The cognitive costs of being an ideological misfit

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Abstract

An impressive quantity of data suggests that ideologically conservative individuals are more closed-minded and cognitively rigid than ideologically liberal individuals are (Jost et al., 2003). Yet, the vast majority of the work supporting this conclusion was conducted in communities where ideological conservatives are in the numerical minority. The current dissertation project examines whether being in the numerical minority, rather than being ideologically conservative, fosters increased cognitive rigidity. I investigated this in 3 studies. In Studies 1 and 2, I examined large archival national samples of liberals and conservatives who lived in communities that varied in their degree of conservatism and who completed self-report measures of cognitive style. In Studies 3a and 3b, I experimentally manipulated a sense of ideological misfit and then assessed self-reported cognitive rigidity in addition to nonverbal behavioral rigidity and verbal rigidity. Across studies, ideological misfit predicted greater cognitive rigidity. Yet, ideological conservatism also corresponded with greater cognitive rigidity. This finding suggests that misfit accounts for part, but not all, of the relationship between conservatism and cognitive rigidity. Rather, ideological misfit and ideological conservatism each uniquely predict cognitive rigidity.

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The cognitive costs of being an ideological misfit

Over many decades, social psychologists have amassed an impressive quantity of data suggesting that conservatives, compared to liberals, are closed-minded, dogmatic, intellectually inferior, and rigid (see Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Jost, Kruglanski, Sulloway, & Glaser, 2003). The reliability of this pattern has led to the assumption that these differences are fundamentally linked to ideology. Thus, most theoretical perspectives attempt to explain what makes people conservative, rather than what makes conservatives exhibit rigid social cognitive styles. The theories range from attributing conservatism to harsh-parenting and stressful childhood experiences, parental socialization, cognitive deficiencies, existential fears, genetics, insufficient education, and neural connectivity (Adorno et al., 1950; Hibbing, Alford, & Funk, 2005; Jost & Amodio, 2012; Kemmelmeier, 2005; Nail, McGregor, Drinkwater, Steele, & Thompson, 2009; Stenner, 2005). Some evidence suggests that liberals are sometimes closed-minded and dogmatic, too (e.g., Eysenck, 1980; Ray, 1983; Van Hiel, Duriez, & Kossowski, 2007), but evidence in favor of the rigidity-of-the-right hypothesis dominates the present understanding (e.g., Hodson & Busseri, 2012; Van Hiel, Onraet, & De Pauw, 2010). This dissertation investigates an unconsidered explanation for the observed relationship between conservatism and rigid cognitive styles. In particular, I examine whether closed-mindedness, dogmatism, and rigidity are a function of being ideological minorities in hostile social climates rather than a function of conservatism per se.

Humans possess a fundamental need to belong and to be respected. Because of this, ideological and moral minorities may feel pressured to conceal their viewpoints lest

they run the risk of being rejected (Baumeister & Leary, 1995; Bergsieker, Shelton, & Richeson, 2010; Hoffman & Motyl, 2013). Holding, and potentially concealing, stigmatized social identities is cognitively taxing, and may produce the rigid cognitive profile often ascribed to conservatives: cognitively depleted individuals are less open to new experiences, less tolerant of ambiguity, and more rigid and dogmatic in processing information in the environment (Johnson, Richeson, & Finkel, 2011; Quinn & Chaudoir, 2009; Smart & Wegner, 1999; Stephens, Townsend, Markus, & Phillips, 2012). This tendency for people who are concealing stigmatized social identities to exhibit greater cognitive rigidity may be considered the *rigidity-of-the-rejected* phenomenon.

How could this be an alternative explanation for the pervasive evidence of conservatism being associated with motivated social cognition (Jost et al., 2003)? The answer is in sampling. The vast majority of existing evidence comes from data on students on liberal campuses and people in liberal communities (Gross & Fosse, 2012; Gross & Simmons, 2007). That is, most of the conservative participants are both conservative and ideological minorities. This confound introduces the possibility that either could be responsible for the relationship between conservatism and motivated social cognition.

