means and standard deviations of affective polarization (i.e., the difference between feeling thermometer score on political ingroup and outgroup) for each condition are reported in Table 9, and Table 10 shows the results of the ANOVA for the main and interaction effects of group cue and level of conflict on affective polarization (feeling thermometer ratings).

Table 9. Means and standard deviations of affective polarization (the difference between in- and out-group feeling thermometer ratings)

<table>
<thead>
<tr>
<th></th>
<th>Political Frame</th>
<th></th>
<th>Science Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>2.66</td>
<td>1.85</td>
<td>3.09</td>
</tr>
<tr>
<td></td>
<td>(n = 88)</td>
<td></td>
<td>(n = 94)</td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>2.86</td>
<td>2.04</td>
<td>2.87</td>
</tr>
<tr>
<td></td>
<td>(n = 87)</td>
<td></td>
<td>(n = 98)</td>
</tr>
</tbody>
</table>
Table 10. Two-way ANOVA for main and interaction effects on affective polarization (the difference between in- and out-group feeling thermometer ratings)

<table>
<thead>
<tr>
<th>Sources</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group cue</td>
<td>1</td>
<td>4.32</td>
<td>1.118</td>
<td>.291</td>
<td>.003</td>
</tr>
<tr>
<td>Level of conflict</td>
<td>1</td>
<td>.01</td>
<td>.001</td>
<td>.971</td>
<td>.000</td>
</tr>
<tr>
<td>Group cue × Level of conflict</td>
<td>1</td>
<td>4.05</td>
<td>1.050</td>
<td>.306</td>
<td>.003</td>
</tr>
<tr>
<td>Error</td>
<td>363</td>
<td>3.86</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Next, the results of stereotypes of trait ratings showed that the main effect of political frame on stereotypes of trait ratings was not significant \([F(1,363) = 3.228, \ p > .05, \ η_p^2 = .009]\), showing greater ratings in the scientific frame condition \((M = 1.71, SD = 1.57, n = 192)\) than in the political condition \((M = 1.42, SD = 1.43, n = 175)\) (H3a). The main effect of the conflict frame on the difference of stereotypes of trait ratings was also not statistically significant \([F(1,363) = .553, \ p > .05, \ η_p^2 = .002]\); participants who saw the consensus frame showed a little bit higher stereotypes trait ratings \((M = 1.62, SD = 1.54, n = 185)\) than those who were exposed to the conflict frame condition \((M = 1.52, SD = 1.48, n = 182)\). Moreover, the interaction effect was not revealed to be statistically significant \([F(1,363) = 3.527, \ p > .05, \ η_p^2 = .010]\) (H3b). In sum, an effect of the political conflict frame on affective polarization—both feeling thermometer and stereotype trait ratings measures—was not found. Means and standard deviations of affective polarization (i.e., the difference of stereotypes of trait ratings between political ingroup and outgroup) for each condition are reported in Table 11, and Table 12 shows the results of the ANOVA for the main and interaction effects of group cue and level of conflict on stereotype trait ratings.
Table 11. Means and standard deviations of affective polarization (the difference of stereotypes of trait ratings between political ingroup and outgroup)

<table>
<thead>
<tr>
<th></th>
<th>Political Frame</th>
<th></th>
<th>Science Frame</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>1.22</td>
<td>1.28</td>
<td>1.80</td>
<td>1.60</td>
</tr>
<tr>
<td></td>
<td>(n = 88)</td>
<td></td>
<td>(n = 94)</td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>1.63</td>
<td>1.55</td>
<td>1.62</td>
<td>1.53</td>
</tr>
<tr>
<td></td>
<td>(n = 87)</td>
<td></td>
<td>(n = 98)</td>
<td></td>
</tr>
</tbody>
</table>

Table 12. Two-way ANOVA for main and interaction effects on affective polarization (the difference of stereotypes of trait ratings between political ingroup and outgroup)

<table>
<thead>
<tr>
<th>Sources</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group cue</td>
<td>1</td>
<td>7.27</td>
<td>3.23</td>
<td>.073</td>
<td>.009</td>
</tr>
<tr>
<td>Level of conflict</td>
<td>1</td>
<td>1.25</td>
<td>.553</td>
<td>.458</td>
<td>.002</td>
</tr>
<tr>
<td>Group cue × Level of conflict</td>
<td>1</td>
<td>7.94</td>
<td>3.527</td>
<td>.061</td>
<td>.010</td>
</tr>
<tr>
<td>Error</td>
<td>363</td>
<td>2.25</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Effects of Political Conflict Frame on Attitude Polarization

H4a predicted that participants in the political frame condition (vs. scientific frame) would show greater attitude polarization than participants in the scientific frame condition, and H4b predicts that the effect of party cue on attitude polarization will be greater in the conflict frame condition. Attitude conformity was measured by the change in participants’ pre- and post-attitude toward their party’s issue position. Means and standard deviations of pre- and post-attitude toward participants’ issue position in each condition are reported in Table 13.
A two-way ANOVA was performed to test the main effect of group cue (H4a) and the interaction effect of group cue and level of conflict (H4b) on attitude polarization with experimental manipulations as independent variables and attitude conformity to one’s supported party’s issue position as a dependent variable. Means and standard deviations of attitude polarization (i.e., attitude conformity) for each condition are reported in Table 14.

Table 14. Means and standard deviations of attitude polarization (attitude conformity)
The main effect of political frame on attitude polarization showed that participants who were exposed to the political frame indicated statistically significantly higher attitude conformity ($M = .36, SD = .95, n = 175$) than those who were exposed to the scientific frame ($M = -.09, SD = .62, n = 192$), $[F(1,363) = 30.726, p < .001, \eta^2_p = .078]$ (H4a). In addition, there was a significant main effect of conflict frame on attitude polarization $[F(1,363) = 9.344, p < .01, \eta^2_p = .025]$, showing that participants who were exposed to the conflict frame indicated statistically significantly higher attitude conformity ($M = .25, SE = .88, n = 182$) than those who were exposed to the consensus frame ($M = .00, SE = .74, n = 185$).

Moreover, as expected, the interaction effect on attitude polarization was statistically meaningful $[F(1,363) = 4.334, p < .05, \eta^2_p = .012]$ (H4b). Table 15 illustrates the results of the ANOVA for the main and interaction effects of group cue and level of conflict on attitude polarization. More specifically, post-hoc pair-wise comparison tests using Sidak revealed that in the conflict frame condition, participants who were exposed to the political party cue showed significantly greater attitude polarization ($M = .57, SE = .08$) than those who were exposed to the scientists cue ($M = -.05, SE = .08$) $[F(1,363) = 28.869, p < .001, \eta^2_p = .074]$. Meanwhile, the difference between the participants who were exposed to the political party cue ($M = .15, SE = .08$) and the scientists cue ($M = -.13, SE = .08$) was also statistically significant in the consensus frame condition. As Figure 3 illustrates, however, the mean difference between the political frame and the scientific frame was greater in the conflict frame condition (mean difference = .621) than in the consensus frame condition (mean difference = .282).

The significant interaction effects of group cue and level of conflict on attitude polarization suggest that the effect of party cue (i.e., political frame) on attitude polarization is boosted under the intergroup conflict situation (i.e., conflict frame) compared with under the
intergroup consensus condition (i.e., consensus frame). In conclusion, H4a and H4b were supported, indicating that a political conflict news frame positively influences participants’ attitude polarization (see Figure 3 for the interaction pattern).

