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LOYOLA UNIVERSITY CHICAGO

POLITICAL ESSENTIALISM AND AFFECTIVE POLARIZATION

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

PROGRAM IN SOCIAL PSYCHOLOGY

BY
CHASE WILSON
CHICAGO, IL
DECEMBER 2018

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ABSTRACT

Affective polarization, the phenomenon of liberals and conservatives treating each other as disliked outgroups, is increasingly intense (Iyengar & Westwood, 2015; Pew, 2016). In the present research, I used the construct of psychological essentialism (Medin & Ortony, 1989) to help understand this intergroup phenomenon. Specifically, I measured *political essentialism*, or the belief that political ideologies are strongly determined, informative, discrete and/or immutable, and tested the relationship between these beliefs and affective polarization. I approached this question with both correlational and experimental methods. In a correlational study, political essentialism overall is found to covary positively with affective polarization and social avoidance of political outgroups. Essentialism is found to be most predictive when treated as a collection of distinct lay beliefs, rather than a unitary construct. Informativeness and discreteness beliefs correspond strongly and positively with affective polarization, while biological basis beliefs and social deterministic beliefs have weak effects in the opposite direction. In the experimental study, manipulating essentialism beliefs had no effect on affective polarization or desire for social distance. Potential reasons for the discrepant results are explored. In sum, this research supports the hypothesis that political essentialism is associated with affective polarization, but does not provide evidence that essentialism plays a causal role in this relationship.

CHAPTER ONE

INTRODCUTION AND LITERATURE REVIEW

Few identities in 21st Century United States are as salient, or as divisive, as political identities. The attitudes liberal- and conservative-identified people have toward each other are not only negative, but explicitly so. The degree of such inter-ideological negativity appears to be only getting more severe over the past fifty years (Iyengar, Sood & Lelkes, 2012). The media constantly remind American viewers that there is a large group of people in the country who oppose them on issues, prefer opposing politicians, and differ on many core values. What do people make of this state of affairs? What explanations do people have for the formation and nature of liberal and conservative identity? And what do such explanations have to do with their attitudes towards people with opposing views?

Researchers have explored the phenomenon of political polarization using some social psychological lenses, including social identity (Iyengar et al., 2012), prejudice (Chambers, Schlenker & Collisson, 2013), stereotyping (Crawford, Modri & Motyl, 2013), meta-stereotyping (Appleby & Borgida, 2016), and more. The present research explores the use of yet another perspective: that of lay beliefs. The present research asks how people's beliefs about the nature of ideology relate to their inter-ideological attitudes. It is proposed that people who believe ideological groups to be distinct, to have deeply-rooted causes, etc., will express accentuated intergroup antipathy. This dissertation explores this possibility and presents findings in the following manner. First, the remainder of this chapter reviews relevant theory and

research regarding political polarization, as well as work that pertains to psychological essentialism (Chapter 1). Next, Chapter 2 provides a conceptual overview of hypotheses and research questions that are examined in this dissertation. Two studies investigate the relation between political essentialism and intergroup attitudes. Chapter 3 describes the findings obtained in a correlational study (Study One), and Chapter 4 describes findings obtained in an experimental study (Study Two). Finally, Chapter 5 summarizes the research questions addressed in this research, and synthesizes evidence gathered in the two studies.

Polarization

Polarization by many measures. Political scientists continue to debate whether the United States is increasingly polarized. Part of this disagreement rests in focusing on different aspects of polarization. Some note the increasing divergence in political elites, e.g., that Democrats and Republicans are increasingly divergent in their ideological positions and voting records (Iyengar, 2016; Levendusky, 2009; Theriault, 2006). There are also increasing correlations between lay people's ideological identities (e.g., "conservative") and issue positions (e.g., abortion attitudes) (Baldassarri & Gelman, 2008). This suggests people are increasingly relying on their ideological identities to derive individual issue stances. On the other hand, lay individuals' attitudes are not becoming more divergent on the majority of policy issues (Fiorina & Abrams, 2008). Also, the tendency to identify as "liberal" or "conservative," (as opposed to "independent") did not increase from the 1970s to the 2000s (Fiorina, 2006).

One form of polarization, however, is clearly evident: the phenomenon of liberals and conservatives treating each other as disliked out-groups. This is referred to as *affective polarization* (Iyengar et al., 2012). Several items in the nationally-representative American

National Election Studies (ANES) survey allow trends in political in-group and out-group attitudes to be measured over time. Most relevant are “feeling thermometer” (attitude) ratings individuals report toward conservatives, liberals, Democrats, and Republicans. Summarizing these ratings stretching back to the 1970s, Iyengar et al. report that in-group ratings (e.g., self-identified Republicans’ ratings of “Republicans”) have remained positive and constant, around 70 on the 100-point scale. In contrast, out-group ratings have steadily fallen. For example, Democrats’ ratings of Republicans was approximately 48 (on a scale from 0 to 100) in 1978; but approximately 33 in 2008 (Iyengar et al., 2012). Attitudes towards ideological out-groups (that is, conservatives’ attitudes towards liberals, and vice versa) show a similar stark in-group/out-group gap in affect. These attitudes are largely symmetrical: self-identified liberals and conservatives are both “driving” this trend of in-group preference, although the effect may be most pronounced among those identifying as “strong Republicans,” (Iyengar & Westwood, 2015).

Affective polarization may occur even in the absence of diverging attitudes on policies (Iyengar et al., 2012). In other words, the social identity side of polarization may be getting more accentuated, while issue polarization remains moderate over time (Mason, 2015). Webster and Abramowitz (2017), however, find that affective polarization is in fact most pronounced among people whose issue positions (on social welfare issues) are most extreme, suggesting a correlation between affective and issue polarization.

Whether or not it correlates with issue polarization, interideological antipathy is consequential. Liberals and conservatives are driving themselves apart, quite literally, into monolithic living communities (Motyl, 2015). This sorting is evident in voting patterns by

county: in 1992, 39% of voters lived in a county that skewed strongly toward one party or another (i.e., voting for one major presidential candidate over the other by double-digit margins); by 2016, this share increased to 61% of the population (Wasserman, 2017). This situation encourages the polarized electorate to distrust people with opposing views, and overvalue for political “wins” for the in-group, perhaps even over the better functioning of the democracy as a whole (Mason, 2018). Elected officials are responsive to the preferences and demands of their polarized political bases, as well. Observing the negative evaluations their base has of the opposing party may push them to adopt a more confrontational, and less compromising, mode of governing (Abramowitz & Webster, 2016).

Polarization as an intergroup phenomenon. Among the different aspects of polarization that have been studied, affective polarization is a particularly fruitful area for the application of social psychological hypotheses. Understanding polarization as an intergroup phenomenon invites the use of social identity theory, and related intergroup attitude frameworks, to understanding partisanship (Tajfel & Turner, 1986). This approach acknowledges that, rather than merely labeling clusters of attitudes, party and ideology serve as social identities. One’s identity as “conservative” can function similarly to identifying as “Texan” or “lesbian” (Devine, 2015; Greene, 2004; Huddy, Mason, & Aaroe, 2013).

Social identity theory posits that people’s intergroup attitudes are, in part, driven by a motivation to maintain positive distinctiveness (Tajfel & Turner, 1986). This creates both a tendency for over-valuation of one’s in-group, and a devaluation of out-groups. Along racial, ethnic, gender, nationality, and regional lines, we such find patterns of in-group preference, out-group derogation, along with stereotyping, prejudice and discrimination. Additionally, such

intergroup attitudes are shaped by *lay theories* about the meaning of intergroup differences (Levy, Chiu, & Hong, 2006). If polarization is indeed at least partly an intergroup phenomenon, one would expect to find evidence of prejudice, stereotyping, discrimination, and the influence of lay theories when people view across ideological lines. Recent research suggests this is indeed occurring.

Partisans readily express negative attitudes and stereotypes about one another (Brandt, Reyna, Chambers, Crawford, & Wetherell, 2014). A particularly relevant concept is the ideological-conflict hypothesis, that “conservatives and liberals will display intolerance against groups whose values, beliefs, and ideas conflict with their own” (Brandt et al., 2014). This hypothesis suggests that people are motivated to dislike, and desire distance from, others who they see as violating their worldview and values. This hypothesis has implications for many forms of prejudice. For example, it is suggested that conservatives tend to display more racism against Blacks (Federico & Sidanius, 2002) in part because they perceive Blacks to be ideologically different from themselves (Brandt et al., 2014). The ideological-conflict hypothesis is particularly relevant for explicitly ideological groups – there is little doubt that conservatives perceive liberals as possessing values that conflict with their own (and vice versa).

Survey research confirms that partisans make stereotypic, negative trait inferences of supporters of the opposing party. A 2008 study conducted by YouGov asked participants to rate “People who are Republicans or Democrats” on certain given traits. Self-identified Republicans and Democrats rated partisans from the opposing party as more selfish, more closed-minded, and less intelligent than their in-group (YouGov, 2008, as cited in Iyengar et al., 2012).

Capturing traits more uniquely descriptive of liberals and conservatives, Crawford, Modri, and Motyl (2013) found that partisans endorsed subtly dehumanizing stereotypes of political groups. Conservatives were rated as more mechanistic (dehumanized along “human uniqueness” lines); while liberals were rated as more emotional or impulsive (dehumanized along “human nature,” animalistic lines; Haslam et al., 2009; Crawford et al., 2013). In this study, people also displayed in-group favoritism: conservatives were more likely to endorse the negative aspect of these stereotypes in regards to liberals, and the positive aspect in regards to conservatives (and vice versa; liberals endorsed the more negative aspects of conservatives, and more positive aspects of liberals; Crawford et al., 2013).

Democrats and Republicans also possess skewed, stereotypic views of party membership (Ahler & Sood, 2016). For example, while only 6% of Democrats self-identify as LGBT, Americans estimate that approximately a quarter of Democrats are LGBT (Ahler & Sood, 2016). This misperception is amplified among Republicans, who on average reported that 36% of Democrats are LGBT (Ahler & Sood, 2016). Similar overestimates are found when estimating the percent of Democrats who are Black or atheist; or the percent of Republicans who earn over \$250,000 yearly or are over the age of 65 (Ahler & Sood, 2016). Overall, people perceive political parties to be composed of more party-stereotypical members than they really are, and this effect is amplified in the out-group. Furthermore, those who are most interested in political news tend to hold the most stereotypic views (Ahler & Sood, 2016). This suggests that people who are *more* familiar with political information (rather than people who are naive politically) tend to stereotype the most.

Partisans not only make negative trait inferences about opposing party members, they also assume that opposing partisans hold negative stereotypes about their in-group (Appleby & Borgida, 2016). Liberals assume that conservatives possess negative stereotypes of liberals; while conservatives assume liberals believe negative stereotypes of conservatives. This phenomenon is referred to as *meta-stereotyping*, and has previously been observed among interracial beliefs (Sigelman & Tuch, 1997; Vorauer, Main, & O'Connell, 1998). These political meta-stereotypes are even more negative than the actual stereotypes possessed by out-group members (Appleby & Morgida, 2016). That is, for example, liberals' perception of how conservatives view liberals is even more negative than conservatives' actual evaluation of liberals. Such negative meta-stereotypes can contribute uniquely to intergroup anxiety during social interactions (Appleby & Morgida, 2016).

Interpartisan negativity is not limited to attitudes and beliefs; it extends into behavioral intentions and behaviors as well. Liberals' and conservatives' mutual antipathy can motivate discriminatory behavior and promote a desire for social distance. This group-based behavior has been observed in laboratory studies, using methods that mirror previous work on social identity-motivated action. For example, strong partisans gave less favorable recommendations to a hypothetical scholarship applicant when they believed that applicant was from an opposing party, vs. a control condition when no party was mentioned (Munro, Lusane, & Leary, 2010). People were less likely to cooperate in a prisoner's dilemma game with another-party vs. same-party member (Balliet, Tybur, Wu, Antonellis, & Van Lange, 2016). Partisans were more likely to choose in-group party members as team-mates in an in-lab game; and the more they reported in-group party favoritism, the less likely they were to choose an out-party member as a teammate

(Lelkes & Westwood, 2015). They also express more support for institutional discrimination against out-group members, in the form of fines for protesters (Lelkes & Westwood, 2015); or limitations on free speech (Wetherell, Brandt, & Chambers, 2013).

Survey research has revealed increases in the discomfort people feel around ideological others. In 1960, Almond and Verba asked a representative sample of Americans how pleased or displeased they would be if their son or daughter married a supporter of the opposing party. In 1960, approximately five percent of people reported that they would be “displeased” with cross-party marriage (as cited in Iyengar et al., 2012). In 2010, a YouGov survey asked a similar question – and found that 49% of Republicans, and 33% of Democrats, would be “very” or “somewhat” unhappy about such an inter-marriage (as cited in Iyengar et al., 2012).

These tendencies, revealed in survey and experimental research, are reflected in broader sociological trends. Liberals increasingly live in “blue state” enclaves with like-minded Democrats; while conservatives are increasingly more likely to live in “red states” and Republican communities (Greenblatt, 2012; Tam Cho, Gimpel, & Hui, 2013; Motyl, 2015). When people move, there is a significant tendency for them to move *toward* communities they are more ideologically congruent with, even when controlling for racial and economic factors (Tam Cho et al., 2013). The desire to move to more ideologically-congruent community is mediated by a need to belong (Motyl et al., 2014). This strongly suggests that it is psychologically uncomfortable to be politically “different” from close others. This need to fit in, ideologically, with one’s neighbors motivates moving to new regions within the United States (Motyl et al., 2014), and even intentions to move to another country (Motyl et al., 2014). It is not clear whether this sorting is motivated by in-group liking or out-group dislike, but regardless, it

suggests a clear ideological preference for proximity to the in-group over the out-group (Mason, 2014).

Political correlates of affective polarization. While a majority of people demonstrate some amount of affective polarization (Iyengar et al., 2012), some people may display it to a greater degree than others. Facets of ideology (right vs. left; extreme vs. moderate), as well as measures of political engagement (interest, political media consumption) may moderate this tendency.

Ideology. Affective polarization is common to liberals and conservatives; ideological orientation does not appear to moderate this tendency overall (Iyengar & Westwood, 2015). However, when considering party identification, out-group animosity is more pronounced among strong Republicans than strong Democrats (Iyengar & Westwood, 2015).

Political news consumption & political interest. The “selective exposure” hypothesis suggests that people attend more to political news sources that confirm, rather than challenge, their prior opinions. This can lead to increasing polarization, as people become increasingly certain of their own political viewpoints (Stroud, 2010). In support of this hypothesis, Stroud (2010) found that liberals and conservatives who paid more attention to congenial news sources had more polarized attitudes toward salient political figures. This was the case for consumption across a variety of news sources (newspapers, television, and Internet). Iyengar et al. (2012) argued that partisan news can contribute to affective, as well as attitudinal polarization. Partisan media’s negative portrayal of political out-groups can contribute to out-party animus. In the 2004 election “battleground states,” where people were exposed to a higher than normal degree of

negative campaign advertising, people displayed significantly greater partisan antipathy (Iyengar et al., 2012).

Interest in politics tends to be correlated with political news consumption; perhaps increasingly so (Strömbäck, Djerf-Pierre, & Shehata, 2012). Political interest is a motivational dimension of political engagement: it reflects the seeking-out of, rather than mere exposure to, political information. Interest is therefore likely to also be associated positively with affective polarization. Iyengar et al. (2012) reported that *political interest* was positively correlated with out-group antipathy for both Democrats and Republicans (in 2004; but not in 1988). Furthermore, Ahler and Sood (2016) found that the more interested participants were in political news, the more exaggerated their stereotypes were about party membership.

Ideological extremity. While even independent “leaners” held out-group animosity, animosity is more pronounced among people who associate strongly with one political side or another (Iyengar & Westwood, 2015). People who place themselves near the poles of the 1-7 ideological scale tend to express lowest ratings of the opposing party (Webster & Abramowitz, 2017). Ideological extremity is also associated with skewed and stereotypic out-group perceptions (Homola et al., 2016). Extreme liberals and extreme conservatives (vs. moderates of both camps) both perceive the political out-group to be more extreme and homogenous in their beliefs (Homola et al., 2016). That is, for example, extreme conservatives were more likely than moderate conservatives to view liberals as all in agreement with liberal issue positions. People with strong partisan identities and extreme attitudes also perceived polarization in general to be more intense than others did (Westfall, Van Boven, Chambers, & Judd, 2015).

Disgust sensitivity. The emotion of disgust has been linked both to avoidance of out-groups, and to political outcomes. Disgust can be regarded as a dimension of the “behavioral immune system:” a collection of evolved behaviors that promote avoidance of perceived contaminants (Terrizzi, Shook, & McDaniel, 2013). Because other people, particularly out-group members, may be seen as sources of contamination, people who are high in disgust sensitivity tend to express more out-group prejudice (Faulkner, Schaller, Park, & Duncan, 2004). Prejudice toward gay people and ethnic minorities, in particular, are often found to correlate positively with disgust sensitivity (Terrizzi, Shook & Ventis, 2010). This extends toward political views: disgust sensitivity corresponds positively with political conservatism, even when controlling for personality factors, and using international samples (Inbar, Pizarro, Iyer & Haidt, 2012; but also see Tybur et al., 2010 for a contrasting view). Disgust sensitivity, and in particular the contamination dimension of disgust, also predicts negative evaluation of political groups who threaten traditional sexual values (e.g., pro-gay activists, pro-choice activists) (Crawford, Inbar & Maloney, 2014). Attitudes towards even non-sexuality related concepts (e.g., tax cuts, affirmative action) are also at times found to relate to disgust sensitivity (Inbar, Pizzaro & Bloom, 2009). This is particularly interesting, as this dimension of disgust sensitivity measures reactions toward things like “seeing mold on leftovers” or “seeing a cockroach,” phenomena that do not explicitly relate to devalued groups, or stereotypes thereof. Therefore, there is some evidence to suggest that disgust sensitivity may predict conservatives’ negative evaluation of liberals, insofar as liberals are seen as violating sexual norms (Crawford et al., 2014).

Psychological Essentialism

Defining psychological essentialism. An important tool for understanding intergroup relations is the concept of *psychological lay theories* (Hong, Levy, & Chiu, 2001; Levy, West, & Ramirez, 2005). Lay theories are working concepts of the world that lay people subscribe to – such as the idea that hard work pays off; that people can (or cannot) change; or that talent is inborn. Lay theories help imbue meaning to events and entities observed in the world, as they impose “psychologically meaningful constraints on the infinite variety of interpretations available for a particular stimulus or event” (Levy, Plaks, Chiu, & Dweck, 2001, p. 157); and thus help create potential explanations for another person or group’s behavior.

Particularly relevant to intergroup relations is the lay theory of *psychological essentialism* (Medin & Ortony, 1989). Psychological essentialism is the belief that categories possess a unique underlying essence, whether observable or not, that inherently imbues categories with meaning. This is in contrast to the view that categories represent more arbitrary, fluid, or relativistic social constructions. People may take an essentialist view of many different kinds of categories, including objects (such as tables, squares, or houses), institutions (marriage, the state), and the natural world (raccoons, skunks). What the “essence” itself is, is not typically acknowledged or directly observed by individuals. Rather, there exists what is described by Medin and Ortony (1989) as an “essence placeholder” (p. 184) – a notion that a unique essence exists, without necessarily knowing what this essence exactly is. What is more observable is the *consequences* of a category having an essential nature. For example, that category membership is immutable, that the group is homogenous, and that it is distinct from other groups, are all features associated with an essentialized category. In recent times, “genes” have often stood in

for the essential nature of different human groups (Dar-Nimrod & Heine, 2011), but are not the only possible “placeholder” (Rangel & Keller, 2011).

Essentialist views may be applied to social groups – categories such as race, gender, and ethnicity have all been understood, to varying degrees, as being essential categories. This has been an important observation in the study of intergroup relations, prejudice, and discrimination in social psychology. Allport wrote that, “one consequence of least effort in group categorizing is that a *belief in essence* develops. There is a ‘Jewishness’ to every Jew. The ‘soul’ of the Oriental,’ ‘Negro blood,’ ... ‘the passionate Latin’ – all represent a belief in essence. A mysterious mana (for good or ill) resides in a group, all of its members partaking thereof” (1954, pp. 173-174). Allport believed that essentialism applied to social categories leads to increased prejudice and general strain on intergroup relations.

More formal and systematic study of essentialism’s relationship to prejudice, stereotyping and discrimination emerged in the late 1980s (Haslam, Rothschild, & Ernst, 2000; Medin & Ortony, 1989; Rothbart & Taylor, 1992). This current understanding of essentialism, and its relationship to other attitudes, owes a great deal to other well-developed social psychological constructs-- most notably, entitativity (Campbell, 1958) and entity theory (Dweck, Chiu, & Hong, 1995). Entitativity is the perception that a group is a holistic entity, rather than a loose or random assortment of people (e.g., five members of a family, as compared to five people waiting at the same bus stop; Lickel et al., 2000). “Entity theory” is the lay belief that traits, such as personality traits or intelligence, are fixed or immutable (Dweck et al., 1995). It is contrasted with the alternate, “incremental” lay theory: that competence in a domain, or even intelligence in general, can be improved through effort.

The concepts of entitativity and entity theory both have a rich body of literature demonstrating that these beliefs affect attitudes and behavior towards out-groups. The lay theory of essentialism relates both of these constructs, among others.

Facets of essentialism. Psychological essentialism is considered to be, and is measured as, a multi-faceted construct. It is not reducible to other constructs; essentialism goes further to explain attitudes and behavior than either entity theory or entitativity alone (Bastian & Haslam, 2006). Common attributes associated with essentialism include that membership in a given group is *immutable*; that the group is defined by *discrete* boundaries; that group membership is *informative* (that is, inductively potent); and that group membership is *biologically-based* (Bastian & Haslam, 2006; Delgado-Acosta, Betancor, Rodriguez-Perez & Delgado, 2016). Relatedly, essentialist beliefs relate to a *belief in genetic determinism* (Keller, 2005), as well as a *belief in social determinism* (Rangel & Keller, 2011). Therefore, multiple kinds of features (discreteness, immutability) and etiology beliefs (genetic, social) are associated with essentialism.

There is no strict consensus on which features precisely compose essentialism. Adding further complexity, it is likely that the number and types of features varies by the domain being essentialized. Rothbart and Taylor (1992) argued that essentialism consists of two main dimensions: *inalterability* (immutability) and *inductive potential* (the ability to draw inferences based on category membership). Using factor analysis based on ratings of multiple social categories, Haslam et al. (2000) concluded there are two main dimensions, but they determined these to be a *natural kind dimension* and an *entitativity/reification* dimension. The concept of a *natural kind* is that category members possess intrinsic, biological features that imbue them with

an essence. In Haslam et al.'s (2000) study, participants ranked the categories of "male," "Asian" and "blind" as very high on this dimension. Such categories are perceived as possessing biologically-derived properties, and may be perceived as "akin to biological species" (Haslam & Levy, 2006). *Entitativity*, on the other hand, refers to the perception that a group is a coherent and unified entity: relatively homogenous and distinct from other groups (Campbell, 1958; Haslam et al., 2000). Haslam et al. (2002) found the social categories of "Liberal," "homosexual," and "Jew" were rated highly on entitativity, while the categories "White" and "ugly" were rated very low on this factor.

When examining specific domains, even more factor structures of essentialism have emerged. Essentialist beliefs about homosexuality were determined to consist of three factors (entitativity, biological basis, and cultural invariance; Haslam & Levy, 2006). In regards to personality judgements, essentialist beliefs appear to coalesce around a single factor (Gelman, 2003; Haslam, Bastian, & Bissett, 2004). Even between sexuality-related categories (e.g., lesbians vs. prostitutes vs. transsexuals), differential correlations between sub-factors of essentialism are found (Delgado-Acosta, Betancor, Rodriguez-Perez, & Delgado, 2016). Therefore, while essentialism is clearly often multi-faceted, how to conceptualize and measure those facets varies across domains and individual studies.

Developmental underpinnings of essentialism. Essentialism appears to arise early in development; children as well as adults use essentialism as a lay "folk theory" to understand the world. Gelman (2003) synthesized a great deal of research suggesting that children intuitively perceive essences and make inferences based upon them. Rather than deriving category judgments based on superficial features, children intuit that there are deeper reasons for certain

category labels. For example, in one study, children are shown a picture of a leaf bug that looks more like a leaf than a bug. When this insect is labeled as a “bug,” children inferred that it had properties similar to bugs rather than leaves (despite its superficial features being entirely leaf-like; Gelman & Markman, 1986, as cited in Gelman, 2003). Similarly, an animal was described to children: a raccoon that was surgically modified (new fur, etc.) to look and smell precisely like a skunk. Children were asked what the resulting animal would be; and tended to report that the animal is still a raccoon (Gelman & Wellman, 1991). These findings, while they may seem intuitive to adults, contradict previous theories of development that suggest young children understand nature only in terms of superficial, external features (Piaget, 1970; as cited in Gelman, 2003).

As illustrated in the “skunk” and “leaf bug” studies, essentialism can be a useful theory for understanding nature. However, studies demonstrate that children may over-rely on essentialist reasoning. Children report, for example, that a child adopted at birth would speak the language of their birth parents, not their adoptive parents (Hirschfield & Gelman, 1997). While essentializing about natural categories may be rather universal, the degree to which *social* categories are essentialized is more context-dependent (Diesendruck & Haber, 2009). A key insight of Rothbart and Taylor (1992) was that while social groups (such as race) actually reflect human conventions (or “artifacts”), in some contexts, we tend to treat them as “natural kinds.”

Although the tendency to essentialize categories may be, in part, hard-wired, research suggests children’s understanding of social categories is also influenced by their environment (Bigler & Lieben, 2007). Adults’ language is an important force influencing whether children will essentialize a category (Rhodes, Leslie, & Tworek, 2013). In several studies, adults using

generic language about a fictional group caused children (and other adults) to essentialize that group (Rhodes et al., 2013). For example, when shown the expression “Zarpies are scared of ladybugs!,” participants rated “Zarpies” as a more essential category than after they read “Look at this Zarpie! This one is afraid of ladybugs” (Rhodes et al., 2013). Because of this environmental influence, children vary in the degree to which they essentialize social categories. For example, older children in more conservative communities essentialize race to a greater degree than older children in more liberal communities (Rhodes & Gelman, 2009). Similarly, Orthodox Jewish fifth graders in Israel essentialized social categories to a greater degree than did their secular counterparts (Diesendruck & Haber, 2009).

Essentialism and intergroup attitudes and behaviors. Endorsement of essentialist beliefs varies among adults as well. This variation has been found to uniquely predict intergroup attitudes, stereotypes, and desire for social distance between groups. Essentializing lay theories predict attitudes related to race (Jayaratne et al., 2006; Williams & Eberhardt, 2008), sexual orientation (Jayaratne et al., 2006; Haslam & Levy, 2006; Hegarty, 2010), mental illness (Darnimrod & Heine, 2011; Howell & Woolgar, 2013; Kvaale, Haslam, & Gottdiener, 2013), immigration (Rangel & Keller, 2011), and gender (Mahalingam, 2003; Brescoll & LaFarce, 2004). These effects often persist even when controlling for other intergroup attitude-related constructs (e.g., right-wing authoritarianism; Bastian & Haslam, 2006; Levy, Stroessner, & Dweck, 1998). However, research suggests essentialism’s multiple facets can have distinct effects; some of which enhance intergroup negativity, while others may dampen it.

Stereotyping. Essentialist lay beliefs appear to enhance stereotyping. Stereotypes are most pervasive when category membership appears to be *meaningful*, rather than haphazard. For

example, it is more likely there would be stereotypes about lawyers than there would about people currently standing at a bus stop near a law office. Essentialist lay explanations, suggesting a deep essence underlying group membership, can provide such meaning (Yzerbyt, Rocher, & Schadron, 1997). Consistent with this theory, several studies have found correlations between endorsement of essentialism and endorsement of stereotypes.

Possessing an implicit “entity theory” about personality (also referred to as immutability; believed to be one facet of essentialism; see Bastian & Haslam, 2006; Haslam, Bastian, Bain, & Kashima, 2006) is associated with greater agreement with stereotypes. People who endorsed entity theories were also more likely to endorse stereotypes about African Americans, Asians, Caucasians, Hispanics/Latinos, and Jews (Levy et al., 1998). Entity theorists also more readily formed stereotypes about a novel fictional group. These effects also appeared to be causal, as demonstrated by an experiment where implicit theories were manipulated. These results are particularly striking, given that the measure of entity theory serving as the predictor in these studies made no reference to race or ethnicity, only to personality in general (e.g., “Everyone is a certain kind of person, and there is not much that they can do to really change that” (Levy et al., 1998, p. 1423).

Bastian and Haslam (2006) replicated Levy et al.’s results (1998), and furthermore found that measuring additional facets of essentialism helped predict additional variance in stereotyping. In addition to measuring entity theory using the same items as in the Levy et al. (1998) study, they measured three additional dimensions: biological basis, discreteness, and informativeness. This formed an overall “essentialism index,” which was positively correlated with stereotyping ($R = .33, p < .01$). Furthermore, every one of these four dimensions of

essentialism were also positively associated with stereotype endorsement (all $R_s \geq .20$). These effects were not reducible to the effect of immutability alone; nor did they disappear when controlling for right wing authoritarianism, need for closure, or social dominance orientation.

Several studies have also shown connections between essentialism and gender stereotyping in particular. Participants exposed to a genetic essentialist explanation of gender, rather than a social constructivist view of gender, agreed more strongly with gender stereotypes (Brescoll & LaFarge, 2004). Coleman and Hong (2008) similarly found greater self-stereotyping among women after exposing them to biological explanations of gender. *Stereotype threat* (Steele & Aronson, 1995) effects also appear to be activated by providing genetic, rather than socio-cultural, explanations for gender differences (Dar-Nimrod & Heine, 2006).

Prejudice. Essentializing lay theories, like stereotyping, may have positive as well as negative connotations. For example, one may essentialize their in-group (e.g., “Americans”) and have an entirely positive view of that group. Whether essentialism also connects to prejudice¹ therefore is a distinct question.

Essentialism, or components of essentialism, correlate positively with various measures of prejudice. Haslam et al. (2002) found the *entitativity* facet of essentialism is positively correlated with racism (as measured by the Anti-Black Scale, $R = .40$; and disagreement with the Pro-Black scale, $R = .29$; Katz & Hass, 1998). However, the measure of the “natural kinds” dimension of essentialism was unassociated with racist attitudes (Haslam et al., 2002). Keller

¹ In this dissertation, following Brandt and Crawford (2016), prejudice will be defined as “a negative evaluation of a group or of an individual on the basis of group membership” (Crandall et al., 2002, p. 359). This is a deliberately broad definition of prejudice, that does not require the target group to be lower-status, nor for the negative evaluation to be unjustified -- conditions that are difficult to demonstrate in this case of political antipathy.

(2005) also found the “natural kinds” index fails to relate to negative attitudes toward Turkish immigrants (a relevant target group for the German sample used in the study). However, in the same study, negative attitudes towards Turkish immigrants were significantly correlated with Belief in Genetic Determinism scale, as well as the entitativity and immutability dimensions of essentialist beliefs. Modern sexism was found to positively correlate with Belief in Genetic Determinism, as well as immutability beliefs. Similarly, in Jayaratne et al. (2006), endorsement of genetic explanations was positively associated with both traditional racism ($R = .25$) and modern racism ($R = .18$).

Essentialism research, which often highlights a “natural” or “biological” variant of essentialism, are supplemented by a more recently proposed construct: *Belief in Social Determinism* (Rangel & Keller, 2011). Rangel and Keller (2011) advanced the notion that genes and biology may not be the only perceived engines of essence – rather, the culture one is socialized within may also lend a perceived essence to a group. To clarify, what Rangel and Keller refer to as *social determinism* is not the lay belief that people are continuously shaped by their social environment. Rather, it is the lay belief that people’s attributes are culturally shaped at an early age, and after this point, the attributes are fixed. For example, an American may believe that Syrians possess a discrete and immutable character not (only) because of their genetic makeup, but because of the social environment they were raised in. This belief can justify or enhance prejudices against immigrants, just as a belief in genetic determinism can (Rangel & Keller, 2011). In fact, belief in genetic determinism and belief in social determinism were both found to be uniquely predictive of anti-Turkish prejudice (Rangel & Keller, 2011).

Notably, essentialism is also at times unassociated with prejudice, or even associated with reduced prejudice. For example, one study found no particular relationship between general essentialism and multiple forms of sexism (modern, old-fashioned, hostile or benevolent) (Haslam et al., 2002). The relationship between essentialism and homophobia is also more complex; while an entitativity or discreteness factor of essentialism is positively correlated with homophobia ($R = .53$; Haslam et al., 2002; $R = .67$; Haslam & Levy, 2006), other studies have found a negative correlation between belief in the genetic determination of sexuality and homophobia (Jayaratne et al., 2006; Haslam & Levy, 2006). That is, the belief that gays' and lesbians' sexuality was biologically determined prior to birth was associated with lessened homophobia. Similarly, biogenetic explanations may dampen the perception that people with mental illness are responsible, or to blame, for their illness (Angermeyer, Matschinger, & Corrigan, 2004).

These mixed findings relating essentialism to prejudice suggest a tension in essentialist beliefs. To the extent that essentialism implies that people are “not responsible” for stigmatized conditions (e.g., homosexuality, mental illness), essentialism may reduce facets of prejudice and discrimination. To the extent that essentialism makes a group seem meaningful, coherent, and truly distinct from others (e.g., in the case of race or ethnicity), it may lead to increased prejudice. This highlights the complexity of essentialist attitudes; there are nuances to how essentialism affects different target groups. Similarly, there may be distinct effects of different dimensions of essentialist thinking: “discreteness” assumptions may function differently than “biological basis” assumptions.

Social avoidance. In addition to stereotypes and prejudices, there are also behavioral consequences of essentialist beliefs. Essentialism is also connected with a desire for social distance, above and beyond what is predicted by prejudice alone. Williams and Eberhardt (2008) found that possessing a biological conception of race was associated with having a less racially diverse friend group, and decreased interest in cross-race friendship. Biological essentialism appears to play a causal role in this relationship; participants primed with a biological conception of race were less interested in forming a friendship with a racial-outgroup confederate (Williams & Eberhardt, 2008).

People who hold essentialist beliefs are in some cases more likely to tolerate governmental discrimination against out-group members. Rangel and Keller (2011) found that a belief in social determinism predicted acceptance of discriminatory policies (e.g., “Persons without German citizenship should not be allowed to produce newspapers or magazines,” p. 9). On the other hand, consistent with effects on prejudice, people who held a genetic lay theory of homosexuality were *less* in favor of discrimination against gays and lesbians (e.g., ‘Homosexual couples should not be allowed to adopt children,’ Jayarante et al., 2006, p. 83).

Essentialist beliefs also affect how people respond to someone who makes an offensive statement. Specifically, believing personality to be immutable predicted intention *to withdraw from future interactions* with someone who made a biased statement (Rattan & Dweck, 2009). In one experiment, immutability beliefs also reduced the likelihood of confronting a confederate about the biased statement they made. About 10% of those who possessed an entity theory of personality confronted the confederate; in contrast, close to 40% of those with an incremental theory of personality confronted the confederate. The lay theory of personality did not shape

whether the statement was perceived as biased or not, it only shaped the preferred reaction. In this case, believing personality to be fixed predicted reduced willingness to engage with the person who made the prejudiced comment; but increased interest in withdrawing from them.

In-group and out-group essentialism. Many studies presume essentialist *beliefs about the out-group* drive prejudice (e.g., heterosexual people's *beliefs about* gays and lesbians can shape their *attitudes towards* gays and lesbians). But it is also true that believing one's *in-group* to have an essential nature can facilitate out-group negativity. For example, biological basis and immutability beliefs about the in-group can make it seem impossible for the out-group to assimilate with the in-group. This function of in-group essentialism has been shown to increase prejudice, particularly against immigrants. For example, British citizens who believed the British identity to be rooted in biology were both less likely to believe that Pakistani immigrants could assimilate, and were more prejudiced against Pakistani immigrants (Zagefka, Nigbur, Gonzaléz, & Tip, 2013).

Perceiving one's in-group to be entitative can also enhance the expression of out-group prejudice. Effron and Knowles (2015) argue that prejudice can be seen as more socially acceptable and understandable (in their words, "rationalistic") when done in the name of collective self-interest. In this way, prejudice is analogous to violence: though generally unacceptable, violence is perceived as more understandable or justifiable when done in pursuit of some collective self-interest (such as during the American Revolution) rather than when perpetuated alone for one's individual self-interest. *Entitative* groups (such as a religious minority) are more likely to be perceived as having legitimate collective interests than *non-entitative* groups (such as White people, able-bodied people, heterosexual people, etc.).

Therefore, the argument follows that entitative groups are more likely to be seen as possessing a “rationalistic” basis to compete with out-groups. This lends greater justification to the expression of prejudice against out-groups (Effron & Knowles, 2015). Supporting this notion, American Christians experimentally manipulated to believe that American Christians were a highly entitative group were more likely than a control group to express Islamophobia (Effron & Knowles, 2015).