Being an ideological minority may produce increased concern about belonging. For example, on college campuses, even though many professors may try to hide their personal political attitudes in the classroom, all people (professors included) process the social world in biased ways that generally conform to their attitudes and values (Ditto & Lopez, 1992; Hastorf & Cantril, 1954; Kunda, 1990). Even if professors are capable of

presenting course material in a fair and balanced way, they may convey their political identities and values to their students in more subtle ways like the types of clothes they wear, the way their office is (dis-)organized, and the types of décor in their offices (Carney, Jost, Gosling, & Potter, 2008). Regardless of how subtle or explicit professors are about their values, students are able to accurately identify the general ideological and moral leanings of their professors (Woessner & Kelly-Woessner, 2009). The strong social norm conveyed by the liberalism of the professorate and the vocal students who share in the professorate's liberalism may alert conservatives to their minority status, essentially making them conscious of their stigmatized ideological identity and fearful of being socially rejected.

To date, the research on stigmatized identities has focused on people with mental illness, nonheterosexual sexual orientations, consensually nonmonogamous relationships, working class backgrounds, unemployment status, and illiteracy (for a review, see Pachankis, 2007). The current research examines how ideological and moral minority status may trigger stigma consciousness, leading to negative cognitive consequences experienced by people with other stigmatized identities.

I begin with a brief overview of the concept of ideology and how it encompasses much of people's identities. Then, I review past work on ideological differences in the use of motivated social cognition and how these differences may be an artifact of the samples used in past research. Then, I describe an alternative hypothesis – the rigidity of the rejected – proposing that ideological misfits, or people in social contexts where their

personal ideological beliefs are in the numerical minority, are stigmatized and that this stigma consciousness fosters increased cognitive rigidity.

Ideology

Ideology has been the subject of much debate in the social sciences. Early research, primarily in political science, demonstrated that people's attitudes were inconsistent and did not cohere with the ideologies as the researchers defined them (e.g., Converse, 1962; Lane, 1966). Since then, the United States political landscape has evolved such that ideology is a clearer indicator of political party identification, policy attitudes, and voting behavior (Abramowitz, 2012; Levendusky, 2008). Democrats and Republicans, and liberals and conservatives have diverged on most political issues (Bafumi & Shapiro, 2009). The sharpest divergences are on racial issues and tolerance of differences in "moral" issues such as abortion, same-sex marriage, and school prayer. Furthermore, not only are partisans polarizing on these issues, positions on these issues are becoming increasingly related to religious, moral, and family values (Bafumi & Shapiro, 2009). Moreover, this ideology gap extends to non-political cultural, lifestyle, and psychological tendencies such as attending to negative stimuli and seeking novel experiences (Bishop, 2009; Hibbing, 2013; Jost, Nosek, & Gosling, 2008).

Increasingly, being liberal or conservative implies specific clusters of values that span most of a person's moral and social identity, and there are important differences between people who adhere to one worldview or another. Much in the same way that race and social class are discussed, there are cultural and lifestyle differences between liberals and conservatives. Conservatives prefer an "orthodox" lifestyle that is rooted in respect

for authority and a tendency toward tradition whereas liberals prefer a "progressive" lifestyle that tends more toward challenging authority in pursuit of promoting human flourishing for all citizens equally (Hunter, 1991). Indeed, traditional, authoritarian parenting styles that endorse spanking children as a form of discipline is a strong predictor of conservative ideological preferences. In one report, support for using spanking to discipline children predicted more than 60% of the variance voting for President George W. Bush versus John Kerry in the 2004 Presidential election (Pearson's *r*s ranged from .79 to .83; Hetherington & Weiler, 2009). Political identities are strongly correlated with moral values (e.g., Graham et al., 2009; Haidt & Graham, 2007; Koleva et al., 2011; Motyl & Iyer, 2013; Motyl, Iyer, & Graham, in prep).