Table 15. Two-way ANOVA for main and interaction effects on attitude polarization (attitude conformity)

<table>
<thead>
<tr>
<th>Sources</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group cue</td>
<td>1</td>
<td>18.68</td>
<td>30.726</td>
<td>.000</td>
<td>.078</td>
</tr>
<tr>
<td>Level of conflict</td>
<td>1</td>
<td>5.68</td>
<td>9.344</td>
<td>.002</td>
<td>.025</td>
</tr>
<tr>
<td>Group cue × Level of conflict</td>
<td>1</td>
<td>2.63</td>
<td>4.334</td>
<td>.038</td>
<td>.012</td>
</tr>
<tr>
<td>Error</td>
<td>363</td>
<td>.608</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 3. Interaction effects of group cue and level of conflict on attitude polarization

Note. Attitude polarization was measured by attitude conformity (i.e., participants’ pre- and post-attitude change toward their party issue position) (range from -6 to 6)

Mediation Process

Mediation effects of party identity salience on the three types of polarization were tested for H2c (mediation process of perceived polarization), H3c (mediation process of affective polarization), and H4c (mediation process of attitude polarization).

Mediation, moderation, and moderated mediation analyses have traditionally been conducted using statistical software such as SPSS, SAS, and R. Recently, PROCESS, a computational tool for SPSS and SAS, has become popular thanks to its easy-to-use command and interface. PROCESS is a path analysis-based moderation and mediation analysis tool that
can construct bias-corrected and percentile-based bootstrap confidence intervals for conditional and unconditional indirect effects in mediation models (for a review, see Hayes, 2012).

In this dissertation, the mediation analysis was conducted using the bootstrapping procedures recommended for smaller samples (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Preacher & Hayes, 2004). For bootstrapping, Hayes’ (2013) analytical strategies were used. Among the 76 model templates PROCESS offers, this study used Model 8. Its conceptual and statistical diagrams are illustrated in Figure 4 and Figure 5 (Hayes, 2013).

Figure 4. Conceptual diagram of mediation model
Figure 5. Statistical diagram of mediation model

Note. Conditional indirect effect of $X$ on $Y$ through $M_i = (a_{1i} + a_{3i}W)b_i$

Direct effect of $X$ on $Y = c_1' + c_3'W$

The analysis used 1,000 bootstrap resamples of the data with replacement. Statistical significance with alpha at .05 is indicated by the 95% bias-corrected confidence intervals not crossing zero. Group cue manipulation, the level of conflict manipulation, and a dummy variable of interaction terms (group cue × the level of conflict) were entered as independent variables,
reaction time was entered as a mediator, and the three polarization measures were entered as dependent variables.

Consistent with the findings from H1a and H1b, there were significant effects of political conflict (i.e., interaction effect of group cue and level of conflict) on party identity salience (i.e., reaction time to party-related words; $b = -74.19$, $SE = 27.74$, $t = -2.67$, $p < .01$). In addition, the mediator (i.e., party identity salience) had a significant effect on perceived polarization ($b = - .002$, $SE = .001$, $t = -2.62$, $p < .01$) and on attitude polarization ($b = -.001$, $SE = .00$, $t = -3.44$, $p < .001$). The results from bootstrapping confirmed that the political conflict news frame manipulations had statistically significant indirect effects on perceived polarization through party identity salience (effect = .14, bootstrap $SE = .07$, 95% CI [.03, .34]) and also had significant indirect effects on attitude polarization through party identity salience (effect = .08, bootstrap $SE = .04$, 95% CI [.03, .17]). Figure 6 and Figure 7 illustrate the statistical diagrams of the mediation process for perceived polarization and attitude polarization respectively.
Figure 6. Statistical diagram of mediation model for perceived polarization

Note. Reported values are unstandardized coefficients. *p < .05, **p < .01, ***p < .001.
Figure 7. Statistical diagram of mediation model for attitude polarization

*Note.* Reported values are unstandardized coefficients. *p < .05, **p < .01, ***p < .001.

However, affective polarization did not reveal significant indirect effects through party identity salience (effect = .06, bootstrap SE = .07, 95% CI [-.04, .23] for feeling thermometer measure; effect = .05, bootstrap SE = .05, 95% CI [-.02, .19] for stereotype trait ratings measure). In sum, the bootstrapping results supported H2c and H4c, which suggested that party identity salience would mediate the effects of the political conflict frame on participants’ perceived
polarization and attitude polarization, but not H3c about their affective polarization. Thus, H3c was rejected.

Summarized statistical diagrams of the mediation effects of party identity salience on the influences of political conflict news frame on perceived polarization and attitude polarization are illustrated in Figure 8. The findings show that the effect of political conflict news frame on attitude polarization was fully mediated by salience of party identity, while its effect on perceived polarization was partially mediated by identity salience, suggesting that other factors might mediate the effect of political conflict frame on perceived polarization. However, the significant results of the mediation processes for perceptual and attitudinal polarization clearly illustrate that the political conflict frame produces political polarization among partisan news readers through a social identification process in which the news frame propels the party identification process among partisan readers, resulting in intergroup bias in perception and attitudes.
Figure 8. Mediation effects of political conflict news frame on perceived and attitude polarization through party identity salience

*Note.* Reported values are unstandardized coefficients. *p < .05, **p < .01, ***p < .001.

**Analysis of Independent Sample**

As mentioned earlier, because the polarization study compared two opposing groups of party identifiers, the data for participants who identified themselves as independent (*n* = 123) were excluded in the analysis. However, this study additionally confirmed that the effects of political conflict frame on political polarization were not seen among independents.

First, the effects of exposure to the political conflict frame on party identity salience were analyzed for the independent sample. Table 16 shows the means and standard deviations of
reaction times for each condition. Although participants who were exposed to the political frame
\((M = 511.14, SD = 359.24, n = 55)\) recorded a little bit faster reaction times to party-related
words compared to those in the scientific frame condition \((M = 533.57, SD = 306.54, n = 68)\), the
difference was not statistically significant \([F(1,119) = .515, p = .475, \eta^2_p = .004]\). In addition,
participants who saw the conflict frame \((M = 466.85, SD = 261.39, n = 55)\) showed shorter
reaction time than those who saw the consensus frame \((M = 569.40, SD = 371.98, n = 68)\), but
the difference was not statistically significant \([F(1,119) = 3.455, p = .066, \eta^2_p = .028]\). The
interaction effect of the political framing on party identity salience was also not significant
\([F(1,119) = .320, p = .573, \eta^2_p = .003]\).

Table 16. Means and standard deviations of reaction time

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<th>Political Frame</th>
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<tr>
<td></td>
<td>(M)</td>
<td>(SD)</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>417.05</td>
<td>138.99</td>
</tr>
<tr>
<td>(n = 20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>564.91</td>
<td>431.26</td>
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<tr>
<td>(n = 35)</td>
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Second, the effects of the political conflict frame on perceived polarization were analyzed
for the independent sample. Table 17 presents the means and standard deviations of perceived
polarization for each condition among the independents. A main effect of political frame on
perceived polarization shows that participants in the political frame condition did indicate higher
perceived polarization \((M = 2.32, SD = 2.01, n = 55)\) than those in the scientific frame condition
\((M = 1.22, SD = 1.76, n = 68)\), and the difference was statistically significant \([F(1,119) = 11.161,\)
However, a main effect of the conflict frame on perceived polarization was not detected \([F(1,119) = .794, \ p = .375, \eta_p^2 = .007]\), although greater perceived polarization was reported when participants were exposed to the conflict frame \((M = 1.78, \ SD = 1.98, \ n = 55)\) as opposed to the consensus frame \((M = 1.66, \ SD = 1.94, \ n = 68)\). The interaction effect of the political and conflict frames on perceived polarization was not statistically significant \([F(1,119) = .115, \ p = .735, \eta_p^2 = .001]\).