Potential mitigators of essentialist beliefs. A great deal has been written about potential correlates and consequences of essentialist beliefs. Less has been stated about what variables may *predict* variation in essentialist beliefs. Several interesting possibilities exist that may reduce the tendency for people to essentialize social categories:

Intergroup contact. Intergroup contact is a demonstrably powerful tool in improving intergroup relations, particularly when conducted under certain favorable conditions (Allport, 1954; Dovidio, Gaertner, & Kawamaki, 2003; Pettigrew & Tropp, 2005, 2006, 2008; Pettigrew, Tropp, Wagner, & Christ, 2011). A meta-analysis of over 500 studies conducted on intergroup contact concluded that there is a reliable negative relationship between contact and prejudice, with an estimated strength of $R = -.21$ (Pettigrew & Tropp, 2008). Longitudinal and experimental studies demonstrate that intergroup contact has a causal effect on intergroup attitudes (and vice versa; Pettigrew & Tropp, 2008).

Allport (1954) argued that certain conditions are necessary for intergroup contact to successfully reduce prejudice; suggesting contact quality matters as well as quantity. Specifically, Allport suggested that in order to be effective, interactions should take place under conditions where the parties held equal status, shared cooperative goals, did not have to compete,

and enjoyed support from legal or cultural authorities. Pettigrew and Tropp's meta-analysis (2006) determined that these conditions may help enhance intergroup contact's effects, but are not necessary conditions. Even in situations where these conditions were largely unmet, intergroup contact still tended to relate to reduced prejudice ($R = -.20$). Intergroup contact effects were also observed in a variety of domains, including sexual orientation, race, and disability, suggesting that these effects are not limited to one type of target group. This is not to claim, however, that there are no meaningful moderators of intergroup contact's effects. For example, negative intergroup interactions also exist; these typically involve involuntary interactions in which people feel threatened (Pettigrew & Tropp, 2011). Such interactions have been shown to relate to increased racism (Barlow et al., 2012) and ethnic prejudice (Graf, Paolini, & Rubin, 2014).

Intergroup contact effects have been observed in the political domain. A survey by Pew (2016) found that people who have "some" or "a lot of" friends from the opposing party are less likely to report "very cold" feelings toward members of that party (Pew, 2016). Analyzing nationally representative survey data, Mutz (2002a) also found that closeness with cross-ideological contacts related to greater political tolerance. Exposure to divergent views alone was insufficient to predict increased tolerance; but greater social *intimacy* with politically discordant friends was positively related to tolerance (Mutz, 2002a). In a separate study, however, Mutz (2002b) reported that exposure to dissonant political views within social networks functioned to decrease political participation. This effect was heightened among people who were conflict avoidant, suggesting that political participation may be eschewed in order to avoid social conflict (Mutz, 2002b). This is consistent with theories suggesting that "cross-pressures" or conflict can

reduce tendencies to vote or interest in elections (e.g., Campbell, Converse, Miller, & Stokes, 1960). Therefore, when investigating positive effects of intergroup contact in the political domain, negative effects on political participation may also be considered.

Research directly connecting intergroup contact to essentialism is not as prevalent as research connecting intergroup contact to prejudice per se. The existing research supports the notion that intergroup contact may also function to erode certain essentialist beliefs. After getting to know someone who belongs to an out-group, it may be difficult to maintain certain essentialist assumptions, like that one's group membership is completely informative about that person's personality (undermining the *informativeness* dimension); or that the boundary around the category is entirely rigid (undermining the *discreteness* dimension). Deeb, Segall, Birnbaum, Ben-Eliyahu, and Diesendruck (2011) argued that when someone is familiar with members of a social group, they have to rely less on "essentialist placeholders" to assess that category. Consistent with this notion, Deeb et al. (2011) reported that increased interethnic exposure in schools (between Arab and Jewish children) was associated with reduced essentialist beliefs about ethnicity. While all students started out with a relatively essentialist view of ethnicity, children who attended integrated schools (vs. "regular" segregated schools) showed decreasing essentialist beliefs about ethnicity over time.

Brown, Eller, Leeds, and Stace (2007) found that both quantity and quality of intergroup contact related to reduced intergroup *infracumanization*. Infracumanization is an essentialism-related process, in which people view the in-group as possessing the human "essence," while the out-group does not (see Leyens et al., 2000). In their longitudinal study, high quality intergroup contact between private and public school children in Britain (school type is an important class

marker in this context) was associated with reduced out-group infrahumanization. The reverse causation was not evident (that is, reduced infrahumanization at Time 1 did not relate to greater contact at Time 2). This suggests that at least in this instance, intergroup contact may be more of an antecedent of essentialist beliefs than a consequence.

Open-Minded Cognition. Open-minded cognition (“OMC”) is the tendency to cognitively process information in a manner that is relatively unbiased toward the individuals’ prior opinion (Price, Ottati, Wilson, & Kim, 2015). Because OMC implies a less rigid and prescriptive style of thinking, it may be negatively related to essentialism – which consists of a relatively rigid view of categories. OMC has also been shown to be negatively associated with various forms of prejudice against various social groups, even when controlling for similar cognitive constructs (e.g., need for closure; Price et al., 2015). One cross-sectional study tested the relationship between OMC and essentialism (Wilson & Ottati, 2016). This research revealed a negative correlation between OMC and the overall essentialism measure. This association was primarily driven by the facets of *discreteness* and *immutability*; the biological basis and informativeness dimensions were not associated with OMC. Therefore, more cognitively open-minded people may be less likely to perceive boundaries between groups, and be more likely to think that group membership is not fixed.

Ideology and other political variables. Ideology may influence the endorsement of essentialist beliefs. Rhodes and Gelman (2009) found that self-reported conservatism among adults is associated with more essentialist views of race. Other research suggests this relationship is context-dependent. One study suggests conservatism is positively associated with genetic explanations for race ($R = .10$), but that conservatism is negatively associated with genetic

explanations for sexual orientation ($R = -.19$; Jayaratne et al., 2006). This pattern was replicated with a more recent study (Suhay & Jayaratne, 2012), which also found that conservatism was associated with greater endorsement of genetic explanations for economic class differences, yet had no association with genetic explanations for personality differences. Political orientation appears to be reliably associated with essentialism, but it is consistently moderated by the target group of interest. Essentializing race and class helps to justify existing hierarchies (a more conservative tendency; see Jost, Glaser, Kruglanski, & Sulloway, 2003); whereas biologically essentializing sexual orientation differences is more associated with the promotion of liberal values (Suhay & Jayaratne, 2013).

Ideology may also moderate a link between essentialism and prejudice. Suhay, Brandt, and Proulx (2016) found a stronger association between belief in biopolitics (biologically essentializing politics) and political intolerance among liberals than conservatives. This was an exploratory finding rather than confirmation of an a priori hypothesis. It is not clear, theoretically, why this would be the case.

It can be reasonably suggested that reduced essentialism can result from open-mindedness, from intergroup contact, or from political ideology. It is also possible, however that essentialism influences and determines variation in these constructs. For example, having a less essentialist view of an out-group (e.g., not believing non-Americans to be fundamentally different from Americans) may lead people to more seriously consider out-group members' viewpoints. This in turn may influence one's overall level of open-minded cognition. Experimental tests are needed in order to determine causality. For purposes of the present cross-

sectional Study 1, these will be referred to as *proposed* antecedents, acknowledging that this direction of causality has not firmly been established.

Direction of causality. Many studies of the relationship between essentialism and intergroup attitudes are cross-sectional (Haslam et al., 2000; Haslam et al., 2002; Suhay et al., 2016). The nature of these studies leaves the direction of causality as a somewhat open question. At least since Allport (1954), there has been a suspicion of an association between group-based essentialism and prejudice. However it is not entirely obvious whether possessing essentialist beliefs about a group *causes* prejudice, or if there is some other chain of causation. A great deal of research rests on the prior assumption. This is a reasonable hypothesis, as beliefs about target groups (or one's own group) can easily shape what attitudes you have toward that group. At the same time, is also possible that prejudiced attitudes could lead to greater endorsement of essentialist beliefs.

Theoretically, essentializing beliefs about a group can help provide important cognitive justification for espousing and expressing prejudices. Crandall and Eshleman (2003) argued that “justification allows the expression of prejudice without shame; adequately justified prejudices are not even labeled as prejudices (e.g., prejudice toward rapists, child abusers, enemy soldiers)” (p. 417). Therefore, to the extent that essentialism's features (e.g., immutability, discreteness) help justify that a group is worthy of derision and social distance, these features can be endorsed simply to help validate pre-existing prejudice.

Studies that have tested both causal directions have found evidence for bidirectionality (Keller, 2005; Rangel & Keller, 2011). This question is important, because if essentialism is playing at least partially a causal role, reducing essentialist lay beliefs may be a tool to help

decrease prejudice (Hegarty, 2010). If such beliefs simply follow, or co-occur, with prejudice, changing them would not be expected to influence intergroup attitudes per se. However, even in this case, essentialism beliefs may still influence other downstream consequences, such as political tolerance, or interest in compromise.

Psychological Essentialism and Political Ideology

A limited number of studies have specifically examined the relationship between political orientation and essentialism. One question of interest is whether political orientation predicts endorsement of general essentialist lay theories (i.e., are conservatives or liberals more likely to have essentialist lay theories about group membership?). As described in an earlier section (*potential mitigators of essentialist beliefs, ideology*), there are relationships between ideology and essentialism, but this relationship varies by target group.

A second question, more relevant to this dissertation, is whether people in general treat political affiliation groups (e.g., liberals, conservatives, Republicans, Democrats) as essentialized social groups. Relative to categories like race and gender, political orientation may be seen as a less essential category (Gelman, 2003). However, it would be overly simplistic to claim that people never essentialize political identity. As mentioned earlier, Haslam et al. (2000) asked participants to rate a variety of categories (e.g., Liberal, Black, male, heterosexual) on different facets of essentialism. The two political categories they measured, “Liberal” and “Republican,” were indeed rated particularly low on the “natural kind” dimension of essentialism, but were rated particularly high on the entitativity dimension. Therefore, “Liberals” and “Republicans” may not be seen as “species-like,” as racial groups sometimes are. However, they are perceived as particularly homogenous and distinct. Bernstein et al. (2010) furthermore found that

essentialist beliefs about political identity are malleable. Participants primed with an article stating that partisan identity is diffuse and malleable rated political identity low in essentialism; but those primed with an article stating that political identity is innate and immutable rated political identity as more essential than not ($M = 5.44$ on a 7-point scale; vs. $M = 3.39$ in control condition).

Finally, the core question of this research, is what the relationship is between essentializing lay theories and affective polarization. Several studies have examined a construct referred to as “biopolitics” – the belief that political identity is rooted in biology. The popularity of research on biological determinants of political identity (“biopolitics,” Hibbing, Smith, & Alford, 2014) makes this question quite pertinent. Such research suggests political identity is heritable through genes via more fundamental predictors of political orientation, such as negativity bias (Hibbing et al., 2014; Jost et al., 2003). It has been suggested that acknowledging biological roots of political identity can lead to increased tolerance across the political divide (Hibbing et al., 2013). In two correlational tests of this biopolitics-tolerance hypothesis, Suhay et al. (2016) found the opposite. In fact, increased endorsement of biopolitics was associated with *decreased* tolerance. Participants who held biological lay theories of politics were less likely to believe that opposing views should be tolerated. They also expressed more desire for social distance from people with opposing views. These patterns were found both within a Mechanical Turk sample and a nationally-representative sample across two studies. Therefore, while there are situations where understanding the biological roots of a category can help promote tolerance (e.g., Jayaratne et al., 2006), the opposite may be true in the case of ideology.

Summary

Polarization, particularly affective polarization, is a phenomenon receiving a great deal of academic and popular attention. It is particularly interesting at this point in history, as it is more apparent in the current decade than at any other point in recent history. As an intergroup phenomenon, affective polarization has been interpreted with a variety of social psychological lenses, including stereotyping, discrimination, and lay beliefs. Such research largely confirms that ideology can be viewed as a social identity, and displays effects similar to other intergroup phenomena. Liberals and conservatives view each other in stereotypical terms, tend to give preferential treatment to members of their ideological in-group, and prefer to maintain social distance from the ideological out-group.

Psychological essentialism is a lens that has been used to understand intergroup attitudes on a variety of subjects. It is a multi-faceted construct that tends, in many cases, to correspond positively with in-group preference and desire for social distance. Only one of these facets, biological essentialism, has been directly studied as a potential determinant (or at least correlate) of affective polarization. Therefore, an opportunity exists to measure additional essential beliefs about politics, and assess whether and how these relate to affective polarization.

CHAPTER TWO

OVERVIEW OF STUDIES, RESEARCH QUESTIONS, AND HYPOTHESES

Overview

The present research introduces the construct of *political essentialism* – essentialism about political identity---and studies its relationship with affective polarization. Does essentialism relate to heightened polarization, contributing to the large discrepancy in affect toward the ideological ingroup versus the ideological outgroup? Or, as some suggest, are there features of essentialism that are associated with reduced affective polarization (e.g. Hibbing, 2014)? Do different facets of essentialism relate differentially to these outcomes? Two studies are proposed to address these questions, using divergent methodological approaches.

Study 1 is a broad cross-sectional study, that examines the relationship between essentialist beliefs and inter-ideological attitudes and behaviors, and also considers several other potential antecedent and correlated variables. Study 2 is an experimental study, in which essentialist beliefs are manipulated and inter-ideological attitudes are measured. Therefore these studies focus on multiple constructs, measured in several ways. The present section introduces the constructs considered in each study, the general predictions made about these constructs, and the most relevant literature supporting these general predictions. Finally, the formal hypotheses and exploratory research questions for each study are presented.

Key Constructs and General Predictions

Political essentialism is the primary construct of interest across the two studies. Drawing from prior research, several “facets” or manifestations of essentialism are considered, and specifically tied to the political domain. Both studies also focus on affective polarization as a key *consequence* of essentialist beliefs. *Political correlates* of essentialism (e.g., political interest, ideology) are also addressed in each study. *Potential antecedents* of political essentialism (e.g., intergroup contact) are also explored in Study 1. Each of these categories of variables are addressed below, but more details about precisely how they are measured are within the Methods section of Chapters 3 and 4. General predictions are also outlined in this section. More formally introduced predictions and research questions are provided at the end of this chapter.

Political essentialism. Essentialism is sometimes treated as a unitary construct, and sometimes as a collection of distinct but related beliefs. Different essentialist beliefs can function differently – for example, entitativity but not natural-kind beliefs were associated with negative group evaluation (Haslam et al., 2000). Research consistently demonstrates the importance of measuring domain-specific (rather than general) essentialist beliefs, as the structure and consequences of essentialist beliefs varies by topic (Jayaratne et al., 2006; Delgado-Acosta et al., 2016). Therefore, in Study 1, political essentialism is measured as a multi-faceted construct drawing upon facets of essentialism that have been proposed in previous research (Bastian & Haslam, 2007; Rangel & Keller, 2011; Delgado-Acosta et al., 2016): discreteness, informativeness, immutability, biological basis, and social determinism. A novel, politics-specific measure of essentialism is used (the “political essentialism scale”), allowing the construct to be tested as an overarching construct and as a collection of subscales. Reliability and

factor analyses are also used to explore the structure of the scale.

In Study 2, political essentialism beliefs are manipulated. This is accomplished by exposing participants to one of two fabricated news articles. These articles maximally manipulate essentialism: that is, the “high essentialism” version of the article argues that ideology is an essential quality in terms of all five facets that were measured, while the “low essentialism” version argues the opposite.

Proposed consequences of political essentialism.

Affective polarization and social distance. The key outcome explored in these studies is political polarization as an intergroup, affective phenomenon. As such, it is operationalized as feelings that members of ideological groups express toward the opposing group as compared to their ingroup. Within this dissertation, the term “affective polarization” refers to the degree to which people prefer their ideological ingroup (e.g., “liberals,” for liberal participants) over the most salient ideological outgroup (e.g., “conservatives,” for liberal participants)¹.

The affect toward the political ingroup and outgroup is assessed with a scale known as the “feeling thermometer.” This is a persistently popular, 101-point measure of attitudes that asks participants to rate their feelings toward each target, on a scale from “very cold or unfavorable” to “very warm or favorable” (Nelson, 2008). The vast majority of people gravitate toward “rounded” spots within the scale (e.g., 80 rather than 79) so it may not function as fine-grained a

¹ In the literature, the term “affective polarization” can also refer not just to the gap in affect towards one’s ideological in-group versus the ideological outgroup, but to the *increase in this gap over time* (Iyengar, Sood & Lelkes, 2012). As this is a cross-sectional study, I am necessarily only capturing this gap at one moment in time. However, the term is still useful in the context of this dissertation. The phrase “polarization” captures, better than other potential terminology, simultaneous warmth toward the ingroup and coldness toward the outgroup. In contrast, an expression such as “political outgroup antipathy” would only refer to half of the attitudinal divergence.

measure as “101 points” implies (Alwin, 1992). Nevertheless, it has been used extensively in survey research. When used in online surveys, warmth expressed tends to be lower (Liu & Wang, 2015), but test-retest reliability tends to be higher (Chang & Krosnick, 2009), than when this scale is used in face-to-face surveys.

Closely tied to political affective polarization is the conative, or behavioral, dimension of polarization. That is, polarization can be expressed not just by reporting differential warmth toward the ingroup versus the outgroup, but also via a behavioral preference to avoid the ideological outgroup. In this dissertation, this construct is referred to as *desire for social distance*.

As essentialism as a whole often relates to more negative intergroup attitudes, it is generally predicted that political essentialism will accentuate affective polarization and desire for social distance. An important question for the present research is *which facets* of political essentialism will correspond with these outcomes, and in which direction. In many instances, perceived discreteness and informativeness are associated consistently with increased prejudice (Haslam et al., 2002). On the other hand, perceptions of immutability and biological basis are at times associated with tolerance. Political identity could be regarded more like mental illness or homosexuality, in which biological basis and immutability beliefs are associated with *reduced* prejudice (Jayaratne, 2005; Phelan et al., 2002). It is also possible that political identity will function more akin to race or immigration status, wherein immutability beliefs are associated with *increased* prejudice (e.g., Bastian & Haslam, 2008; Zagefka et al., 2013). I predicted that political identity will behave more like the latter, for two reasons: one based on empirical results to date, and one more theory-driven.

First, Suhay et al. (2016) found a positive association between biological basis beliefs and political intolerance. This suggests the biological basis facet is associated with a more negative inter-ideological orientation. Further, their measure of the biological-basis construct contained some items that also referred directly to immutability (e.g., “Political beliefs do not have an inherent biological basis, and *thus can be changed*” [emphasis added]). If immutability beliefs were contributing to more positive outgroup evaluations, we might expect any negative biological-basis effects to be dampened by the presence of immutability statements. On the contrary, a significant negative relationship between such items and outgroup orientation was maintained across two studies. Furthermore, when entered as a control variable, “entity theory” (basically synonymous with “immutability” beliefs) was positively associated with desire for social distance from political outgroups ($B = .25$, $SE = .08$, $p < .01$; however, it should be noted that this measure assessed “general” immutability beliefs about personality, rather than about political orientation more generally). Therefore, empirical results point toward immutability beliefs having a positive association with intergroup tension rather than tolerance.

The second reason is more theory-driven. The proposed theoretical explanation for why biology and immutability beliefs reduce some forms of prejudice (e.g., homophobia) is they lessen the blame and personal responsibility for carrying a stigmatized status (Jayaratne, 2005; Dar-Nimrod & Henie, 2011). This blame-reduction function is bolstered by cultural frames that use biology and immutability statements in arguments supporting stigmatized groups (e.g., Lady Gaga’s pro-LGBT anthem “Born this Way”; Bennett, 2014; Jayaratne, 2005). No such cultural frame exists to support the identities of liberals or conservatives (as in, “we must accept liberals; they were ‘born that way’ and cannot change.”). On the contrary, because politics is goal-driven,

there may be some demand for others to adopt one's own political orientation (e.g., for instrumental reasons, conservatives would prefer liberals to become more conservative – this would only help advance conservatives' political goals). This potential *demand* for outgroup assimilation, combined with a belief that assimilation is *impossible*, is associated with greater outgroup prejudice (Zagefka et al., 2013). Therefore, I expected that all measured facets of political essentialism, including immutability and biological-basis beliefs, would relate to greater affective polarization.

Political participation. While the main outcomes of interest in this dissertation are affective polarization and desire for social distance, an additional construct is considered: political participation. On the basis of Mutz's (2002b) findings that political disagreement in social networks depresses voting intention, this potential "side effect" of inter-ideological contact (see next section) will also be explored in Study 1. Political participation is measured both as a summary index of participation over the past year, and as intention to vote in the 2018 Congressional midterm election.

Proposed antecedents of political essentialism. The correlational study also addressed two proposed predictors of political essentialism: one related more to behavioral history (intergroup contact), and one related to cognitive style (open-minded cognition).

Intergroup contact. I predicted that intergroup contact with people of opposing political views (which I will refer to as "inter-ideological contact") would have a negative relationship with both political essentialism and affective polarization. As intergroup contact appears to be associated with a decrease in essentialist beliefs in other domains (Deeb et al., 2011), it is anticipated that liberals and conservatives may have a less essentialist view of ideology if they

have had more extensive inter-ideological contact. While Pettigrew and Tropp (2011) are overall optimistic about intergroup contact's positive effect on intergroup attitudes, they note that the conditions under which it takes place can moderate its effects. Those that fulfilled Allport's conditions for effective intergroup contact (equal status, common goal, etc.) yielded greater reduction in prejudice than those that did not (though contact outside of these conditions still tended to yield some prejudice reduction; Pettigrew & Tropp, 2006). Some more recent research cautions even more strongly that negative interactions can result in accentuated prejudices (Barlow et al., 2014; Graf et al., 2004). Finally, Mutz (2002a) found that it was greater *intimacy* in cross-ideological friendships, rather than mere exposure to opposing views, that led to increased political tolerance. With these qualifications in mind, the present study will assess inter-ideological contact *quality* as well as quantity.

Open-minded cognition². I expected open-minded cognition would be negatively related to both political essentialism and affective polarization. This prediction is based both on empirical findings as well as the theoretical content of the two constructs.

Previous empirical research has found a significant negative relationship between OMC and a general measure of essentialism (Wilson & Ottati, 2016). Prior research has also demonstrated that OMC is positively related to affect toward a variety of outgroups – including

² Another potentially interesting construct to assess would be Political Open-Minded Cognition ("P-OMC," Price et al., 2015), a measure of how open-minded people within the domain of politics. I am primarily interested, however, in the antecedent role of OMC as a general cognitive style that potentially determines how people perceive social and political categories. Research suggests individuals possessing a high level of General Open-Minded Cognition have a less rigid view of social categories (Wilson & Ottati, 2016), and therefore may view liberals and conservatives in less essentializing terms. P-OMC, in contrast, may be more of a consequence than antecedent of essentialist lay beliefs about politics. People low in political essentialism may be more inclined to listen more openly to others about politics, since they view those with opposing views as less fundamentally different.

those relating to gender identity, ethnicity, and race -- even when controlling for a set of related constructs (Price et al., 2015; Wilson & Ottati, 2016). Similarly, Price et al. (2015) reported that OMC positively predicted empathic concern for others; again controlling for openness to experience and other related constructs. The authors stated that overall, results indicate that “individuals possessing an open-minded cognitive style often respond to outgroup members in a more positive emotional manner” (p. 13). This suggests there is a robust connection between this cognitive style and more positive outgroup attitudes, which quite possibly could extend to ideological outgroup members.

In addition to these empirical findings, the content of the OMC and political essentialism constructs suggests they are likely to be negatively related. The two constructs offer different frames for nature and importance of others’ beliefs. For example, an item from the political essentialism scale states, “People’s political views can’t really be changed”; see Appendix A). As this item suggests, the notion that one’s beliefs may change is contrary to political essentialism. One item of the open-minded cognition scale, in contrast, states “I am open to considering other viewpoints” (Price et al., 2015; see Appendix A for all OMC items). A willingness to entertain “other” views is one of the core facets of OMC.

The political essentialism scale directly measures beliefs about people in general (“*people’s* views...”), while the OMC scale measures one’s own cognitive orientation (“*I* am willing...”). However, one’s own cognitive orientation is likely to influence their perception of possibilities for “people” in general. Consider, for example, an individual who is particularly high in OMC. They express a willingness to listen to “both sides,” consider “many opinions,” and reject the notion that it is a “waste of time” to listen to dissenting views. By observing their

personal experience, they are unlikely to believe that personal beliefs in general are immutable, or arising solely from primordial biological sources. Furthermore, via their active open-mindedness towards others' views, the high-OMC individual has the opportunity to reject essentialist assumptions of others (that they “can’t really change”; they belong to a “distinct camp,”). In contrast, a low-OMC individual may observe from their own personal experience that it is true that beliefs are fixed, self-defining and pre-determined. As they “tune out” perspectives they disagree with, they may also fail to notice nuances or changes within others' belief systems.

For all of these reasons, I predicted that open-minded cognition would be related both to greater warmth toward the political outgroup and to reduced essentialism. The cross-sectional nature of this study did not enable me to strongly demonstrate a chain of causation between OMC, outgroup warmth, and political essentialism. A mediational model, however, tests the notion that OMC mediates the link (if one is present) between essentialism and affective polarization (see RQ5).

Political correlates of political essentialism and affective polarization. The studies also include political variables: ideology, political extremity, political interest, political news consumption, and disgust sensitivity. With the exception of ideology, each one is expected to be positively correlated with affective polarization; and may correspond with political essentialism as well. Political extremity has been demonstrated to be correlated with political outgroup antipathy (Iyengar & Westwood, 2015) and holding more extreme and incorrect stereotypes of political outgroups (Homola et al., 2016). Political interest is also associated with more accentuated affective polarization (Iyengar et al., 2012). People who pay attention to congenial

news sources also tend to display stronger affective polarization than those who do not (Garret et al., 2014; Stroud, 2010).

These political variables are assessed in the two present studies. One goal of measuring these is to replicate previous research findings regarding the relationship between each of these and affective polarization. Another goal is to test the degree to which each of these relates to political essentialism. For example, it is feasible that political extremity influences political essentialism, because extremity increases partisan stereotyping (Homola et al., 2016), and essentialism and stereotyping tend to be correlated (Bastian & Haslam, 2006). It may also be the case that political essentialism beliefs function as a partial mediator; that is, part of the reason that extremity relates to greater affective polarization is that it heightens political essentializing lay beliefs. This mediational relationship is tested in Study 1.

Causality. Finally, it is important to provide an initial test of causality. This is the focus of Study 2. The Suhay et al. (2016) study addresses the association between biopolitical lay theories and political prejudice, but does so in a cross-sectional manner. They write that it is feasible that biopolitics beliefs increase political prejudice, but that, “it also may be that higher levels of political prejudice lead to greater belief in biopolitics via a motivated reasoning process. Future research should study this important question experimentally” (2016, p. 8). In many instances, the relationship between essentialism and intergroup attitudes is bi-directional (Keller, 2005; Rangel & Keller, 2011). In the present studies, one causal direction – from essentialist beliefs to prejudice – is tested.

Study 1: A Cross-sectional Approach

Study 1 provides a cross-sectional test of the relationship between essentialist beliefs about ideological groups and affective polarization. As described previously, it also measures some of the proposed antecedents (*open-minded cognition*; *intergroup contact*) and correlates of political essentialism (*ideology*, *political extremity*, *political interest*, *political news consumption*). Psychological essentialism is assessed with new items, building upon previous, theory-driven scales, but revised to be specific to the domain of political identity. Affective polarization is measured, as well as the closely-related construct of desire for social distance. It is generally predicted that the political essentialism scale will positively relate to affective polarization and desire for social distance; and this relationship will not be reducible to biological-basis beliefs.

Another core goal of this study is to test two proposed antecedents of political essentialism, open-minded cognition and inter-ideological contact, which are both expected to attenuate essentialism. Also, several political correlates that are frequently of interest in political science research are measured: political interest, political extremity, political ideology, political news consumption, and disgust sensitivity. They are included as control variables in some analyses, allowing for a more rigorous test of the essentialism-attitude link. Measuring these variables allows their own bi-directional relationship with political essentialism to be tested. This has the potential to also yield helpful evidence about the sources and/or consequences of essentialist attitudes.

A priori hypotheses (Study 1).

H1: Participants will, on average, indicate greater warmth for their political ingroup than the political outgroup, demonstrating evidence of affective polarization.

H2: The total political essentialism scale will be positively associated with both affective polarization and desire for greater social distance from political outgroups.

H3: Replicating previous research, belief in a biological basis of politics (*biological basis* subscale) will be positively associated with a greater desire for social distance from political outgroups, and greater affective polarization. Additionally, the discreteness, immutability, informativeness, and social determinism facets will also all be positively related to affective polarization. Controlling for *biological basis* will not eliminate the effect of the remaining subscales on affective polarization and desire for social distance.

H4: Open-minded cognition will be negatively related to the overall political essentialism scale. It will also relate negatively to affective polarization and desire for social distance.

H5: Inter-ideological contact quantity and quality will be negatively related to the overall political essentialism scale. They will also relate negatively to affective polarization and desire for social distance.

Exploratory research questions (Study 1).

RQ1: What factor structure best describes the political essentialism scale? Does it consist of the five proposed theoretical factors (discreteness, immutability, informativeness, biological determinism, and social determinism); a smaller number of more general factors (natural kinds versus entitativity); or some other structure?

RQ2: Does ideology moderate the link between political essentialism and affective polarization?

That is, is the association between political essentialism and affective polarization stronger for liberal participants (as in Suhay et al., 2016), or for conservative participants, or is this association equivalent across groups?

RQ3: Which political correlates (i.e., political extremity, political interest, political news consumption, and disgust sensitivity), if any, are associated with political essentialism or affective polarization? Are any sub-types of news consumption particularly associated with political essentialism or polarization (i.e., congenial versus non-congenial news consumption)?

RQ4: To the extent that political correlates are associated with affective polarization, are these mediated by political essentialism beliefs?

RQ5: To the extent that open-minded cognition is associated with reduced affective polarization, is this relationship mediated by political essentialism?

RQ6: To the extent that inter-ideological contact is associated with reduced affective polarization, is this relationship mediated by political essentialism?

RQ7: Which facets of political essentialism beliefs are most and least influenced by intergroup contact? Which facets (quantity versus quality) of intergroup contact are most and least related to political essentialism? Which facets of political essentialism are most strongly associated with open-minded cognition? Does contact quality moderate effects of contact quantity on political essentialism?

RQ8: To the extent that political essentialism is associated with affective polarization, is this effect primarily driven by heightened ingroup liking, by decreased outgroup liking, or both?

RQ9: Does inter-ideological contact negatively predict political participation? Is political participation associated at all with affective polarization or political essentialism?

Study 2: An Experimental Approach

Study 2 provides an experiment to test causation. This study intentionally includes fewer measures, particularly in the “proposed antecedents” category, than Study 1 does. Belief in political essentialism is manipulated, rather than measured. The manipulation will prime multiple facets of essentialism using fabricated articles that endorse an essentialist or non-essentialist view of political identity. In order to confirm the effectiveness of this manipulation, a pilot study is run prior to the main study. In the pilot study, participants read one of the two versions of the article, then rate whether they believe that the researchers described in the article believe ideology to be discrete, immutable, informative, socially determined, and biological (or their opposites). In the main study, participants will read one of the two versions of the article, then simply rate their attitudes on the feeling thermometer, and desire for social distance from ideological others.

A priori hypotheses (Study 2).

H6: Participants in the “high essentialism” condition will report that the researchers described in the article view ideology as more essentialized than will participants in the “low essentialism” condition.

H7: Those primed with an essentialist view of political identity will display greater affective polarization than those primed with a non-essentialist view of political identity.

H8: Those primed with an essentialist view of political identity will display greater desire for social distance than those primed with a non-essentialist view of political identity.

Exploratory research questions (Study 2).

RQ10: To the extent that people display greater affective polarization in the high-essentialism condition than in the other two conditions, is this difference primarily driven by increased ingroup liking, or by decreased outgroup liking?

RQ10: Does ideology moderate the effect of political essentialism on affective polarization?

That is, is the effect of political essentialism on affective polarization stronger for liberal or conservative participants? Or is this effect equivalent across groups?

CHAPTER THREE

STUDY ONE: A CROSS-SECTIONAL APPROACH

This chapter presents the methodology and results from Study 1. In this study, political essentialism is considered both as a unitary construct and as a collection of related constructs. Factor analysis is also performed on the political essentialism scale. The chapter is divided into five sections: 1) methods; 2) descriptive statistics; 3) results concerning political essentialism as a unitary construct; 4) results considering essentialism as a multi-faceted construct; 5) discussion.

Methods

Design and participants. Study 1 used a cross-sectional design, with the level of political essentialism as a measured, continuous, between-subjects factor. The primary dependent variables are affective polarization and desire for social distance. Affective polarization is measured using a difference score (ingroup – outgroup thermometer rating; see Iyengar et al., 2012) in some analyses, and as repeated measure in others. Desire for social distance is measured with a three-item scale assessing participants' discomfort with interacting with people of opposing ideologies.

Power analysis suggested that 377 participants would be needed in order to detect a small correlation ($R = .15$) with 90% power. I therefore set a sampling goal of 420 ($377 * 110\%$, rounded up to nearest 10), to account for the potential need to drop subjects.

Participants were Amazon Mechanical Turk (“MTurk”) workers. MTurk is an online platform that allows people to complete tasks, including surveys, for money. MTurk workers, while not truly nationally representative, are more representative of the United States than are traditional college student samples (Huff & Tingley, 2015). Furthermore, MTurk workers have been demonstrated to be an appropriate sample for studying political variables: liberals and conservatives recruited on MTurk appeared to have nearly identical political values and motivations as liberals and conservatives in nationally-representative samples (Clifford, Jewell, & Waggoner, 2015).

MTurk workers were recruited via TurkPrime. TurkPrime interacts with MTurk, and screens participants based upon various demographic characteristics, including ideology. To do this, TurkPrime intermittently surveys MTurk workers about their demographic characteristics. After responding consistently (twice or more) that they are “liberal” or “conservative,” TurkPrime identifies them as such for purposes of later recruiting (hereafter referred to as “TurkPrime-identified liberals” and “TurkPrime-identified Conservatives”). On the basis of this pre-screening, I posted one study which allowed only TurkPrime-identified conservatives to participate, and one that allowed only TurkPrime-identified liberals to participate.

TurkPrime also allows requesters to select certain additional attributes they would like participants to have. I employed two such criteria. The first is that the worker should be a US resident. This helps ensure that the study, which focuses on US politics and US political identity, is relevant to the participants, and that they are somewhat familiar with the concepts presented. The second criteria will be that workers have a 95% “success rate” on previous tasks. Selecting

only such “high reputation” workers helps ensure high-quality data, without the need to utilize attention check questions (Peer, Vosgerau, & Acquisti, 2014).

Two-hundred ten participants of each ideology were requested, for a total of 420. Data collection for both groups occurred simultaneously in January, 2018. Informal pre-testing suggested the study would take about 12 minutes to complete, on average. Workers were each paid \$1.25 for participation.

Materials. The measures employed by the proposed study are clustered into the following categories: primary variable (*political essentialism scale*); proposed antecedents (*open-minded cognition; intergroup contact*); proposed consequences (*inter-ideological affect; desire for social distance, political participation*); and potential political correlates (*ideology, political extremity, political interest, political news consumption, disgust sensitivity*).

Political essentialism scale (“PE”). Political essentialism is measured with a 20-item self-report measure (the “*political essentialism scale*”), see Appendix A. The scale is inspired by several existing scales (Bastian & Haslam, 2006; Keller, 2005; Rangel & Keller, 2011; No et al., 2008; Suhay et al., 2016), and also includes some completely newly written items. It is designed to distinctly assess the four measurable features of essentialism proposed by Bastian and Haslam (2006): immutability (Levy et al., 1998), discreteness, informativeness, and biological basis. While research has been varied in what is regarded as the observable facets or factors of essentialist beliefs, these four dimensions encompass many of these concepts (e.g., belief in genetic determinism can be regarded as a type of “biological basis” belief). This set of four features has also been widely used in research relevant to essentialism and intergroup attitudes

(Bastian & Haslam, 2006, 2007, 2008; Demoulin, Leyens, & Yzerbyt, 2006; Delgado-Acosta, Betancor, Rodriguez-Perez, & Delgado, 2016).

While drawing inspiration from previous scales, the *political essentialism scale* departs from the items used by Bastian and Haslam (2006) and Levy et al. (1998) in several important ways. The aim of the political essentialism scale, following Suhay et al. (2016) was to focus on essentialism about political identity *specifically*. Given that essentialism regarding different categories has different implications (e.g., essentializing about homosexuality vs. race; Jayarante et al., 2006), it is important to specifically measure essentialist beliefs *about political identity*.

Another unique feature of the political essentialism scale is that it was designed to contain five subscales: the four features noted above (Bastian & Haslam, 2006), as well as assesses *belief in social determinism* (Rangel & Keller, 2011). This potential variant of essentialism was proposed more recently than Bastian and Haslam's (2006) scale, so it was not assessed in any previous overall essentialism scales. Therefore, the political essentialism scale measures beliefs about discreteness, immutability, informativeness, biological basis, and social determinism. While multi-faceted, the scale was designed to be relatively brief. Bastian and Levy's (2006) scale contained 32 items; and the belief in social determinism scale (2011) consists of 12 items. Rather than maintain this total volume of items (44), I restricted the total number to 20: four items per subscale.