Table 17. Means and standard deviations of perceived polarization

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<th>Political Frame</th>
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<th>Science Frame</th>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>2.60</td>
<td>1.98</td>
<td>1.31</td>
<td>1.84</td>
</tr>
<tr>
<td></td>
<td>(n = 20)</td>
<td></td>
<td>(n = 35)</td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>2.16</td>
<td>2.04</td>
<td>1.12</td>
<td>1.69</td>
</tr>
<tr>
<td></td>
<td>(n = 35)</td>
<td></td>
<td>(n = 33)</td>
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Third, the effects of the political conflict frame on affective polarization (the difference between in- and outgroup thermometer ratings) were analyzed for the independent sample. Table 18 reports the means and standard deviations of affective polarization for each condition. A main effect of political frame on affective polarization indicates that participants in the political frame condition did have lower affective polarization \((M = 1.13, \ SD = 1.49, \ n = 55)\) than those who were in the scientific frame condition \((M = 1.40, \ SD = 1.53, \ n = 68)\), but the difference was not statistically significant \([F(1,119) = 1.546, \ p = .216, \eta_p^2 = .013]\). Also, a main effect of the conflict frame on affective polarization was not detected \([F(1,119) = 3.082, \ p = .082, \eta_p^2 = .025]\); greater affective polarization was reported by participants in the consensus frame condition \((M = 1.47, \ SD = 1.63, \ n = 68)\) as opposed to the conflict frame condition \((M = 1.04, \ SD = 1.32, \ n = 55)\).
The interaction effect of the political and conflict frames on affective polarization was not statistically significant either \( F(1,119) = .008, \ p = .930, \eta^2_p = .000 \)

Table 18. Means and standard deviations of affective polarization (the difference between in- and out-group thermometer ratings)

<table>
<thead>
<tr>
<th>Political Frame M</th>
<th>SD</th>
<th>Science Frame M</th>
<th>SD</th>
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<tbody>
<tr>
<td>Conflict Frame</td>
<td>.80</td>
<td>1.20</td>
<td>1.17</td>
</tr>
<tr>
<td>(n = 20)</td>
<td></td>
<td></td>
<td>(n = 35)</td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>1.31</td>
<td>1.62</td>
<td>1.64</td>
</tr>
<tr>
<td>(n = 35)</td>
<td></td>
<td></td>
<td>(n = 33)</td>
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</table>

The effects of the political conflict frame on affective polarization (the difference of stereotypes of trait ratings between political ingroup and outgroup) were analyzed for the independent sample. See Table 19 for the means and standard deviations for each condition. A main effect of political frame on affective polarization shows that participants in the political frame condition did indicate lower affective polarization \( (M = .76, \ SD = 1.15, \ n = 55) \) than those who were in the scientific frame condition \( (M = 1.04, \ SD = 1.22, \ n = 68) \), but the difference was not statistically significant \( F(1,119) = 1.856, \ p = .176, \eta^2_p = .015 \). Furthermore, a main effect of the conflict frame on affective polarization was not detected \( F(1,119) = .100, \ p = .752, \eta^2_p = .001 \), with participants reporting greater affective polarization when they were exposed to the conflict frame \( (M = .99, \ SD = 1.21, \ n = 55) \) than the consensus frame \( (M = .85, \ SD = 1.18, \ n = 68) \). The interaction effect of the political and conflict frames on affective polarization was not statistically significant \( F(1,119) = .973, \ p = .326, \eta^2_p = .008 \)
Fourth, the effects of the political conflict frame on attitude polarization were analyzed for the independent sample. Table 20 reports the means and standard deviations of attitude polarization for each condition. A main effect of political frame on attitude polarization shows that participants in the political frame condition did indicate a little bit higher attitude polarization ($M = .04, SD = .64, n = 55$) than those who were in the scientific frame condition ($M = .03, SD = .85, n = 68$), but the difference was not statistically significant [$F(1,119) = .004, p = .949, \eta^2_p = .000$]. A main effect of the conflict frame on perceived polarization was not detected [$F(1,119) = .019, p = .890, \eta^2_p = .000$], showing greater attitude polarization when participants were exposed to the conflict frame ($M = .05, SD = .68, n = 55$) as opposed to the consensus frame ($M = .01, SD = .82, n = 68$). In addition, the interaction effect of the political and conflict frames on attitude polarization was not statistically significant [$F(1,119) = 1.209, p = .274, \eta^2_p = .010$].

Table 19. Means and standard deviations of affective polarization (the difference of stereotypes of trait ratings between political ingroup and outgroup)

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<thead>
<tr>
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<th>Political Frame</th>
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<th>Science Frame</th>
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<tr>
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<td>$M$</td>
<td>$SD$</td>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td></td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>.66</td>
<td>1.14</td>
<td>(n = 20)</td>
<td>1.18</td>
<td>1.23</td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>.81</td>
<td>1.17</td>
<td>(n = 35)</td>
<td>.89</td>
<td>1.21</td>
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Table 20. Means and standard deviations of attitude polarization

<table>
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<th>Political Frame</th>
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<th>Science Frame</th>
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<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Conflict Frame</td>
<td>-.05</td>
<td>.51</td>
<td>.11</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>(n = 20)</td>
<td></td>
<td>(n = 35)</td>
<td></td>
</tr>
<tr>
<td>Consensus Frame</td>
<td>.09</td>
<td>.70</td>
<td>-.06</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>(n = 35)</td>
<td></td>
<td>(n = 33)</td>
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</table>

In summary, independent participants did not experience a significant effect of being exposed to the political conflict frame on their party identity salience, perceived polarization, affective polarization, and attitude polarization.

Summary of Findings

In order to examine the effects of the political conflict news frame on political polarization, this study manipulated group cue (political frame vs. scientific frame) and level of conflict (conflict frame vs. consensus frame) in a news story about GMF. A 2 (group cue: political frame vs. scientific frame) × 2 (level of conflict: conflict frame vs. consensus frame) experimental design was employed.

First, H1a expected that the political frame (vs. scientific frame) would increase party identity salience, and H1b expected that the conflict frame (vs. consensus frame) would strengthen the effects of political frame on party identity salience. Party identity salience was measured by reaction time to party-related words based on the assumption that reaction time to identify party-related words in a lexical task would be shorter when party identity has been made salient. The results supported both H1a and H1b, which suggests that the political conflict news frame positively influenced party identity salience.
Second, as H2a and H2b expected, the results showed the positive effects of the political conflict frame on perceived political polarization. That is, H2a (perceived polarization would be greater when participants are exposed to a political frame than when they are exposed to a scientific frame) and H2b (the effect of party cue on perceived polarization would be greater when participants are exposed to a political conflict frame than when they are exposed to a consensus frame) were both statistically confirmed.

Third, inconsistent with H3a and H3b, the results did not show statistically significant main and interaction effects of group cue and level of conflict on affective polarization. The study used both in- and outgroup thermometer ratings, and in- and outgroup stereotypes of trait ratings measures for affective polarization. Neither the in- and outgroup thermometer ratings nor the stereotypes of trait ratings measures showed any statistically meaningful effects of the political conflict news frame on affective polarization.

Fourth, consistent with H4a and H4b, the effects of the political conflict frame did positively influence attitude polarization. Participants reported higher attitude conformity when they were exposed to the political frame (vs. the scientific frame), and the party cue effect was greater when they were exposed to the conflict frame (vs. the consensus frame). Therefore, H4a and H4b were supported.