A related goal was for each scale item to be primarily referent to only *one* feature of essentialism only. Some items used in previous research were "double-barreled." For example, the item "Race does not have an inherent biological basis, and thus can be changed" (No et al., 2008) simultaneously refers to both biological basis and immutability. The new items were

written with the intention of explicitly referring to one of the five concepts only. This may allow a better statistical test of the unique contributions of biology beliefs vs. immutability beliefs.

Care was also taken to select terminology that would be familiar to the majority of participants. Some previous essentialism scale items used rather advanced terminology (Suhay, 2017, personal communication). For example, “Political beliefs are fluid, *malleable constructs*” (emphasis added; No et al., 2008; Suhay et al., 2016); “It is hard, if not impossible to change the *dispositions* of a person’s political beliefs” (emphasis added; No et al., 2008; Suhay et al., 2016). Items were written to avoid such academic terms.

This scale possesses an equal number of items that are “pro-essentialist” (e.g., “A person’s political views can tell you a lot about the kind of person they are”) and “anti-essentialist” (e.g., “A person’s genetics don’t influence their political ideology”). This helps control for the effect of acquiescence bias – the tendency to simply agree with all items.

Outcome variables.

Affective polarization (“AP”). Following a large body of research based on ANES and Pew data, affective polarization is measured using thermometer ratings of the political ingroup and political outgroup (i.e., *liberals* and *conservatives*; Hetherington, 2001; Iyengar et al., 2012; Iyengar, 2016). This consists of a scale of how “warm or cold” one feels toward the target group (on a scale from 0 to 100), with a neutral midpoint (50). For some analyses, a simple difference score will be used (political ingroup rating minus political outgroup rating). This allows for hypothesis testing via straightforward correlation and regression procedures. For other analyses, a repeat-measures design will be used (ingroup vs. outgroup evaluation as a within-subject factor), which will help differentiate unique effects on ingroup ratings vs. outgroup ratings.

Desire for social distance (“DSD”). Desire for social distance will be measured using three items borrowed from previous research. These tap several distinct types of social distance (living preferences, family preferences, and social interaction preferences). The items include (see Appendix A for response scales and other details), “In deciding where to live, how important would it be to you to live in a place where most people held political views similar to your own?” (see Pew, 2014; Suhay et al., 2016); “How do you think you would react if a member of your immediate family told you they were going to marry a [liberal/conservative (opposing ideology to participant)]? Would you be generally happy about this, generally unhappy, or wouldn’t it matter to you at all?” (see Pew, 2014); “I would like to meet and get to know people with political beliefs different from my own” (adapted from Suhay et al., 2016 and Williams & Eberhardt, 2008).

Proposed antecedents.

Open-Minded Cognition. Open-minded cognition is measured using the six-item General Open-minded Cognition Scale (Price et al., 2015). See Appendix A.

Past intergroup contact. Past intergroup contact quantity and quality (labelled “past” to distinguish it from “desire for social distance”) is assessed with a measure partially adapted from Brown et al. (2007). See Appendix A for the full wording of this measure. Participants were asked to estimate the percentage of their social contacts who are liberal, conservative, and moderate/other/unsure. Those who report more than 0% are from the opposing ideology were also asked four additional questions to assess *quality* of their closest intergroup relationship: how positive, close, equal, and cooperative the relationship is. This reflects methods employed by

Brown et al. (2007), and furthermore assesses positive vs. negative contact (Barlow et al., 2012; Graf et al., 2014).

Political correlates.

Political interest (PI). Political interest was measured by a single item: “In general, how interested are you in politics and public affairs?” [1 = not at all interested to 7 = extremely interested] (adapted from Homola et al., 2016)

Political news consumption (PN). Participants were asked to report how frequently they watch, listen to, or read political news. The full text of this measure is available in Appendix A.

Selective news consumption (SN). An additional question asked the participant to select all of the sources they had gotten political news from in the past week (see the scale computation section for how this item was constructed to reflect selective news consumption). The news sources chosen to be included in this scale were selected by reviewing survey research from Pew (2015) that identified sources strongly preferred by liberals and conservatives. Only sources that were clearly identifiable as clearly liberal-congenial, conservative-congenial, and moderate/mixed were chosen. Furthermore, only sources that Pew identified as familiar to a majority of people were included.

Disgust sensitivity (DS). Following Aaroe, Petersen, and Arceneaux (2017), disgust sensitivity was measured with the 7-item pathogen sensitivity subscale of the disgust scale (Tybur, Lieberman, & Griskevicius, 2009).

Ideology. Ideology is measured on a 7-point scale from 1 (very conservative) to 7 (very liberal).

Ideological extremity. Extremity is measured by subtracting 4 from ideology scores, and then taking the absolute value of this score (e.g., 1, representing “very conservative”, will become a 4). Extremity will therefore be measured on a 0 to 3 scale.

Partisan identity. Partisanship was measured via several items, reflecting ANES (e.g., ANES, 2016) methods. In the first question participants will be asked whether they identify as Democrat, Republican, Independent, or Something Else. If they selected Democrat (or Republican), they were asked how strongly they identify as a Democrat (or Republican). If they select “Independent” or “something else,” they were asked to report whether they lean towards the Democrat or Republican Party, or neither. Thus, a 7-point scale was constructed that ranged from “Strong Democrat” on the low end, to “Strong Republican” on the high end.

Demographics. Demographic measures assessed, racial identity, gender identity, geographic region, education level, income level, age (year born), religious identity, and degree of religiosity (see Appendix A for precise wording).

Procedure.

Participants encountered the study online, listed on MTurk’s platform as “social attitudes study.” After choosing to participate in the study, they were provided a link to the survey, hosted on SurveyGizmo.com. Via SurveyGizmo, they completed the following steps:

1. Complete the political essentialism scale
2. Complete the thermometer ratings (measure of affective polarization)
3. Complete the preferred social distance measure
4. Complete the past intergroup contact measures
5. Complete the open-minded cognition measure

6. Complete political questionnaire (political interest, political news consumption, and political participation ratings)
7. Complete the disgust sensitivity measure
8. Complete demographic questionnaire

The survey program randomized the placement of the political essentialism scale, either before or after measuring the dependent ratings (steps 2 and 3 above). This was to help address the concern that the dependent variables may be influenced by having first completed the Political Essentialism scale (or vice versa). The survey program tracked what order participants saw the pages in, so that this potential order factor could be controlled for.

Median study completion time was 11.5 minutes (predicted to be 12 minutes).

Results: Preliminary and Descriptive Analyses

Data filtering. A total of 434 participants began the survey. Fourteen exited the survey before completing the demographic measures (including the ideology measure) and were thus dropped. Therefore, 420 participants completed the survey: 210 TurkPrime-identified conservatives and 210 TurkPrime-identified liberals.

Among the TurkPrime-Identified conservatives, 179 described themselves as conservative in the demographic section of the present study; 13 described themselves as moderate, and 18 described themselves as liberal. Among the TurkPrime-identified liberals, 195 identified as liberal, 8 identified as moderate, and 7 identified as conservative in the demographic section. Those who indicated an ideological identity in the demographics section opposite to their TurkPrime-identified ideology were dropped (i.e., those who TurkPrime screened as

conservative, but identified themselves as liberal, and vice versa). However, I retained moderates—those who selected the midpoint of the ideology scale¹.

Furthermore, participants were dropped for missing data on any of the most central measures: the political essentialism measure, the dependent measures, or any of the controls for primary regression analyses. The final N for all main analyses is 385: 187 conservatives and 198 liberals.

Demographics. 49.1% of participants were female, 55.4% had a bachelor's degree or higher level of education, and the median age was 35. 50.4% were Democrat-identified, 43.6% Republican, and 6.0% reported an independent or "other" party identification. Full demographics are provided in Table 1.

Table 1. Study 1 Demographics

	Full sample	Liberals	Conservatives
N	385	198	187
Party	Democrat: 50.4% Republican: 43.6% Other/Independent: 6.0%	Democrat: 92.4% Republican: 6.1% Other/Independent: 5.9%	Democrat: 5.9% Republican: 88.2% Other/Independent: 5.9%
Age	Mean = 37.56 (SD=11.06) Median = 35.00	Mean = 36.1 (SD=10.81); Median = 33.5	Mean = 39.11 (SD=11.15) Median = 36.0
Gender	Male: 50.6% Female: 49.1% Other/Non-binary: 0.3%	Male: 51.5% Female: 48.0% Non-binary: 0.5%	Male: 49.7% Female: 50.3% Non-binary: 0
Income	Under \$40,000: 34.6% \$40,000 - \$99,000: 49.9% \$100,000 or greater: 15.6%	Under \$40,000: 40.9% \$40,000 - \$99,000: 46.5% \$100,000 or greater: 12.6%	Under \$40,000: 27.9% \$40,000 - \$99,000: 53.5% \$100,000 or greater: 18.8%
Education	Some HS or HS degree:	Some HS or HS degree:	Some HS or HS degree:

¹ Such participants consistently identified themselves to TurkPrime as liberal or conservative on two or more occasions, and only selected the scale mid-point in the present study. Therefore the majority of evidence suggest they possess a liberal or conservative identity, and thus were not dropped.

	12.2% Some college or 2 year degree: 32.5% 4 year degree: 41.6% Graduate/Professional degree: 13.8%	9.1% Some college or 2 year degree: 33.3% 4 year degree: 47.5% Graduate/Professional degree: 10.1	15.5% Some college or 2 year degree: 31.5% 4 year degree: 35.3% Graduate/Professional degree: 17.6%
Race	White: 76.1% Black: 9.1% Hispanic: 6.0% Asian: 5.7% All other: 2.4%	White: 73.2% Black: 8.6% Hispanic: 7.6% Asian: 7.1% All other: 3.5%	White: 79.1% Black: 9.6% Hispanic: 4.3% Asian: 4.3% All other: 2.6%
Religion	Atheist/Agnostic/Nothing in particular: 37.2% Catholic: 19.2% Protestant (Evangelical): 14.0% Protestant (Non- evangelical): 11.4% Spiritual, but not religious: 8.3% Jewish: 2.1% All other: 7.8%	Atheist/Agnostic/Nothing in particular: 58.6% Catholic: 14.6% Protestant (Evangelical): 1.5% Protestant (Non- evangelical): 9.1% Spiritual, but not religious: 9.1% Jewish: 2.5% All other: 6%	Atheist/Agnostic/Nothing in particular: 14.9% Catholic: 24.3% Protestant (Evangelical): 27.6% Protestant (Non- evangelical): 14.1% Spiritual, but not religious: 7.6% Jewish: 1.6% All other: 10.2%
Religious Importance	Mean = 4.14 (SD=3.18; Scale of 1-9; median = 3.00)	Mean = 2.64 (SD=2.51, median=1.00)	Mean = 5.73 (SD = 3.05; median = 7.00)
Urban/ Rural	42.9% live in a medium or large city 23.1% live in a suburb of a large city; 33.5% live in a small town or rural environment (0.5% missing)	50.0% live in a medium or large city 21.2% live in a suburb of a large city; 28.2% live in a small town or rural environment (0.5% missing)	35.3% live in a medium or large city; 25.1% live in a suburb of a large city; 39.0% live in a small town or rural environment (0.5% missing)

Variable computation and descriptives. In all cases (except where noted below), scales were computed by reverse-coding items where appropriate, then averaging of all relevant items

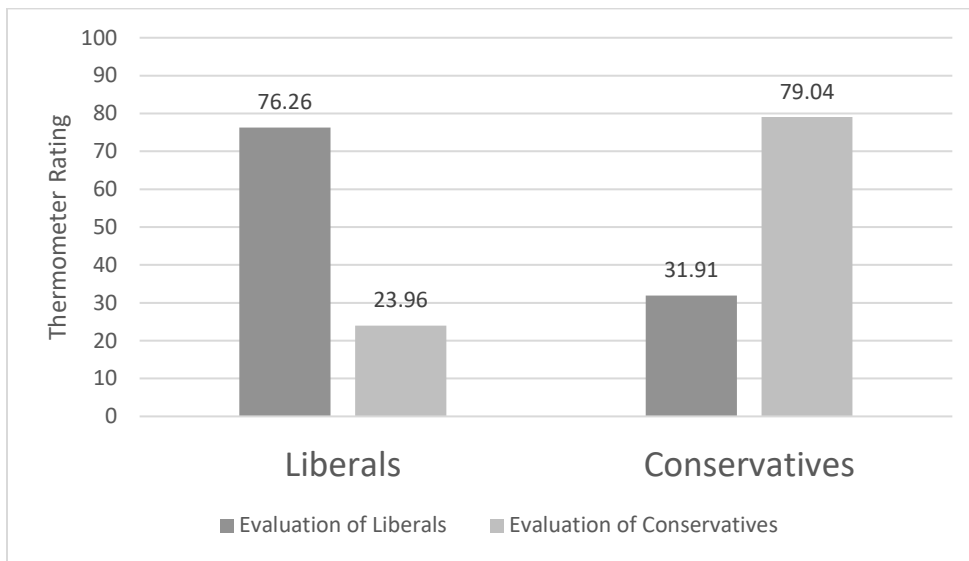
for a composite mean score. A full table of scale descriptives are shown in Table 2, along with Cronbach's α scores where relevant.

Table 2. Primary IV, DV, and antecedent descriptives

Scale	N	α	Scale range	Observed range	Mean	SD
Political Essentialism Scale (total)	385	.782	1 to 7	1.70 to 5.85	3.70	0.68
Political Essentialism Scale (item 2 deleted)	385	.795	1 to 7	1.63 to 5.79	3.65	0.72
Affective polarization (ingroup thermometer rating – outgroup thermometer rating)	385	N/A	-100 to 100	-37 to 100	49.79	32.84
Desire for social distance	385	.636	1 to 7	1.33 to 7.00	4.18	1.15
Intergroup contact quantity	382	N/A	0 to 100	0.00 to 96.00	25.23	19.04
Intergroup contact quality	358	.809	1 to 7	1.00 to 7.00	4.95	1.26
Open-minded cognition	379	.857	1 to 7	1.17 to 7.00	5.04	1.17

Dependent variables. Affective polarization was computed by subtracting outgroup thermometer scores from ingroup thermometer scores. Confirming Hypothesis 1, participants rated their members of their own ideology ($M=77.61$, $SD=18.84$) more positively than members of the opposing ideology ($M=27.82$, $SD=23.27$), $M_{diff} = 49.79$, $SD=32.84$, $t(384)=29.75$, $p < .001$. There was no significant difference in ingroup minus outgroup ratings for liberals vs. conservatives, $t(383) = 1.546$, $p = .12$, though it trended towards being accentuated among liberals, $M_{lib} = 52.30$ ($SD_{lib} = 32.32$); $M_{con}=47.13$ ($SD_{con} = 33.27$). Figure 1 illustrates the breakdown of thermometer ratings by ideology.

Figure 1. Thermometer ratings by participant ideology and target group ideology



Desire for social distance was measured by three items, one that measured how important it is to the participant to live among people with similar political views (“live”); how happy they would be if a family member were to marry someone with views that opposed their own (“marry”); and how much they would like to meet and get to know people with opposing views (“meet”). The “meet” and “marry” items were reverse scored, so that higher scores on all items generally reflect a desire to be distant from political others. The 3-item “Desire for Social Distance” scale produced an α of 0.64; with small to moderate item intercorrelations (“Live” and “Marry” items” correlate $R = .312$; “Marry” and “Meet” correlate $R = .621$; “Live and “Meet” correlate $R = .219$, all P s $< .001$). To retain a reasonable number of primary analyses, the three-item scale will be used, despite having less than optimal reliability ($\alpha < .70$). The small number of items is likely contributing to the α falling below .70 (Field, 2009).

Independent variable. The overall political essentialism scale possessed good reliability ($\alpha = 0.78$), but “alpha if item deleted” analysis suggest that the overall reliability could be

improved by dropping Item 2 (resulting $\alpha = 0.80$). Subscale analysis strongly confirm that Item 2 failed to measure the intended construct (see Table 13 more detail on subscales). When included in the immutability subscale, the resulting α is 0.48; if this item is dropped, reliability rises to 0.67. Therefore, in all subsequent analyses, Item 2 is dropped.

Antecedent variables. Intergroup contact quantity was operationalized as the percent of “people you spend time with” indicated as being of the opposing ideology (i.e., “liberals” for conservative participants, “conservatives” for liberal participants), ranging from 0 to 100. Intergroup contact quality was computed by averaging the ratings for intergroup contact quality positivity, closeness, equality, and cooperativeness ($\alpha = .809$). Only participants who indicated knowing at least one person with opposing ideology were asked these questions, so 27 participants were excluded from this item ($N=358$). Open-minded cognition was computed by reverse-scoring the questions written in the close-minded direction, then averaging the scores to all 6 items ($\alpha = .857$). Descriptives of these scales are provided in Table 2.

Political correlates. Characteristics of the political correlates are provided in Table 3. Overall news consumption and political interest were each measured with a single item. Political extremity was calculated by taking the absolute value of the ideology value minus 4, so scores range from 0 (most moderate) to 3 (most extreme). Disgust sensitivity ($\alpha = .813$) was computed by calculating the mean of the responses to each item. Political participation was computed by summing the total number of forms of political engagement the person participated in ($\alpha = .687$). Vote intention for the Midterm 2018 elections was measured by a single item that ranged from 1 to 10.

Selective news exposure was calculated by subtracting the number of news sources selected from the “opposing side” from the number of news sources selected from the “same side,” and dividing this number by the total number of news sources selected. Therefore, the scale ranged from -1 (selected only “opposing” new sources); to 0 (selected an equal number of opposing and same-side sources; or only “moderate” sources); to +1 (selected only “same side” news sources). For example, a liberal participant who selected NPR (liberal source), MSNBC (liberal source), USA Today (neutral source) and Fox News (conservative source) would receive a score of $(2-1)/4 = 0.25$. Those who selected 0 news sources ($N=80$ individuals) did not receive a score on this variable (final N for analyses including this variable = 305). These individuals were counted as “missing” rather than “0,” as it is quite possible they consume news from sources not listed; but there is no way to estimate the selectivity of those sources.

Table 3. Descriptives for political correlates

Scale	N	Scale Range	Observed Range	Mean	SD
Political interest	385	1 to 5	1.0 to 5.0	3.184	1.099
Frequency of news consumption	383	1 to 8	1.0 to 8.0	6.345	1.420
Selective news exposure*	305	-1 to 1	-1.0 to 1.0	0.401	0.5288
Political extremity	385	0 to 3	0.0 to 3.0	1.907	0.8207
Disgust sensitivity	378	1 to 5	1.0 to 5.0	3.468	0.733
Political participation (total)	377	0 to 7	0.0 to 7.0	1.714	1.4523
Vote intention 2018	384	0 to 10	0.0 to 10.0	7.693	2.8577
Ideology	385	1 to 7	1.0 to 7.0	3.808	2.069
Party	385	1 to 7	1.0 to 7.0	3.784	2.312

*Participants who did not select any of the news sources listed were coded as missing for this variable

Results Concerning Political Essentialism as a Unitary Construct

Bivariate correlation analysis. As illustrated in Table 4, there is a positive correlation between political essentialism and degree of affective polarization. There is also a positive correlation between political essentialism and a desire for social distance. These correlations provide preliminary evidence for Hypothesis 2.

Relevant to Hypothesis 4, intergroup contact quality, and to a lesser extent, quantity, are both negatively related to political essentialism. Quantity and quality are also both negatively associated with both dependent measures. Similarly, supporting Hypothesis 5, open-minded cognition (OMC) relates negatively to political essentialism, as well as both dependent measures.

Table 4. Correlations among essentialism, antecedent variables, and dependent variables

Variables	ESS	AP	DSD	IC Quant	IC Qual	OMC
Political Essentialism (ESS)	1	.31**	.46**	-.13*	-.32***	-.42**
Affective Polarization (AP)		1	.56**	-.22**	-.18***	-.18**
Desire for Social Distance (DSD)			1	-.24**	-.42***	-.39**
Intergroup Contact Quantity				1	.16**	.16**
Intergroup Contact Quality					1	.22***
Open-Minded Cognition (OMC)						1

*Correlation is significant at the $p < .05$ level

**Correlation is significant at the $p < .01$ level

Ns range from 382 to 385, due to occasional missing data, except for correlations with IC Quality (N=358) for which there was additional missing data due to lack of cross-ideological relationships

Research Questions 7 and 9 concerned additional explorations of past intergroup contact quality and quantity: whether the two variables interact to predict outcomes; and whether these

two variables predict political participation. Regression analyses addressing these two questions are addressed in Appendix C.

Table 5 illustrates the relationship between the overall essentialism scale, the dependent variables, and potential political covariates. Political extremity is positively correlated with both dependent variables and with political essentialism. Interestingly, political interest is completely uncorrelated with either dependent variable. Frequency of watching political news overall was positively correlated with affective polarization and desire for social distance but was uncorrelated with essentialism. However, selective news exposure was positively associated with the outcome measures and essentialism. Disgust sensitivity was not correlated with either outcome measure, but it was positively correlated with political essentialism².

Table 5. Correlations between essentialism, affective polarization, and potential political correlates

Variables	ESS	AP	DSD	Extremity	Interest	News freq.	Selective news (<i>N</i> = 305)	Disgust Sens. (<i>N</i> = 378)
ESS	1	.31**	.46**	.19**	.01	-.03	.15*	.20**
AP		1	.56**	.54**	.05	.27**	.28**	.03
DSD			1	.42**	.08	.22**	.23**	.09
Extremity				1	.18**	.30**	.20**	-.00
Interest					1	.09	.22**	-.08
News Freq.						1	.25**	-.10*
Selective news							1	-.18**
Disgust Sens.								1

* $p < .05$; ** $p < .01$

² Additional regression analyses were run to test the possibility that ideology moderates the relationship between disgust and interideological attitudes, as prior research suggests disgust may motivate conservatives attitudes towards liberal activists (Crawford et al., 2014). However, no interaction between ideology and disgust was found, whether predicting affective polarization, desire for social distance, or essentialism. These analyses are presented in Appendix C.

Based on these bivariate relationships, subsequent analyses will test whether the influence of extremity, political news frequency, and/or news selectivity on the dependent variables is mediated by essentialism beliefs.

Regression analyses. Regression analyses are used to confirm the bivariate correlational results, to demonstrate unique effects after controlling for other factors, and to allow for moderation analyses. In the following analyses, the essentialism scale is entered as the primary independent variable. Two dependent variables are also measured: affective polarization and desire for social distance. Results are displayed both with and without controls included.

Please note that for all regression analyses, unstandardized regression coefficients (B) and standard errors (SE) are reported in tables. However, when discussing results in-text, standardized regression coefficients (β) are used.

Preliminary correlational analyses were run to determine which variables to include as controls in the main regression analyses. To balance both parsimony and consistency across analyses, any variable that significantly covaried with one or both dependent variables is retained in as a control in all regression analysis. Preliminary analyses revealed that White ($M = 53.26$, $SD = 31.78$) and Hispanic/Latinx ($M = 54.04$, $SD = 29.27$) participants expressed greater affective polarization than did Black/African American ($M = 30.26$, $SD = 38.10$), Asian ($M = 44.41$, $SD = 29.0$) and other race participants ($M = 23.58$, $SD = 24.69$). Therefore, to maximize the variance controlled for, while remaining parsimonious, race was coded as 0=White and Hispanic, 1=all other races.

As illustrated in Table 6, affective polarization was significantly correlated with age (higher for older people), gender (higher for women), race (higher for White and Hispanic

respondents), party (higher for Democrats) and order (higher among those who responded to the thermometer rating before completing the essentialism scale). Desire for social distance was associated significantly with age (*lower* among older people), religiosity (higher among the less religious), race (higher for White and Hispanic respondents), ideology (higher for liberals), and party (higher for Democrats). There was no association between education and income and either dependent variable. Therefore, all subsequent analysis described as being run “with controls” contain the same set of seven control variables: ideology, party, order, gender, race, age and religiosity. All of these variables were centered so that 0=the true scale midpoint (for ideology and party); 0=the sample mean (age, religiosity); 0=the hypothetical midpoint between dichotomous values (gender, race, order).

Table 6. Pearson correlations between proposed control variables and dependent variables

	Affective Polarization	Desire for Social Distance
Age	.103*	-.105*
Education+	.031	.006
Income+	.053	-.038
Religiosity	0.066	-.126*
Gender	-.120*	-.074
Race	-.230***	-.130*
Order	-.140**	-.089
Ideology	-.083	-.163**
Party	-.105*	.146**

*** $p < .001$, ** $p < .01$, * $p < .05$

+Relationships with Education and Income were tested using Spearman Rank Order correlation.

Race is coded as 1=Black, Asian or Other; -1=White or Hispanic. Gender was coded 1=male/other; -1=female. Ideology is scored as higher=more conservative; party is scored as higher= more Republican-identified. Order was coded such that 1=Essentialism scale measured first, -1=DVs were measured first.

Regression analyses: predicting affective polarization. Results are displayed in Table 7.

As Model 1 illustrates, without controls entered, the overall essentialism scale significantly

predicts degree of affective polarization, $\beta = .311$, $p < .001$. As shown in Model 2, entering control variables does not eliminate the effect of essentialism, $\beta = .306$, $p < .001$. Nevertheless, some controls continued to be uniquely associated with the outcome measure. Race was associated with affective polarization, confirming that Whites and Hispanics ($M = 53.32$, $SD = 31.56$) display higher affective polarization than do members of other racial groups ($M = 33.61$, $SD = 33.95$). A significant order effect emerged, such that respondents who completed the essentialism scale *before* filling out the dependent measure expressed *less* affective polarization than those who responded to the dependent measure first. Gender related to degree of affective polarization, such that men expressed less affective polarization than women did ($M_{male} = 45.98$, $SD_{male} = 32.87$; $M_{female} = 53.81$, $SD_{female} = 32.48$). Age was a weaker predictor, suggesting that older people express more affective polarization than younger people do.

Two models were run testing for possible interactions. The centered, normalized ideology and essentialism measures were multiplied to create an interaction term. As shown in Table 7, Model 3, this interaction term was not significant, $\beta = .001$, $p = .98$. Therefore, essentialism beliefs do not appear to influence affective polarization differentially for liberals versus conservatives.

Table 7. Regression models predicting affective polarization

	Model 1		Model 2		Model 3		Model 4	
	<i>B</i>	(SE)	<i>B</i>	(SE)	<i>B</i>	(SE)	<i>B</i>	(SE)
Essentialism	10.22**	(1.60)	10.22**	(1.55)	10.04**	(1.56)	10.02**	(1.55)
Ideology			0.846	(3.34)	0.85	(3.35)	0.97	(3.35)
Party			-4.00	(3.15)	-4.01	(3.16)	-4.07	(3.15)
Order			-9.32**	(3.07)	-9.32**	(3.07)	-9.33**	(3.07)
Gender			-7.02*	(3.11)	-7.02*	(3.11)	-6.78*	(3.12)
Race			-16.55**	(4.14)	-16.55**	(4.15)	-16.66**	(4.15)
Age			3.51*	(1.60)	3.51*	(1.60)	3.41*	(1.60)

Religiosity	-0.105	(1.82)	-0.104	(1.83)	-0.087	(1.83)
Ideology X Essentialism			.048	(1.52)		
Order X Essentialism					-2.569	(3.07)
Constant	49.79**	(1.59)	44.24**	(5.48)	44.07**	(2.04)
<i>N</i>	385		385		385	
<i>Adjusted R</i> ²	.097		.177		.175	

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

Race is coded as 1=Black, Asian or Other; -1=White or Hispanic. Gender was coded 1=male/other; -1=female. Ideology is scored as higher=more conservative; party is scored as higher= more Republican-identified. Order was coded such that 1=Essentialism scale measured first, -1=DVs were measured first.

An additional model tested whether the order factor interacted with essentialism to predict affective polarization. A centered term for order was computed, such that -0.5 = dependent measures were completed first, and +0.5 = essentialism measure was completed first. This term was multiplied with the centered normalized essentialism score to form an interaction term. As shown in Model 4, this interaction was also nonsignificant, $\beta = -.039$, $p = .40$. Therefore, while order influenced scores on the dependent measure, this effect was not moderated by scores on the essentialism scale. People both high and low in essentialism similarly reported reduced affective polarization if they completed the essentialism scale first.

Regression analyses: predicting desire for social distance. A similar set of regression models tested the effect of the overall essentialism scale on desire for social distance. Results are displayed in Table 8. The overall essentialism scale significantly predicted desire for social distance, $\beta = .464$, $p < .001$. As shown in Model 2, adding in controls did not eliminate the effect of essentialism on desired social distance, $\beta = .451$, $p < .001$. Race and gender influenced desire for social distance in the same direction as they influenced polarization, but no other controls were significant in this model.

Model 3 illustrates that there is no interaction between ideology and essentialism in predicting desired social distance, $\beta = .037, p = .412$. As shown in Model 4, there is also no interaction between essentialism and order effects in predicting desired social distance, $\beta = 0.033, p = .45$.

Table 8. Regression models predicting desire for social distance

	Model 1		Model 2		Model 3		Model 4	
	<i>B</i>	(SE)	<i>B</i>	(SE)	<i>B</i>	(SE)	<i>B</i>	(SE)
Essentialism	0.53**	(0.05)	0.52**	(0.05)	0.52**	(0.05)	0.52**	(0.05)
Ideology			-0.18	(0.11)	-0.18	(0.11)	-0.18	(0.11)
Party			0.06	(0.11)	0.06	(0.11)	0.06	(0.11)
Order			-0.19	(0.10)	-0.20	(0.10)	-0.20	(0.10)
Gender			-0.22*	(0.10)	-0.22*	(0.10)	-0.22*	(0.10)
Race			-0.29*	(0.14)	-0.29*	(0.14)	-0.29*	(0.14)
Age			-0.07	(0.05)	-0.07	(0.05)	-0.07	(0.05)
Religiosity			-0.06	(0.06)	-0.06	(0.06)	-0.06	(0.06)
Ideology X Essentialism					0.04	(0.05)		
Order X Essentialism							0.08	(0.10)
Constant	4.18**	(0.05)	4.07**	(0.07)	4.07**	(.07)	4.07**	(.07)
N	385		385		385		385	
Adjusted R ²	.214		.252		.251		.251	

* $p < .05$; ** $p < .01$.

Race is coded as 1=Black, Asian or Other; -1=White or Hispanic. Gender was coded 1=male/other; -1=female. Ideology is scored as higher=more conservative; party is scored as higher= more Republican-identified. Order was coded such that 1=Essentialism scale measured first, -1=DVs were measured first.

Mixed general linear model analysis. For analyses involving affective polarization up until this point, a difference score has been used: ratings of the ingroup minus ratings of the outgroup. There is strong evidence that this dependent measure is associated significantly with essentialism. However, such a measure of polarization does not differentiate between inflated

ingroup evaluation (e.g., essentialist liberals rating liberals more highly), or deflated outgroup evaluation (e.g., essentialist liberals rating conservatives more negatively). A generalized linear model was used to address this question.

A general linear model was built with essentialism serving as a continuous, between-subjects predictor, and ingroup vs. outgroup evaluation as a binary within-subjects predictor. The dependent variable is the thermometer rating. This analysis allows a test of the main effect of in vs. outgroup ratings, the main effect of essentialism on evaluation (regardless of ingroup vs. outgroup), and the interaction between the target group being rated and essentialism. Most importantly, it also demonstrates the simple effects of essentialism on ingroup ratings and on outgroup ratings independently.

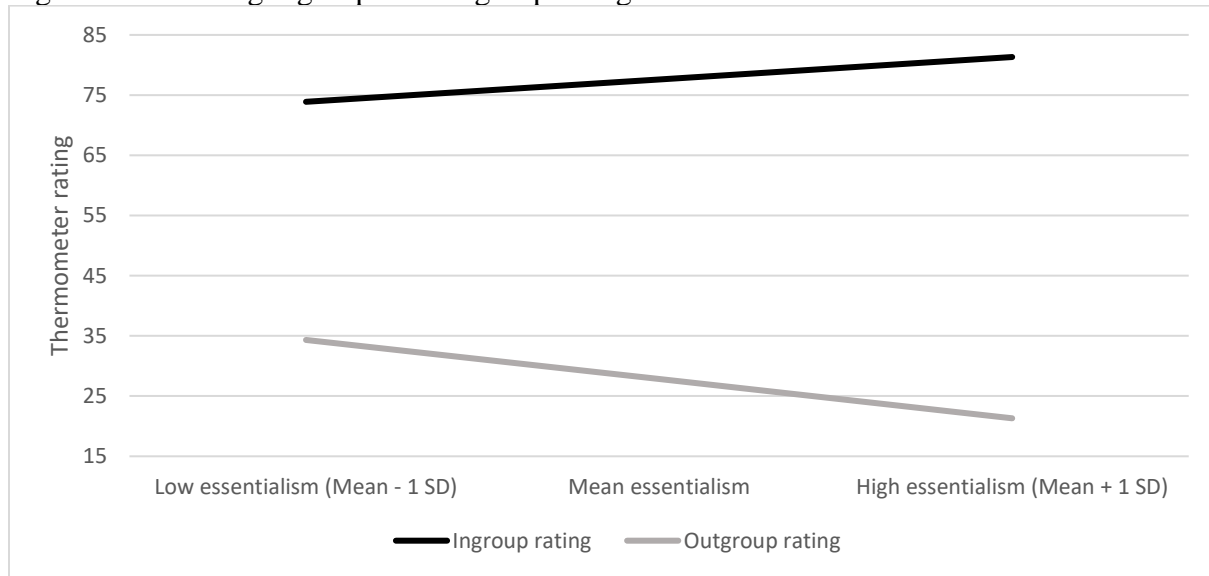
There was, unsurprisingly, a huge effect of in vs. outgroup rating on thermometer ratings, $F(1, 383) = 977.12, p < .001$. Consistent with main effects found when using a difference score, this effect was moderated by essentialism, $F(1, 383) = 41.105, p < .001$. Simple effects tests revealed that essentialism predicts significantly more positive evaluations of the ingroup, $B = 3.719$ ($SE = .944$), $t(376) = 3.939, p < .001$. Essentialism *also* negatively predicts evaluations of the outgroup, $B = -6.506$ ($SE = 1.142$), $t(376) = -5.697, p < .001$. Therefore, essentialism relates to both heightened ingroup liking and reduced outgroup liking. As illustrated in Table 9 and Figure 2, being one standard deviation low in essentialism relates to an approximate 40-point difference between ingroup and outgroup ratings. Being one standard deviation high in essentialism relates to an approximate 60-point gap between ingroup and outgroup ratings.

Table 9. GLM results, predicting Ingroup and Outgroup ratings from levels of essentialism

Low Essentialism (Mean- 1 SD)	Mean Essentialism	High Essentialism (Mean + 1SD)
-------------------------------------	----------------------	--------------------------------------

Mean ingroup rating	73.889	77.608	81.327
Mean outgroup rating	34.327	27.821	21.315
Difference	39.562	49.787	60.012

Figure 2. Predicting ingroup and outgroup ratings from levels of essentialism



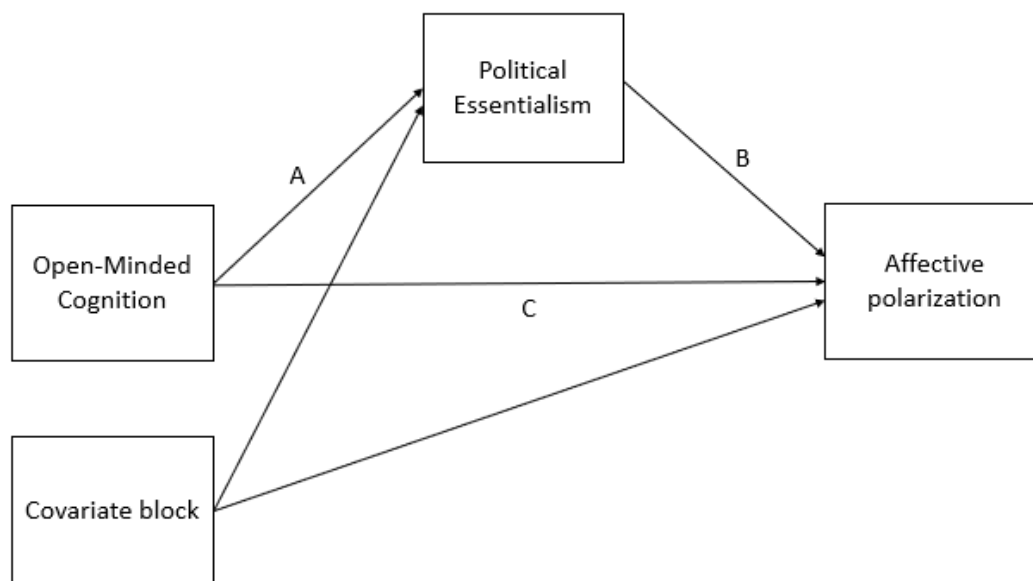
Another GLM analysis was run to determine whether this pattern remained even when including the primary controls (ideology, party, order, gender, age, race, religiosity) in the model. Controlling for these variables, and each of their interactions with within-subject factor, did not eliminate the significant interaction between essentialism and in vs. outgroup ratings, $F(1, 378) = 41.801, p < .001$. Just as in the original analysis without controls, essentialism positively predicted ingroup ratings, $B = 3.913$ ($SE = .928$), $t=4.218, p < .001$, and negatively predicted outgroup ratings, $B = -6.125$ ($SE = 1.13$), $t=-5.433, p < .001$.

Mediation analyses. Correlational analyses suggested that open-minded cognition, inter-ideological contact quantity, and inter-ideological contact quality all relate both to essentialism and to affective polarization (see Table 4). Similarly, two political correlates related to essentialism, affective polarization, and desire for social distance on a bivariate label: political

extremity and selective news exposure (see Table 5). I performed a series of analyses to test whether essentialism functions as a mediator of these six variables' effects on affective polarization and desire for social distance.

Mediation analysis methods. All of the mediational analyses include all primary controls as covariates, controlling for both the effect of the IV on essentialism, and the IV predicting affective polarization. For these analyses, the PROCESS macro (Hayes, 2017) was used to generate 5,000 bootstrapped samples of the dataset. In all cases, a proposed antecedent of essentialism (e.g., OMC) was entered as the independent variable, and the total essentialism scale was entered as the mediator. The primary controls (party, ideology, order, race, gender, age, and religiosity) were entered as covariates. In the first cluster of analysis, affective polarization (ingroup minus outgroup ratings on thermometer scale) was entered as the dependent variable. In the second, desire for social distance served as the dependent variable. An example mediational model is illustrated in Figure 3. In these analyses, significant mediation is reported if the 99% confidence interval around the indirect effect does not contain 0.

Figure 3. Example mediation diagram. An example mediation diagram, showing the IV (here, *Open-Minded Cognition*), influencing the mediator (here, and in all cases, *political essentialism*) and the dependent variable (*affective polarization*). The covariates enter into both the models predicting the mediator and the dependent variable.



Mediation results. Table 10 summarizes the results of the mediation tests predicting affective polarization on thermometer ratings. As the figures in the “A path” column illustrate, each variable, with the exception of frequency of news exposure, continued to significantly predict essentialism, even when controlling for the primary controls. Scoring high in open-minded cognition, having a larger proportion of friends who are of an opposing ideology, and having a good-quality relationship with a person of opposing ideology all related negatively to essentialist beliefs about politics. Conversely, more extreme political identities, and selectively attending to congenial news sources relate positively to essentialism.

As shown in the “B path” column, essentialism consistently continued to significantly predict affective polarization, even when controlling for the primary controls and the independent variables of interest (see Appendix C for additional analyses regarding essentialism as a unique predictor). The “indirect path” for OMC, inter-ideological contact quality, and ideological extremity were significant at the $p < .01$ level, indicating significant mediation. That

is, part of the reduced affective polarization predicted by high OMC is “explained” by reduced essentialist beliefs (in fact, the relationship between OMC and affective polarization drops to non-significance when controlling for essentialist beliefs, see “C’ Path” column). Similarly, the direct relationship between intergroup contact quality and affective polarization becomes only marginally significant when controlling for essentialism. Intergroup contact quantity follows a similar patterns, but the indirect path is not significant at the $p < .01$ level.

Ideological extremity’s strong positive relationship with affective polarization is also mediated by increased essentialism, but also remains a significant predictor even when controlling for essentialism. The full model including extremity, essentialism and controls provides a high degree of predictive power, explaining 40.5% of the variance in affective polarization. In contrast, while selective news exposure is significantly related to both essentialism and affective polarization, essentialism does not serve a significant mediator in this relationship.

Table 11 illustrates a parallel set of analyses, replacing affective polarization with desire for social distance as the dependent variable. Results are similar to those predicting affective polarization. Here, the effects of intergroup contact quality and open minded cognition are mediated by essentialism. In contrast to results predicting affective polarization, intergroup contact quantity also is mediated by essentialism. The direct effects of open-minded cognition, intergroup contact quality, and quantity all remain significant when controlling for essentialism. Among the political correlates, the effect of extremity on desire for social distance is mediated via essentialism, but the effect of selective news exposure is not. This mirrors the results when predicting affective polarization.

Table 10. Mediation results: direct and indirect effects of each variable on affective polarization, controlling for party, ideology, order, gender, race, age, and religiosity. Unstandardized regression coefficients are displayed.

Independent Variable (X)	Effect of X on essentialism (MV) (A Path)	Effect of essentialism on affective polarization, while controlling for X (B Path)	Direct effect of X on affective polarization (controlling for mediator) (C' path)	Indirect effect		
	B (SE)	B (SE)	B (SE)	Indirect effect (SE)	99% confidence interval of indirect effect	
Open-minded cognition (N=379)	-.264 (.03)**	13.148 (2.42)**	-0.963 (1.46) (ns)	-3.469 (.72)**	-5.5967	-1.8750
Inter-ideological contact quantity (N=382)	-.004 (.002)*	12.866 (2.14)**	-0.289 (.079)**	-0.054 (.02)	-.1358	.0014
Inter-ideological contact quality (N=358)	-.174 (.03)**	12.474 (2.31)**	-2.338 (1.31)+	-2.174 (.54)**	-3.8772	-.9953
Selective news exposure (N=305)	.180 (.08)*	13.633 (2.44)**	12.970 (3.51)**	2.458 (1.25)	-.4899	6.2089
Ideological extremity ϕ (N=385)	.155 (.04)**	10.179 (1.89)**	19.165 (1.66)**	1.581 (.53)**	.4432	3.2454

+ $p < .10$. * $p < .05$. ** $p < .01$.

ϕ When analyzing effects of this variable, I controlled for “ideology” not with the 7-point scale (confounded w/ extremity) but with a binary liberal vs. conservative variable.

Table 11. Mediation results: direct and indirect effects of each variable desire for social distance, controlling for party, ideology, order, gender, race, age, and religiosity. Unstandardized regression coefficients are displayed.

Independent Variable (X)	Effect of X on Essentialism (MV)	Effect of Essentialism on desire for social distance while controlling for X	Direct effect of X on desire for social distance (Controlling for mediator)	Indirect effect		
	(A Path) B (SE)	(B Path) B (SE)	(C' path) B (SE)	Indirect effect (SE)	99% confidence interval of indirect effect	
Open-minded cognition (N=379)	-.264 (.03)**	.533 (.08)**	-.257 (.05)**	-.141 (.03)**	-.2143	-.0773
Inter-ideological contact quantity (N=382)	-.004 (.002)*	.692 (.07)**	-.010 (.003)**	-.003 (.001)**	-.0065	-.0001
Inter-ideological contact quality (N=358)	-.174 (.03)**	.567 (.08)**	-.252 (.05)**	-.099 (.03)**	-.1665	-.0452
Selective news exposure (N=305)	.180 (.08)*	.741 (.08)**	.255 (.12)*	.134 (.07)	-.0279	.3151
Ideological extremity ϕ (N=385)	.155 (.04)**	.626 (.07)**	.449 (.06)**	.097 (.03)**	.0235	.1804

+ $p < .10$. * $p < .05$. ** $p < .01$.

ϕ When analyzing effects of this variable, I controlled for “ideology” not with the 7-point scale (which is confounded with the extremity variable) but with a binary liberal vs. conservative variable.

Results Concerning Political Essentialism as a Multi-Faceted Construct

The political essentialism scale was designed to reflect five theoretically distinct facets of essentialism: discreteness, immutability, informativeness, social determinism, and biological basis. In this section, the attributes of the five theoretically-determined subscales are described, and a confirmatory factor analysis is presented showing the fit of the five-subfactor model. Then a set of analyses are shown, replicating the main correlation and regression analyses described in the previous section, but substituting the five-subscale model for the overall scale.

Initial descriptives. Table 12 illustrates the properties of the theoretically derived essentialism subscales. Subscales ranged in reliability from $\alpha=.63$ to $\alpha=.83$. Means varied from the low end of the scale (biological basis) to above the midpoint (informativeness).

Table 12. Descriptives for theoretically determined subscales

Scale	N	α	Scale range	Observed range	Mean	SD
Discreteness	385	.675	1 to 7	1.00 to 7.00	4.307	1.169
Immutability (all four items included)	385	.478	1 to 7	1.00 to 6.25	3.078	0.874
Immutability (item 2 deleted)	385	.665	1 to 7	1.00 to 6.00	2.605	1.069
Informativeness	385	.785	1 to 7	1.00 to 7.00	4.430	1.260
Social determinism	385	.626	1 to 7	1.50 to 7.00	4.411	1.063
Biological basis	385	.833	1 to 7	1.00 to 6.25	2.257	1.232

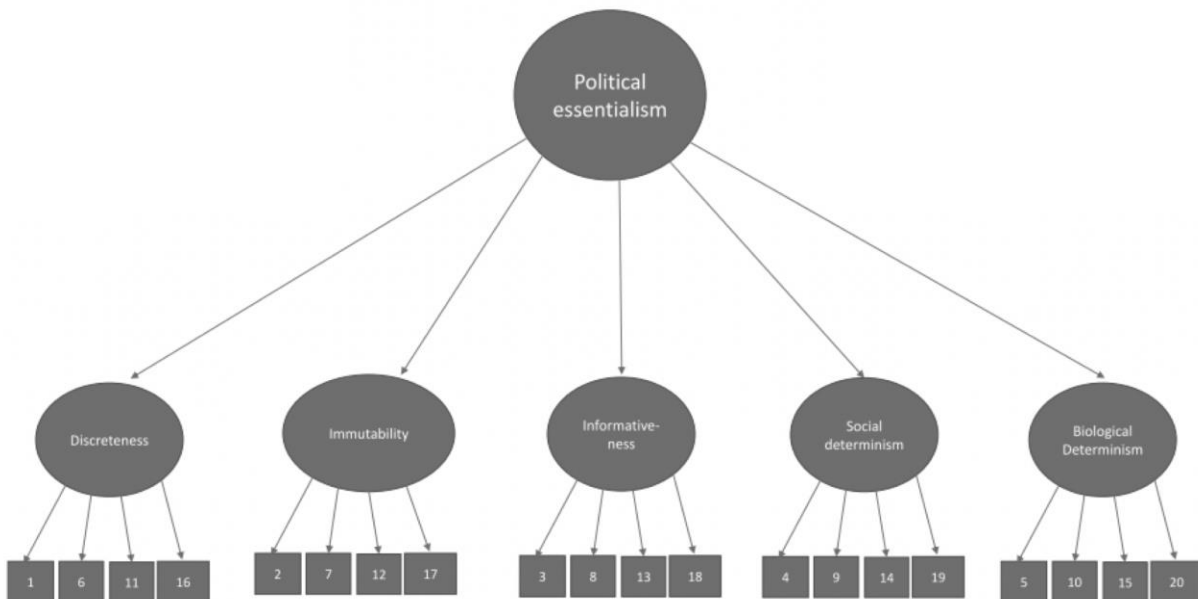
Confirmatory factor analysis. Before proceeding with subscale analyses, a more rigorous test of the implied model was tested using confirmatory factor analysis. The idea that the scale is measuring a multi-faceted “political essentialism” construct suggests a certain theoretical factor structure of the scale. This is a hierarchical model: five first-order factors representing discreteness, immutability, informativeness, social determinism, and biological

basis beliefs about politics; and one overarching political essentialism factor which these all correspond to (see Figure 4). The confirmatory factor analysis tested whether the present data conform well to this theoretical model.

To maintain consistency across analyses, the factor analyses were performed on the same sample used in the main regression analyses ($N = 385$). Also to maintain consistency, item 2 was dropped from factor analyses.

Analyses were performed using LISREL 9.30. Many scale items displayed either significant skew or kurtosis; to control for this non-normality, ML robust estimation was used to produce the Satorra-Bentler Scale Chi Square statistic. Each item was allowed to load on its

Figure 4. Proposed hierarchical model for confirmatory factor analysis



single, relevant first-order factor (e.g., Item 1 loaded onto the Discreteness factor). Each first order-factor loaded freely onto the one second-order factor (i.e., all five “subscale” factors loaded onto the Political Essentialism factor). Goodness of fit statistics are displayed in Table 13 and Factor loadings for this model are displayed in Table 14.

Table 13. Confirmatory factor analysis goodness of fit statistics

Model	Satorra-Bentler Scaled Chi Square (C3)	RMSEA	SRMR	NNFI	CFI
Hierarchical model	47.07, df = 147, p = 1.00	<0.0001	0.133	1.0	1.0
Hierarchical model with Method Factor	261.833, Df = 146, p <.001	.0455	0.215	0.235	0.336

Table 14. Individual loadings onto first order factors

Item	Pro- or anti-essentialism item	First-order factor	Standardized Lambda	Completely standardized Lambda
1	Pro	Discreteness	1.053	0.672
6	Anti	Discreteness	-1.011	-0.583
11	Pro	Discreteness	1.243	0.670
16	Anti	Discreteness	-0.709	-0.485
7	Anti	Immutability	1.503	0.674
12	Pro	Immutability	-0.793	-0.696
17	Anti	Immutability	1.032	0.677
3	Pro	Informativeness	1.543	0.899
8	Anti	Informativeness	-1.404	-0.679
13	Pro	Informativeness	2.970	0.870
18	Anti	Informativeness	-0.522	-0.432
4	Pro	Social determinism	1.189	0.645
9	Anti	Social determinism	-0.598	-0.488
14	Pro	Social determinism	1.072	0.713
19	Anti	Social determinism	-0.587	-0.410
5	Pro	Biological basis	1.686	0.904
10	Anti	Biological basis	-1.383	-0.796
15	Pro	Biological basis	1.626	0.859
20	Anti	Biological basis	-2.344	-0.730

As shown in Table 14, individual items loaded in predicted fashion onto each factor, e.g., the discreteness items worded in an anti-essentialist direction loaded negatively onto the discreteness factor. The exception to this overall pattern is with the immutability factor. One of the four immutability items, Item 2, was dropped from analysis. This was a pro-immutability item. Therefore, two of the three indicators of immutability are anti-essentialist, causing this factor to overall stand for *anti*-immutability beliefs. Therefore, for this factor, the two anti-immutability items load positively onto the factor, and the single pro-essentialist item loads negatively. As demonstrated in Table 15, four of the five subscales load significantly onto the overarching factor. Discreteness is most closely tied to the overarching factor, while biological basis does not load significantly.

Table 15. Gamma loadings onto second order political essentialism factor

Factor	Loading onto Political Essentialism factor
Discreteness	0.921 (0.18)**
Immutability	-0.498 (0.17)**
Informativeness	0.79 (0.16)**
Social determinism	0.32 (0.13)*
Biological basis	0.088 (0.06)

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

Table 16 shows the correlation between the subscale factors, as well as the relationship between each subscale and the overarching essentialism factor. Discreteness and informativeness are strongly correlated with each other and, confirming the gamma loadings, with the political essentialism construct overall ($R = .92$ for discreteness, $R = .79$ for informativeness). Immutability corresponds negatively with discreteness ($R = -.50$) and informativeness ($R = -.39$). Though, again, the “immutability” factor should be in fact considered an “anti-

immutability” factor. These negative correlations should therefore be considered conceptually to be positive correlations with the construct of immutability.

Table 16. Correlations between first order factors and second order factor

	PE	Dis	A-Imm	Inf	Soc	Bio
Political Essentialism (PE)	1					
Discreteness (Dis)	0.921	1				
(Anti-)Immutability (A-Imm)	-0.498	-0.459	1			
Informativeness (Inf)	0.790	0.728	-0.393	1		
Social determinism (Soc)	0.322	0.297	-0.160	0.254	1	
Biological basis (Bio)	0.088	0.081	-0.044	0.069	0.028	1

The two factors concerning the “etiology” of ideology relate to the overarching political essentialism factor more weakly (social determinism, $R = .32$; biological basis, $R = .09$). In general, social determinism’s relationship to the other factors is stronger, e.g., with discreteness, $R = .30$; and with informativeness, $R = .25$. Biological basis beliefs’ correlation to other factors are all $< .10$.

The overall fit of this model was assessed with measures of absolute fit: chi-square, root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR); and relative fit: non-normed fit index (NNFI), comparative fit index (CFI). The Satorra-Bentler Scaled Chi Square value was nonsignificant, and in fact lower than the number of degrees of freedom. Therefore, RMSEA is determined to be 0. The calculated NNFI and CFI values were also higher than 1, so are set at a 1. All of these indexes suggest excellent fit. In contrast, the SRMR value exceeds 0.08, which is indicative of inadequate fit (Hu & Bentler, 1999).

In sum, confirmatory factor analysis provides some support for the proposed hierarchical model. The items load in a sensible and interpretable fashion, and four of the five substantive factors do significantly correspond to the overarching essentialism factor. However, while four out of five fit statistics support the model (χ^2 , RMSEA, NNFI, CFI), one clearly does not (SRMR). Therefore, it is not possible to completely confirm that this model provides a good summary of the data; though there are good indications that it is not far off.

Alternate model. Because the primary model resulted in inconclusive fit, an alternate confirmatory model was considered. This model accounts for acquiescence bias, which can attenuate true inter-item correlations when items are worded in opposing directions (Billiet & McClendon, 1998). This model is identical to the one described above, with one exception: a sixth first-order “method” factor was included along with the five substantive subscale factors. All individual items were required to load equally onto this method factor, while they were allowed to load freely onto their relevant substantive subscale factor. The method factor and substantive factors were specified to remain uncorrelated.

Fit indices suggested that this alternate “Method Factor” model was not an improvement over the more parsimonious original model, see Table 13. Relative to the original model, the χ^2 value is inflated and becomes significant, and all other measures of model fit become worse. Therefore, this “method factor” approach is not a useful model in this case and is rejected.

Summary of CFA results. Confirmatory factor analysis did not definitively confirm the 5-factor structure of the scale, but provided some evidence that the subscales describe the data sufficiently well. The following analyses address the five theoretically proposed subscales. An attempt to specify a better model for the data, using exploratory factor analyses, is described in

Appendix C. The exploratory factor analysis results essentially produced the same factor solution as the confirmatory model, but suggested splitting the “social determinism” factor into two separate factors, resulting in a 6-factor solution. This adjustment does not provide a clear substantial improvement to understanding the structure of political essentialism. The remainder of the present section explores relationships using the originally proposed five factors.

Bivariate correlation matrix. For purposes of the following analyses (correlation, regression, and GLM), essentialism subscale scores were computed by simply averaging the responses to each of the four³ items that were intended to measure them. Of course, these analyses will yield correlations between subscales that are similar to those derived from the confirmatory factor analysis (as in Table 16). The distinction between the approach going forward, as opposed to the previous CFA approach, is that all items are now equally-weighted, rather than weighted by their respective loadings.

As shown in Table 17, all subscales are positively correlated with one another, with the exception of biological basis beliefs, which only correlate with immutability beliefs. The strongest relationship is between the informativeness and discreteness subscales.

Table 17 also illustrates the relationship between each subscale and outcome measures. Contrary to Hypothesis 3, biological basis beliefs are slightly *negatively* associated with affective polarization ($R = -.10, p = .04985$) and are unrelated to a desire for social distance ($R = .03, p = .62$). Similarly, social deterministic beliefs appear to be unrelated to affective polarization, and are only slightly related to desire for social distance ($R = .11, p = .04$).

³ Three, in the case of the immutability subscale.

Table 17. Correlations between theoretically proposed subscales and key outcome variables (N = 385)

Variables	<i>M</i> (<i>SD</i>)	Dis.	Imm.	Inf.	Soc.	Bio.	AP	DSD
Discreteness	4.31 (1.17)	1	.33**	.57**	.14**	-.05	.50**	.45**
Immutability	2.61 (1.07)		1	.28**	.19**	.34**	.13*	.22**
Informativeness	4.43 (1.26)			1	.31**	.07	.42**	.58**
Social determinism	4.43 (1.26)				1	.07	-.03	.11*
Biological basis	2.26 (1.23)					1	-.10*	.03
Affective polarization							1	.56*
Desire for Social distance								1

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

Discreteness and informativeness beliefs are much more strongly and consistently associated with these outcomes. Immutability positively correlates with both outcomes to a smaller degree. This provides preliminary support for the other assertion of Hypothesis 3: that subscales aside from biological basis will likely explain unique variance in affective polarization.

Table 18 illustrates the bivariate relationship between each antecedent variable and the essentialism subscales. Intergroup contact quality negatively relates to every facet of the essentialism scale, including biological basis beliefs. Intergroup contact quantity relates negatively to discreteness, immutability, and informativeness beliefs -- the same subscales that are most strongly associated with affective polarization. Open-minded cognition relates

negatively to each subscale of the essentialism scale, though not significantly with the social determinism element.

Table 18. Correlations between theoretically proposed essentialism subscales and proposed antecedents

Variables	Dis	Imm	Inf	Soc	Bio.	IC Quant.	IC Qual.	OMC
Discreteness	1	.33**	.57**	.14**	-.05	-.16**	-.19***	-.31**
Immutability		1	.28**	.19**	.34**	-.13*	-.20***	-.38**
Informativeness			1	.31**	.07	-.11*	-.32***	-.34**
Social determinism				1	.07	-.02	-.16**	-.09+
Biological basis					1	.02	-.11*	-.21**
Intergroup Contact Quantity						1	-.16**	.02
Intergroup Contact Quality							1	.22**
Open-Minded Cognition								1

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

Regression analyses. In the previous results section (results concerning essentialism as a unitary construct), it was revealed that affective polarization and desire for social distance significantly are predicted by the overall essentialism scale, both with and without controls. In the present section, these regression models are replicated using each of the five theoretically-derived factors as predictors, rather than the overall scale. Maintaining consistency across analyses, the same controls are entered in these models as in the previous analyses.

Subscales predicting affective polarization. Table 19 displays the regression models predicting affective polarization as measured by thermometer ratings. Model 1 shows results

predicting affective polarization with each subscale, controlling only for each other subscale.

Model 2 displays results with controls added.

Table 19. Regression analysis predicting affective polarization from theoretically proposed subscales

	Model 1		Model 2	
	<i>b</i>	(SE)	<i>b</i>	(SE)
Discreteness	10.55**	(1.53)	12.30**	(1.76)
Immutability	-0.44	(1.52)	-0.97	(1.59)
Informativeness	6.76**	(1.42)	7.52**	(1.77)
Social determinism	-4.67**	(1.40)	-4.57**	(1.48)
Bio. determinism	-2.27+	(1.24)	-1.87	(1.53)
Ideology			0.84	(3.02)
Party			-4.79+	(2.75)
Order			-7.73**	(2.75)
Gender			-0.98	(2.87)
Race			-14.36	(3.73)
Age			1.70	(1.44)
Religiosity			1.89	(1.65)
Constant	49.79**	(1.40)	44.67**	(1.83)
<i>N</i>	385		385	
<i>Adjusted R</i> ²	.297		.339	

* $p < .05$; ** $p < .01$. Race is coded as 1=Black, Asian or Other; -1=White or Hispanic. Gender was coded 1=male/other; -1=female. Ideology is scored as higher=more conservative; party is scored as higher= more Republican-identified. Order was coded such that 1=Essentialism scale measured first, -1=DVs were measured first.

In Model 1, confirming the overall pattern observed in the bivariate correlation matrix, discreteness ($\beta = .374, p < .001$) and informativeness ($\beta = .229, p < .001$) are the strongest positive predictors of affective polarization. Social determinism beliefs here are negatively related to ideological affective polarization, in contrast to the bivariate level, where these variables were uncorrelated to the outcome. Therefore, controlling for each of the other four subscales, belief in social determinism appears to attenuate affective polarization. Biological

determinism is somewhat negatively associated with affective polarization, a marginally significant effect when controlling only for the effect of the other four subscales. Also contrary to the first-order bivariate correlation results, immutability has no significant relationship to affective polarization. With the inclusion of additional control variables (Model 2), the effect of biological determinism becomes non-significant. However, the pattern of significant effects for discreteness, informativeness, and social determinism remain.

Subscales predicting desire for social distance. The overall scale analyses demonstrated a relationship between essentialism overall and desire for social distance. Table 20 illustrates the unique effects of each subscale. Results are largely similar to those predicting affective polarization on thermometer ratings. Focusing on Model 2 (controls included), informativeness and discreteness beliefs are consistent positive predictors of desire for social distance. When predicting desire for social distance, informativeness ($\beta = .479, p < .001$) appears to be a stronger predictor than discreteness ($\beta = .167, p < .001$). As with affective polarization, social determinism relates significantly to reduced scores on the dependent variable. This is contrary to the bivariate correlational findings, in which social determinism was weakly *positively* related to desire to social distance. Biological determinism and immutability were both unrelated to the outcome variable.

Table 20. Regression analysis predicting desire for social distance from theoretically proposed subscales

	Model 1		Model 2	
	<i>b</i>	(SE)	<i>b</i>	(SE)
Discreteness	0.180**	(.06)	0.192**	(.06)
Immutability	0.058	(.05)	0.055	(.05)
Informativeness	0.579**	(.06)	0.550**	(.06)
Social determinism	-0.097+	(.05)	-0.119*	(.05)
Bio. determinism	-0.016	(.05)	-0.002	(.05)
Ideology			-0.142	(.10)
Party			0.038	(.10)
Order			-0.157+	(.09)
Gender			-0.059	(.10)
Race			-0.210+	(.13)
Age			-0.130**	(.05)
Religiosity			-0.010	(.06)
Constant	4.178**	(0.47)	4.099**	(0.062)
N	385		385	
Adjusted R ²	.357		.379	

Mixed general linear model results. In the previous section, a general linear model was built to distinguish the effect of essentialism on ingroup ratings vs. outgroup ratings. Here, an identical GLM analysis is run, but testing the effects of each subscale on ingroup vs. outgroup ratings. The primary controls, and each of their interactions with the within-subject factor were also included. As illustrated in Table 21, discreteness, informativeness, and social determinism significantly interacted with in vs. outgroup ratings to predict thermometer scores. Immutability and biological basis did not.

The pattern of simple effects revealed interesting divergent patterns. The discreteness subscale behaved similarly to the essentialism scale as a whole: strongly predicting enhanced warmth toward the ingroup, and coldness toward the outgroup. The informativeness factor,

Table 21. GLM analysis: effect of theoretically proposed essentialism subscales on ingroup and outgroup ratings

Subscale	Interaction	Effect on ingroup ratings	Effect on outgroup ratings
Discreteness	$F(1, 372) = 48.742$, $p < .001$	$B = 6.469$, $SE = 1.105$, $t = 5.852$, $p < .001$	$B = -5.828$, $SE = 1.330$, $t = -4.381$, $p < .001$
Immutability	$F(1, 372) = 0.379$ $p = .538$	$B = -0.164$, $SE = .995$, $t = -.164$, $p = .870$	$B = .813$, $SE = 1.197$, $t = .679$, $p = .498$
Informativeness	$F(1, 372) = 18.028$, $p < .001$	$B = 1.482$, $SE = 1.111$, $t = 1.334$, $p = .183$	$B = -6.037$, $SE = 1.338$, $t = -4.513$, $p < .001$
Social determinism	$F(1, 372) = 9.537$, $p = .002$	$B = -3.288$, $SE = .929$, $t = -3.539$, $p < .001$	$B = 1.284$, $SE = 1.118$, $t = 1.148$, $p = .252$
Biological basis	$F(1, 372) = 1.493$, $p = .223$	$B = .668$, $SE = .960$, $t = .696$, $p = .487$	$B = 2.536$, $SE = 1.155$, $t = 2.196$, $p = .029$

Results are presented controlling ideology, party, order, gender, race, age, religiosity

however, strongly predicts decreased outgroup ratings, but has no significant effect on ingroup ratings. Interestingly, social determinism factor is *negatively* related to ingroup ratings, contrary to the overall essentialism factor; and is unassociated with outgroup ratings. This confirms, and further clarifies, the overall negative relationship between social determinism and affective polarization (See Table 19). Although there was not a significant interaction between the within-subject factor and biological basis ratings, there was a notable pattern of simple effects: while it was unassociated with ingroup ratings, it was significantly *positively* associated with outgroup ratings.

Study 1 Discussion

Study 1 was a broad, cross-sectional examination of affective polarization, political essentialism, and the relationships between these two constructs and other variables. Among the five primary hypotheses tested, the data fully supported four of the hypotheses, and partially

supported one. This section will review the main hypotheses and research questions posed in this study, and summarize the findings related to each.

The first hypothesis contended that participants would express greater warmth for their political ingroup than the political outgroup. This non-controversial postulate was firmly supported. Evaluations of the outgroup tended to be cold (approximately 28 on the 0-to-100 feeling thermometer scale), while ingroup evaluations were, on average, quite warm (78). Relevant to Research Question 2, the degree of outgroup preference seems slightly, though non-significantly, accentuated among liberal participants. However, any trend in this direction is erased when controlling for political extremity, (see Tables 45 and 46 in Appendix C). Therefore, this finding was likely an artifact of the an extremity effect: liberals in this sample were more extreme in their ideology than conservatives.

Hypothesis 2 stated that the overall political essentialism scale will be positively associated with affective polarization, as well as a desire for social distance from political outgroups. This prediction was borne out across correlational and regression analyses, without and with controls. In fact, even in the most conservative estimation (controlling for extremity, biased news consumption, etc.) essentialism remained a significant unique predictor of both outcomes (see Appendix C). Therefore, for separate measures, one of affective reactions (feeling thermometer), and one more relevant to intended behaviors (desire for social distance), political essentialism appears to provide unique explanatory power. Contrary to the overall trend found in Suhay et al. (2016) ideology did not moderate the effect of essentialism on intergroup attitudes: among liberals and conservatives alike, heightened essentialism beliefs are associated with greater affective polarization and desire for social distance.

The use of theoretically determined subscales allowed a more nuanced evaluation of the link between essentialism beliefs and political attitudes. Hypothesis 3 stated that biological basis beliefs would relate to increased affective polarization and desire for social distance. Such a result would echo the findings Suhay et al. (2016). The present set results suggest, however, that this relationship is non-existent. If anything, the opposite relationship is found. On a bivariate level, and in some regression analyses (depending on the controls included), biological basis beliefs appear to attenuate political affective polarization. They appear to have no effect on desire for social distance.

Hypothesis 3 also stated that additional dimensions of essentialism, beyond biological basis, would explain further variance in affective polarization and desire for social distance. This hypothesis was clearly supported; both informativeness and discreteness beliefs consistently related to outcomes across analyses. However, immutability tended to only relate on a bivariate level with the outcomes; controlling for the other facets tended to render this factor less potent. Unexpectedly, the social determinism subscale tended to correspond consistently with *reduced* desire for social distance, and also occasionally with reduced affective polarization. Therefore, beliefs about what “causes” ideologies to form (biology, upbringing) may ameliorate, rather than exacerbate, affective polarization.

The GLM analyses, which teased apart evaluations of ingroup from evaluations of outgroup, provided more data on precisely how essentialism beliefs affect affective polarization. This produced interesting results that varied by subscale. Discreteness related to both greater ingroup liking and reduced outgroup liking. Perceiving conservatives and liberals as truly distinct and differentiable “camps” appears to facilitate more extreme attitudes about the ingroup

and outgroup alike. Other facets of essentialism only related to one “piece” of the difference score each: informativeness decreased, and biological basis increased, warmth toward the outgroup. Social determinism had no effect on outgroup ratings, but reduced the degree of warmth toward the ingroup. Such interactions were not predicted *a priori*, but have interesting implications that may be explored further (see Chapter 5, General Discussion).

Hypotheses Four and Five predicted that intergroup contact quantity, intergroup contact quality, and open-minded cognition would all relate to reduced essentialism and reduced affective polarization. Correlational and mediational tests largely supported these hypotheses. Having a positive, cooperative, high-quality relationship with a member of the opposing ideology related to reduced political essentialism along all five dimensions. People who had a greater proportion of social contacts who were of the opposing ideology also showed reduced discreteness, immutability, and informativeness beliefs. However, no interaction between quantity and quality was found; having a large number of opposing-ideology contacts did not accentuate the effect of having one high-quality cross-ideology relationship. Open-minded cognition also related to reduced endorsement of all subscales except for social determinism. Mediational tests suggested that the effects of these variables “flow through” reduced essentialism to ultimately reduce affective polarization and desire for social distance (with the exception of intergroup contact quantity’s effects on desire for social distance). This all largely supports Deeb et al.’s (2011) argument that exposure to outgroup members in a certain category reduces essentialist beliefs about that category.

Intergroup contact appears to reduce (or at least negatively co-vary with) essentialist beliefs and inter-ideological negativity. This corresponds with Mutz’s (2002a) finding that

political tolerance is predicted by increased ideological diversity in one's social network. For the most part, Mutz's (2002b) finding that ideological diversity dampens political participation was not replicated in these data (see Appendix C). However, there was a borderline effect in this direction: intergroup contact quantity corresponded with a slightly reduced likelihood of intending to vote in the 2018 midterm election ($p = .057$). Especially when given the large number of analyses run, a single "marginal effect" should not be interpreted with a great deal of excitement; but it does trend in the expected direction.

Several political correlates, political news frequency, selective news exposure, and political extremity, all correlated positively with affective polarization and desire for social distance, confirming Iyengar et al.'s (2012) contention that media exposure can exacerbate affective polarization. Selective news exposure and extremity also related to increased essentialism. Disgust sensitivity, while unrelated to the dependent measures on a bivariate level, did relate positively to essentialism.

Mediational analyses suggested that ideological extremity's relationship to affective polarization and desire for social distance partially flowed through enhanced essentialism beliefs, but selective news exposure's did not. Therefore, essentialism may not be involved in how media exposure influences inter-ideological attitudes.

The structure of the political essentialism scale was tested through reliability analysis, confirmatory factory analysis, and exploratory factor analysis (see Appendix C). The overall essentialism scale, excluding Item 2, cohered well enough according to reliability analysis ($\alpha = .80$), and functioned sufficiently to predict outcomes on relevant variables. Confirmatory factor analysis suggested the proposed one-overarching factor, five-subfactor hierarchical model was

not an unambiguously good fit for the data, with an SRMR value exceeding .80. On the other hand, other fit indices suggested excellent fit, leaving the results of confirmatory factor analysis less than clear. The data-driven exploratory factor analysis mostly reproduced the proposed set of intercorrelated factors, but suggested eliminating one item, and reconfiguring the social determinism factor into two factors (see Appendix C). In all, factor analyses lend some support to the theoretical conceptualization of political essentialism, but suggest that the measure could be improved. This issue is explored further in the general discussion.

Finally, it is worth noting that several unpredicted but consistently significant demographic covariates emerged. While these were peripheral to the hypotheses, gender, race, and age at times significantly predicted affective polarization. Overall, women, White people, and Hispanic/Latinx people were most likely to report a high degree of political affective polarization and desire for social distance. Older people also reported greater affective polarization on thermometer ratings, but reduced desire for social distance. These effects are interesting, but should be confirmed with new data (via Study 2) before much speculation. Those demographic covariates whose relationship with the outcomes consistently replicate across both studies will be of most interest.

It is notable that there were rather consistent *order* effects on affective polarization. People who responded to the essentialism scale *before* responding to the DV measures reported reduced polarization. This suggests affective polarization is malleable in response to context. First considering whether ideological groups are essential categories seems to attenuate affective polarization. However, moderation analysis revealed no interaction: agreement vs. disagreement

with the overall essentialism scale did not influence the order effect. Therefore, the order effect does not appear to be restricted to agreement or disagreement with the essentialism items.

In sum, this study provided ample basis for the claim that essentialism overall relates to accentuated affective polarization and desire for social distance from the political outgroup. It also provides some richness in describing which facets of essentialist beliefs are most and least associated with polarization, and in what direction. While the mediational analyses statistically support a model of precursors (e.g., OMC) causally influencing intergroup attitudes “via” essentialism, they cannot strictly establish causation. The results of this study, however consistent with that interpretation, leave open possibility that essentialism is a cluster of beliefs that tends to either follow, or simply covary with, affective polarization.

CHAPTER FOUR

STUDY TWO: AN EXPERIMENTAL APPROACH

Overview

Study 1 established a significant, but correlational, relationship between political essentialism and affective polarization. Study 2 is an experiment designed to test whether increased essentialism *causes* increased antipathy. Belief in political essentialism is therefore manipulated, rather than measured. This study intentionally includes fewer measures, particularly in the “proposed antecedents” category, than Study 1 does. The study entailed asking participants to read one of two versions of a fabricated article, adapted from Bernstein et al. (2010). The article either endorses an essentialist or non-essentialist view of political identity. Participants then rated their attitudes toward liberals and conservatives. Before Study 2 was run, a pilot study assessed comprehension of the stimulus materials.

Study 2 Manipulation and Pilot Study

Study 2 manipulates participants’ beliefs in political essentialism by using a pair of fabricated news articles. One version of the article declares that political identity is fixed at birth, immutable, socially determined, discrete and informative; while the other makes the opposite assertions. The bogus articles are adapted from a previous study (Bernstein et al., 2010), which was reported to successfully manipulate political essentialism beliefs.

While these materials were effective in Bernstein et al. (2010), a pilot test was run to determine if they were still interpretable and useful for the current study. Differences in history and sample characteristics may render the manipulation less (or more) effective for the present study than it was in the past. Moreover, the materials were edited for the present study. Therefore, a pilot study was conducted, checking the manipulation before running Study 2.

The Bernstein et al. (2010) materials were edited in the following ways:

1. The original articles referred primarily to party identification. This has been changed to refer primarily to ideological identity (e.g., many instances of the term “Republican” has been changed to “conservative.”).
2. The original article did not explicitly refer to the *social determinism* concept, and only vaguely referred to the *informativeness* notion. Additional paragraphs have been added to more fully reflect the construct measured in Study 1.
3. The original article had a lengthy portion referring to shared fates within social networks (e.g., adverse events that occur to Democrats only negatively affect other Democrats). This is somewhat peripheral to the essentialism definition used in the present research, so this portion has been reduced.
4. The original materials used the names of actual political science researchers. To avoid misrepresenting the views of real people, the articles were edited to replace researchers’ names with made-up names.