Finally, the study tested the mediation process of [political conflict news frame → party identity salience → political polarization]. The bootstrapping analyses via PROCESS confirmed that party identity salience did mediate the effects of the political conflict news frame on perceived polarization (H2c) and attitude polarization (H4c). However, a mediating effect of party identity salience on affective polarization was not found (H3c), just as main effects and interaction effects on affective polarization were not found.
CHAPTER 5
DISCUSSION

Communication scholars have paid attention to the role of media in the increasing political polarization of American politics (Pew Research Center, 2014). Although previous studies have shown that increasingly partisan media in the U.S. media market and audiences’ selective exposure jointly contribute to this phenomenon (Levendusky, 2013; Mutz, 2006, Stroud, 2010), relatively little is known about how the media’s portrayal of political reality and what specific factors in news messages affect mass political polarization. To explore such unanswered issues regarding the role of the media’s portrayal of political reality in mass political polarization, this dissertation attempts to explore how political polarization may be caused by the prevailing news frames on American politics, which are often influenced by journalistic professional routines and conventions (Pan & Kosicki, 1993). Specifically, as scholars are concerned about current news reports, which often highlight and over-represent political conflicts compared to consensus, this dissertation examines how such conflict-centered news reports on politics, which I labeled “political conflict news frame,” affect audiences’ psychological processing of news content that leads them to produce and/or intensify their political polarization.

Using social identity and self-categorization theories to conceive mass political polarization as a type of intergroup bias, this dissertation investigated the effect of political conflict news frame regarding a non-political scientific issue (i.e., genetically modified foods) on partisans’ polarized perceptions, attitudes, and emotions through salience of party identity. More
specifically, this study postulated the following two-step process of political polarization by which media reports about political conflict may influence the way partisan message recipients perceive, feel, and think about an issue.

First, a news message focusing on conflict between political in- and outgroups activates and makes salient their party identity in partisan recipients’ minds: the salience of partisan news recipients’ party identity is (a) increased by the presentation of political party cues in the message and (b) magnified when the message highlights intergroup conflict compared with when it highlights intergroup consensus.

Second, the salience of partisan recipients’ party identity initiates a process of self-categorization along political party lines and thus leads to intergroup bias in partisan recipients’ perceptions, emotions, and attitudes in relation to the issue: the increased salience of recipients’ party identity enhances polarized perceptions of political in- and outgroup members’ opinions, polarized emotions toward political in- and outgroup members, and attitude conformity to political ingroup opinion. Such polarized perceptions, emotions, and attitudes are accentuated when (a) political party cues are presented in the message and (b) the message focuses on inter-party conflict rather than consensus (c) through increased party identity salience.

To test the effects of the two key elements of the political conflict news frame (i.e., party cue and level of intergroup conflict) on the proposed two-step process of political polarization, eleven hypotheses were proposed: effects of a political conflict frame on party identity salience (H1a and H1b), perceived polarization (H2a and H2b), affective polarization (H3a and H3b), and attitude polarization (H4a and H4b), and the mediation of party identity salience in the effects of political conflict frame on the three types of polarization (H2c, H3c, and H4c). These hypotheses
were empirically tested through a 2 (group cue: political frame vs. scientific frame) × 2 (level of conflict: conflict frame vs. consensus frame) web-based experiment.

**Implications of Results**

**Party Identity Salience**

Rather than simply assuming the role of contextual identity salience in the group polarization process, this dissertation attempted to empirically measure the level of party identity salience in participants’ minds and investigate whether exposure to a political conflict news frame affects party identity salience. For this goal, this study employed a lexical task to measure participants’ reaction time to a series of party-related words after exposure to a manipulated news article. Previous studies suggest that when party identity is activated and accessible in audiences’ short-term memory, and thus salient in their mind, they tend to show shorter reaction times toward party-related words than when it is not salient (e.g., Bassili, 1995; Comello & Slater, 2011; Smith & Henry, 1996).

As expected, the presence of political party cues in a news story in which the main debaters of the issue were politicians of the two major political parties (i.e., the Republican Party and the Democratic Party) produced shorter reaction times to party-related words than the absence of party cue. Furthermore, when the news story highlighted intergroup conflict, the effect of the political party cue on reaction times was amplified compared to when the story highlighted intergroup consensus.

The findings about the significant effect of the news manipulation on party identity salience are quite consistent with the social identity and self-categorization approach to identity salience. According to this approach, people do not always use or rely upon a certain identity
when they process incoming information. Rather, whether the identity is actually being used or not in any given situation is largely dependent upon salience of the identity—the likelihood that a given identity will be active and be judged as a relevant factor for social categorization at a particular moment or in a particular situation. In addition, salience of the identity can be influenced by contextual factors affecting *fit* or *applicability* of the identity, which refers to the congruence between a given category and perceptions of the situation (Turner & Reynolds, 2010). As social identity theory suggests, the message factors of the current study (i.e., presence of party cue and level of intergroup conflict) indeed play a significant role as contextual factors to increase the salience of party identity.

The findings also demonstrate that media news can be an important source for transferring elite political polarization to the mass public (e.g., Hetherington, 2001) by showing that even a science topic like GMF could stimulate the salience of party identity when the topic is politically framed (vs. scientific frame). Consistent with theories on news framing effects which argue that a particular news frame makes individuals selectively pay attention to specific aspects of a message and activate related information more noticeable or meaningful (Entman, 1993; Higgins, 1989; Tewksbury et al., 2000), these findings clearly reveal that political conflict news frames can increase party identity salience when audiences think about the issue by focusing on political conflict.

**Perceived Polarization**

Previous studies have shown that people often overestimate or exaggerate the views of typical members of the opposing political party on heavily politicized or hot-button issues such as abortion, the death penalty, and same-sex marriage (e.g., Chambers, Barson, & Inman, 2006; Keltner & Robinson, 1993; Robinson, Keltner, Ward, & Ross, 1995), so-called false
polarization (Levendusky & Malhotra, 2013; Monin & Norton, 2003). This study showed how media coverage of an issue can play an important role in the formation of such biased perceptions of mass polarization by framing a scientific issue as a politically controversial issue. By depicting the two opposing political parties rather than scientists at odds over the GMF issue, the manipulation of the political issue frame significantly increased partisan participants’ perceived disagreements between Republicans and Democrats compared with the manipulation depicting the issue with a scientific frame. In addition, highlighting intergroup conflict as opposed to intergroup consensus in the news significantly amplified the effect of the party cue on perceived partisan divide over the issue. Given that the GMF issue is not a well-known political issue and participants were exposed to a single news story about the issue, these findings indicate that the political conflict news frame can have quite a strong influence on the formation of perceived partisan polarization.

Combined with prior studies on the effects of media frames of science-related issues (i.e., nuclear energy and global warming) on audiences’ reactions to the issues (e.g., Bennett, 2012; Gamson & Modigliani, 1989), the current results provide useful theoretical explanation and empirical evidence for how the political conflict frame shapes audiences’ perception of public opinion through social identity and self-categorization processes. Given the complexity and novelty of the GMF issue, the partisan participants in the current study seem to stereotypically perceive others’ views on the issue based on party identity only when the news messages make party identity salient with a political conflict frame. Consistent with the findings of previous studies of perceived mass polarization which suggested that the perceived political divide is grounded in a social categorization process (e.g., Corneille & Judd, 1999; Hwang et al., 2014; Seyle & Newman, 2006), these findings suggest that once party identity is made salient by the
political conflict frame, people categorize others in relation to the issue primarily as members of conflicting political parties, which results in exaggeration of the perceived disagreement between partisan groups.

**Attitude Polarization**

The results revealed that the political conflict news frame positively influences attitude polarization: partisan participants were more likely to change their issue attitude to be in line with their party’s issue position when the GMF issue was framed as a political issue than when it was framed as a scientific issue. This difference of attitude polarization between the political frame versus the scientific frame condition was accentuated by the conflict frame which highlighted intergroup conflict as opposed to the consensus frame. Consistent with prior findings regarding intergroup conflict message on attitude formation through the social identification process (e.g., Price, 1989), the current findings indicate that political news frames can prove to be influential in the formation of partisans’ opinion about the reported issue by describing the normative opinions political in- and outgroup members should adopt. Furthermore, the findings indicate that the conflict frame promotes these normative effects of the political frame on partisans’ conforming to political in-group opinion by making intergroup opinion differences salient.

It is worth noting that studies have not provided consistent evidence supporting the effects of intergroup conflict message on attitude conformity to ingroup norms. For example, Hwang et al. (2014) investigated the effects of uncivil online intergroup debate on political polarization, perceived polarization, and attitude polarization by experimentally manipulating online news users’ comments. They found that exposure to uncivil online intergroup debate had a significant influence on the perception of mass polarization, but not on attitude polarization.
There are several possible explanations for these mixed findings on the effects of social identification on attitude change.

First, given that attitudinal effects of the social identification process are largely dependent upon the salience of in- and outgroup norms on a given issue, pre-knowledge about group positions may condition the attitudinal effects. That is, if an issue is well-known and individuals are already aware of in- and outgroup positions on the issue (e.g., health care reform in Hwang et al., 2014), a news message depicting intergroup conflict on the issue may not produce attitudinal effects. In contrast, using a fabricated (e.g., Price, 1989) or non-politicized issue as in the current study may maximize the attitudinal effects of the social identification process because study participants may first come to know about the issue and group positions on the issue through the manipulated messages.

Second, the strength of a person’s preexisting opinion may also condition the attitudinal effects of social identification. Hwang et al. (2014) utilized health care reform, which had been one of the most controversial issues between Democrats and Republicans for a long time during the time the experiment was conducted. So people were likely to have elaborated their opinion on the issue and developed a clear issue position already in that case. GMF is a less well-known issue compared with health care reform, and people may not have the firm issue opinion that can be a necessary condition to facilitate the attitudinal effects of the political conflict frame through the social identification process.

*Affective Polarization*

Although this study provides empirical support for the perceptual and attitudinal effects of the political conflict frame, neither party cue nor its interaction with level of intergroup conflict had statistically significant effects on affective polarization. One possible explanation for
the null findings of affective polarization is that the emotions of the study were not measured by issue-specific items but by overall impressions and emotions towards political in- and outgroups in contrast to the issue-specific measures of perceived in- and outgroup opinion and issue attitudes. Affective polarization about general political in- and outgroup members may be formed and developed by long-term intergroup experiences through cumulative interpersonal interactions and media exposure. Evidence from survey-based studies in which affective polarization is typically measured and tested by respondents’ pre-existing feelings and impressions about political in- and outgroups has consistently supported affective polarization among the American public (e.g., Garrett, Carnahan, & Lynch, 2013; Iyengar, et al., 2012). In this sense, a single exposure to one message would probably not produce general feelings and impressions about political in- and outgroups.

Low levels of issue interest and importance of GMF are other possible explanations for the null findings. If an issue is thought to be personally interesting and/or important, issue-based emotions toward in- and outgroups might be more likely to be generalized to overall feelings and impressions about group members. In this regard, the GMF issue may not be interesting and important enough for the study participants to generalize their emotional reactions from the news story to overall group feelings and impressions. In other words, if participants were exposed to a more politically influential and controversial issue like health care reform or gun control, issue-specific emotions are more likely to be primed that will influence general group emotions.

**Mediation Process**

In this study, the mediating role of party identity salience is proposed and tested in the relationships between political conflict news frame and three types of political polarization. Among these three types of political polarization, significant mediating effects of party identity
salience on perceived polarization and attitude polarization were found. The political conflict news frame leads to enhanced salience of partisan participants’ party identity, which in turn results in perceptual and attitudinal polarization.

Since the current study strictly controlled other message factors (i.e., facts, reasons, and arguments presented in the news story) to be constant across the experimental conditions, significant mediation effects of party identity salience clarify that the causal effects of the political conflict frame occur mainly through the social identification process but not through the conventional message persuasion process. The role of party identity salience in mediating the effects of framing on perceptions and attitudes can also explain why news frame did not produce polarization among the independent participants of the study. Among independents who do not have a pre-existing party identity, the news story neither triggers the party identification process nor leads to political polarization even when they are exposed to a political conflict news frame. In fact, the analyses in this study showed that the political conflict news frame influences neither party identity salience nor perceived, affective, and attitude polarizations among the independent participants. This is consistent with Lelkes’s (2016) argument that the trend of polarization is driven entirely by partisans.

**Theoretical Implications**

This study explores whether and how media’s political conflict news frame promotes political polarization through the social identification process. The findings show that media frame can evoke political identity from individuals’ preexisting social self-schema (i.e., the sum of all their social identities) by embedding the information in a party conflict context and, as a result, produce polarized perceptions and attitudes along political party lines.
By linking framing effect theory with social identity and self-categorization theory, this study aimed to explore how news frames affect the political polarization of audiences through the party identification process. By doing so, this study makes several theoretical contributions to the literature on framing effects, social identification and self-categorization, and the role of media in politics.

The first theoretical implication is that the current study offers a new way to explore the role of news frames in explaining intergroup political polarization by theorizing effects of framing on the party identification process. This study empirically showed that news frames can accentuate party identity salience when partisan audiences process a news story and that party identity salience is a key factor for explaining partisan audiences’ political polarization over an issue. The political conflict news frame plays an important role as a contextual/situational factor that momentarily increases political identity salience, resulting in perceptual and attitudinal political polarization.

Second, the study provides empirical evidence that applicability-based framing effects are distinguishable from other accessibility-based cognitive effects (e.g., priming effects). As scholars have pointed out (Price & Tewksbury, 1997; Scheufele, 2000), the accessibility-based cognitive effect model assumes that once a certain construct is activated and becomes salient, the salient construct is more likely to be used automatically in later information processing regardless of the individual’s pre-existing experience. However, framing effects involve different cognitive processes in which the framed information influences the relevance or applicability of a certain construct by providing interpretive contexts that are consistent with preexisting cognitive schema. That is, a news frame is assumed to have an effect only when audience members think that it not only resonates with their pre-existing schema but also is relevant to a
given situation. The findings of the current study confirm that framing produces perceptual and attitudinal changes through this applicability effect: the effects of party cue on perceptual and attitudinal polarization were significantly moderated by different intergroup contexts (i.e., conflict vs. consensus) and whether participants possessed a party identity or not. In this regard, the findings correspond to what Entman (1993) argued about how frames work: “Because salience is a product of the interaction of texts and receivers, the presence of frames in the text, as detected by researchers, does not guarantee their influence in audience thinking” (p. 53).

Third, the findings theoretically contribute to social identity and self-categorization theory by providing a useful understanding of the role of media framing in the social identification process. Although social identity and self-categorization theory highlights the importance of identity salience in the social identification process, the process by which a particular identity becomes activated and is used in a given situation is less well understood. The current study suggests that a variety of contextual and individual difference factors can differentially activate specific social identities within one’s social self-schema. As a result, the mere presence of a party identity within an individual’s social self-schema does not automatically prompt increased party identification among partisan participants. Rather, increased party identification of partisan participants was most pronounced when the news frame depicted the two political parties as at odds over the GMF issue and thus signaled that party identity was relevant in thinking about the issue.

Another implication of this study is that it divided political polarization into three different types (i.e., perceptual polarization, affective polarization, and attitudinal polarization) and examined message effects on each type of polarization separately. As Mason (2013) mentioned, the current political polarization debate is confused and the results of studies on
political polarization are mixed due to lack of agreement on a definition of polarization. For example, some scholars argue that the American public is not polarized based on their findings about the stability of issue attitudes among the American public (e.g., Fiorina & Abrams, 2008; Fiorina & Levendusky, 2006; Levendusky, 2009), while other scholars argue that political polarization is ever-growing based on their findings about inter-party emotions (e.g., Iyengar, 2012; Jacobson, 2006, 2007). These conflicting arguments regarding mass political polarization among Americans suggest that political polarization has different facets. Therefore, systematic analysis of different types of polarization can contribute to a broader understanding of political polarization by identifying causal factors that influence each type of polarization.