See Appendix B for the full text of the articles. In this pilot study, understanding, rather than persuasion, was assessed. That is, participants are asked what the article states, rather than

what they themselves believe about essentialism. Asking participants directly about their personal beliefs about essentialism immediately following the manipulation may engender resistance. That is, participants may be unwilling to readily report agreement with beliefs that were directly presented to them. I therefore selected to measure the subtler, and less reactive, outcome of whether participants comprehended and could report the contents of the article.

Pilot study methods. Participants were randomly assigned to read either the essentialism-endorsing version of the article (“high essentialism” condition) or the non-essentialism-endorsing version of the article (“low essentialism” condition). They then answered two questions about their opinion of article, then completed five questions that gauged their interpretation of the message conveyed in the article.

Participants. A large effect of the article on responses was anticipated. Power analysis suggested a sample of 33 would be sufficient to detect a medium-to-large effect with 95% power. I set a sampling goal of 50, to ensure power would remain high, after dropping incomplete subjects and/or random assignment resulting in unequal assignment to condition.

Participants were first recruited from an undergraduate student participant pool ($N = 16$). Because an insufficient number of students participated before the end of the semester, the remainder of the sample was recruited via MTurk. 34 participants were requested via MTurk; 37 began the study, and 35 completed the key dependent variable outcomes. Four participants indicated they did not live in the United States. Therefore, the total sample from MTurk was 31, and the overall sample total was 47.

Procedure and materials. Participants arrived at the study, hosted on SurveyGizmo, via the online undergraduate participant pool portal (“SONA”), or via the MTurk platform. The

study was presented as an assignment to “Read and rate an article.” An instructions page informed participants that they would be reading an article that was adapted from the popular press, and that they would rate its appropriateness for a high school audience (see Appendix B). They then proceeded to the next page, which contained the article text. Via random assignment programmed by SurveyGizmo, the participants were either presented with the high- or low-essentialism version of the article. Following this, participants were asked two questions relevant to the cover story (e.g., “11th graders would likely find this article...”, scale of 1=boring to 7=interesting). Next, five questions measured whether participants understood the essentialism-related arguments in the article (e.g., “according to the researchers described in the article, political beliefs are...” 5-point scale from “are not changeable” to “are changeable”). Finally, participants completed a demographics section and were shown a debriefing form.

Undergraduate participant pool participants received 1 credit hour for their participation. MTurk workers received \$0.75. Data collection occurred between November 2017 and January 2018.

Pilot study results. Demographics are summarized in Table 22. Because, unlike in Study 1, no effort was made to collect an ideologically balanced sample, the sample skews liberal (64% liberals vs. 17% conservatives) and Democratic (55% Democrats vs. 13% Republicans). This reflects the left-leaning tendency of both the MTurk and the undergraduate samples. The undergraduate participants also contributed to the younger median age compared to Study 1.

Table 22. Demographics of Study 2 Pilot Test

N	47
Recruitment	Undergraduate Participant Pool: 16 (33%) MTurk: 31 (67%)
Ideology	Liberal: 30 (64%) Moderate: 7 (15%) Conservative: 8 (17%) Missing: 2 (4%)
Party	Democrat: 26 (55%) Republican: 6 (13%) Other/Independent: 14 (30%) Missing: 1 (2%)
Age	Mean = 27.80 (<i>SD</i> = 10.53) Median = 25.0
Gender	Male: 28 (60%) Female: 18 (38%) Missing/no answer: 1 (2%)
Race	White: 30 (64%) Black: 0 (0%) Hispanic/Latino: 4 (9%) Asian: 8 (17%) All other/no answer: 5 (10%)

Five items assessed the degree to which participants believed the article described ideology as an essentialized category. That is, they rated whether the “researchers described in the article” believed political beliefs are: unchangeable, biologically based, determined by upbringing, group people into distinct camps, and tell you a lot about someone’s personality. Items were reverse scored, so that higher values reflect higher essentialism, and the five items were averaged ($\alpha = .879$). Possible responses on each item ranged from one to five. Average scores were higher in the in the high-essentialism condition ($M = 3.71$, $SD = 0.71$), and lower in

the low-essentialism condition ($M = 1.95$, $SD = 0.80$). This contrast was significant, $t(45)=8.009$, $p < .001$.

Table 23. Means and T statistics for Pilot Study variables

Full sample ($N = 47$)					MTurk sample only ($N = 31$)
Item	Mean (and SD) in high essentialism condition, $N = 25$	Mean (and SD) in low essentialism condition, $N = 22$	Mean diff.	T-test	T-test
Discreteness	3.88 (0.97)	2.27 (1.39)	1.61	$t(45)=4.65$, $p<.001$	$t(29) = 3.69$, $p = .001$
Immutability	3.76 (1.01)	1.50 (0.74)	2.26	$t(45)=8.64$, $p<.001$	$t(29) = 6.62$, $p < .001$
Informativeness	3.76 (1.30)	1.81 (0.91)	1.94	$t(45)=5.86$, $p<.001$	$t(29) = 4.52$, $p < .001$
Social det.	3.52 (1.19)	2.27 (1.08)	1.25	$t(45)=3.74$, $p=.001$	$t(29) = 2.87$, $p = .008$
Biological basis	3.64 (0.95)	1.86 (1.28)	1.78	$t(45)=5.43$, $p .001$	$t(29) = 4.17$, $p < .001$

To further explore the effectiveness of the manipulation, a t -test was run on each item individually. As Table 23 illustrates, scores on each individual item were significantly higher in the high-essentialism than low-essentialism condition. Therefore, confirming Hypothesis 6, participants understood the intended message of the article in respect to all 5 dimensions.

Main Study Methods

Sample. As in Study 1, participants were American Mechanical Turk “workers” with a successful HIT completion rate of >95%. Power analysis suggested 172 participants would be sufficient to detect a medium sized effect at 90% power. I intended to collect responses from an

equal number of liberals and conservatives. I rounded up the initial number (86 of each group) to 100 for each, to account for the possible need to drop subjects. Therefore, a total sampling goal of 200 was set.

Materials. The manipulation consists of the two versions of the essentialism article, as shown in Appendix B. More discussion related to the development of this measure is in the previous section, Study 2 Pilot Study.

The following variables were measured and/or calculated exactly as in Study 1: affective polarization (in-group minus outgroup thermometer ratings), desire for social distance, political news consumption (frequency only, selective news exposure was not measured), ideology, party identification, extremity, and demographic variables, including age (year born), race, gender, region, religion, urban vs. rural residence, and religious importance.

Procedure. Participants encountered the study listed on MTurk as an assignment to “Read and rate an article.” If they agreed to participate in the study, they followed a link to the survey hosted on SurveyGizmo.com.

After agreeing to the consent form, participants were shown instructions orienting them to the study. Instructions stated that they will be asked to read an article and consider its appropriateness for an 11th grade audience. They were then randomly assigned, via the SurveyGizmo program, to either the high- or low-essentialism condition. After reading the article, they completed three “bogus” questions about the article. These questions asked how interesting the article would be for 11th graders, how difficult it would be for this age group, and what sort of subject interest areas it most relates to. These questions were intended as part of a

cover story to reduce the salience of the ultimate dependent measure, avoiding hypothesis-guessing or demand characteristics.

After answering the three bogus questions, participants completed a “political questionnaire” that measured their desired social distance, as well as their overall political interest, and political news consumption. On the following page, they completed the thermometer ratings, which randomized whether they evaluated liberals or conservatives first. On the last pages they responded to demographic items, and finally, were shown a debriefing statement, which explained the purpose of the experiment.

Data were collected in February 2018. I used TurkPrime (see Study 1 methods) to recruit 100 liberal and 100 conservative participants from MTurk. MTurk workers who participated in either Study 1, or the pilot study, were precluded from participating in this study. I predicted the time to complete the study would be 10 minutes, based on informal pre-testing. Participants were offered \$1.00 for completion of the study. Actual median completion time was 9.1 minutes.

204 people began the survey, and 201 completed all key dependent variables and reported their ideology. Among the 101 TurkPrime-identified liberals, 93 identified as liberal in the present study, 5 identified as moderate, and 3 identified as conservative. Among the 100 TurkPrime-identified conservatives, 84 identified as conservative, 8 identified as moderate, and 8 identified as liberal. The 11 completely mismatched participants (3 conservative-liberals; 8 liberal-conservatives) were excluded from analysis (those who selected “moderate” were retained, as in Study 1). There was a total of 190 participants in these analyses: 98 liberals and 92 conservatives.

Results: Descriptive and Preliminary Analyses

Demographics. 55.3% of participants were female, 81.8% were White, and median age was 34. 53% of participants described themselves as Democrats, 42% as Republicans, and 5% as Independents. Full demographics are described in Table 24.

Table 24. Demographics for Study 2 Main Study

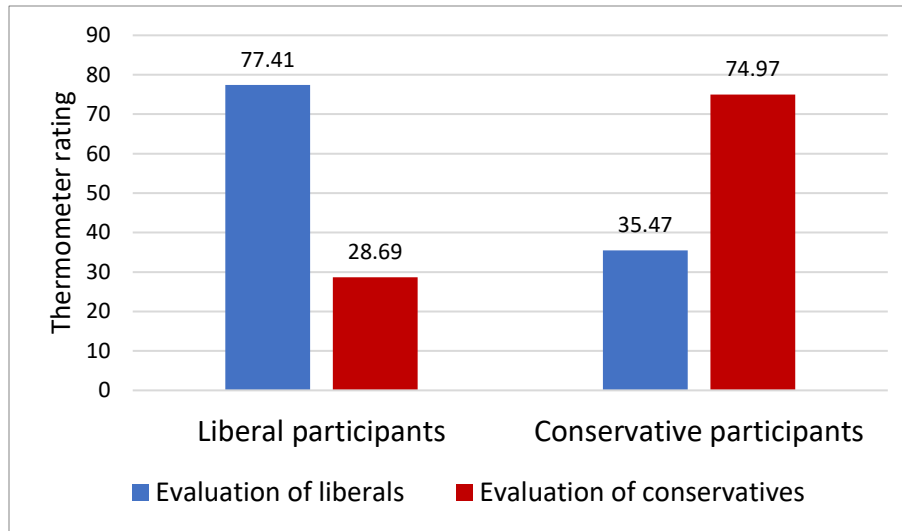
	Full sample	Liberals	Conservatives
N	190	98	92
Party	Democrat: 53.1% (101) Republican: 41.6% (79) Other/Independent: 5.3% (10)	Democrat: 94.9% (93) Republican: 0 Other/Independent: 5.1% (5)	Democrat: 8.7% (8) Republican: 85.9% 79 Other/Independent: 5.4% (5)
Age	Mean = 36.6 (<i>SD</i> = 10.70) Median = 34	Mean = 35.79 (<i>SD</i> = 9.92); Median = 33.0	Mean = 37.51 (<i>SD</i> = 11.46) Median = 34.0
Gender	Male: 81 (42.6%) Female: 105 (55.3%) Other/Non-binary: 1 (0.5%) Missing: 3 (1.6%)	Male: 45.9% (45) Female: 53.1% (52) Non-binary: 1 (1%)	Male: 39.1% (36) Female: 57.6% (53) Non-binary: 0 Missing: 3 (3.3%)
Income	Under \$40,000: 33.3% (63) \$40,000 - \$99,999: 49.2% (93) \$100,000 or greater: 17.4% (33) Missing: 1	Under \$40,000: 41.6% (41) \$40,000 - \$99,999: 40.8% (40) \$100,000 or greater: 17.3% (17)	Under \$40,000: 23.9% (22) \$40,000 - \$99,999: 57.6% (53) \$100,000 or greater: 17.4% (16) Missing: 1
Education	Some HS or HS degree: 8.9% (17) Some college or 2-year degree: 43.2% (82) 4-year degree: 34.2% (65) Graduate/Professional degree: 13.7% (26)	Some HS or HS degree: 9.2% (9) Some college or 2-year degree: 43.9% (43) 4-year degree: 33.7% (33) Graduate/Professional degree: 13.3% (13)	Some HS or HS degree: 8.8% (8) Some college or 2-year degree: 42.4% (39) 4-year degree: 34.8% (32) Graduate/Professional degree: 14.1% (13)

Race	White: 81.8% (153) Black: 8.0% (15) Hispanic: 5.3% (10) Asian: 3.2% (6) All other: 1.6% (3) Missing: 3	White: 76.5% (75) Black: 10.2% (10) Hispanic: 7.1% (7) Asian: 4.1% (4) All other: 1% (1) Missing: 1	White: 84.8% (78) Black: 5.4% (5) Hispanic: 3.3% (3) Asian: 2.2% (2) All other: 2.2% (2) Missing: 2
Religion	Atheist/Agnostic/Nothing in particular: 35.9% (68) Catholic: 15.8% (30) Evangelical: 17.4% (33) Protestant (Non-evangelical): 14.7% (28) Spiritual, but not religious: 7.9% (15) Jewish: 1.6% (3) All other: 6.8% (13)	Atheist/Agnostic/Nothing in particular: 56.1% (55) Catholic: 9.2% (9) Evangelical: 6.1% (6) Protestant (Non-evangelical): 13.3% (13) Spiritual, but not religious: 10.2% (10) Jewish: 2.9% (2) All other: 3% (3)	Atheist/Agnostic/Nothing in particular: 14.3% (13) Catholic: 22.8% (21) Evangelical: 29.3% (27) Protestant (Non-evangelical): 16.3% (15) Spiritual, but not religious: 5.4% (5) Jewish: 1.1% (1) All other: 10.8% (10)
Religious import	Mean = 4.23 (<i>SD</i> = 3.12); Scale of 1-9; median = 3.0)	Mean = 2.5 (<i>SD</i> = 2.27) Median = 1.0	Mean = 6.07 (<i>SD</i> = 2.84) Median = 7.0
Urban vs. Rural	39.1% (74) live in a medium or large city 21.2% (40) live in a suburb of a large city; 39.8% (75) live in a small town or rural environment 1 missing	45.9% (45) live in a medium or large city 18.4% (18) live in a suburb of a large city; 34.7% (34) live in a small town or rural environment 1 missing	31.6% (29) live in a medium or large city 23.9% (22) live in a suburb of a large city; 44.6% (41) live in a small town or rural environment

Descriptives. Average in-group thermometer rating was 76.23 (*SD* = 19.54), and average outgroup rating was 31.97 (*SD* = 22.0). As illustrated in Figure 5, the overall pattern matched that in Study 1. The average level of in-group minus out-group rating was 44.25 (*SD* = 32.56). The degree of affective polarization was larger among liberals (*M* = 48.71, *SD* = 30.35) than

conservatives ($M = 39.50$, $SD = 34.29$). This contrast that was not significant, but nearly so, $t(188)=1.964$, $p = .051$.

Figure 5. Thermometer ratings by participant ideology and target group ideology, Study 2



As in Study 1, desire for social distance was measured with three items. Means and intercorrelations between the three items, as well as the affective polarization variable, are displayed in Table 25. The “meet” and “marry” items are the most strongly correlated ($R = .59$, $p < .001$). Preference to live with likeminded others correlated only weakly with feelings about meeting those with opposing views, $R = .17$, $p = .019$. Affective polarization correlated positively with all three variables.

Reliability analysis indicated that the three desire for social distance items had questionable reliability, $\alpha = .602$. Alpha if item deleted scores suggested that removing the “live” item would substantially increase reliability, to .738. Therefore, in addition to testing results on the 3-item scale overall, each item is also analyzed separately.

Table 25. Descriptives and correlations between Study 2 dependent variable items (N = 190)

Variables	<i>M (SD)</i>	DSD- Live	DSD- Marry	DSD- Meet	Desire for social distance	Affective polariza- tion
DSD-Prefer to live with similar others	4.09 (1.60)	1				
DSD-Family member marry (reverse)	4.33 (1.23)	.314**	1			
DSD-Would like to meet (reverse)	4.12 (1.46)	.170*	.592**	1		
Desire for social distance (total)	4.18 (1.07)	.695**	.763**	.807**	1	
Affective polarization	44.25 (32.56)	.384**	.446**	.528**	.601**	1

* $p < .05$, ** $p < .01$. Higher scores reflect greater discomfort with ideological outgroup.

Determining control variables. Preliminary analyses tested whether certain demographic and political variables correlated with any of the dependent measures. A summary of these analyses is in Table 26. Preliminary analyses revealed that affective polarization was highest among Black ($M = 51.67$, $SD = 25.47$) and Hispanic ($M = 64.60$, $SD = 32.10$) participants, and lower among White ($M = 42.29$, $SD = 33.06$) and Other race ($M = 34.89$, $SD = 30.18$) participants. To maximize variance captured by the “race” control variable, race was coded as Black and Hispanic = 1, and White and Other = 0. This variable correlated significantly with affective polarization, $R = .156$, $p = .033$. No other demographic variable covaried significantly with either outcome variable.

Several of the measured political variables covaried with the dependent variables. Ideology negatively correlated with desire for social distance, indicating that this tendency was lower among conservatives. Republicans also scored somewhat lower on desire for social

Table 26. Correlations between proposed control variables and dependent variables (N = 190 except where otherwise specified)

	Affective polarization	Desire for social distance
Age	-.033	-.111
Education	.120	-.087
Income (<i>N</i> = 189)	-.095	.002
Religiosity	-.059	-.012
Gender (<i>N</i> = 186)	-.045	-.058
Race	.156*	.051
Ideology	-.119	-.157*
Party	-.094	-.112
Political interest	.251**	.190**
Political news	.300**	.264**
Ideological extremity	.556**	.363**

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

Notes: Relationships with Education, Income, and Political News Consumption were tested using Spearman Rank Order correlation. Gender is coded as Female = -.5, Male = .5. Ideology is coded so higher numbers = more conservative; party is coded so higher numbers = more Republican identified. Race is coded as Black and Hispanic participants = +.5; White, Asian and other races = -.5.

distance than Democrats, but this trend was non-significant. Frequency of political news consumption corresponded positively with affective polarization and desired social distance, as did political interest. Political extremity (distance from mid-point on the ideology scale) was clearly associated with both affective polarization and desire for social distance.

For remaining analyses, the “primary controls” will thus include race, ideology, political interest, political news consumption, political extremity, and party (while not significantly associated with the DVs, party is retained to be consistent with literature regarding political outcomes).

Results: Main Analyses

ANCOVA predicting affective polarization. Analysis of covariance (ANCOVA) was used to test whether the manipulation influenced affective polarization, while controlling for the primary controls identified above. As shown in Table 27, there was no effect of condition on affective polarization, $F(1, 179) = .647, p = .422$. Estimated marginal mean polarization in the high essentialism condition was 42.27 ($SE=2.82, N = 94$), and 45.48 ($SE = 2.81, N = 96$) in the low-essentialism condition. Actual mean levels of polarization, calculated without controls, show a similar pattern $M_{\text{HighEssentialism}} = 43.09 (SD = 35.20)$, $M_{\text{LowEssentialism}} = 45.40, SD = 29.90$. This contradicts the prediction specified in Hypothesis 7.

Ideological extremity dominates the model predicting polarization, with a large effect size, while all other effects are trivial. Nevertheless, the effect of condition is still non-significant, even when excluding all controls and running a simple between-groups t -test, $t(188)=.488, p = .63$.

Table 27. ANCOVA results predicting affective polarization

Variable	df	F	Sig	Partial Eta squared
Race	1	0.58	.45	.003
Party	1	0.393	.51	.002
Ideology	1	0.056	.81	.000
Political interest	1	0.921	.34	.005
Political news consumption	1	0.704	.40	.004
Ideological extremity	1	62.398	<.001	.258
Condition	1	0.647	.32	.002

ANCOVA predicting desire for social distance. A similar ANCOVA was run, replacing affective polarization with desire for social distance, as shown in Table 28. Once again,

there was no effect of condition on the outcome, $F(1, 179) < .001, p > .99$, contrary to Hypothesis 8. The estimated marginal mean desire for social distance was 4.168 ($SE = .105$) in the high-essentialism condition, and 4.168 ($SE = .104$) in the low-essentialism condition. The actual raw means also did not meaningfully differ, $M_{high} = 4.169$ ($SD = 1.20$), $M_{low} = 4.167$ ($SD = 0.95$). Once again, ideological extremity is the strongest predictor of desire for social distance. There is no effect of condition, even when controls are excluded, $t(188) = -.002, p > .99$.

Table 28. ANCOVA results predicting desire for social distance

Variable	df	F	Sig	Partial Eta squared
Race	1	.104	.75	.001
Party	1	.026	.87	<.001
Ideology	1	.901	.34	.005
Political interest	1	.640	.43	.004
Political news consumption	1	.317	.57	.002
Ideological extremity	1	18.86	<.001	.095
Condition	1	<.001	>.99	<.001

Because correlation and reliability analyses suggested the “live” item was distinct from the “marry” and “meet” items within DSD, additional ANCOVA analyses were run testing each item independently. As shown in Table 29, no significant result emerged (all $ps > .40$).

Interaction between condition and ideology. A two-way ANCOVA was run to test for a potential interaction between ideology (scored as -0.5 is liberal, +0.5 for conservatives) and condition (scored as -0.5 for the low essentialism condition, +0.5 for the high essentialism

Table 29. Effect of condition on each desire for social distance items

Variable	Mean (SD) in High Essentialism condition	Mean (SD) in Low Essentialism Condition	F	Sig	Partial Eta squared
Live	3.95 (1.5)	4.18 (1.7)	.575	.449	.003
Meet	4.08 (1.5)	4.15 (1.4)	.032	.858	.000
Marry	4.25 (1.3)	4.40 (1.4)	.589	.444	.003

Results are presented controlling for race, party, ideology, political interest, political news consumption, and extremity.

condition) in predicting affective polarization. The same set of covariates used in regression analyses (race, party, political interest, and political news consumption) were entered as controls. There was no main effect of ideology $F(1, 178) = .007, p = .94$, or of condition, $F(1, 178) = .678, p = .411$. There was also no interaction between ideology and condition when predicting affective polarization, $F(1, 178) = .594, p = .442$. Full results are presented in Table 30.

Table 30: 2-way ANOVA results predicting affective polarization from ideology and condition

Source	F	Sig.	Partial Eta Squared
Corrected Model	11.260	<.001	.336
Intercept	221.68 0	<.001	.555
Party	.263	.609	.001
Race	.491	.484	.003
Political Interest	1.024	.313	.006
Political News	.758	.385	.004
Extremity	60.856	<.001	.255
Ideology	.007	.935	.000
Condition	.678	.411	.004
Ideo X Condition Interaction	.594	.442	.003

A similar 2x2 ANOVA was performed to predict desire for social distance. There was again no main effect of ideology, $F(1, 178)=.009, p = .923$, nor of condition, $F(1, 178)=.012, p = .912$. There was also no interaction between the two, $F(1, 178)=1.491, p = .224$. Full results are displayed in Table 31.

Table 31. 2-way ANOVA results predicting desire for social distance from ideology and condition

Source	F	Sig.	Partial Eta Squared
Corrected Model	4.168	.000	.158
Intercept	1316.528	.000	.881
Party	.391	.533	.002
Race	.301	.584	.002
Political Interest	.569	.452	.003
Political News	.391	.533	.002
Extremity	20.686	.000	.104
Ideology	.009	.923	.000
Condition	.012	.912	.000
Ideo X Cond.Interaction	1.491	.224	.008

Similar 2x2 ANOVAs were run predicting each desire for social distance variable separately. These mostly demonstrated non-significant interactions; see Table 32. There was, however, a marginally significant interaction between ideology and condition for the “live” variable. As illustrated in Table 33, this interaction suggested that liberal participants’ desire to live in an ideologically segregated community increased in response to the high essentialism condition, marginally significantly. Conservatives’ desire to live in an ideologically segregated community slightly and non-significantly *dropped* in response to the high-essentialism condition.

Table 32. ANOVA results predicting individual desire for social distance scale items

Variable	Main effect of ideology	Main effect of condition	Interaction between ideology and condition
Live	$F(1, 178)=.110, p = .74$	$F(1,178)=.553, p = .46$	$F(1, 178)=3.053, p = .082$
Meet	$F(1, 178)=.167, p = .680$	$F(1,178)=.084, p = .77$	$F(1, 178)=.285, p = .594$
Marry	$F(1, 178)=.035, p = .852$	$F(1,178)=.778, p = .379$	$F(1, 178)=.075, p = .785$

In these analyses, the same covariates were entered as in the main desire for social distance analysis in Table 31 (race, party, political interest, political news consumption, and extremity).

Table 33. Means by condition for the “live” item of desire for social distance

Variable	Mean in low essentialism condition	Mean in high essentialism condition	Significant slope?
Liberals	3.722	4.276	Marginal, $F(1,90) = 3.036, p = .085$
Conservatives	4.259	4.033	No, $F(1, 83)=.188, p = .666,$

In these analyses, the same covariates were entered as in the main desire for social distance analysis in Table 31 (race, party, political interest, political news consumption, and extremity).

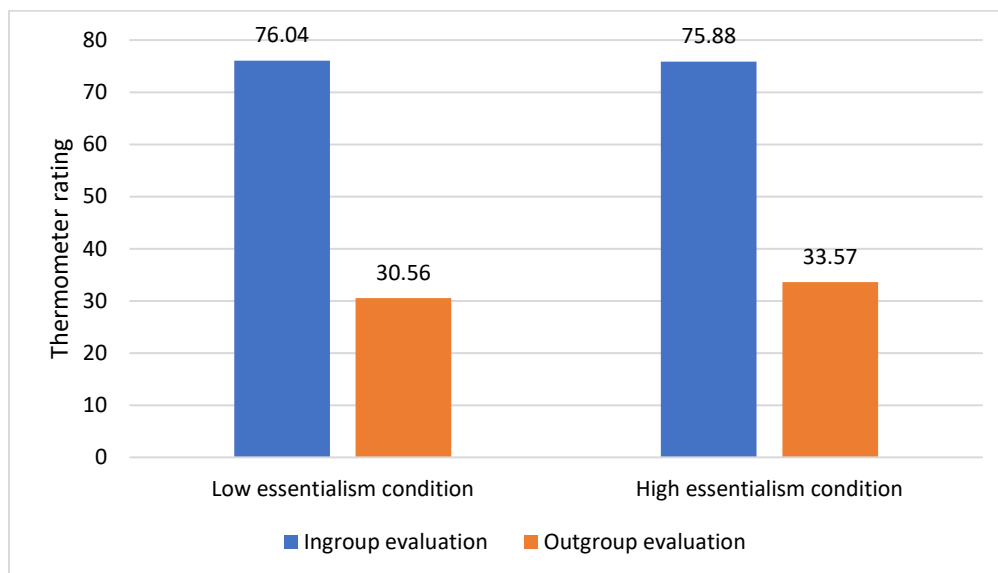
Mixed General Linear Model predicting affect toward ingroup and outgroup.

A mixed GLM analysis was used to test the main effect of condition, in vs. outgroup evaluation, the interaction between the two variables. The same block of covariates used in the ANCOVA analysis are included in this GLM analysis. All variables were centered on their mean (or on the scale midpoint, in the case of party and ideology), so estimates would occur at the average level of each covariate.

No interaction was expected; if there were, there would have been a condition effect on the difference-score ratings used as the dependent variable in ANCOVA. However, if the manipulation was influencing in-group and out-group evaluations in the same direction, for example, this would be revealed by main effects in this analysis. The analysis revealed there was

no main effect of condition on ratings, $F(1, 179) = 0.566, p = .453$. On the other hand, unsurprisingly, was a massive effect of in vs. out-group evaluation on thermometer ratings, $F(1, 179) = 226.85, p < .001$. There was no interaction between condition and in- vs. outgroup rating, $F(1, 179) = 0.647, p = .422$. The pattern of means, illustrated in Figure 6, confirms the null effect: there is a large but completely parallel gap in in-group rating vs. out-group rating in both conditions.

Figure 6. Mean evaluation by ingroup vs. outgroup and condition



Exploratory analysis: responses to “bogus” questions. In addition to the dependent variables, political controls and demographics, there also were some data gathered by asking participants the three “bogus” questions about the article’s suitability for students. While not strictly intended to be analyzed, I explored these responses for a possible insights into the null results found on the dependent variables. If, for example, participants in one (or both) conditions rated the article as completely “difficult” for an 11th grader to understand, it is possible they were unable to comprehend it, and thus did not receive a complete “dose” of the manipulation. This could provide a potential explanation for null results.

Two items were assessed with multi-point scales: how “interesting” the article would be, and how “difficult” it would be, for a high school audience. Participants overall reported that the article was on the boring side, but near the midpoint, on the “interesting” scale, $M = 3.51$, $SD = 1.7$ (range from 1 to 7). They further deemed the article close to the “just right” midpoint of the “easy to difficult” scale, $M = 0.1$, $SD = 0.4$, scale range -1 to 1. As demonstrated in Table 34, there was no effect of condition on either item ($ps > 0.80$). Therefore, there is little evidence from the “bogus” responses that participants had difficulty understanding, or were exceedingly bored, by the stimulus.

Table 34. Ratings on bogus questions

	Low essentialism condition	High essentialism condition	Contrast
Interesting (scale of 1 to 7)	3.51 (1.76)	3.51 (1.72)	$M_{diff}=0.00$, $t(188)=-.001$, $p > .99$
Difficult (scale of -1 to 1)	0.10 (.423)	0.10 (.390)	$M_{diff}=0.01$, $t(188)= .143$, $p = .89$

A third item asked participants, “This article would be most interesting to students interested in (select all that apply)...”. Participants were free to select as many or as few subjects as they wanted. Reflecting good comprehension of the article, a vast majority of participants selected Political Science (93%). Sociology (67%) and/or Psychology (67%) were also selected by a majority of participants, while 0% selected Physics.

Chi-square analysis was run to determine whether any subjects seemed more relevant in one condition vs. another, see Table 35. Neuroscience was selected more often in the high essentialism condition (45.7%) than the low-essentialism condition (24.0%), a difference in proportion that was significant, $p < .01$. A similar but marginal effect occurred in Biology (28.7%

in high essentialism condition, 17.7% in low essentialism condition, $p = .07$); and sociology (73.4% in high essentialism condition, 60.4% in low essentialism condition, $p = .057$). All other contrasts revealed no differences between conditions. Therefore, participants may have viewed the high essentialism condition as saying more about the brain, biology, and society as the low-essentialism condition did.

Table 35. Percent of participants who selected this subject as relevant to the present articles

Subject	Low essentialism condition	High essentialism condition	Chi square contrast between conditions
English	14.6%	16.0%	0.069, $p = .792$
History	29.2%	29.8%	0.009, $p = .925$
Neuroscience	24.0%	45.7%	9.94, $p = .002$
Biology	17.7%	28.7%	3.238, $p = .072$
Psychology	63.5%	71.3%	1.297, $p = .256$
Physics	0%	0%	--
Chemistry	0%	2.1%	2.064, $p = .151$
Math	4.2%	2.1%	0.646, $p = .422$
Sociology	60.4%	73.4%	3.615, $p = .057$
Political science	93.8%	92.6%	0.107, $p = .744$

Study 2 Discussion

Main results. The existence and degree of affective polarization on thermometer ratings, and desire for social distance from ideological outgroups, was clearly replicated in this study. Participants rated their ideological in-group approximately 44 points higher than their outgroup, which resembles the 50-point difference observed in Study 1. Similarly, desire for social distance was at a nearly identical level as in Study 1, $M_{Study2} = 4.18$ ($SD = 1.07$) vs. $M_{Study1} = 4.18$ ($SD = 1.15$). The most notable outcome from this study, however, was that the manipulation had, overall, no effect on either of these outcomes. Contrary to Hypotheses 7 and 8, neither affective polarization measured by thermometer ratings, nor desire for social distance, appeared to be in

any way influenced by exposures to the articles. A marginal effect did emerge on the “live” item alone, such that liberals were influenced by the manipulation in the expected direction, but conservatives were not. However, given the large number of analyses run in this study, a single trend that does not meet a $p < .05$ threshold should not be interpreted as strong evidence that such an effect exists.

It is difficult to interpret null results, as one experiment cannot disprove a hypothesis. However, evidence can suggest some interpretations are more plausible than others. Two interpretations can be more easily ruled out: that participants failed to attend to or comprehend the article, and that insufficient power led to null p values.

The pilot study was designed to ensure that the manipulation was effective at priming a high- or low- essentialism explanation for ideology. *T*-tests performed on a multi-faceted essentialism measure, and on each of the subscale-specific items individually, strongly confirmed that participants were able to receive the “high” vs. “low” essentialism argument as intended. Furthermore, responses to the “bogus” questions provided no evidence that participants misunderstood the articles. Majorities reported the article as being relevant to the content it was designed to reference, including political science, psychology, and sociology; and irrelevant to subjects like chemistry and physics. Furthermore, participants reported that the article’s difficulty would be nearly “just right” for 11th graders. The high-essentialism article was more likely to be rated as interesting to students interested in neuroscience (vs. the low-essentialism article, 46% vs. 24%). However, it is difficult to see how this would result in the present pattern of null results.

The power analyses to determine sample size for this study assumed a medium effect. So, it could be reasonable to consider whether the effect of the manipulation was simply a “small effect” that the sample size was insufficient to detect. However, effects on affective polarization trended in the direction opposite to prediction ($M_{diff} = 45.4$ in low essentialism condition; $M_{diff} = 43.1$ in high essentialism condition). Desire for social distance was functionally identical in each condition ($M_{diff} = 4.18$ in low essentialism condition; $M_{diff} = 4.18$ in high essentialism condition). Neither including control variables, nor exploring items individually, did much to suggest there was a trend in the predicted direction that was simply too small to be detected with the available sample size.

There are three main explanations that are more plausible. The first is more mundane: that the manipulation was simply too weak to shift political essentialism beliefs. The second consideration is more theoretically interesting: that political essentialism beliefs simply are more chronic, and not so easily shifted by experimental manipulations. The final interpretation, and most theoretically relevant, would be that essentialism simply has no causal influence on inter-ideological attitudes. Each of these possibilities is explored in the General Discussion (Chapter 5).

Demographic effects on polarization. In Study 1, several demographic variables were found to covary significantly with affective polarization and/or desire for social distance: age, race, religiosity, and gender. In Study 2, these associations were not consistently replicated. In Study 1, age was positively associated with affective polarization ($R = .103, p < .05$) and negatively associated with desire for social distance ($R = -.105, p < .05$). In Study 2, age was uncorrelated with affective polarization ($R = -.033, p = .652$), and negatively, but non-

significantly, correlated with desire for social distance ($R = -.111, p = .127$). The correlations with desire for social distance were similar across the two studies; suggesting that the difference in p value may be due to sample size differences.

Race was significantly related to affective polarization in both studies, but which races expressed greatest polarization differed between studies. In Study 1, White and Hispanic participants expressed the most extreme polarization. In Study 2, Black and Hispanic participants expressed the highest levels of polarization. Therefore, White or Black racial identity may not be particularly robust predictors of affective polarization; though the consistent findings for Hispanic participants may warrant further exploration. Race had an effect on desire for social distance only in Study 1; in Study 2, it was non-significant, and in fact trended in the opposite direction.

Higher religiosity was associated with reduced desire for social distance in Study 1, but no such relationship was found in Study 2. In Study 1, women expressed significantly more affective polarization and desire for social distance than men did. These relationships were much closer to 0 in Study 2, and were non-significant.

Political variables' effects on polarization. Another cluster of variables that were measured in both Study 1 and Study 2 were the political variables. These include political interest, frequency of news consumption, political extremity, and political ideology. In Study 1, frequency of political news consumption was positively correlated with affective polarization and desire for social distance. These correlations were reproduced in Study 2. Self-reported political interest was surprisingly unassociated with both dependent variables on a bivariate level in Study 1, but in Study 2, a positive correlation did emerge for both variables. Extremity was

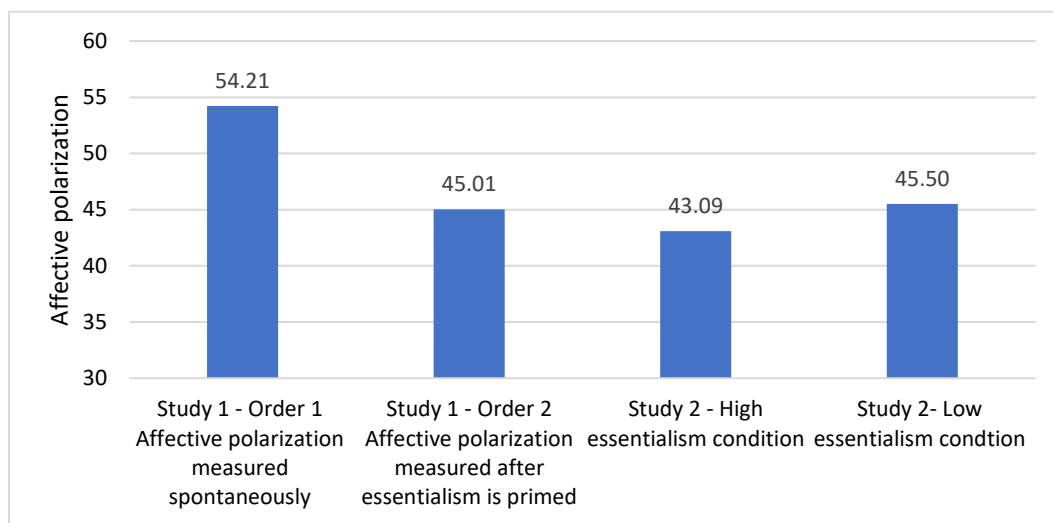
strongly associated with outcomes in both studies; correlation with affective polarization, $R = .54$ in Study 1, $R = .56$ in Study 2. Extremity's correlation with desire for social distance was also consistently observed, $R = .42$ in study 1, $R = .36$ in Study 2. Ideology was negatively associated with desire for social distance in both studies, suggesting liberals score higher on this outcome than conservatives do. However, as shown in Tables 25 and 26 in Appendix C, this effect is erased when controlling for ideological extremity and other political variables. Therefore, the apparent “ideology” effect is most likely an artifact of the liberals in this sample being more extreme in their ideology than the conservatives.