**Practical Implications**

The present study not only advances theoretical understanding of the underlying mechanism of the effects of framing on political polarization, but also provides practical implications. News is the key source of information that impacts public perception. However, news media reporting has been criticized because of its preference for sensational reports and horse race journalism. Scholars pointed out that the strategy frame is pervasive in reporting about not only political campaigns but also routine politics and policy debates (Cappella & Jamieson, 1997; Lawrence, 2000). This study provides some insights into the effects of the political conflict news frame in terms of expectations of issue scrutiny. Media frames encourage people to activate and use frame-consistent thoughts in the process of issue interpretation and pay less attention to things on the outside (Bennett, 2012; Lee, McLeod, & Shah, 2008). People may form or change their issue attitude not because they have scrutinized the issue itself, but because of their biased information processing resulting from frequent consumption of the political conflict news frame.
Deliberation theorists posit that exposure to dissimilar views contributes to social cohesion as it encourages people to take into account various perspectives and reconsider their biases (Gutmann & Thompson, 1996). However, frequent exposure to political conflict frames in news coverage may hinder the deliberation process on a controversial issue. Scholars have argued that over-representing extreme voices and highlighting political conflicts over consensus in news media can distort people’s perception of political polarization (Hwang et al., 2014; Mutz, 2006). Hwang and colleagues (2014) revealed that exposure to uncivil online debate causes perceived polarization, which in turn lowers expectations about public deliberation. Similarly, over-estimating the difference between two sides (i.e., perceived polarization) and having extreme attitudes formed by consistently supporting the party position rather than scrutinizing the issue itself (i.e., attitude polarization) can damage mutual understanding. Even if there is a possibility to reach a compromise or find a better solution or even if each side has some similar opinions, people may think the difference between the two sides is too great to allow for common ground. In that case, it would be more difficult to make greater efforts to find a point of compromise.

In regard to political conflict news frames and their impact on political polarization, it seems worthwhile to think about some perspectives of peace journalism. Peace journalism grew out of criticism of the typical conflict news reporting (Galtung, 1985). War journalism focuses on conflict (ignoring non-violent alternatives), elite positions (as opposed to the actual opinions/views of all rival parties), differences between two opposing sides (rather than similarities, agreements, and progress on common issues), and ongoing confrontation (instead of in-depth review of underlying causes and outcomes of issue/event and reporting on solutions) and represents a conflict situation as a zero-sum game (assuming that one side’s needs can only
be met by the other side’s defeat; Galtung, 1986, 1998). In contrast to war journalism, peace journalism (interpreted here in a broad sense to cover all socio-political news reporting, not just news coverage of war and conflict) aims to present causes and options on every side rather than just two opposing sides, to give voice to the views of all rival parties at all levels, and to offer ideas for conflict resolution, development, peacemaking, and peacekeeping (Lynch & McGoldrick, 2005). The pursuit of peace journalism can mitigate the worries of lowered expectations of issue scrutiny and deliberation resulting from news coverage with a political conflict news frame.

The current media environment, with its 24-hour news cycles from diverse channels, has made people consider journalistic objectivity. Breaking news or speed is the virtue of modern journalism. However, the reduced efforts to seriously consider news contents require a rethinking of what good journalism is. Just reporting facts is not the whole story. Instead of depicting a political issue as a simple dichotomy and over-emphasizing confrontation between two elite groups or negative events, journalists should try to report more on the process of conflict, including how the conflict started (what are the underlying causes), the common ground between parties, ways to reach resolution, and so forth.

Moreover, we need to think about how to reduce perceived polarization and its negative effects. What can media do to reduce or eliminate the causes that promote polarization? As the results of this study suggested, people can overestimate the difference between Republicans’ and Democrats’ issue positions (i.e., perceived polarization) when they are exposed to political conflict news frames. Sherman, Nelson, and Ross (2003) showed that participants saw more common ground and were more optimistic about the likelihood of successful negotiation when similarities were made more salient by revealing the actual positions of opponents rather than the
assumed views of counterparts. To extend their results, what if media provided more accurate and detailed information rather than oversimplified and conflict-highlighting news? Highlighting political conflict between parties can be done in many ways in news coverage. For example, the red-blue electorate map conceals the actual numbers, so that people assume the level of conflict between groups to be far greater than the actual difference. However, perhaps informing news consumers of the detailed contents of issues themselves, covering how each party thinks about the issues, and giving specific, in-depth reasons why each party supports or opposes the issues rather than highlighting simplistic differences or confrontation between two parties might help to reduce political polarization. Therefore, offering accurate and detailed information about an issue or event can help to reduce erroneous presuppositions. Furthermore, presenting common ground rather than summing up the issue like a red/blue or black and white division in news coverage can reduce polarization. From this perspective, comparative experimental studies regarding what factors reduce or induce political polarization would be an interesting area for future studies.

**Limitations and Directions for Future Studies**

Although the findings of this study provide valuable implications for research on mass political polarization, several limitations need to be considered in interpreting them. The first is associated with the experimental structure of the design, especially regarding its generalizability and external validity. This study employed an experimental design because it is useful to isolate causal effects of news message factors with strict control of possible third variables. However, experimental results in artificial settings may not reflect real-world phenomena. For example, the current study design in which participants were exposed to a single news story did not allow the researcher to investigate long-term effects. Given that audiences encounter diverse information
about a given issue through various communication channels in the real world, the findings identified in this study may not be generalized to explain any long-lasting effects. Testing the main theoretical propositions of this study using diverse research designs such as survey and longitudinal panel experiment is required to not only identify long-term effects of consuming political conflict frames but also investigate the effects of cumulative exposure to similar media reports over a long period of time.

A number of methodological limitations also need to be taken into account. Although this study used an out-of-lab experimental design in order to reach a more generalized sample than an in-lab experiment, this design inevitably invites unwanted errors in measuring participants’ reaction time for party identity salience. Moreover, reaction time is recorded through a web-based survey, so differences in participants’ computer systems, Internet service, and web browsers may affect their reaction time report. That is, even though reaction time outliers were excluded from the analysis, the investigator cannot control unwanted factors that might affect reaction time. Given that a millisecond-based reaction time measure is very sensitive, a very minor distraction can cause great differences in reaction time. Measuring reaction time using in-lab experimental designs as well as employing additional measures of party identity salience such as a thought listing task (e.g., Bohner et al., 2008; Kuppens et al., 2013) will help future researchers to maximize the internal and external validity of the identity salience measure.

In addition to out-of-lab experimental designs, the text-based news manipulation in this study might be a methodological limitation given that text messages allow greater control by users over the ways they process the message than audio and video messages (Eveland, 2003), such as in the pace of information processing (e.g., careful rereading the message vs. quickly scanning it), the order of information processing (e.g., linear reading of the message vs. non-
linear reading), and selective attention and/or inattention to particular sentences. In consideration of the potential effects resulting from user control of the text-based manipulation, participants in this study who took less than 25 seconds to read the manipulated news article were automatically filtered out. In addition, random assignment seems to have successfully minimized variance in the level of exposure to the message across the conditions such that there were not significant differences in time spent on reading the news story across the conditions ($M = 168$ seconds, $SD = 118$ for political conflict frame; $M = 175$ seconds, $SD = 112$ for political consensus frame; $M = 177$ seconds, $SD = 129$ for scientific conflict frame; $M = 182$ seconds, $SD = 113$ for scientific consensus frame; $p = .43$). Nonetheless, there is still a possibility that the text manipulation of the current study may influence the ways participants processed the information regarding the order of information processing and selective attention, which might in turn produce the observed political polarization. To address this limitation, future researchers might employ audio or video manipulation in order to control users’ information processing and/or directly measure their information processing using eye tracking and news recall tests.

Several limitations of the measurements also need to be mentioned. For the main analyses, this study used a dummy variable of party identity although party identity was measured with a 7-point scale. The dummy coding of party identity in this study made the analyses and results clearer and easier to understand, but it did not allow the researcher to explore potential effects of party identity strength on the proposed model. Although potential effects of party identity strength cannot be tested in this study due to a small sample, such effects need to be addressed in future studies.

Another limitation of measurement for affective polarization needs to be addressed. The study measured in- and outgroup emotions with a general feeling thermometer or trait
evaluations towards political in- and outgroups. However, these measures may not be appropriate to an one shot, issue-specific message exposure experiment and thus may contribute to the null findings of affective polarization of the current study as discussed above. Future experimental studies should attempt to develop other measures for affective polarization.

Finally, the limitation of the sample should be noted in interpreting the findings. This study collected data using MTurk. As seen in the review of the demographic statistics of the final sample, MTurk data seem to be more demographically diverse than a typical student sample data. However, MTurk is still not a representative sample of U.S. citizens. Although studies have shown that MTurk is a valid recruitment tool for psychological research on politics (e.g., Clifford, Jewell, & Waggoner, 2015; Grimmer et al., 2012; Scherer et al., 2014), some have argued that MTurk users are not an appropriate subject pool for political-related studies because they tend to differ from the general public in terms of demographic variables such as age, income, and education (Brüggen and Dholakia, 2010; Goodman et al., 2013; Rogelberg et al., 2003).

Despite the limitations listed above, this study provides valuable insights for new directions of future studies. First, although the current study mainly focuses on political polarization, the proposed model can be applied to explain how media reports contribute to the development and intensification of diverse intergroup conflicts (i.e., racial, religious, and cultural conflicts). Applying the model to other issues and other intergroup conflicts will broaden our understanding of the role of news media in intergroup polarization.

Second, it is evident that many other factors beyond the two message factors of the current study might affect the salience of a certain social identity and thus enhance polarization along the salient identity. For example, interpersonal interactions, social networks, cultural aspects, and individual differences such as personality, party identity strength, issue involvement,
and issue knowledge might influence group polarization independently or jointly with news frame. Future investigation of the various factors that work on identity salience and group polarization will be helpful for understanding which factors foster group polarization as well as how to alleviate intergroup conflict.

Third, the potential effects of political conflict frames on other outcomes are worth exploring in future studies. The current study postulated that political conflict frames would enhance political polarization as a form of intergroup bias through the social identification process. Conceptualized in this way, any message factors enhancing social identification can be thought to produce biased cognitive processing of the news story per se. Combining recent findings that uncivil intergroup attacks during intergroup discussions result in biased cognitive processes and evaluations of ingroup and outgroup arguments and reasons (Hwang, Kim, & Kim, 2016), the current study suggests that political conflict framing may facilitate biased information processing and evaluations of the news story. This should be addressed in future studies.
REFERENCES


APPENDIX A. Screenshot of the Experimental Manipulation
APPENDIX B. Manipulated News for Political Conflict Condition

Acrimonious Battle Over Genetically Modified Foods between Republicans and Democrats

WASHINGTON — Last Monday, the Food and Drug Administration (FDA) held a conference in Washington D.C., regarding new policy on genetically modified foods including genetically engineered animals. The conference ended in acrimony as bitterly divided Republicans and Democrats traded verbal attacks and insults.

Genetically modified organisms, or GMOs, are grown from seeds that are genetically engineered in a lab. Since the first genetically engineered crops were approved for commercial production in the United States in the mid-1990s, GMO corn and soy have come to nearly dominate the industry. More than 90 percent of both crops are now genetically engineered, and GMO cotton, alfalfa, and sugar beets have enjoyed similar commercial success.

However, no genetically engineered animals are currently being sold for human consumption. The only candidate that is close, AquaBounty’s fast-growing GM salmon, seems to have stalled in its approval process.

Currently, the FDA regards most GMO foods as presumptively falling within the category of “generally regarded as safe,” thus not needing premarket approval. Republicans who advocate GMO foods are satisfied with the current base line of the GMO policy and want to expand its scope to include seafood and meat. However, Democrats argue that there is something fundamentally problematic with GMO foods and raise concerns about current FDA policy as well as opposition to approving the use of genetically engineered animals for human consumption.

Democratic Rep. Frank Pallone argued “GMO foods can present significant allergy risks to people. Genetic modification often mixes or adds proteins that were not indigenous to the original plant or animal, causing new allergic reactions in the human body.” Smith Butterfield, a Republican representative, denounced his claims as “blatantly exaggerated scare tactics of Democrats,” arguing “GMO foods can have vitamins and minerals added to them through genetic modifications to provide greater nutritive benefits to those who eat them. This is especially common in developing countries that don’t always have access to needed resources.”
Republican Senator Mike Pompeo also said, “Plants and animals that have been genetically modified can become more resistant to the unexpected problems of disease.” However, Democratic Senator Michael Schmidt accused Republicans of “shamelessly ignoring the danger of GMO foods.” He pointed out a problem of decreased antibiotic efficacy, saying that “When you eat some GMO foods, antibiotic markers persist in your body and can make actual antibiotic medications less effective.”

The Republican panel vehemently attacked Democrats’ arguments. House Republican Erik Corbett said, “Democratic GMO haters purposefully overlook the fact that the safety of genetically engineered foods does have a strong scientific consensus behind it, and there aren’t really any credible studies from any source showing any damage to animals or people attributable to any of the currently used transgenic crops.” He added that the technology has been adopted by 80 million farmers worldwide with no documented health problems so far.

Gregory Jaffe, the top Democrat on the Energy and Commerce Committee, condemned Republicans’ arguments as a fraud and accused them of using deceptive “Tobacco Science.” He said that “Biotech companies told us that Agent Orange, PCBs, and DDT were safe, which are now banned throughout the U.S. after their toxicity was at last confirmed through outside research. Republicans are now using the same type of superficial, rigged research to try and convince us that GMOs are safe. There is currently no consensus on the possibly subtle, long-term effects of GMOs.”

Although the conference was held to find a solution, reconciliation was nearly impossible from the beginning, given the presence of movements within the parties that oppose reconciliation. No agreements or suggestions were made for further policy for GMO foods. Republican Senator Adam Brisson, who supports GMO foods, said, “All factors are not now serving the reconciliation because the parties are not suggesting a new strategic vision for the current phase.” House Democrat Shelley McCarty, who opposes GMO foods, also said that the situation might continue to deteriorate: “Both parties have many plans that are not based on reconciliation, but rather on resolving of the conflict and their disputes.”
APPENDIX C. Manipulated News for Political Consensus Condition

Democrats and Republicans Seek Consensus on Genetically Modified Foods

WASHINGTON — Last Monday, the Food and Drug Administration (FDA) held a conference in Washington, D.C., regarding new policy on genetically modified foods including genetically engineered animals. Politicians participated in the FDA conference to discuss the future policy for GMO foods. GMO foods are still a controversial topic between Republicans and Democrats, but they have been working to find a compromise.

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Democratic Rep. Frank Pallone argued, “GMO foods can present significant allergy risks to people. Genetic modification often mixes or adds proteins that were not indigenous to the original plant or animal, causing new allergic reactions in the human body.” Smith Butterfield, a Republican representative said, “We understand these concerns, but GMO foods can have vitamins and minerals added to them through genetic modifications to provide greater nutritive benefits to those who eat them. This is especially common in developing countries that don’t always have access to needed resources.”
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Despite the different views and opposition, both Republicans and Democrats agreed that they need to hear more from the panels in order to reach consensus. Republican Senator Adam Brisson, who supports GMO foods, said, “I want to make sure we hear from as many people as possible to share their concerns, frustrations and ideas. By easing concerns from each side, we can arbitrate the dispute and reach a consensus on future GMO foods policy.” House Democrat Shelley McCarty, who opposes GMO foods, also said, “If we are to reach a consensus, more meetings are needed. I would support having them. We believe we can reach a compromise.”
APPENDIX D. Manipulated News for Scientific Conflict Condition

Acrimonious Battle Over Genetically Modified Foods between Scientists

WASHINGTON — Last Monday, the Food and Drug Administration (FDA) held a conference in Washington D.C., regarding new policy on genetically modified foods including genetically engineered animals. The conference ended in acrimony as bitterly divided between scientists traded verbal attacks and insults.