Correlations that were observed in Study 1, but not in Study 2, do not necessarily indicate that such relationships are non-existent. It is possible that the effects are small, and thus only detected with larger samples. Or, it is possible they are only correlated under certain conditions. That is, exposure to the fabricated news articles may have overshadowed chronic baseline tendencies that tend to emerge due to gender, religiosity, etc. Still, evidence most strongly supports the robustness of the relationships between affective polarization and extremity, political news consumption, and Hispanic identity.

Main effect of any prime? A retrospective overview of all results suggests exposure to *any* form of essentialism prime may weaken affective polarization. In Study 1, the survey program randomized whether the essentialism scale, or the thermometer ratings, were presented first. There was a 54-point gap in in-group vs. outgroup ratings when thermometer ratings were measured first. This dropped to a 45-point gap when essentialism was measured first (hence, why order was controlled for in Study 1 regression analyses). This contrast was statistically significant, $t(383) = 2.771$, $p = .006$. Notably, in both conditions of Study 2 (wherein

thermometer ratings were *always* measured after exposure to essentialism-relevant articles), the in-group minus out-group gap ($M_{diff} = 44.25$) resembles that of the essentialism-first order condition of Study 1. In other words, people who were exposed to political essentialism concepts *before* they rated their affective reaction to political groups tended to express less affective polarization overall (approximately 9 points less, see Figure 7).

Figure 7. Effect of order on ratings across studies



However, without a control group in Study 2, in which participants spontaneously evaluate groups, this post hoc observation is not possible to more strongly confirm. Possible explanations for this pattern are explored in the General Discussion.

Summary

Affective polarization was again evident in Study 2, and correspondent to some of the same factors as observed in Study 1. Frequent news consumption, possessing an extreme ideological identity, and identifying as Hispanic or Latino all consistently related to accentuated affective polarization. However, the role of essentialism was less evident in Study 2 as it was in

Study 1. Whether an essentialist or non-essentialist view of ideology was primed had virtually no measurable effect on polarization. A marginal effect suggested liberals may have responded to the high-essentialism prime with a heightened preference to live among other liberals (as opposed to conservatives). Furthermore, a review of means across both studies suggests that *any* essentialism prime (whether high or low) may result in reduced polarization. These effects were not predicted a priori, but are intriguing trends that may be addressed with future research.

CHAPTER FIVE

GENERAL DISCUSSION AND CONCLUSION

Summary and Implications

The two studies presented here assessed the role that political essentialism, a lay theory of the nature of ideology, plays in affective polarization. Among the intergroup attitudes measured by psychologists, inter-ideological attitudes are among the most negative (Iyengar & Westwood, 2015). Psychological frameworks used to quantify, and qualitatively assess this intergroup dynamic have included stereotyping (Crawford et al., 2013; Iyengar et al., 2012; Appleby & Borgida, 2016; Ahler & Sood, 2016), social/geographic avoidance (Motyl et al., 2014; Suhay et al., 2016), discriminatory behavior (Chambers et al., 2013), and prejudice (Brandt et al., 2014). This paper brings another social psychological framework, that of lay theories, to the discussion. Psychological essentialism is the lay belief that categories represent real, deep-rooted, informative, immutable, discrete and perhaps invisible essences. To essentialize political identity is to believe that liberalism and conservatism represent real, informative, discrete and deeply-rooted differences. The present research proposed that variations in endorsement of this lay theory can correspond to inter-ideological attitudes.

The goals of the present research can be summarized as a set of related questions: 1) do people essentialize political identity in a way that can be meaningfully measured? 2) Does political essentialism relate to the phenomenon of affective polarization at all? 3) How do

different facets of essentialism relate to each other, and to affective polarization outcomes? 4)

What is the causal relationship between essentialism and affective polarization? 5) What additional evidence can this research provide on the phenomenon of affective polarization?

Encouragingly for this research program, across the two studies, evidence supports an affirmative answer to the first two questions. The answer to the remaining three questions is more complex. This section will summarize the data related to each of these questions in turn.

Q1. Do people essentialize political identity in a way that can be measured? Study 1 established that political essentialism is a set of measurable beliefs that (mostly) cohere. A newly-crafted scale, designed to assess the essentializing lay beliefs people have about politics, demonstrated good reliability and predictive power. Participants in Study 1, whose demographic characteristics are in many ways similar to (though not truly representative of) the United States as a whole (Huff & Tingey, 2015), reported levels of essentialism that were closer to the midpoint than to either extreme of the scale. Strong conclusions cannot be drawn about levels of essentialism by comparing the mean to the scale midpoint, as there is no confirmation that the mathematical midpoint is in fact a “truly neutral” midpoint (as the “pro-“ and “anti-“ essentialist items may slightly vary in their extremity). However, there was clearly not a strong disagreement or rejection of political essentialism overall.

Political essentialism beliefs corresponded with other related constructs in predicted ways. People who had a large number of cross-ideological social contacts reported reduced political essentialism beliefs. High intergroup contact quality, in terms of positivity, equality, cooperation, and closeness, also related to an attenuation in essentialism. This aligns well with Brown et al. (2007), who found reduced intergroup inhumanization (a process related to

essentialism) resulted from greater intergroup contact in a longitudinal study. Increased open-minded cognition also corresponded with reduced essentialism: people who report being willing to think in an unbiased fashion also reported that politics was more malleable, less discrete, less informative of one's personality, and less "fixed" by biology. Conversely, essentialism was also positively correlated with measures commonly associated with polarization: political news consumption and ideological extremity. That such relationships emerged so consistently, and in the theoretically-predicted directions, suggests that the measure of essentialism is assessing a meaningful construct. The scale, in other words, possesses good convergent validity. On the other hand, it did not completely overlap with any other construct, confirming discriminant validity. The largest correlation was between essentialism and any other construct was with desire for social distance, with which it shared 21% of the variance.

Confirmatory factor analysis, and correlation analyses of the subscales, mostly supported the notion that many political essentialism scale items were interrelated and indicated an overarching construct. However, both the confirmatory factor analysis and conventional correlational analysis of subscales suggested that biological basis beliefs were statistically distinct. Biological basis beliefs cohered *internally* ($\alpha > .80$), but generally did not correlate strongly, if at all, with the other subscales. Further discussion of this is in the Q3 Section. Data-driven explorations of this scale also suggested some items that may cohere less well than others (Item 2, Item 18). This will be important to consider when refining the scale for future use.

Q2. Does political essentialism relate to the phenomenon of affective polarization?

Study 1 provided ample opportunities to assess this claim. All evidence suggested that political essentialism is indeed associated with affective polarization. Political essentialism furthermore

predicted desire for social distance from political outgroups. Both of these outcomes were significantly related to essentialism, both on a bivariate level, and when controlling for a variety of covariates. Essentialism explained variance in affective polarization and desire for social distance beyond what was explained by other political variables, including news consumption, political interest, and importantly, ideological extremity.

The relationship between political essentialism and affective polarization was also “decomposed” into in-group and out-group ratings, via a mixed general linear model. This analysis demonstrated that political essentialism relates to both in-group and out-group affect ratings. Rather than only predicting more extreme negativity toward the out-group alone, essentialism related to inflated ratings of the in-group as well.

In Study 2, wherein essentialism was manipulated rather than measured, there was no evidence of this relationship. This is unlikely to be because the relationship found in Study 1 is simply a fluke, given the strength and consistency of evidence in Study 1. Question 4 explores alternate plausible explanations for the null findings of Study 1.

Q3. How do different facets of essentialism relate to each other, and to affective polarization? This research suggested that political essentialism is best regarded as a multi-faceted construct, comprised of some beliefs about the *current nature* of liberal and conservative identity (discrete, informative, immutable), and some beliefs about the *etiology* of ideology (biologically or social determined). The present data suggests that not all proposed facets of essentialism are equally associated to affective polarization. While the overall political essentialism scale was predictive, explaining 10% of the variance in affective polarization, analyses using “facets” of essentialism were even more so, explaining 30% of the variance in

affective polarization. This is partially due to the contradictory relationships that different dimensions of essentialism had with the outcomes. Discreteness and informativeness beliefs consistently predicted greater affective polarization and desire for social distance, whereas biological basis and social determinism beliefs mostly predicted reduced polarization and desire for social distance. Immutability had little unique measurable effect on the outcomes. The positive correlation the outcomes had with discreteness and informativeness tended to be much larger than the those with social and biological determinism. Therefore, the overall scale mirrored the discreteness and informativeness factors, predicting greater affective polarization.

The present research uses essentialism as a tool to understand affective polarization as an intergroup phenomenon. It therefore engages with previous literature connecting lay beliefs to attitudes, such as work connecting beliefs about race to racism, lay beliefs about sexuality to homophobia, and so on. An interesting tension found in such work is that essentialism is often associated with more negative attitudes (e.g., Bastian & Haslam, 2008; Zagefka, Nibgur, Gonzalez, & Tip, 2013); but in some cases, associated with more positive attitudes and tolerance (e.g., Jayaratne et al., 2006; Phelan et al., 2002). The argument that sexuality is genetically determined, for example, tends to be associated with reduced homophobia (Jayaratne et al., 2006). A key finding from the present research is that biological lay theories of politics were associated, in some cases, with reduced affective polarization. This is contrary to the initial expectation -- and indeed contrary to other recent work in this area, which found a positive relationship between biological essentialism and desire for social distance from political outgroups (Suhay et al., 2016). The present research in fact lends support to Hibbing's (2013) speculation that acknowledging biopolitics may lead to greater tolerance between liberals and conservatives.

Beyond the biological determinism results alone, Study 1 invites an understanding of political essentialism as a multi-faceted construct more generally. Observing the pattern of results, two facets are strongly and consistently associated with greater affective polarization: informativeness and discreteness. Two facets relate (albeit more weakly) to lessened affective polarization: biological determinism, and social determinism. The influence of immutability, which emerged as a positive correlate in bivariate analysis, disappears when controlling for the other factors, so seems to be less relevant. Therefore, it seems that there are two pairs of factors that have distinct effects. The first pair of lay beliefs concerns the current nature of ideology: believing liberals and conservatives to be distinct groups (discreteness) and that ideology tells you a lot about a person's personality (informativeness). The second pair concerns the etiology of ideology: that it is biologically determined (biological basis) or fixed at a young age (social determinism). Current nature beliefs may accentuate (or at least accompany) affective polarization, while etiology beliefs may attenuate it.

This “two-factor” description alone, however, is not sufficient to explain the richness of results. Empirically, a two-factor solution in exploratory factor analysis did not explain a majority of the data. Biological determinism and social determinism are uncorrelated ($R = .07, p > .05$), so they ought not be collapsed into a single factor. Furthermore, the individual factors appeared to function independently in their relationship to outcomes. GLM results suggested social determinism related only to reduced in-group liking, while biological determinism related to increased out-group liking. Reflecting on the *social* origin of ideology may reduce people's affection for others who share their ideology. Perhaps recognizing the environmental determinants of one's own ideology reduces the degree to which one's ideology seems objectively, logically or even ethically “correct.” And perhaps reflecting on the possible *genetic*

origin of the opposing ideology helps “forgive” others of their “incorrect” political beliefs. Of course, at this point, these explanations are merely speculative; and these results should be replicated before they need to be strongly theoretically considered (see future directions).

Q4. What is the causal relationship between essentialism and affective polarization?

One goal of this research was to test whether essentialist beliefs about politics can *cause* negative intergroup attitudes and desire for social distance. Study 2 was designed to evaluate this prediction, and produced null results. Whether participants were primed with a high- or low-essentialism concept of ideology had no effect on this outcome. This non-effect can be plausibly explained by three alternative frameworks, with increasing theoretical weight: A) that the present manipulation was too weak to shift essentialism beliefs; B) that political essentialism beliefs are simply chronic and enduring, and no brief experimental manipulation could realistically affect them; or C) that there truly is no causal relationship between essentialism and affective polarization. The implication of each of these explanations is discussed here.

Failure of present manipulation. The efficacy of the article manipulation was validated by the results of the pilot study. However, in the pilot study, participants only reported their interpretation of the article’s message. This had the advantage of conservatively testing whether the manipulation communicated the message effectively and primed certain concepts. On the other hand, true persuasion was not assessed. Therefore, it is possible that participants understood what the article was saying, but did not *believe* the article consisted of true, convincing research. While the concept of “high” or “low” essentialism may have been effectively “primed,” it may not have been deeply internalized enough to shift true beliefs about political identity.

Bernstein et al. (2010) found that materials very similar to the ones used in this study were effective in significantly shifting actual beliefs about political essentialism ($M = 5.44$ vs. 3.39 on a political essentialism measure, $t(20) = 8.85$, $p < .001$). However, as politics and political disagreements are increasingly salient, lay people may have more crystalized attitudes about the meaning and etiology of ideology. Spending several minutes reading an article online, during a paid study, may simply have been insufficient to shift such beliefs. Furthermore, Bernstein et al.'s (2010) materials were edited for this study; perhaps disrupting some convincing facet of the original materials.

Another way in which the article may have functioned poorly is that it, by design, assumed political essentialism was unified construct with five sub-parts all covarying positively. The manipulation therefore simultaneously endorsed all five essentialism “facets” in the high-essentialism condition, and counterargued all five in the low-essentialism condition. Study 1 results initially suggested this was a reasonable approach. All subscales correlated positively on a bivariate level (except biological basis, which failed to correlate with several other scales), and the overall scale related to outcomes as predicted. On the other hand, subscale analyses suggested that different facets of essentialism related differently to affective polarization. Discreteness and informativeness strongly predicted affective polarization, while social determinism, and at times, biological determinism, predicted more inter-group liking (albeit more weakly). This manipulation, then, may have simultaneously heightened affective polarization (by emphasizing discreteness and informativeness), and dampened it (by emphasizing the etiology of ideology, via social or biological determinism). These effects may have cancelled each other out, ultimately producing a null effect.

Finally, it is possible that any priming of political essentialism, whether endorsing or counter-arguing essentialism, may soften negative inter-group affect and behaviors. As discussed in Chapter 4, this prospect is supported by the pattern of results across the two studies. Across two studies, there were four “conditions”: the two order conditions in Study 1, and the high versus low essentialism conditions in Study 2. In the three conditions in which people considered essentialism first, affective polarization ratings were consistently about 9 points lower than in the single condition wherein people spontaneously reported their affective polarization without first considering essentialism (see Study 2 discussion for additional details). Theoretically, this would suggest that considering the nature of ideology predicts lessened affective polarization than tends to exist at a chronic level. Perhaps a more motivational (e.g., wanting one’s values to be advanced and reflected in society), or emotional (e.g., being angry at an opposing party) dimension of politics is more chronically salient. These dimensions are more conflict-oriented, potentially leading to intense polarization. Priming the nature and etiology of ideological groups possibly reduces the salience of chronically salient frameworks, softening the degree of polarization. This explanation would be akin to sports team members expressing intense preference for their team and antipathy for the other team immediately before a game – when the desire to win is most salient. Asking team members to first reflect on the nature of the sport, and how people wind up on certain teams, etc., may predict reduced inter-team tension. Of course, this explanation is merely speculative, but could be explored experimentally in future research.

Essentialism is chronic. Political essentialism beliefs may simply be difficult to shift situationally. Previous research on lay beliefs suggest that, while they are malleable, may also be chronic and developmentally-determined (Hong, Chiu & Dweck, 1995). Perhaps political essentialism beliefs are relatively crystallized, given the high degree of salience politics has in

the United States at this time. If this is the case, political essentialism beliefs may still be playing a causative role in determining affective polarization. It is simply that they will not be shifted by experimental primes. This potential explanation can be ruled out through more extensive manipulation checking. This could entail testing a variety of manipulations, and directly measuring participant's own beliefs about ideology following the manipulation. If no experimental effects are observed, longitudinal studies, measuring both lay beliefs and attitudes over time, may be necessary to determine if the proposed causal relationship exists.

True non-effect. The most theoretically impactful interpretation is that political essentialism beliefs simply do not causally influence intergroup attitudes. While a convincing set of correlations, regression coefficients, and mediation effects were presented here, essentialism is not necessarily the causal factor in these relationships. Study 2 may be interpreted as evidence against the explanation that political essentialism beliefs cause affective polarization. However, it does not directly inform which other causal relationships are most plausible.

Beliefs justify attitudes. It is possible that intergroup warmth, generated for other reasons, could “cause” political essentialism beliefs to arise. Post hoc justification is a plausible explanation for this causal path. That is, for example, a conservative person may begin to dislike liberals for motivational reasons (they want Republicans to win elections, and view liberals as an impediment to this goal). Then, when presented with the idea of political essentialism (e.g., that liberals and conservatives are fundamentally distinct), they endorse it, because it justifies their avoidance of liberals. This account would be congruent with research suggesting that liberals and conservatives differentially essentialize race, class, and sexuality in ways that confirm their prior attitudes (Suhay & Jayaratne, 2013). Similarly, Morton, Hornsey & Postmes (2009) argue that

essentialist beliefs do not precede prejudice per se but are called upon strategically to protect the in-group. However, other research strongly suggests that while such post hoc justifications process do occur, this does not preclude the alternative causal explanation. That is, research suggests that the connection between essentialism and prejudice can be bidirectional (Rangel & Keller, 2005, Levy et al., 2001).

Beliefs co-occur with attitudes. It can also be considered that negative attitudes, social avoidance, and an endorsement of essentialism simply co-occur. They could even be considered features of the same overarching construct. The results here would be consistent with such an account. Once again, a third causal variable (e.g., motivation to advance one's values) could produce affective polarization, desire for social distance, and political essentialism simultaneously.

Given these possible alternate explanations, political essentialism beliefs are still important to measure and account for. Even if essentialism arises after a more basic affective evaluation of the outgroup, for example, it can help reinforce it, and inform what the perceived implication of that evaluation is. Additional outcomes that were not measured in the present research could be influenced, downstream. For example, merely disliking liberals, for example, may have a different effect on political tolerance than disliking liberals *and* viewing them as an entitative outgroup. It may be more tempting to restrict the rights of a disliked outgroup when that outgroup is also viewed as uniquely distinct from one's own. Similarly, there are potential implications for political discourse and compromise. If people with opposing ideologies are evaluated as not just a disliked outgroup, but one constituted by immutability and discreteness, discussion and eventual compromise may seem futile.

Q5. What additional evidence can this research provide on the phenomenon of affective polarization? Setting aside essentialism, the present studies contribute additional insights to the understanding of the affective polarization phenomenon in general. The existence of affective polarization was confirmed in both Studies 1 and 2, with huge gaps in in-group and out-group ratings, and a moderate degree of discomfort expressed in interacting with ideological others.

Whether liberal or conservative identity is associated with greater affective polarization is of interest in survey research (e.g., Iyengar et al., 2012). The present research largely confirms that inter-ideological attitudes are mostly symmetrical. A trend in Study 1, and a significant bivariate correlation in Study 2, suggested that liberals express more affective polarization than do conservatives. This would contradict survey research by Iyengar et al. (2012), and Pew (2016), who found no particular difference between the two. And in fact, when controlling for extremity, this ideological difference was erased. Therefore, these trends are probably reflections of the peculiarity of the MTurk samples, where liberals are more extreme in their ideology than conservatives.

Several variables were found that related to accentuated affective polarization, in ways that largely confirm the findings of previous research. Ideological extremity strongly covaried with affective polarization (as in Iyengar & Westwood, 2015; Webster & Abramowitz, 2017; also see Homola et al., 2016 for similar effects on stereotyping). Frequency of news exposure also positively corresponded to affective polarization, lending further evidence that polarization may be at least partially fueled by media messages (Iyengar, Sood & Lelkes, 2012). A unique contribution of Study 1 was the selective news exposure variable, measured by assessing the

proportion of news sources selected that are congenial to the participant's ideology. This novel variable was only moderately correlated with the overall news frequency variable ($R=.25$) but was just as predictive of affective polarization and desire for social distance. It may therefore be a useful way of measuring congenial news exposure in future research (see also Peterson, Goel, & Iyengar, 2018, for a related, more resource-intensive, but non-self-report, approach).

Aligning with findings by Mutz (2002a) on political tolerance, a measure of the ideological *diversity* among one's social contacts corresponded with reduced affective polarization. Intergroup contact *quality* was negatively associated with in-group preference, which conforms to Mutz's (2002a) findings that it was greater intimacy with a cross-ideological person related to increased tolerance. However, in contrast to Mutz's (2002b) findings relating interideological contact to reduced political participation, adverse effects of contact on participation were largely not found in the present research. However, a marginal negative effect of intergroup contact on intention to vote ($p = .06$) suggests this hypothesis is worthy of further exploration.

Limitations

Design. The most notable limitation in this set of studies is the methodological narrowness of Study 2. It used a mono-method approach, only attempting to manipulate essentialism using a set of two fabricated articles. Relevant literature had provided evidence to believe this manipulation would be effective: several studies used similar, article-prime-based methods, and reliably found predicted effects on attitudinal outcomes (Bernstein et al., 2010; Rangel & Keller, 2011; Levy, Stroessner & Dweck, 1998). Furthermore, a pilot test confirmed that participants were sensitive to the message expressed. Nevertheless, in retrospect, the null

results are necessarily ambiguous; the independent variable was only manipulated in this single way, not allowing results to be observed across multiple methods.

The article manipulation addressed all five proposed facets of essentialism. This seemed to be a reasonable first step, as a maximal manipulation of essentialism. However, given the mixed effects of various facets of essentialism, this “multi-faceted” approach may have in fact impeded the emergence of an effect. Presenting information about ideology’s *informativeness* alone, or *biological basis* alone, for example, may have produced unique, effects in opposing directions. Presenting the two messages together may have muddled each effect, resulting in a null result.

Study 2 also suffered from lack of a control group. If a control group were included, it could help rule out (or verify) the suspicion that *any* essentialism prime reduces affective polarization. As it is, all participants in Study 2 considered the existence of political essentialism before responding to the dependent variables, whether the manipulation endorsed or counter-argued it. The resulting pattern of affective polarization being depressed in three out of four “conditions” across the two studies remains somewhat ambiguous to interpret.

Measures. Measures were selected to maintain continuity with relevant research. In-group minus out-group ratings on the feeling thermometer is an enduring measure of intergroup affect that has been used in survey research since the 1960s (Iyengar et al., 2012); and serves as important marker of the degree of affective polarization (Iyengar et al., 2012). Desire for social distance was a key dependent variable for Suhay et al. (2016), whose research on biopolitics and attitudes is extremely relevant to the present studies. While these measures help situate the research among other relevant work, the measures are not particularly rich nor complex. The

three desire for social distance items also produced only borderline-acceptable reliability in both studies ($.60 < \alpha < .70$ in both cases). Feeling thermometer difference scores, as they are assessed with a single “item,” are impossible to even validate with reliability analysis. Therefore, the entirety of affective polarization was assessed with a total of only four items. Measurement error on any single item may severely undermine the ability to detect true effects.

The political essentialism scale itself performed reasonably well as a predictor and demonstrated sufficient reliability. However, confirmatory factor analyses suggested a hierarchical model with one overarching essentialism factor, and five subfactors, was less than ideally fitting. On the other hand, completely data-driven exploratory factor analyses did not suggest a clear alternative. Therefore, while the scale was effective for the current study, it may need some further refinement (see Future Directions).

Finally, the results of this study are necessarily situated in a particular time in history – late 2017 to early 2018, during the Donald Trump presidency. The 2016 election, and subsequent presidency, saw rhetoric more explicitly negative and combative than typical in recent years. Trump’s campaign entailed leading chants demanding the jailing of his political opponent; and his rhetoric since his term started has been characterized as “demonization of those with whom he disagrees” (Jamieson & Taussig, 2017, p. 620). Hillary Clinton, while less vitriolic and negative in her rhetoric than Trump (Savoy, 2018), received criticism during her campaign for describing “half of Trump supporters” as belonging in “the basket of deplorables.” This rhetoric from political elites may easily accentuate affective polarization (see Iyengar et al., 2012), and possibly the degree to which liberals and conservatives are perceived as discrete and informative “camps.” The degree that political news stories focus so frequently on Trump, his rhetoric, and

norm-violating forms of expression also likely leads to a closer association between media exposure and polarization. Of course, affective polarization has been growing steadily since the 1970s (Iyengar et al., 2012), so the political environment of 2018 may be seen as a point along an increasing trend, rather than an isolated outlying datapoint.

Sample: excluding moderates. Both of the studies presented here represent only a subset of the population: Americans with a consistent liberal or conservative identity. That is, TurkPrime only allowed self-identified liberals (those who identified themselves as liberals on more than one occasion) and self-identified conservatives (those who identified themselves as conservative on more than one condition) to participate. While this was necessary in order to identify clear ideological in-group and out-groups relative to each participant, it also presents a weakness for this study. Moderates, and those with inconsistent ideological identity (e.g. switching identity from conservative to liberal, or vice versa) are not represented by these results. Recent survey data suggests that 34% of Americans identify as moderate: a declining, but still sizeable portion of the population (Gallup, 2017). The present research affirms that people with more extremely left and right ideologies report both greater political essentialism and greater affective polarization. Therefore, this sample, which excluded people who dwell near the ideological midpoint, will likely tend to over-represent the degree of both polarization and essentialism.

Sample: MTurk population. The use of an online survey design with an MTurk sample provided both advantages and disadvantages. MTurk, particularly in conjunction with TurkPrime, allowed for reasonably representative samples, featuring a roughly equal number of liberal and conservative participants, with a median age in the 30s, and a variety of education

levels -- all attributes that could not be expected from a student sample. Still, the samples skewed White relative to the United States population (Study 1 = 76%; Study 2 = 82%; US Population = 72%, per the 2010 United States Census). Furthermore, while an equal number of liberals and conservatives were requested via TurkPrime, the overall sample still reflected the liberal skew of MTurk as a whole. That is, the liberals tended to be stronger liberals (e.g., in study 2, the “liberal” half of the study had a mean ideology of 2.07 on the 7-point ideological scale 1.07 points away from the endpoint, whereas conservatives had a mean ideology of 5.66 on the 7-point scale, 1.34 points away from the endpoint). This ideology concern was largely mitigated by controlling for extremity. But the fact that the sample was not truly representative of the United States as a whole limits the generalizability of findings, particularly those simply describing the overall “average levels” of essentialism and affective polarization.

Given the null results of Study 2, the most troublesome aspect of the sample was that MTurk workers tend to be “non-naïve” to psychological manipulations, as they are not prevented from participating in multiple, possibly similar psychology studies (Buhrmester, Talaifar, & Gosling, 2017). Many participants may have participated in similar studies before, wherein a prime was presented, then dependent measures assessed. This procedure is often followed by a debriefing statement, explaining the false nature of the cover story (if present), the prime, and how the prime was expected to influence effects downstream. Such non-naïve participants may have not believed the cover story of the present study (“rate the appropriateness for a high school audience”). Participants then may have either a) discounted the credibility of the article; and/or b) defensively refused to be persuaded. It is worth noting that many of the studies presently cited, which found measurable effects of an essentialism-relevant article on subsequent attitudes, used student samples (Bernstein et al., 2010; Rangel & Keller, 2011; Levy, Stroessner & Dweck,

1998). MTurk's effectiveness as a platform to run psychological experiments has been repeatedly confirmed (e.g. Crump, McDonnell, & Gureckis, 2013; Buhrmesiter, Talaifar, & Gosling, 2017), but still presents a population less naïve to psychological manipulations than student samples are.

Future directions

Causality. The null results produced in Study 2, as well as the apparent “general priming effect” observed across studies, invite further explorations into causality. Alternate methods should be employed to see whether the lack of causality observed in Study 2 was simply a product of a flawed manipulation. To test the hypothesis more thoroughly, extensive pilot testing should be performed. Pilot testing could assess the effect of multiple manipulations, including manipulating a single facet of essentialism at a time. Furthermore, future tests of the essentialism causation hypothesis could measure shifts in the participants' essentialism beliefs, rather than their mere interpretation of the article's message. If done in conjunction with measuring the affective polarization variables, this would allow for mediation via essentialism beliefs to be tested. Future experimental manipulations should also include a control group, to test the effects of manipulations against a true baseline.

Experiments could also be employed to explore alternate directions of causality. The most obvious next step would be to test the effect of inter-ideological affect *on* political essentialism. This would entail creating a manipulation that either elicits or dampens negative inter-ideological affect, and then measuring political essentialism. Such an approach was used in Keller (2005). Another approach may be to measure political essentialism as a justifier of exclusion, as in Morton et al. (2009). That is, an experiment could measure whether political in-

group or political outgroup is being excluded or discriminated against, then measuring the degree that political essentialism is endorsed. This can test the degree to which essentialism functions to justify preferred differences in outcomes.

A particularly informative follow-up direction would be to measure intergroup affect, intergroup contact, and essentialism in a longitudinal fashion. This could provide a rich dataset testing the sequence of events that most and least explain how intergroup behaviors, beliefs, and affect develop over time. This would be especially interesting to test on participants as they move to new geographic locations, start new jobs, or otherwise suddenly encounter a change in the ideological makeup of their environment (Motyl et al., 2014).

Additional political outcomes. Effects of political essentialism beliefs are most likely not isolated to the dependent variables the present study focused upon: affective polarization, desire for social distance, and political participation. It is also of great importance to study the effects of beliefs on political outcomes more closely. In Study 1, political participation was assessed (both in terms of the past year, and immediate intentions to vote). A marginal, negative effect of intergroup contact on voting intention was discovered, but it is unclear how robust this effect is. Future research on political participation may use more nuanced and diverse measurements of intention to participate, including measuring other outcomes like intention to donate, intention to protest., etc.

Some of the research most directly related to this project assess political tolerance, rather than, or in addition to, intergroup affect as a dependent variable (e.g., Suhay, Brandt & Proulx, 2016, Mutz, 2002a). This is a greatly important outcome to assess as well. It is plausible that beliefs about ideology may influence how willing we are to tolerate ideological differences, as

discussed previously. Furthermore, interest in political discussion, persuasion and compromise are also important outcomes to measure. Essentializing a political outgroup may make dialogue seem impossible. This possibility seems quite likely, given research finding that those with “entity beliefs” about personality are less likely than those with “incremental beliefs” to confront someone who makes an offensive remark (Rattan & Dweck, 2009). Having a lay theory of politics that casts political beliefs as reflecting discrete, immutable social entities may also reduce interest in conversations that confront and explore disagreements.

Perceptions of the essential nature of liberals vs. conservatives. The political essentialism scale presented here measures attitudes about political ideology in general. It therefore does not differentiate between essentialism of the ingroup and essentialism of the outgroup, nor the perceived essentialism of liberalism vs. conservatism. With slight rewording, the scale could be re-written into two versions that assess beliefs about liberals and conservatives separately. Essentializing one’s in-group and out-group can both contribute to prejudice (see Zagefka, Nigbur, Gonzalez & Tip, 2013). While GLM analysis reflects the distinct roles of *overall* essentialism on in vs. out group attitudes, the present research does not address unique effects of *in-group vs. out-group* essentialism on such attitudes. Liberals and conservatives may be rated differently on essentialism measures, even averaging across in-group identification. For example, stereotypes of liberals being “emotional” but conservatives “rigid” (Crawford et al., 2013) may contribute to differential perceptions of essentialism. There is, for one example, a specific narrative that posits people get more conservative as they age (e.g., Glenn, 1974). This may lead to differential expectations of immutability. As Bukowski wrote, “What hardly ever happens / is a man going from being a young conservative to a / wild-ass radical in old age. / young conservatives become old / conservatives” (2002). An exploratory

study that assesses perceived essentialism of liberalism and conservatism (within-subject), and also measures the participants' ideology, could disentangle unique effects of distinct ideologies and ingroup vs. outgroup status.

The degree that people essentialize party identification could be another interesting area for future research. Polarization based on party identification is just as apparent as polarization based on ideological identification (Iyengar et al., 2012). Differentiating ideological from party identification can also be important when expanding this research to other cross-cultural contexts. While a left-right ideological distinction is relevant to many political contexts worldwide, systems of government and party organization vary widely. Research could explore whether party participation is similarly essentialized in different contexts, or if it, for example, weakens in countries with a greater number of viable political parties, or a less politically divergent citizenry.

Refine the measurement of political essentialism. Future research should pursue refinement of the essentialism measure. Several analyses suggested that Item 2 and Item 18 did not cohere with the rest of the items. Furthermore, confirmatory factor analyses and correlational analyses suggested “biological basis” is a relatively distinct construct, mostly uncorrelated with the rest of the scale. Exploratory factor analysis suggested the social determinism factor can largely be captured by two items, while the other two are better modelled as part of more diffuse factor. A conservative next research step could entail collecting data and performing a “truly confirmatory” analysis of this data, informed by these findings (i.e., dropping some items, measuring social determinism with two items only).

A more extensive line of research could acknowledge that political essentialism is a construct with a moderate level of specificity, that could be either expanded or pared down. On one hand, it is a collection of beliefs, rather than a single belief. On the other, it does not capture the wide variety of beliefs people may have about political identity, some of which may not be easily characterized as “essentialist” beliefs. Two approaches would be reasonable extensions of the present research. One would be to pursue a briefer, more concise measure of essentialism-related beliefs. This could entail selecting the one to two strongest loading items for each essentialism facet, and constructing a 5 to 10 item scale. This could produce a measure more appropriate for survey research environments, which in turn could help facilitate research with a broader sample. A separate project would be to expand the measure of lay beliefs about politics. Lay people may employ other explanations for the mystery of why people’s political views vary so much. Do other people arrive at “incorrect” political beliefs because they are immoral, selfish, deluded, or unintelligent? Incorporating such alternate lay beliefs would enrich the five “factors” explored in the present research. This could help illuminate why, for example, *anti*-social determinism is related to greater polarization. Is it that polarized participants reject social determinism in favor of a less forgiving lay theory (e.g., that the outgroup is stupid or evil?). This could be a fruitful area for further exploratory research.

Conclusion

This set of studies provided an investigation of the connection between essentializing lay beliefs and affective polarization. The experimental evidence did not support hypothesis that shifts in lay beliefs about politics cause polarization. Correlational results, however, provided a great deal of richness in exploring the connection between essentializing lay beliefs, attitudes,

and related constructs. Essentialism about politics covaries positively with greater affective polarization and desire for social distance. It simultaneously corresponds negatively with open-minded cognition and past intergroup contact. Mediation models are consistent with the explanation that intergroup contact, and open-mindedness, partially function to reduce affective polarization “through” reduced essentialism. Though, again, conclusions from such mediational models applied to cross-sectional designs cannot be provided as strong evidence of causation (Kline, 2015).

The results provided here provide a great deal of exploratory, yet statistically significant, results that could be addressed with future research. Dimensions of essentialism that are more concerned with “etiology” of political ideology may in fact reduce affective polarization. Social determinism was associated with dampened ingroup warmth, and biological determinism related to increased outgroup warmth. While not predicted, these results are consistent with other research reflecting that essentializing lay theories can at times be associated with reduced prejudice (e.g., Angermeyer, Matschinger, & Corrigan, 2004; Haslam & Levy, 2006). Biological determinism, while expected to covary with a group of other essentializing lay beliefs, turns out to be a relatively distinct construct. While again contrary to expectations, it is congruent with related research about the facets of essentialism of other targets (Delgado-Acosta et al., 2016).

If trends in affective polarization continue, with liberals and conservative increasingly disliking each other (Iyengar et al., 2012), moving away from each other (Motyl et al., 2014), and viewing each other through a stereotypic lens (Crawford et al., 2013), research on the psychological mechanisms related to such attitudes and behaviors will be increasingly important. The present research provides important evidence that lay beliefs do correspond with inter-

ideological attitudes, and points toward directions for further investigation. There are serious potential consequences of polarization, not just for interpersonal harmony and comfort, but in the political domain as well. Extreme polarization is a suspected contributor to the decay of democracy itself (Levitsky & Ziblatt, 2018; as cited in Laidler, 2018). A polarized electorate may be prepared to welcome harms to democracy (e.g., foreign election interference, restrictions to voting rights), as long as those harms are perceived as affecting a reviled opposing party. Feelings about members of opposing ideologies, and the lay beliefs that may bolster those feelings, should not be overlooked in studying this emerging phenomenon.

APPENDIX A
STUDY ONE MATERIALS

Consent Form**CONSENT TO PARTICIPATE IN RESEARCH**

Project Title: *Political attitudes study*

Researcher: *Chase Wilson*

Faculty Sponsor: *Victor C. Ottati*

Introduction:

You are being asked to take part in a research study being conducted by Chase Wilson for a research project under the supervision of Victor C. Ottati, Ph.D. in the Department of Psychology at Loyola University of Chicago.