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Dr. Frank Pallone at Brown University argued “GMO foods can present significant allergy risks to people. Genetic modification often mixes or adds proteins that were not indigenous to the original plant or animal, causing new allergic reactions in the human body.” Smith Butterfield, a biologist, denounced his claims as “blatantly exaggerated scare tactics,” arguing “GMO foods can have vitamins and minerals added to them through genetic modifications to provide greater nutritive benefits to those who eat them. This is especially common in developing countries that don’t always have access to needed resources.”
Genetic engineer, Mike Pompeo also said, “Plants and animals that have been genetically modified can become more resistant to the unexpected problems of disease.” However, other genetic engineer Michael Schmidt accused him “shamelessly ignoring danger of GMO foods.” He pointed out a problem of decreased antibiotic efficacy, saying that “When you eat some GMO foods, antibiotic markers persist in your body and can make actual antibiotic medications less effective.”

Panels of GMO foods advocates vehemently attacked GMO foods opponents’ arguments. Dr. Erik Corbett at Oklahoma State University said that “GMO haters purposefully overlook the fact that the safety of genetically engineered foods does have a strong scientific consensus behind it, and there aren’t really any credible studies from any source showing any damage to animals or people attributable to any of the currently used transgenic crops.” He added that the technology has been adopted by 80 million farmers worldwide with no documented health problems so far.

Gregory Jaffe, biotechnology director for the Center for Science in the Public Interest condemned GMO supporters’ arguments as a fraud using deceptive “Tobacco Science.” He said that “Biotech companies told us that Agent Orange, PCBs, and DDT were safe, which are now banned throughout the U.S. after their toxicity was at last confirmed through outside research. GMO supporters are now using the same type of superficial, rigged research to try and convince us that GMOs are safe. There is currently no consensus on the possibly subtle, long-term effects of GMOs.”

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APPENDIX E. Manipulated News for Scientific Consensus Condition

Scientists Seek Consensus on Genetically Modified Foods

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Despite the different views and opposition, both GMO advocates and opponents group of scientists agreed that they need to hear more from the panels in order to reach consensus. Biology professor Adam Brisson, who supports GMO foods, said, “I want to make sure we hear from as many people as possible to share their concerns, frustrations and ideas. By easing concerns from each side, we can arbitrate the dispute and reach a consensus on future GMO foods policy.” Biologist Shelley McCarty, who opposes GMO foods, also said “If we are to reach a consensus, more meetings are needed. I would support having them. We believe we can reach a compromise.”
APPENDIX F. Survey Questionnaires

[Pre-Attitude]
How strongly do you support or oppose Genetically Modified Foods?
- Strongly Oppose
- Oppose
- Somewhat Oppose
- Neutral
- Somewhat Support
- Support
- Strongly Support

[Lexical Test Instruction]
In the next couple of pages, you will see a letter string (such as “flower” or “banana”) presented on the screen. Your task is to decide whether the letter string is an English word or not. Press "D" key on your keyboard for YES if it is an English word. Otherwise, press "F" key on your keyboard for NO button.

We are interested in how quickly and accurately you can perform the task. Your response time and accuracy will be measured by the computer. Please respond as quickly and accurately as possible, but do not work so fast that you make mistakes. If you find yourself making many errors, slow down.

Once you are ready to proceed, press the next button for the several practice items, which are followed by test items.

[Manipulation Check Questions]
Who (or what group of people) participated in FDA conference regarding "Genetically Modified Foods" (GMF)?
- Scientists
- Politicians
- College Students
- National Business Associations

Based on the news article you just read, how would you evaluate the level of conflict between the two sides of the issue in the news article?
- Not at all conflicted (1) - Highly conflicted (7)
[Post-Attitude]
How strongly do you support or oppose Genetically Modified Foods (GMF)?
- Strongly Oppose
- Oppose
- Somewhat Oppose
- Neither Oppose nor Support
- Somewhat Support
- Support
- Strongly Support

[Affective Polarization]
Please indicate your feeling toward the following groups of people: (“very unfavorable/dislike” toward the group (1) – “very favorable/like” feelings toward the group (7) for each subitems)
- Democrats
- Republicans
- Men
- Women
- Scientists
- college students

I think “DEMOCRATS” are generally…. (strongly disagree (1) – strongly agree (7) for each subitems)
- patriotic
- intelligent
- honest
- generous
- close-minded
- hypocritical
- selfish
- mean

I think “REPUBLICANS” are generally…. (strongly disagree (1) – strongly agree (7) for each subitems)
- patriotic
- intelligent
- honest
- generous
- close-minded
- hypocritical
- selfish
[Perceived Polarization]
Please think about the following group of people. How strongly do you think THEY support or oppose "Genetically Modified Foods" (GMF)? (strongly disagree (1) – strongly agree (7) for each subitems)
- Democrats
- Republicans
- Men
- Women
- Scientists
- college students

[Demographic Questions]
What is your gender?
- Female
- Male

What is your age?

Last year, what was your total family income from all sources, before taxes?
- Less than $10,000
- $10,000 to under $20,000
- $20,000 to under $30,000
- $30,000 to under $40,000
- $40,000 to under $50,000
- $50,000 to under $75,000
- $75,000 to under $100,000
- $100,000 to under $150,000
- $150,000 or more

What is your race?
- White/Caucasian
- African American
- Hispanic
- Asian
- Native American
- Pacific Islander
- Other
What is your current status?
- Single, never married
- Married without children
- Married with children
- Divorced
- Separated
- Widowed
- Living w/ partner

What is the last grade or class you completed in school?
- None, or grades 1-8
- High school incomplete (grades 9-11)
- High school graduate (grade 12 or GED certificate)
- Technical, trade or vocational school AFTER high school
- Some college, no 4-year degree (includes associate degree)
- College graduate (B.S., B.A., or other 4-year degree)
- Post-graduate training/professional school after college (toward a Masters/Ph.D., Law or Medical school)

What is your present religion, if any?
- Protestant/Other Christian
- Catholic
- Mormon
- Jewish
- Muslim
- Other non-Christian religion
- None (7)

Which of the following categories best describes the industry you primarily work in?
- Forestry, fishing, hunting or agriculture support
- Mining
- Utilities
- Construction
- Manufacturing
- Wholesale trade
- Retail trade
- Transportation or warehousing
- Information
- Finance or insurance
Real estate or rental and leasing
Professional, scientific or technical services
Management of companies or enterprises
Admin, support, waste management or remediation services
Educational services
Health care or social assistance
Arts, entertainment or recreation
Accommodation or food services
Student
Other

[Party Identity]
Think for a moment about your political party affiliation and indicate where you stand on the following 7-point scale.
Strong Republican
Republican
Weak Republican
Independent
Weak Democrat
Democrat
Strong Democrat
APPENDIX G. IRB Approval

September 21, 2015

Young Ju Kim
College of Communication and Information Sciences
Box 870172

Re: IRB#: 15-OR-283 “How Do News Frames Influence Mass Political Polarization?”

Dear Young Ju Kim:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waivers of written documentation of informed consent and deception/concealment. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Your application will expire on September 17, 2016. If your research will continue beyond this date, complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, complete the appropriate portions of the IRB Request for Study Closure Form.

Please use reproductions of the IRB approved stamped consent form to provide to your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

Carpaneto T. Myers, MSM, CI, CIP
Director & Research Compliance Officer