You are being asked to participate because of your involvement with Amazon's Mechanical Turk. You must be a U.S. resident and 18 years or older to participate in this study. Approximately 420 individuals will be participating in the study.

Please read this page carefully and ask any questions you may have before deciding whether to participate in the study.

Purpose:

The purpose of this study is to learn more about people's beliefs about political identity and attitudes related to politics. Expertise in politics is not required to complete this study.

Procedures:

If you agree to be in the study, you will be asked to:

- Complete several questionnaires about your beliefs
- Respond to several questions about your thinking style, preferences, and attitudes
- Respond to demographic questions

This study should take you about 15 minutes.

Risks/Benefits:

Confidentiality will be maintained to the degree permitted by the technology used. Your participation in this online survey involves risks similar to a person's everyday use of the Internet. There are no direct benefits to you from participation, but this study may benefit society by providing more understanding about how people perceive politics and political identity.

Compensation:

If you complete the study, you will receive \$1.25 to compensate you for your participation. At the end of the survey you will be given a short code, which you will enter into the MTurk HIT page. This will ensure you are correctly identified as having completed the study so you can receive payment. If you chose to end participation before completing the study, you will not be compensated. Payments are made via Amazon's payment system.

Confidentiality:

No identifying information will be collected for this study. All data will be associated with a unique identification number (e.g. 101, 102, 103...). The results of this study will primarily be used only in the aggregate form, for reports, presentations, or publications. During the research phase, the data will be stored on researchers' private, password protected computers. Only the researchers (Chase Wilson, Victor Ottati) will have access to it. After the primary research phase has concluded, the anonymous dataset will be stored indefinitely. This anonymous dataset may be made available to other researchers online upon request, or via Open Science platforms.

Voluntary Participation: Participation in this study is voluntary. If you do not want to be in this study, you do not have to participate. Even if you decide to participate, you are free not to answer any question or to withdraw from participation at any time without penalty. If you wish to exit the survey, you may do so by closing the browser window and returning the MTurk HIT.

As this survey is anonymous, the researcher will not be able to identify and/or remove any individual responses dataset after they are submitted.

Your decision to participate or not will have no effect on your relationship with Loyola University Chicago.

Contacts and Questions:

If you have questions about this research study, please feel free to contact Chase Wilson at cwilson9@luc.edu or the faculty sponsor Victor C. Ottati, Ph.D. at vottati@luc.edu or 773-508-3024.

If you have questions about your rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent:

By selecting "I agree" and completing the survey you are agreeing to participate in the research.

☐ I agree

☐ No thank you

Political Essentialism Scale

Questionnaire about political beliefs

Below are a series of statements about “*political beliefs*.” “Political beliefs” refer to whether someone is conservative, moderate, or liberal.

Please indicate how much you agree with the following statements, on a scale from 1 (strongly disagree) to 7 (strongly agree). There are no right answers; please just share your honest opinion.

		Strongly Disagree				Neither agree nor disagree			Strongly agree
1	Liberals and conservatives are two distinct groups without much overlap.	1	2	3	4	5	6	7	
2	A conservative can start taking on some more liberal beliefs, but is still fundamentally a conservative (and vice versa).	1	2	3	4	5	6	7	
3	If you know someone is liberal or conservative, that tells you a lot about them as a person.	1	2	3	4	5	6	7	
4	People are socialized into being liberals or conservatives during their formative years (i.e., birth to age 18).	1	2	3	4	5	6	7	
5	Whether a person is liberal or conservative is determined at least partly by their genes.	1	2	3	4	5	6	7	
6	The boundary between liberals and conservatives is fuzzy.	1	2	3	4	5	6	7	
7	People's ideology can easily change as they get older.	1	2	3	4	5	6	7	
8	You can't really judge someone by their politics – it is a small part of who they are.	1	2	3	4	5	6	7	
9	How someone is raised doesn't affect their political views very much.	1	2	3	4	5	6	7	
10	A person's genes do not influence their political beliefs.	1	2	3	4	5	6	7	
11	A person's political ideology is distinct; you are either a liberal or a conservative.	1	2	3	4	5	6	7	
12	People's political views can't really be changed.	1	2	3	4	5	6	7	
13	A person's political views can tell you a lot about the kind of person they are.	1	2	3	4	5	6	7	
14	Whether someone is liberal or conservative is determined by their upbringing (the influence of their caretakers and environment up through age 18).	1	2	3	4	5	6	7	

15	Different political views are caused, at least in part, by biologically hard-wired differences.	1	2	3	4	5	6	7
16	People have many different political beliefs, and it is hard to categorize most people as either liberal or conservative.	1	2	3	4	5	6	7
17	People can change their fundamental political beliefs at any time.	1	2	3	4	5	6	7
18	It is impossible to judge how someone will react in new social situations based on knowing their political beliefs.	1	2	3	4	5	6	7
19	Whether someone grows up in a liberal or conservative environment doesn't determine their own politics as an adult.	1	2	3	4	5	6	7
20	A person's political ideology is something that cannot be explained by their biology.	1	2	3	4	5	6	7

Affective Polarization (Thermometer Ratings)

We'd like to get your feelings toward some of the major political groups in America today. To be clear, “conservative” means all people who are conservative (not just conservative politicians); and “liberal” means all people who are liberal (not just liberal politicians).

Ratings between 50 degrees and 100 degrees mean that you feel favorable and warm toward the people. Ratings between 0 degrees and 50 degrees mean that you don't feel favorable toward the people and that you don't care too much for these people. You would rate the person at the 50 degree mark if you don't feel particularly warm or cold toward the people.

Approximate meanings for different numbers:

100 = Very warm or favorable feeling

85 = Quite warm or favorable feeling

70 = Fairly warm or favorable feeling

60 = A bit more warm or favorable than cold feeling

50 = No feeling either way

40 = A bit more cold or unfavorable than warm feeling

30 = Fairly cold or unfavorable feeling

15 = Quite cold or unfavorable feeling

0 = Very cold or unfavorable feeling

How do you feel toward **liberals**?

Very cold or unfavorable

Very warm or favorable

0 -----50-----100

How do you feel toward **conservatives**?

Very cold or unfavorable

Very warm or favorable

0 -----50-----100

Desire for Social Distance

Preferred Social Interaction

In deciding where to live, how important would it be to you to live in a place where most people held political views similar to your own?

			Somewhat				
			important				
Not at all important (1)	(2)	(3)	(4)	(5)	(6)	(7)	Extremely important

How do you think you would react if a member of your immediate family told you they were going to marry a [liberal/conservative]? Would you be generally happy about this, generally unhappy, or wouldn't it matter to you at all?

Very			Neither happy nor			Very
Unhappy			Unhappy			happy
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Would you generally like to meet and get to know people with [liberal/conservative] beliefs?

[the above populates with "liberal" for conservative subjects, and "conservative" for liberal subject]

Really dislike (1)

Dislike (2)

Dislike a little (3)

Neutral/Unsure (4)

Like a little (5)

Like (6)

Really like (7)

Political Correlates

Political Questionnaire

How interested are you in politics and public affairs?

- ☐ Extremely interested
- ☐ Very interested
- ☐ Somewhat interested
- ☐ Not too interested
- ☐ Not at all interested

People vary in how much they follow politics in the news. How often do you read, watch, or listen to news about politics, in general?

- [Never
- About once a year
- Several times a year
- About once a month
- About once a week
- Several times a week
- Daily (Less than 30 minutes a day, on average)
- Daily (30 minutes or more a day, on average)]

And how often do you get news from a social networking site (such as Facebook or Twitter)?

- [Never
- About once a year
- Several times a year
- About once a month
- About once a week
- Several times a week
- Daily (Less than 30 minutes a day, on average)
- Daily (30 minutes or more a day, on average)]

Please click on all of the sources that you got news about government and politics from **in the past week** (whether online, on TV, in print, or on the radio – they all count). If you didn't get news from any of these sources, please just select "none of these."

Fox News
Breitbart
The Blaze

MSNBC
New York Times
NPR

ABC News
Wall Street Journal
USA Today

None of these

Please answer the following questions. There are no right or wrong answers.

- 1) Thinking back to the national election in November 2016, when the presidential candidates were Hilary Clinton, the Democrat, and Donald Trump, the Republican, did you happen to vote in that election? [Yes No]
- 2) Since January 2016, at the beginning of the last national election year, have you worked as a volunteer – that is, for no pay at all or only for a token amount—for a candidate running for national, state, or local office? [Yes No]
- 3) Since January 2016, did you contribute money to an individual candidate, a party group, a political action committee, or any other organization that supported candidates? [Yes No]
- 4) In the past twelve months, have you contacted a federal elected official or someone on the staff of such an official? I mean someone in the White House or a Congressional or Senate office? [Yes No]
- 5) In the past twelve months, have you contacted a state or local elected official such as a governor or mayor or a member of the state legislature or a city or town council or someone on the staff of such an official? [Yes No]
- 6) In the past two years, since October 2015 [NOTE: replace with current month at time study is run, if necessary] have you taken part in a protest, march, or demonstration on some national or local issue? [Yes No]

Vote intention.

So far as you know, do you expect to vote in the midterm congressional elections in November, 2018?

Definitely will not				Not sure				Definitely will			
0	1	2	3	4	5	6	7	8	9	10	

Open Minded Cognition.

How much do you agree or disagree with the following statements? There are no right or wrong answers, we are just interested your opinions. Please click on the circle that best matches your opinion, on a scale from strongly disagree (1) to strongly agree (7)

	Strongly Disagree			Neither agree nor disagree			Strongly agree
1 I am open to considering other viewpoints.	1	2	3	4	5	6	7
2 I often “tune out” messages I disagree with.	1	2	3	4	5	6	7
3 I believe it is a waste of time to pay attention to certain ideas.	1	2	3	4	5	6	7
4 I try to reserve judgment until I have a chance to hear arguments from both sides of an issue.	1	2	3	4	5	6	7
5 I have no patience for arguments I disagree with.	1	2	3	4	5	6	7
6 When thinking about an issue, I consider as many different opinions as possible.	1	2	3	4	5	6	7

Past Intergroup Contact Quantity

Past social interaction

1. Think about the people you spend time with. This may include family members, people you interact with socially, coworkers, and others (but exclude young children). About what percent of these people have are liberal, conservative, moderate, or other? Please provide your best estimate. Numbers should add to 100%.

Percent who are liberal (or left-wing): _____

Percent who are conservative (or right-wing): _____

Percent who are moderate, have another ideology, have no political leaning, or you don't know what their ideology is _____

[program automatically sums the numbers above and prompts participant ensure this number adds to 100]

Do you know at least one [liberal (if conservative participant)/conservative (if liberal participant)] person?

Yes, I do know one or more liberal.

No, I don't know any liberal people at all.

Past Intergroup Contact Quality

Please think about the [liberal (if conservative participant)/conservative (if liberal participant)] person whom you spend the most time interacting with, and answer the following questions.

2. How *negative* or *positive* are your interactions with this person?

Neutral

Very negative (1) (2) (3) (4) (5) (6) (7) Very positive

3. How *close* is your relationship with this person?

Somewhat close

Not close at all (1) (2) (3) (4) (5) (6) (7) Very close

4. How *equal* is your relationship with this person? (i.e., does one of you have more power than the other in some way, like a boss or a parent?)

Somewhat unequal

Not equal at all (1) (2) (3) (4) (5) (6) (7) Completely equal

5. How *cooperative* is your relationship with this person?

Somewhat
cooperative

Not cooperative at all (1) (2) (3) (4) (5) (6) (7) Completely cooperative

Disgust Sensitivity

The following items describe a number of conditions. Please rate how disgusting you find each condition.

- a) Seeing some mold on old leftovers in your refrigerator.
- b) Standing close to a person who has body odor.
- c) Shaking hands with a stranger who has sweaty palms.
- d) Stepping on dog poop.
- e) Accidentally touching a person's bloody cut.
- f) Seeing a cockroach run across the floor.
- g) Sitting next to someone who has red sores on their arm.

Response options:

Not disgusting at all (1)

Not too disgusting (2)

Somewhat disgusting (3)

Very disgusting (4)

Extremely disgusting (5)

Demographics

Demographic Questionnaire

In what year were you born?

[Drop-down menu: 1910 – 2000]

Please select your gender.

[Drop-down menu: male, female, non-binary, prefer to self-identify: _____]

Thinking back to the past year, what was your family's annual income?

[Drop down menu:

<\$20,000

\$20,000 - \$39,999

\$40,000 - \$69,999

\$70,000 - \$99,000

\$100,000 - \$149,999

\$150,000 - \$249,999

\$250,000 or more]

What is the highest level of education you have completed?

[Drop down menu:

Less than high school diploma

High school diploma or GED

Some college but no degree

2-year degree (e.g., AA, AS)

4-year degree (e.g., BA, BS, AB)

Master's degree (e.g., MA, MS, MSW)

Professional degree (e.g., MD, JD)

Doctorate Degree (e.g., Ph.D., Ed. D.)]

Which of these categories describe you?

[Drop down menu:

White

Hispanic, Latino or Spanish origin

Black or African Am.

Asian

Native American, American Indian or Alaskan Native

Middle Eastern or North African

Native Hawaiian or Other Pacific Islander

Mixed race (two or more of the above)

Other _____]

Where would you place yourself on this political spectrum?

Extremely Liberal

Liberal

Slightly liberal

Moderate or Middle of the Road

Slightly conservative

Conservative

Extremely conservative

Generally speaking, do you usually think of yourself as a Democrat, a Republican, an Independent, or what?

[1. Democrat

2. Republican

3. Independent

4. Something else: _____]

[One of these follow up questions will pop up based on response to above:

If 1: Would you call yourself a strong Democrat or a not very strong Democrat?

Strong Democrat

Not strong Democrat

If 2: Would you call yourself a strong Republican or a not very strong Republican?

Strong Republican

Not strong Republican

If 3 or 4: Do you think of yourself as closer to the Republican Party or to the Democratic Party?

Closer to the Republican Party

Closer to the Democratic Party

Neither]

What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion?

None/No religion

Protestant

Catholic

Evangelical Christian

Christian (other)

Jewish

Muslim

Buddhist

Native American religion
 Hindu
 Another religion _____

How important would you say religion is in your own life?

Not important at all			Fairly important				Extremely important	
1	2	3	4	5	6	7	8	9

Which of these categories comes closest to the place you where you currently live?

In open country but not on a farm
 On a farm
 In a small city or town (under 50,000)
 In a medium-size city (50,000 – 250,000)
 In a suburb near a large city
 In a large city (over 250,000)
 Other
 Don't know

In what state (or region) do you live?

[Drop-down menu: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New, Hampshire, New, Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, US Virgin Islands, Other territory or region, I do not live in the U.S.]

Debriefing statement

Thank you for participating in our study! Your response will help contribute to the growing literature on political polarization. The purpose of this study was to look at the links between beliefs about political ideology, and attitudes toward people with opposing political views. You completed a questionnaire that was intended to measure your level of “political essentialism”: the degree to which you think political identity is permanent, rooted in biology, etc. It is predicted that people who essentialize politics more will also tend to dislike, and desire to keep away from, people with opposing views. This prediction is grounded in other research that links essentialism to prejudice.

To learn more about research on polarization, political essentialism, and the origins of political identity, please feel free to read the articles linked below:

<http://www.people-press.org/2016/06/22/partisanship-and-political-animosity-in-2016/>

<http://www.psypost.org/2017/01/people-believe-political-views-biological-basis-intolerant-study-finds-46897>

https://www.washingtonpost.com/news/monkey-cage/wp/2013/11/27/why-biology-belongs-in-the-study-of-politics/?utm_term=.3174eade6b2f

Lastly, we ask that you not discuss the details of this study with other MTurk workers, as that may bias individuals who may become participants in this study at a later time. However, if you found it worthwhile, please feel free to alert other workers to the availability of this study as a task. If you have any questions regarding this particular research project or psychological research in general, please feel free to contact:

Chase Wilson, M.A.
Coffey Hall, Room LL27
Loyola University Chicago
cwilson9@luc.edu

Victor Ottati, Ph.D.
Coffey Hall, 243
Loyola University Chicago
vottati@luc.edu

For information or questions regarding research ethics and guidelines, please contact:

Office of Research Services
6525 N. Sheridan Road
Granada Center, Suite 400
(773) 508-2689
ORS@luc.edu

APPENDIX B

STUDY TWO MATERIALS

Pilot Study Consent Form for Student Sample**CONSENT TO PARTICIPATE IN RESEARCH**

Project Title: *Read and rate an article*

Researcher: *Chase Wilson*

Faculty Sponsor: *Victor C. Ottati*

Introduction:

You are being asked to take part in a research study being conducted by Chase Wilson for a research project under the supervision of Victor C. Ottati, Ph.D. in the Department of Psychology at Loyola University of Chicago.

You are being asked to participate because of your participation in Loyola University Chicago's undergraduate Psychology participant pool. You must be 18 years or older to participate in this study. Approximately 50 individuals will be participating in the study. Please read this page carefully and ask any questions you may have before deciding whether to participate in the study.

Purpose:

The purpose of this study is to measure people's reactions to a social-science themed article.

Procedures:

If you agree to be in the study, you will be asked to complete the following steps online:

- Read an article (about 2.5 pages in length)
- Answer several questions about how interesting and readable the article is, as well as your assessment of its meaning
- Respond to demographic questions

This study should take you about 5 to 10 minutes to complete.

Risks/Benefits:

Confidentiality will be maintained to the degree permitted by the technology used. Your participation in this online survey involves risks similar to a person's everyday use of the Internet. There are no direct benefits to you from participation.

Compensation:

If you complete the study, you will be given one credit hour. You will be granted this credit within 24 hours of completing the study.

Confidentiality:

No identifying information will be collected for this study. All data will be associated with a unique identification number (e.g. 101, 102, 103...). The results of this study will primarily be used only in the aggregate form, for reports, presentations, or publications. During the research phase, the data will be stored on researchers' private, password protected computers. Only the researchers (Chase Wilson, Victor Ottati) will have

access to it. After the primary research phase has concluded, the anonymous dataset will be stored indefinitely. This anonymous dataset may be made available to other researchers online upon request, or via Open Science platforms.

Voluntary Participation: Participation in this study is voluntary. If you do not want to be in this study, you do not have to participate. Even if you decide to participate, you are free not to answer any question or to withdraw from participation at any time without penalty. If you wish to exit the survey, you may do so by closing the browser window. As this survey is anonymous, the researcher will not be able to identify and/or remove any individual responses from the dataset after they are submitted. Your decision to participate or not will have no effect on your relationship with Loyola University Chicago.

Contacts and Questions:

If you have questions about this research study, please feel free to contact Chase Wilson at cwilson9@luc.edu or the faculty sponsor Victor C. Ottati, Ph.D. at vottati@luc.edu or 773-508-3024.

If you have questions about your rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent:

By selecting “I agree” and completing the survey you are agreeing to participate in the research.

☐ I agree

☐ No thank you

Study 2 Pilot Study Consent Form for Mechanical Turk

CONSENT TO PARTICIPATE IN RESEARCH

Project Title: *Read and rate an article*

Researcher: *Chase Wilson*

Faculty Sponsor: *Victor C. Ottati*

Introduction:

You are being asked to take part in a research study being conducted by Chase Wilson for a research project under the supervision of Victor C. Ottati, Ph.D. in the Department of Psychology at Loyola University of Chicago.

You are being asked to participate because of your participation in Mechanical Turk. You must be 18 years or older to participate in this study. Approximately 50 individuals will be participating in the study.

Please read this page carefully and ask any questions you may have before deciding whether to participate in the study.

Purpose:

The purpose of this study is to measure people's reactions to a social-science themed article.

Procedures:

If you agree to be in the study, you will be asked to complete the following steps online:

- Read an article (about 2.5 pages in length)
- Answer several questions about how interesting and readable the article is, as well as your assessment of its meaning
- Respond to demographic questions

This study should take you about 5 to 10 minutes to complete.

Risks/Benefits:

Confidentiality will be maintained to the degree permitted by the technology used. Your participation in this online survey involves risks similar to a person's everyday use of the Internet. There are no direct benefits to you from participation.

Compensation:

If you complete the study, you will be compensated \$0.75. You will be granted this payment within 24 hours of completing the study.

Confidentiality:

No identifying information will be collected for this study. All data will be associated with a unique identification number (e.g. 101, 102, 103...). The results of this study will primarily be used only in the aggregate form, for reports, presentations, or publications. During the research phase, the data will be stored on researchers' private, password protected computers. Only the researchers (Chase Wilson, Victor Ottati) will have

access to it. After the primary research phase has concluded, the anonymous dataset will be stored indefinitely. This anonymous dataset may be made available to other researchers online upon request, or via Open Science platforms.

Voluntary Participation: Participation in this study is voluntary. If you do not want to be in this study, you do not have to participate. Even if you decide to participate, you are free not to answer any question or to withdraw from participation at any time without penalty. If you wish to exit the survey, you may do so by closing the browser window. As this survey is anonymous, the researcher will not be able to identify and/or remove any individual responses from the dataset after they are submitted. Your decision to participate or not will have no effect on your relationship with Loyola University Chicago.

Contacts and Questions:

If you have questions about this research study, please feel free to contact Chase Wilson at cwilson9@luc.edu or the faculty sponsor Victor C. Ottati, Ph.D. at vottati@luc.edu or 773-508-3024.

If you have questions about your rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent:

By selecting “I agree” and completing the survey you are agreeing to participate in the research.

☐ I agree

☐ No thank you

Main Study 2 Consent Form**CONSENT TO PARTICIPATE IN RESEARCH**

Project Title: *Read and Rate an Article*

Researcher: *Chase Wilson*

Faculty Sponsor: *Victor C. Ottati*

Introduction:

You are being asked to take part in a research study being conducted by Chase Wilson for a research project under the supervision of Victor C. Ottati, Ph.D. in the Department of Psychology at Loyola University of Chicago.

You are being asked to participate because of your involvement with Amazon's Mechanical Turk. You must be a U.S. resident and 18 years or older to participate in this study. Approximately 200 individuals will be participating in the study.

Please read this page carefully and ask any questions you may have before deciding whether to participate in the study.

Purpose:

The purpose of this study is to gather reactions to a social science-themed article.

Procedures:

If you agree to be in the study, you will be asked to:

- Read an article (about 2.5 pages in length)
- Answer several questions about how interesting and readable the article is
- Respond to several opinion and demographic questions

This study should take you about 10 minutes to complete.

Risks/Benefits:

Confidentiality will be maintained to the degree permitted by the technology used. Your participation in this online survey involves risks similar to a person's everyday use of the Internet. There are no direct benefits to you from participation, but this study may benefit society by providing more understanding about how people perceive politics and political identity.

Compensation:

If you complete the study, you will receive \$1.00 to compensate you for your participation. At the end of the survey you will be given a short code, which you will enter into the MTurk HIT page. This will ensure you are correctly identified as having completed the study so you can receive payment. If you chose to end participation before completing the study, you will not be compensated. Payments are made via Amazon's payment system.

Confidentiality:

No identifying information will be collected for this study. All data will be associated with a unique identification number (e.g. 101, 102, 103...). The results of this study will

primarily be used only in the aggregate form, for reports, presentations, or publications. During the research phase, the data will be stored on researchers' private, password protected computers. Only the researchers (Chase Wilson, Victor Ottati) will have access to it. After the primary research phase has concluded, the anonymous dataset will be stored indefinitely. This anonymous dataset may be made available to other researchers online upon request, or via Open Science platforms.

Voluntary Participation: Participation in this study is voluntary. If you do not want to be in this study, you do not have to participate. Even if you decide to participate, you are free not to answer any question or to withdraw from participation at any time without penalty. If you wish to exit the survey, you may do so by closing the browser window and returning the MTurk HIT.

As this survey is anonymous, the researcher will not be able to identify and/or remove any individual responses dataset after they are submitted.

Your decision to participate or not will have no effect on your relationship with Loyola University Chicago.

Contacts and Questions:

If you have questions about this research study, please feel free to contact Chase Wilson at cwilson9@luc.edu or the faculty sponsor Victor C. Ottati, Ph.D. at vottati@luc.edu or 773-508-3024.

If you have questions about your rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent:

By selecting "I agree" and completing the survey you are agreeing to participate in the research.

☐ I agree

☐ No thank you

Instructions Page for Pilot And Main Study

Instructions

On the next page, you will see the text of an article adapted from the popular press.

After you read the article, you will be asked to rate how good of a fit the article would be for high school students. Specifically, you will be asked rate how interesting and understandable it is.

Article Manipulation for Pilot and Main Study: High Essentialism Condition¹

Please read the following article. You will be asked several questions about it on the following page.

Research from several major U.S. Universities indicates that political affiliation is not as easily changed as many might think.

“Members of political groups share deep-seated attitudes, and although someone may occasionally vote for a candidate of a different persuasion, ideology tends to be a life-long thing. If someone is a conservative in college, they are likely to be conservative their whole lives. The same is true for liberals. Conservatives share a deep similarity with other conservatives. The same is true for liberals, they are just a lot alike,” reports Dr. Michael Huber of the University of Chicago, summing up the results of an analysis of 6 decades of voting behavior.

“These affiliations are really quite stable,” continues Huber. And the evidence shows he is right. Only a small percentage of people actually change their political affiliations after their early 20’s. A 35-year longitudinal study revealed that 86% of individuals still affiliate with the same political label that they did at age 20, and 94% still affiliate with the same political label they did at age 24. Of those individuals who currently have college age children, 92% of those children identified as the same political party as their parents, yet additional evidence that political affiliations don’t change. “One can say with near certainty that a liberal or a conservative at age 20 will still be a liberal or conservative at age 80.”

“Although someone might vote across ideological lines once or twice, the core values that underlie political affiliation don’t much change. This affects the friendships that people foster, who people choose to marry, and even where people decide to live. Political attitudes and affiliations have lifelong effects.”

Political affiliations are informative

People often assume that if they know someone is a liberal or conservative, they can infer something about that person’s personality or lifestyle. Interestingly, assumptions that people make about others, based on ideology, turn out to be more accurate than not. A 2015 UC-Santa Barbara study measured how accurate people were in estimating a stranger’s personality traits after interacting with them for just one minute. Overall, the participants had a better-than-chance, but not strongly accurate, estimate of the stranger’s personality. However, informing the participant about the stranger’s political leanings improved the participant’s assessment by 60%, on average. Knowing the person’s political leanings even improved accuracy on traits that seemingly have nothing to do with politics. Apparently, politics is not an isolated facet of a person’s personality or interests.

¹ Article text was adapted from materials used by Bernstein, et al. (2010).

Eric Bodin, a political scientist at the University of Texas, has some thoughts about why politics can show us so much about people's personalities. Liberals and conservatives tend to run in "uniquely isolated social circles," he argues, enhancing similarities within each group. Professor Bodin and his colleagues analyzed social networks, groups of friends and acquaintances, across a dozen small and medium sized towns across the U.S., in a study including more than 8000 participants. "Of course, people tend to have friends who share politics with them. Liberals befriend liberals. Conservatives befriend conservatives." He continues, "people often feel as though sharing political ideology is key in forming and maintaining social bonds. In reality this appears to be true, and it is a long term effect."

Political Genes?

Recent research from Rice University links political affiliation to genetics. Evidence supports the argument that political affiliation may be ingrained: "Political tendencies are like being left-handed or right-handed -- you're born feeling more natural using one hand or the other," says David Mayer, a political scientist at Rice University. "It doesn't mean you can't switch -- but it's extremely difficult and more likely for people to think they've changed without realizing how their original affiliation influences their behaviors."

It's a classic dispute of nature versus nurture, and it was Mayer's study on nearly 10,000 twins that started the debate three years ago. The study showed identical twins, who share all the same genes, are more likely to share political views than fraternal twins, who share only about 50 percent of their genes. This is even true when the twins are reared in separate homes due to adoption.

The results of Mayer's study have led scientists at New York University to see whether brains of liberals and conservatives look any different. In one study, researchers at NYU asked 43 study subjects to assess if they were liberal or conservative. They then strapped electrodes on the subjects and had them play a game on the computer. In this study published last year in the journal *Nature Neuroscience*, the researchers found that liberals and conservatives processed information differently. Specifically, they found differences in activity in the anterior cingulate cortex, an area of the brain that processes conflicting information.

William Carlin, an assistant professor of psychology at NYU, and lead author of the study, says these results suggest that liberals and conservatives have some basic brain differences -- and those differences are influenced by our genetic makeup.

"People used to think political attitudes were shaped only by our environment," he says. "Now we realize political attitudes are influenced in large part by our genes. We are born with neural pre-sets. Though they can interact with the environment, the genetic component plays a crucial role in the political affiliations and behaviors in which people engage."

"This is really groundbreaking stuff," says Rob Alexander at the University of Chicago. "Understanding that political affiliation is stable, that it affects so many dimension of life, and

that it even has a strong biological component is certainly going to change the way both politicians and everyday Americans think about politics.”

Nurture also plays a role

While *nature* has powerful effects on whether we are liberal or conservative, scientists are also looking to early-in-life *nurture* as fundamentally shaping our political futures. One’s upbringing cannot be ignored, argues Alexander. “Parents’ political leanings have a huge effect on their children’s political preferences. A lot of this is explained by biology – but the remainder can largely be explained by how people are raised.” Supporting this idea, a recent study published in the *Journal of Political Science* argues that the apple rarely falls far from the tree. The study shows that even children of politically apathetic parents are likely to be shaped by their parents’ ideology. This is partially explained by genes, but also partially explained by differences in how inherently liberal and inherently conservative people parent. The result is that political identity is deeply determined at a young age by both nature and nurture. Once formed in childhood, political identity is relatively permanent in adulthood – leaving little room for adopting new ideological stances later in life.

Article Manipulation for Pilot and Main Study: Low Essentialism Condition

Please read the following article. You will be asked several questions about it on the following page.

Research from several major U.S. Universities indicates that political affiliation is more easily changed than many might think.

“Though it is certainly true that members of political groups share attitudes, political affiliation tends change repeatedly through people’s lives. If someone is a conservative in college, does not necessarily mean they are likely to be conservative their whole lives. The same is true for liberals. In fact, it turns out that conservatives tend to have relatively low levels of similarity with other conservatives, and liberals have low levels of similarity with other liberals. This allows people to move relatively easily between political parties and affiliations over the course of their adult life,” reports Dr. Michael Huber of the University of Chicago, summing up the results of an analysis of 6 decades of voting behavior.

“These affiliations are really quite unstable,” continues Huber. And the evidence shows he is right. Only a small percentage of people maintain their political affiliations after their early 20’s. A 35 year longitudinal study revealed that 52% of individuals still affiliate with the same political label that they did at age 20, and only 54% still affiliate with the same political label they did at age 24. Of those individuals whom currently have college age children, only about 50% of those children identified as the same political party as their parents. In essence, this is a chance occurrence. “It’s a 50-50 coin toss whether someone will affiliate as a liberal or conservative. It is nearly impossible to say with any certainty that a liberal or a conservative at age 20 will still be a liberal or conservative at age 40.”

“People often vote across ideological lines, indicating that the ideological affiliations don’t hold much strength for most individuals over time. Though some have argued that political affiliation affects the friendships that people foster, who people choose to marry, and even where people decide to live, evidence to the contrary seems to be very prevalent. In the post-collegiate environment, people easily make and maintain friendships and romantic relationships across ideological lines. Political attitudes and affiliations seem not to have the lifelong effects that people once thought.”

Politics are not that informative

People sometimes assume that if they know someone is a liberal or conservative, they can infer something about that person’s personality or lifestyle. Interestingly, assumptions that people make about others, based on ideology, turn out to be quite inaccurate. A 2015 UC-Santa Barbara study measured how accurate people were in estimating a stranger’s personality traits after interacting with them for just one minute. Overall, the participants had a better-than-chance, but not strongly accurate, estimate of the stranger’s personality. Informing the participant about the stranger’s political leanings did not improve their accuracy whatsoever. This was especially true

for traits that didn't have to do directly with politics. Apparently, politics is a rather isolated facet of a person's personality and interests.

Eric Bodin, a political scientist at the University of Texas, has some thoughts about why politics are so irrelevant to people's personalities. Liberals and conservatives "do not run in isolated social circles," he argues. Professor Bodin and his colleagues analyzed social networks, groups of friends and acquaintances, across a dozen small and medium sized towns across the U.S., in a study including more than 8000 participants. "People tend to socialize a wide assortment of people. Liberals befriend some conservatives. Conservatives befriend some liberals." He continues, "people sometimes feel as though sharing political ideology is key in forming and maintaining social bonds. In reality this appears to not be true."

Political Genes?

Though some researchers have argued that there is a genetic component to all behavior, researchers from Rice University have continually found a lack of relationship between political affiliation and genetics, supporting evidence for the argument that political affiliation is not ingrained: "Political tendencies are not like being left-handed or right-handed -- you're not born leaning one way or another," says David Mayer, a political scientist at Rice University. "People can change their attitudes easily and repeatedly through the lifespan."

It's a classic dispute of nature versus nurture, and it was Mayer's study on nearly 10,000 twins that started the debate three years ago. The study showed identical twins, who share all the same genes, are actually no more likely to share political views than fraternal twins, who share only about 50 percent of their genes. This was even true when the twins are reared in separate homes due to adoption. "If genetics were a major factor in political affiliation then identical twins should have shown more similarity than fraternal twins. The data fail to show that, however. There is just no evidence that politics has a genetic link. It's all about what a person learns."

The results of Mayer's study have led scientists at New York University to see whether brains of liberals and conservatives look any different. In one study, researchers at NYU asked 43 study subjects to assess if they were liberal or conservative. They then strapped electrodes on the subjects and had them play a game on the computer. In this study published last year in the journal *Nature Neuroscience*, the researchers found that liberals and conservatives processed information almost exactly the same and that any differences that did occur could not be attributed to political affiliation or ideology. Specifically, they found no differences in activity in the anterior cingulate cortex, an area of the brain that processes conflicting information. This area tends to commonly show differences in other group affiliations, but not using political affiliation.

William Carlin, an assistant professor of psychology at NYU, and lead author of the study, says these results suggest that liberals and conservatives have some basic brain similarities -- and any differences that do occur are not influenced by our genetic makeup.

"People used to think political attitudes were shaped both by our environment and our genes," he says. "Now we realize there is little evidence that political attitudes are influenced by our genes. It is not as though we are born with neural pre-sets. The immediate environment and one's own free will plays a crucial role in the political affiliations and behaviors in which people engage."

"This is really groundbreaking stuff," says Rob Alexander at the University of Chicago. "Understanding that political affiliation is relatively unstable, that it has little continued impact on relationships, and that its lack of a strong biological component is certainly going to change the way both politicians and everyday Americans think about politics. Political identity seems much more up for grabs than it did previously."

Upbringing isn't everything

While *nature* does not seem to wholly determine whether we are liberal or conservative, people may look to early *nurture* as fundamentally shaping our political futures. This is not necessarily the case, argues Alexander. "It's tempting to think that liberals and conservatives are essentially reflections of their upbringings. Research isn't really supporting this idea, either. Parents' political leanings only have a slight effect on their children's political preferences." Supporting this idea, a recent study published in the *Journal of Political Science* argues that the apple often falls far from the tree. The study shows that even children of very politically active parents are likely to rebel against their parents' political views. The result is that neither nature nor nurture strongly determine people's political identity.

Pilot Study 2: Bogus Questions and Pilot Test Dependent Variables

11th graders would likely find this article:

Neither boring
Nor interesting

Boring 1 2 3 4 5 6 7 Interesting

In terms of reading level, for average 11th graders, this article would be:

Too easy
Just right
Too difficult

According to the researchers described in the article, **political beliefs...**

Are not changeable 1 2 3 4 5 Are changeable
Are biologically based 1 2 3 4 5 Are not biologically based
Are determined by upbringing 1 2 3 4 5 Are not determined by upbringing
Group people into distinct camps 1 2 3 4 5 Do not group people into distinct camps
Tell you a lot about someone's personality 1 2 3 4 5 Do not tell you a lot about someone's personality

Main Study 2: “Bogus” Questions for Both Conditions

11th graders would likely find this article:

				Neither boring				
				Nor interesting				
Boring	1	2	3	4	5	6	7	Interesting

In terms of reading level, for average 11th graders, this article would be:

- Too easy
- Just right
- Too difficult

This article would be most interesting to students who are interested in (select all that apply):

- English
- History
- Neuroscience
- Biology
- Psychology
- Physics
- Chemistry
- Mathematics
- Sociology
- Political science

Main Study 2 Transition Page

Thank you! Next, you will be asked to answer some attitudinal and demographic questions about yourself.

Main Study 2 Dependent Variables and Political Controls

How interested are you in politics and public affairs?

- ☐ Extremely interested
- ☐ Very interested
- ☐ Somewhat interested
- ☐ Not too interested
- ☐ Not at all interested

People vary in how much they follow politics in the news. How often do you read, watch, or listen to news about politics, in general?

- [Never
- About once a year
- Several times a year
- About once a month
- About once a week
- Several times a week
- Daily (Less than 30 minutes a day, on average)
- Daily (30 minutes or more a day, on average)]

In deciding where to live, how important would it be to you to live in a place where most people held political views similar to your own?

- Somewhat
important
- Not at all important (1) (2) (3) (4) (5) (6) (7) Extremely important

How do you think you would react if a member of your immediate family told you they were going to marry a [liberal/conservative]? Would you be generally happy about this, generally unhappy, or wouldn't it matter to you at all?

- Very Neither happy nor Very
Unhappy Unhappy happy
(1) (2) (3) (4) (5) (6) (7)

Would you generally like to meet and get to know people with [liberal/conservative] beliefs?

- Really dislike Dislike Dislike a little Neutral/Unsure Like a little Like Really like
1 2 3 4 5 6 7

We'd like to get your feelings toward some of the major political groups in America today. To be clear, “conservative” means all people who are conservative (not just conservative politicians); and “liberal” means all people who are liberal (not just liberal politicians).

Ratings between 50 degrees and 100 degrees mean that you feel favorable and warm toward the people. Ratings between 0 degrees and 50 degrees mean that you don't feel favorable toward the people and that you don't care too much for these people. You would rate the person at the 50 degree mark if you don't feel particularly warm or cold toward the people.

Approximate meanings for different numbers:

100 = Very warm or favorable feeling

85 = Quite warm or favorable feeling

70 = Fairly warm or favorable feeling

60 = A bit more warm or favorable than cold feeling

50 = No feeling either way

40 = A bit more cold or unfavorable than warm feeling

30 = Fairly cold or unfavorable feeling

15 = Quite cold or unfavorable feeling

0 = Very cold or unfavorable feeling

How do you feel toward **liberals**?

Very cold or unfavorable Very warm or favorable

0 ----- 50----- 100

How do you feel toward **conservatives**?

Very cold or unfavorable Very warm or favorable

0 ----- 50----- 100

Main Study and Pilot Study 2: Demographics

Demographic Questionnaire

In what year were you born?

Please select your gender.

[Drop-down menu: male, female, non-binary,]

Thinking back to the past year, what was your family's annual income? **[Study 2 main study only]**

[Drop down menu:

<\$20,000

\$20,000 - \$39,999

\$40,000 - \$69,999

\$70,000 - \$99,000

\$100,000 - \$149,999

\$150,000 - \$249,999

\$250,000 or more]

What is the highest level of education you have completed? **[Study 2 main study only]**

[Drop down menu:

Less than high school diploma

High school diploma or GED

Some college but no degree

2-year degree (e.g., AA, AS)

4-year degree (e.g., BA, BS, AB)

Master's degree (e.g., MA, MS, MSW)

Professional degree (e.g., MD, JD)

Doctorate Degree (e.g., Ph.D., Ed. D.)]

Which of these categories describe you?

[Drop down menu:

White

Hispanic, Latino or Spanish origin

Black or African American

Asian

Native American, American Indian or Alaskan Native

Middle Eastern or North African

Native Hawaiian or Other Pacific Islander

Mixed race (two or more of the above)

Other _____]

Where would you place yourself on this political spectrum?

- Extremely Liberal
- Liberal
- Slightly liberal
- Moderate or Middle of the Road
- Slightly conservative
- Conservative
- Extremely conservative

Generally speaking, do you usually think of yourself as a Democrat, a Republican, an Independent, or what?

- [1. Democrat
- 2. Republican
- 3. Independent
- 4. Something else:_____]

[One of these follow up questions will pop up based on response to above:

If 1: Would you call yourself a strong Democrat or a not very strong Democrat?

Strong Democrat

Not strong Democrat

If 2: Would you call yourself a strong Republican or a not very strong Republican?

Strong Republican

Not strong Republican

If 3 or 4: Do you think of yourself as closer to the Republican Party or to the Democratic Party?

Closer to the Republican Party

Closer to the Democratic Party

Neither]

What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion? **[Study 2 main study only]**

None/No religion

Protestant

Catholic

Evangelical Christian

Christian (other)

Jewish

Muslim

Buddhist

Native American religion

Hindu

Another religion _____

How important would you say religion is in your own life? **[Study 2 main study only]**

Not very important

Fairly important

Very important

Which of these categories comes closest to the place you where you currently live? **[STUDY 2 MAIN STUDY ONLY]**

- In open country but not on a farm
- On a farm
- In a small city or town (under 50,000)
- In a medium-size city (50,000 – 250,000)
- In a suburb near a large city
- In a large city (over 250,000)
- Other
- Don't know

In what state (or region) do you live?

[Drop-down menu: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, US Virgin Islands, Other territory or region, I do not live in the U.S.]

How interested are you in politics and public affairs? **[PILOT STUDY ONLY; ASKED ON PREVIOUS PAGE IN MAIN STUDY]**

- ☐ Extremely interested
- ☐ Very interested
- ☐ Somewhat interested
- ☐ Not too interested
- ☐ Not at all interested

People vary in how much they follow politics in the news. How often do you read, watch, or listen to news about politics, in general? **[PILOT STUDY ONLY; ASKED ON PREVIOUS PAGE IN MAIN STUDY]**

- [Never
- About once a year
- Several times a year
- About once a month
- About once a week
- Several times a week
- Daily (Less than 30 minutes a day, on average)
- Daily (30 minutes or more a day, on average)]

Debriefing Statement for Pilot Study 2

Debriefing

Thank you for participating in this study!

The purpose of this study was to determine whether the message of the article was understood by participants. You read one of two versions of an article that described ideology as fixed and biological (“essentialized”) or changeable and less clearly defined (“less essentialized”). In either case, **the article you read was fabricated/made up** by researchers. It was necessary to imply that the article was real, because we are ultimately interested in the impact of such information on people’s attitudes. Additionally, we were **primarily interested in your assessment of the articles message**, rather than your ratings of its appropriateness for a high school audience.

Based on the results of this study, the article you read may be used in future research. Your participation in this study helps this program of research move forward.

In this study, research was described that may reflect some scientists’ actual views of political identity. However, this is an area that is still being researched and explored. If you are interested in some perspectives related to what you just read, please see the following links:

https://www.washingtonpost.com/news/monkey-cage/wp/2013/11/27/why-biology-belongs-in-the-study-of-politics/?utm_term=.3174eade6b2f

<http://www.psypost.org/2017/01/people-believe-political-views-biological-basis-intolerant-study-finds-46897>

We ask that you please not discuss this study with other [students (for undergraduate audience)/individuals (for MTurk audience)], as that may bias individuals who may be future participants in this study. If you have any questions regarding this particular research project or psychological research in general, please feel free to contact:

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For information or questions regarding research ethics and guidelines, please contact:

Office of Research Services
6525 N. Sheridan Road
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(773) 508-2689
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Debriefing Statement for Main Study 2

Debriefing

Thank you for participating in our study! The purpose of this study was to look at the links between beliefs about political ideology and attitudes toward political outgroups. You read one of two versions of an article that purported ideology to be fixed and biological (“essentialized”) or malleable and less clearly defined (“less essentialized”). You then reported your attitudes toward people who share, or do not share your ideology. It was these attitudes we were primarily interested in, rather than your rating of the article’s appropriateness for a high school audience.

This study involved deception. **The article you read was made up** by researchers. It was necessary to temporarily deceive study participants in order to directly investigate relationship between beliefs about the nature of politics, and attitudes towards others. The article reported research that does reflect some scientists’ views of political identity. However, this is an area that is still being researched and explored. If you are interested in some perspectives related to what you just read, please see the following links:
https://www.washingtonpost.com/news/monkey-cage/wp/2013/11/27/why-biology-belongs-in-the-study-of-politics/?utm_term=.3174eade6b2f
<http://www.psypost.org/2017/01/people-believe-political-views-biological-basis-intolerant-study-finds-46897>

We ask that you not discuss this study with other workers, as that may bias individuals who may become participants in this study at a later time. If you have any questions regarding this particular research project or psychological research in general, please feel free to contact:

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APPENDIX C

ADDITIONAL ANALYSES FROM STUDY ONE

Summary of Additional Analyses

While all formal hypotheses from Study 1 were fully addressed in Chapter 3, several of the exploratory research questions entail additional analyses that were not easily incorporated into the structure of the main text. The results of these analyses are presented in this Appendix. These include Research Question 9 (“Intergroup Contact and Political Participation”), Research Question 7 (“Interaction between Intergroup Contact Quantity and Quality”), and parts of Research Question 3 (“Results Relating to Disgust Sensitivity”). Other analyses are addressed here because of discoveries that occurred during the course of analysis. First, the exploratory analysis of the political essentialism scale is described (“Exploratory Factor Analysis of the Political Essentialism Scale”). An alternate set of regression results, using the political essentialism factors that were derived from exploratory factor analysis, is presented in the section “Regression Results Using Exploratory Factor Analysis-Derived Subscales.” Finally, an exploratory test of whether essentialism (and its subscales) is as an *independent* predictor of polarization outcomes, controlling for a host of other measured variables, is presented under “Robustness of Essentialism as a Predictor Using Maximal Controls.”

Intergroup Contact and Political Participation

The primary analyses examined effects on intergroup relations: the attitudes ideological groups have toward each other, and their preferred social distance from each other. However, it is possible that while intergroup contact can increase tolerance and affection between ideological groups (Mutz, 2002a), it can also produce the effect of decreasing political participation (Mutz, 2002b). This set of analyses explore the potential adverse effect of intergroup contact on political participation.

A set of items asked whether or not subjects participated seven different political activities (e.g., voting, volunteering for a campaign, etc.) in the past year. Table 36 summarizes the responses to these questions. A majority reported voting in the 2016 election (84%) but fewer than 20% participated in each of the other categories of participation. Values on the past political participation variable range from 0 to 7, with a mean of 1.71.

Table 36: Forms of political participation

Item	N	Number (%) who selected yes
Voted in 2016 election	384	323 (84.1%)
Bumper sticker or other signage	385	68 (17.7%)
Volunteered for a campaign	384	19 (4.9%)
Contributed to a campaign	383	47 (12.2%)
Contacted national representative	384	72 (18.8%)
Contacted a local representative	385	72 (18.7%)
Participated in a protest	383	52 (13.6%)

A regression model was built with intergroup contact as a predictor, along with the set of primary covariates¹, and number of political activities in the past year as the outcome. Identical

¹ Preliminary analyses revealed that, while completely uncorrelated with essentialism and the affective polarization variables, education and income were significantly correlated with intention to vote in 2018, one of the two variables of concern for these analyses. Therefore, these two variables are included as controls here as well.

regression equations were run, replacing intergroup contact quantity with intergroup contact quality (these were not run simultaneously, so that null results could not be interpreted as the two variables' effects suppressing each other). As demonstrated in Table 37, in Models 1 and 2 there were no significant effects of intergroup contact quantity ($\beta = -.03, p = .58$) or quality ($\beta = .01, p = .84$) on past year's political participation. Model 3, tested whether quantity and quality interact to predict political participation (as in, only people with a large amount of high-quality intergroup contact would show reduced participation). The interaction term was also nonsignificant, $\beta = .066, p = .38$. Finally, regression model tested whether political essentialism itself significantly influences political participation (Model 4). This relationship was also nonsignificant, $\beta = .06, p = .24$.

Table 37. Predicting political participation from intergroup contact quality, quantity, and their interaction; and political essentialism

	Model 1		Model 2		Model 3		Model 3	
	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)
IC quantity	-.002	(.004)			-.004	(.00)		
IC quality			.013	(.06)	.040	(.06)		
QuantityX Quality					.088	(.07)		
Essentialism							.121	(.10)
Ideology	-.398*	(.16)	-.331*	(.17)	-.310+	(.17)	-.437**	(.16)
Party	.024	(.15)	-.112	(.16)	-.126	(.16)	.061	(.15)
Order	.002	(.15)	.086	(.15)	.043	(.15)	.024	(.15)
Race	.110	(.20)	-.014	(.21)	.008	(.21)	.122	(.15)
Gender	.148	(.15)	.047	(.15)	.059	(.15)	.134	(.20)
Age	.052	(.08)	.046	(.08)	.027	(.08)	.077	(.15)
Religiosity	.147+	(.09)	.153+	(.09)	.144	(.09)	.160+	(.08)
Income	.104	(.08)	.130	(.08)	.105	(.08)	.114	(.09)
Education	.195*	(.08)	.162*	(.08)	.177	(.08)	.176	(.08)
Constant	1.702***	(.14)	1.543**	(.32)	1.49***	(.33)	1.224	(.38)
<i>N</i>	373		349		347		376	
<i>Adjusted R</i> ²	.058		.062		.069		.057	

+ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Another item asked about a behavioral intention: the intention to vote in the 2018 midterm election, on a scale from 0 (definitely will not) to 10 (definitely will). Mean level of intention was 7.69 ($SD = 2.86$), with a median of 9.0. Following Pew (2016), selecting 9 or 10 on this scale is considered an indicator of actual vote intention². By this metric, 208 (54%) of participants strongly intend to vote, while 176 (46%) do not. This binary vote intention variable (1=strong intention to vote, 0=not strong intention to vote) serves as the dependent variable of interest for the following analyses.

Logistic regression was used to test whether intention to vote in 2018 was predicted by intergroup contact quality, quantity, and/or political essentialism. These regression analyses were structured similarly to the past political participation outcome, with each predictor entered separately, and the covariates remaining the same. Results indicated that intergroup contact quantity was marginally related to reduced intention to vote, $B = -.011$ ($SE=.006$), $Wald=3.621$, $p = .057$. However, there was no relationship between intergroup contact quality and intention to vote, $B = .076$, $SE=.092$, $Wald=.683$, $p = .41$; nor between essentialist beliefs and intention to vote, $B = -.198$ ($SE=.156$), $Wald = 1.624$, $p = .20$.

Table 38. Predicting intention to vote in 2018 election

	Model 1		Model 2		Model 3	
	<i>b</i>	(SE)	<i>b</i>	(SE)	<i>b</i>	(SE)
IC quantity	-.011+	(.006)				
IC quality			-.076	(.092)		
Essentialism					-.198	(.156)
Ideology	-.032	(.242)	-.009	(.254)	.015	(.241)
Party	-.412+	(.229)	-.420+	(.243)	-.473	(.228)
Order	-.161	(.221)	-.193	(.227)	-.147	(.220)
Race	.029	(.298)	.083	(.314)	-.053	(.296)

² In the Pew (2016) study, 75% of those who selected 9 or 10 on a vote likelihood scale were verified as having actually voted, vs. 34% of those who selected 7 or 8.

Gender	-.072	(.224)	-.002	(.230)	-.072	(.223)
Age	.544***	(.121)	.467***	(.123)	.498***	(.120)
Religiosity	.065	(.132)	.068	(.137)	.056	(.132)
Income	.276*	(.119)	.276*	(.122)	.277*	(.118)
Education	.205+	(.113)	.178+	(.115)	.219	(.112)
Constant	.340	(.217)	-.267	(.486)	.743	(.575)
<i>N</i>	381		357		384	
<i>Cox & Snell R²</i>	.117		.097		.113	

+p <.10, *p <.05, **p <.01, ***p <.001

Potential Interaction between Intergroup Contact Quantity and Quality

Research Question 7 regarded the interaction between intergroup contact quantity and quality. That is, it was predicted that intergroup quality may negatively influence essentialism, and lessen affective polarization, but only among those who have a large quantity of intergroup contact. To test this hypothesis, the intergroup contact quantity and quality variables were centered, normalized, and multiplied together to form an interaction term. Three regression models tested the significance of this interaction with three different dependent variables: essentialism, affective polarization, and desire for social distance, while controlling for the primary control variables.

Results of the relevant regression analyses are displayed in Table 39. There is no significant interaction between quality and quantity when predicting any of the three outcomes. When controlling for each other, the intergroup contact quantity and quality variables both remained significant unique predictors of affective polarization and desired social distance. However, only intergroup contact quality significantly predicted essentialism.

Table 39. Predicting essentialism, ingroup preference, and desire for social distance with the interaction between intergroup contact quantity and quality

	DV: Essentialism		DV: In-group preference		DV: Desire for social distance	
	Unst. B	SE	Unst. B	SE	Unst. B	SE
Ideology	.142	(.111)	1.626	(3.512)	-.104	(.122)
Party	-.194+	(.106)	-5.131	(3.341)	-.026	(.116)
Order	.132	(.100)	-7.516*	(3.141)	-.105	(.109)
Gender	-.077	(.101)	-6.160+	(3.178)	-.244*	(.110)
Race	-.308*	(.138)	-17.515***	(4.362)	-.358*	(.151)
Age	-.088+	(.052)	2.974+	(1.628)	-.056	(.056)
Religiosity	.043	(.060)	1.689	(1.892)	.004	(.066)
IC quantity	-.044	(.051)	-5.628**	(1.606)	-.179**	(.056)
IC quality	-.291***	(.052)	-4.671**	(1.625)	-.416***	(.056)

IC quantity x quality	.059	(.047)	-.435	(1.491)	-.016	(.052)
Constant	-.126+	(.069)	44.148**	(2.176)	4.051***	(.075)
<i>N</i>	356		356		356	
<i>Adjusted R</i> ²	.023		.135		.215	

+p < .10, *p < .05, **p < .01, ***p < .001

Disgust Sensitivity and Ideology

Regression analyses were run to test whether disgust sensitivity is moderated by ideology in predicting in-group preference, desire for social distance, and/or essentialism. It was considered that disgust motivates only conservatives' dislike of liberals, as disgust sensitivity plays a role in upholding traditional sexual morality (Crawford et al. 2014). To run these analyses, disgust sensitivity and ideology were centered and normalized, then multiplied together to form an interaction term. Results of these regression analyses are presented in Table 40 below.

Table 40. Interaction between disgust sensitivity and ideology in predicting outcomes

	DV = In-group preference		DV = Desire for social distance		DV = Essentialism		SE
	Unst. B	SE	Unst. B	SE	Unst. B	SE	
Party	-6.378+	3.327	-.038	.118	-.131+	.074	
Order	-8.317*	3.269	-.157	.116	.050	.073	
Gender	-6.726*	3.328	-.198+	.118	.001	.074	
Race	-19.424***	4.378	-.448*	.156	-.233*	.097	
Age	2.285	1.686	-.129*	.060	-.091*	.037	
Religiosity	.341	1.986	-.076	.071	-.021	.044	
Ideology	1.895	3.546	-.123	.126	.093	.079	
Disgust	1.714	1.706	.144*	.061	.149***	.038	
Ideology x Disgust	1.098	1.602	.060	.057	.015	.036	
(Constant)	42.990***	2.188	4.015***	.078	3.578***	.049	
N	378		378		378		
Adj. R ²	.084		.064		.058		

+p < .10, *p < .05, **p < .01, ***p < .001

While the interaction between disgust sensitivity and ideology did not emerge for any outcome, the analyses did reveal some interesting results. The association between disgust sensitivity and essentialism, which was observed at the bivariate level (See Chapter 3), was replicated. Controlling for other factors did not erase the association between these two

variables; in fact, evidence suggests a quite significant relationship, $\beta = .208$, $t(368) = 3.929$, $p < .001$.

A positive association was also found between disgust sensitivity and desire for social distance in the regression model, $\beta = .125$, $t(368) = 2.370$, $p = .018$. This association was non-significant at the bivariate level. Therefore, there may be a connection between disgust sensitivity and interest in avoiding political others. However, this does not extend to ingroup preference. Disgust sensitivity may be more closely associated with preferred *behavioral* responses to political others, rather than evaluative *affect* toward them.

Exploratory Factor Analysis of the Essentialism Scale

Because confirmatory factor analysis resulted in an inconclusively adequate level of fit, an exploratory factor analysis was run to derive a data-driven factor model for the questionnaire. This analysis was run to determine if a different factor structure could better explain the set of items. If a substantially different, illuminating factor structure emerges, it would be useful to re-run the primary regression analyses substituting these data-driven subscales.

Preliminary analyses. The ratio of participants to variables is 19.25 (385/20), which suggests a sufficient sample size for exploratory factor analysis (Field, 2009). The sample size also exceeds the minimum 200 suggested by Fabrigar et al. (1999) for a set of items with moderate communalities.

To perform the exploratory factor analysis, a maximum-likelihood procedure was selected, following popular guidelines (Fabrigar et al., 1999). Because the subfactors of essentialism were expected to be correlated, an oblique, direct oblimin rotation was selected. All “anti-essentialism” items were reverse-scored prior to factor analysis, to simplify the interpretation of results.

Initially, all 20 items were entered into factor analysis. A preliminary check of item communalities confirmed that Item 2 shared too little variance with the rest of the scale, with a communality of .185 (below .200 cutoff; Child, 2006). All other items had communalities $>.300$ (average = .547). Therefore item 2 was dropped, as in all preceding analyses, and the remaining 19 items were analyzed.

Selecting number of factors to extract. To determine the number of factors to extract, I was guided primarily by parallel analysis (Horn, 1965). For this analysis, I used syntax developed by O’Connor (2000, 2018) for parallel analysis in SPSS. The program generated

1,000 parallel datasets, which were random permutations of the actual raw data, with the same number of variables and cases. The program then performed principal axis factoring on the random datasets, and reported the mean eigenvalues (and 95% confidence interval around those eigenvalues) found by factor analyzing those random datasets. This produces an estimate of eigenvalues that might be expected from random chance alone. Six eigenvalues derived from the “real” data exceeded the upper limits of the 95% confidence intervals around the largest six eigenvalues of the random data. Therefore, this parallel analysis indicated that six factors in the data were significant, at the $p < .05$ level.

Methods and sample sufficiency. I ran an exploratory factor analysis on the 19 items, using maximum likelihood extraction and direct oblimin rotation, requesting a 6-factor solution. Maximum likelihood is preferred when trying to determine accurate parameter estimates, rather than simply describing the data within the sample (Tabachnik & Fidell, 2013). An oblique rotation was requested, as the factors are theoretically expected to correlate (and indeed, the theoretically-proposed factors did, as much as $R = .57$, see Table 17).

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .802, suggesting the data are suitable for factor analysis (Kaiser, 1974). This was confirmed by Bartlett’s test of sphericity, $\chi^2(171) = 2665.15, p < .001$, which indicates the data contains sufficiently large correlations for factor analysis.

Main EFA results. The initial six-factor solution produced factors with a mostly interpretable and “clean” pattern of loading. However, item 16 failed to load $> .35$ on any single factor, and thus was dropped. A 6-factor solution was then requested for the remaining 18 items. The resulting pattern matrix revealed a clean 6-factor solution, with all items loading $> .40$ on

only one factor (see Table 41). The six factors explained 69.6% of the total variance in scale responses.

Alternate models. Before accepting this six-factor model, two alternate models were considered: a five-factor model and a two-factor model. Several indicators suggested that six factors may be too many. One is that the 6th factor had an eigenvalue <1.0 (.820), failing to meet a commonly cited minimum “cutoff” for factors to retain, despite being deemed significant via parallel analysis. Also, an examination of the pattern of eigenvalues (and the resulting scree plot) indicate a relatively drop-off in eigenvalues between the 2nd and 3rd factor (3.316 to 1.765) between the 5th and 6th factor (1.293 to .802), suggesting a 5- or 2-factor solutions may also be justifiable.

A five-factor solution, using the same specifications as the six-factor solution (ML extraction, direct oblimin), resulted in some cross-loadings (Item 1 and item 11 loaded $>.40$ on two factors), and less substantively interpretable factors. A two-factor solution resulted in six items that failed to load on either factor, and explained less than half of the variance in the data (39.9%). After eliminating these six items, the two factors still explained less variance in the 13 remaining items (51.6%) than the original 6-factor model explained in 18 items (69.6%). Therefore, the 6-factor solution is retained: it provides the most interpretable model, with the largest amount of variance explained, for the greatest number of variables.

The six-factor solution in many ways resembled the original theoretically-proposed structure (see Table 41). All four items initially labelled as “informativeness” items loaded on Factor 1; all 4 “biological basis” items loaded on Factor 2. Factor 4 represented the three remaining immutability items (omitting only Item 2, which was dropped), and Factor 6

Table 41. Pattern of factor loadings for 6-factor exploratory model

Item #	Factors					
	1 Informativeness	2 Biological basis	3 Pro-Social determinism anti-bio basis	4 Immutability	5 Anti-Social determinism	6 Discreteness
1	0	0	0	0	0	0.763
3	0.836	0	0	0	0	0
4	0	0	0	0	-0.590	0
5	0	0.768	0	0	0	0
6*	0	0	0	0	0	0.532
7*	0	0	0	0.542	0	0
8*	0.541	0	0	0	0	0
9*	0	0	0.703	0	0	0
10*	0	0.834	0	0	0	0
11	0	0	0	0	0	0.429
12	0	0	-0.308	0.573	0	0
13	0.842	0	0	0	0	0
14	0	0	0	0	-0.739	0
15	0	0.631	-0.325	0	0	0
17*	0	0	0	0.705	0	0
18*	0.356	0	0	0	0	0
19*	0	0	0.472	0	0	0
20*	0	0.648	0	0	0	0

*Items worded in an anti-essentialist direction. See Appendix A for item wordings. Loadings with an absolute value <.30 are replaced by 0 for easier interpretation.

represented the remaining “discreteness” items (omitting only Item 16, which was dropped). The only major divergence from the theoretically-proposed factor structure was that the “social determinism” items were distributed across two factors: Factor 3, on which Items 9 and 19 loaded positively; and Factor 5, on which items 14 and 4 loaded negatively.

Because all anti-essentialism items were reverse-scored, the negative loadings on Factor 5 do not represent a simple reverse-scoring issue. Rather, this factor appears to represent an “anti-social determinism” factor, where higher scores reflect disagreement with two particular social deterministic items. Factor 3 is largely represented by the two reverse-scored items about how one is “raised.” A biological basis item (Item 13, loading = $-.325$) and an immutability item (Item 12, loading = $-.308$) also borderline load onto this Factor. Therefore, Factor 3 may represent a more general belief that ideology is socially determined, and *thus* neither biologically based nor immutable. In contrast, Factor 5 is represented (negatively) by two items, 14 and 4, that explicitly state that ideology is determined before “age 18.” Because the two items load negatively on this factor, Factor 5 may represent the more specific rejection of the notion that ideology is “fixed” by “age 18.”

The six factors correlated weakly to moderately; see Table 42. As in the theoretically-derived analysis, informativeness and discreteness were moderately strongly associated ($R=.51$), and biological basis beliefs corresponded positively with immutability beliefs ($R=.34$). Surprisingly, the “pro” and “anti” social determinism factors were uncorrelated ($R=-.03$).

Table 42. Correlations between EFA-derived factors

Variables	Inf.	Bio.	Pro-Soc.	Imm.	Anti-Soc.	Dis.
Informativeness	1.0					
Biological basis	.065	1.0				
Social determinism	.223	-.149	1.0			
Immutability	.261	.338	.124	1.0		
Anti-social determinism	-.149	-.188	-.033	-.171	1.0	
Discreteness	.507	-.041	-.018	.312	-.058	1.0

Regression Analysis Using Empirically-Derived Factors

The exploratory factor analysis suggested some slight modifications to the initial, theoretically-derived 5-subscale model. Therefore, factor scores were generated using regression for each of the six EFA-derived factors. Then, the primary regression analyses predicting in-group preference and desire for social distance (see Tables 19 and 20 in the main text) were re-run with these six factor scores in place of the original five subscales.

Results are displayed in Table 43. They largely confirm what was found in the original regression analyses based on the initial subscales. Both with and without controls, discreteness

Table 43. Predicting ingroup preference with EFA-derived subscales

	Model 1		Model 2	
	<i>b</i>	(SE)	<i>b</i>	(SE)
EFA-Informativeness	8.582***	(2.151)	7.534***	(2.102)
EFA-Biological basis	-2.067	(1.911)	-1.155	(1.885)
EFA- Pro-Social determinism	2.467	(1.888)	1.893	(1.856)
EFA- Immutability	1.440	(2.159)	-0.73	(2.123)
EFA- Anti-social determinism	7.270***	(1.800)	6.305**	(1.812)
EFA- Discreteness	11.44***	(2.430)	12.458***	(2.397)
Ideology			1.091	(3.06)
Party			-5.166+	(2.87)
Order			-8.550**	(2.80)
Gender			-0.473	(2.93)
Race			-15.89***	(3.79)
Age			1.045	(1.48)
Religiosity			2.33	(1.70)
Constant	49.79**	(1.43)	44.15***	(1.86)
<i>N</i>	385		385	
<i>Adjusted R</i> ²	.272		.320	

p* < .05, *p* < .01, ****p* < .001. Note: Race is coded as +.5=White and/or Hispanic; -.5=Black, Asian or Other (Preliminary analyses suggested that this was the starkest racial contrast). Gender was coded +.5=male/other; -.5=female. Ideology is scored as higher=more conservative; party is scored such that -.5 = more Democrat-identified, +.5 = more Republican-identified. Higher scores on age = older; higher scores on religiosity = more religious. Order was coded such that -.5=DVs were measured first, +.5=Essentialism scale measured first.

and informativeness are the most powerful predictors of in-group preference. Immutability and biological basis have no effect. The “splitting” of social determinism into two factors highlights that the effect of social determinism on in-group preference is largely driven by Factor 5 (thus, items 4 and 14). People who *disagree* that ideology is fixed by age 18 seem to display stronger affective polarization. In other words, people who do believe that ideology is fixed by age 18 display less polarization. The regression analysis with 6 factors and controls explained 32% of the variance in in-group preference (adjusted $R^2=.320$). This does not improve upon the variance explained by the original theoretically-derived subscales (adjusted $R^2=.339$).

When predicting desire for social distance, results again resembled those from the initial regression analysis, see Table 44. Informativeness was the overwhelmingly largest predictor of desire for social distance. Discreteness also explained some additional variance. As in predictions of in-group preference, the anti-social determinism factor positively related to desire social distance. Those who believe that ideology is fixed by age 18 had less desire to remain socially isolated from those with opposing views. In contrast to the original regression analysis, the EFA-derived immutability factor significantly predicted desired social distance (though this relationship dropped to non-significance after controlling for the primary covariates). The regression analysis with 6 factors and controls explained 35.7% of variance in desire for social distance (*adjusted $R^2 = .357$*), which does not improve upon the variance explained by the original theoretically-derived subscales (*adjusted $R^2 = .379$*).

Table 44. Predicting desire for social distance with EFA-derived subscales

	Model 1		Model 2	
	<i>b</i>	(SE)	<i>b</i>	(SE)
EFA- Informativeness	0.536***	(.07)	.507***	(.07)
EFA- Biological basis	0.004	(.06)	0.025	(.06)

EFA- Pro-Social determinism	0.074	(.06)	0.052	(.06)
EFA- Immutability	0.168*	(.05)	0.137+	(.07)
EFA- Anti-social determinism	0.138*	(.06)	0.152*	(.06)
EFA- Discreteness	0.163*	(.08)	0.201*	(.08)
Ideology			-0.158	(.10)
Party			0.038	(.10)
Order			-0.166+	(.10)
Gender			-0.046	(.10)
Race			-0.260*	(.13)
Age			-0.141**	(.05)
Religiosity			-0.007	(.06)
Constant	4.178**	(0.48)	4.081**	(.063)
<i>N</i>	385		385	
<i>Adjusted R²</i>	.328		.357	

* $p < .05$, ** $p < .01$, *** $p < .001$. Note: Race is coded as +.5=White and/or Hispanic; -.5=Black, Asian or Other (Preliminary analyses suggested that this was the starkest racial contrast). Gender was coded +.5=male/other; -.5=female. Ideology is scored as higher=more conservative; party is scored such that -.5 = more Democrat-identified, +.5 = more Republican-identified. Higher scores on age = older; higher scores on religiosity = more religious. Order was coded such that -.5=DVs were measured first, +.5=Essentialism scale measured first.

The EFA-derived, six-factor model does not provide improved explanatory power for the primary dependent variables. In fact, the adjusted values are lower when using these factor scores than the R^2 values originally proposed subscales ($R^2_{\text{exploratoryfactors}} = .32$ vs. $R^2_{\text{Original}} = .34$). Therefore, additional analyses using this six-factor model were not pursued. Similarly, the six empirically derived factors did not explain any additional variance in desire for social distance ($R^2_{\text{exploratoryfactors}} = .36$ vs. $R^2_{\text{Original}} = .38$). Therefore, additional analyses were not pursued using these data-driven factors.

Robustness of Political Essentialism as a Predictor

Several analyses confirm there a clear relationship between political essentialism and measures of partisan antipathy, including both affective polarization and a desire for social distance. Mediational results suggested this relationship were robust to the inclusion of controls, *including* the proposed political correlates. That is, even when controlling for political extremity, for example, there remained a significant unique effect of political essentialism on in-group preference. This was not initially hypothesized, as it was predicted that effect of political variables on intergroup attitudes may “flow through” essentialism beliefs, and thus there would be no unique effect of essentialism after controlling for them.

To explore for a “unique” contribution of essentialism beliefs, beyond what is explained by typical political variables, a series of regression analyses were run. These analyses replicate the main regression analyses, but also include many political correlates. The complete results are summarized in Table 45. As shown in Model 1, political extremity is clearly a strong unique predictor of affective polarization, $\beta = .407, p < .001$. Biased news consumption is also a significant positive predictor, $\beta = .158, p = .003$. Interestingly, race and order are still unique predictors ($p < .01$) even with all of these controls entered. Most importantly, overall essentialism remains a strong unique predictor, $\beta = .234, p < .001$. Model 2 confirms that the unique positive effect of the essentialism scale is largely driven by the discreteness factor, $\beta = .314, p < .001$, and informativeness factor, $\beta = .180, p = .002$. In contrast to the results without controlling for political covariates (see Table 19 in the main analyses), biological basis emerges as a unique negative predictor of affective polarization, $\beta = -.112, p = .020$. Social determinism is also negatively associated with affective polarization, but not significantly, $\beta = -.074, p = .105$.

Table 45. The effect of essentialism overall scale and subscales affective polarization, controlling for all primary controls and political correlates

	Model 1: Overall scale		Model 2: 5 Theoretically-proposed Subscales	
Variable	Coefficient	SE	Coefficient	SE
Essentialism overall scale	10.776***	2.28		
Discreteness			10.109***	1.80
Immutability			.028	1.59
Informativeness			5.798**	1.82
Social determinism			-2.418	1.49
Biological basis			-3.721*	1.59
Ideology	3.854	3.59	4.485	3.27
Party	-5.338+	3.10	-6.508*	2.82
Order	-8.464**	3.05	-5.933	2.80
Gender	-2.598	3.12	2.291	2.91
Race	-11.545**	4.22	-10.442*	3.85
Age	1.645	1.65	1.196	1.51
Religious importance	1.354	1.92	2.196	1.75
Ideological extremity	17.090***	2.13	15.224*	1.97
Political interest	-2.109	1.73	-1.764	1.57
News frequency	1.289	1.31	-.363	1.22
Selective News	9.678**	3.27	7.099*	3.00
Disgust	-1.022	2.35	-2.708	2.16
Constant	-26.53+	14.43	32.69*	12.54
Overall adj R ²	.360		.472	

*p <.05, **p <.01, ***p <.001

Table 46 shows two identical models, but predicting desire for social distance. Once again, in Model 1, Essentialism remains a powerful unique predictor, $\beta = .388$, $p < .001$. In fact, the β statistic suggests this is a stronger predictor than ideological extremity, $\beta = .288$, $p < .001$. In contrast to predictions of affective polarization, overall frequency of news consumption is a significant predictor ($\beta = .116$, $p = .028$) while selective news consumption is not ($\beta = .076$, $p = .15$). In this model as well, when controlling for other covariates, disgust emerges as a significant predictor of desired social distance, $\beta = .098$, $p = .047$.

Table 46. The effect of essentialism overall scale and subscales desire for social distance, controlling for all primary controls and political correlates

Variable	Model 1 (overall scale)		Model 2 (subscales)	
	Coefficient	SE	Coefficient	SE
Essentialism overall scale	.637***	.08		
Discreteness			.162*	.07
Immutability			.107+	.06
Informativeness			.462***	.07
Social determinism			-.111*	.05
Biological basis			.009	.06
Ideology	-.028	.13	-.010	.12
Party	.024	.11	-.006	.10
Order	-.236*	.11	-.166	.10
Gender	-.019	.11	.062	.11
Race	-.186	.15	-.107	.14
Age	-.112+	.06	-.143**	.05
Religious importance	-.065	.07	-.041	.06
Ideological extremity	.433***	.08	.356***	.07
Political interest	.038	.06	.032	.06
News frequency	.102*	.05	.077+	.04
Selective News	.166	.12	.058	.11
Disgust	.166*	.08	.115	.08
Constant	-.407	.509	2.479***	.46
Overall adj R ²	.376		.455	

* $p < .05$, ** $p < .01$, *** $p < .001$

In Model 2, it is clear that informativeness is strongly related to desired social distance, $\beta = .401$, $p < .001$. Discreteness is also positively associated with this outcome, $\beta = .140$, $p = .014$; and immutability is marginally positively predictive, $\beta = .093$, $p = .065$. Social determinism is negatively predictive of desire for social distance, $\beta = -.095$, $p = .04$. These results largely mirror the main regression results without controlling for political covariates, see Table 20 in Chapter 3. Results also suggest that informativeness beliefs are more strongly associated with desired social distance than political extremity ($\beta = .237$, $p < .001$), but other facets are less so.

Overall, these additional analyses suggest that essentialism is a unique predictor of affective and behavioral polarization. People will equally extreme views, and equally congenial

political news consumption patterns, vary in their orientation toward political others. This variation correlates significantly with degree of political essentialism, suggesting a unique relationship between lay beliefs and polarization.

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