In addition to predicting parenting styles, values, and voting, ideology predicts many lifestyle choices. For example, people with liberal moral worldviews were significantly more likely to have varied books and music, art supplies, many books, international maps, movie tickets, and international cultural memorabilia in their bedrooms and office spaces than were people with more conservative moral worldviews (Carney, Jost, Gosling, & Potter, 2008). People with conservative moral worldviews were significantly more likely to have sports-related décor, postage stamps, alcohol bottles, ironing boards, laundry baskets, and American flags in their bedrooms and office spaces than were people with more liberal moral identities. Organization and style of these spaces also differed between moral worldviews. Specifically, liberals tended to have darker, messier, more cluttered spaces whereas conservatives tended have better lighting, cleaner, and less cluttered spaces (Carney et al., 2008). Outside of the bedroom and

office, liberals and conservatives prefer different communities (Bishop, 2008; Motyl, Iyer, & Trawalter, 2013). When liberals and conservatives are in communities that are incongruous with their lifestyle preferences and political values, they are disproportionately likely to migrate to new communities that are more congruous with the preferences and values (Motyl, 2014; Motyl, Iyer, Oishi, Trawalter, & Nosek, 2014). The differences in the ways liberals and conservatives constructed, selected, decorated, and (dis-)organized their homes, offices, and communities make it easier for outside observers to accurately identify the ideology of the inhabitants.

Ideological Threat and Cognitive Rigidity

The increased ease of identifying other people's ideologies may affect how individuals navigate their social worlds and how individuals feel in various social contexts. People are generally attracted to others who are similar to them and repulsed from those dissimilar to them (Byrne, 1970; Rosenbaum, 1986). When in the presence of similar others, people generally report greater levels of satisfaction with life, sense of belonging, and well-being (Frable, Platt, & Hoey, 1998; Motyl et al., 2014; Motyl & Oishi, in prep). In contrast, the presence of dissimilar others may provoke anxiety and stress (Crocker, Major, & Steele, 1998; Trawalter, Richeson, & Shelton, 2008). The actual presence of dissimilar others is not necessary to elicit these effects. Environmental cues, like Christmas displays for non-Christians or stereotypically male decorations like Star Wars posters for women, seem to be enough to increase distress and reduce people's sense of belonging (Cheryan, Plaut, Davies, & Steele, 2009; Schmitt, Davies, Hung, & Wright, 2010).

These effects may be enhanced when the dimension on which others are similar or dissimilar is important to the individual in the environment. Lifestyle, moral, and political similarity seem particularly important in choosing interaction partners (Haidt, Rosenberg, & Hom, 2003; Maholtra, 2012; Stoker & Jennings, 2012). Not only do people prefer others with similar lifestyles, morals, and politics, but they also find deviant lifestyles, morals, and politics threatening. Ideological threats increase intolerance for members of outgroups and increased negativity towards outgroup members (Duckitt & Fisher, 2003; Greenberg et al., 1990; Hayes, Schimel, Williams, & Jahrig, 2007; Vail, Arndt, Motyl, & Pyszczynski, 2012). Furthermore, the evidence generally suggests that conservatives are more threat sensitive than liberals (see Hibbing, 2013; Jost et al., 2003; Tritt, Inzlicht, & Peterson, 2013; but see also Greenberg & Jonas, 2003).

If conservatives are indeed more attuned to threats, then they should exhibit closed-mindedness, dogmatism, inflexibility, intolerance of ambiguity, rigidity, and stubbornness that the past social psychological literature suggests. Conservatives would merely be exhibiting a basic psychological process of coping with threats, whereas liberals would not exhibit these effects because they would be oblivious to the threats. An alternative possibility, though, is that liberals and conservatives have similar threat sensitivities and only appear different based on the social context in which they are participating in psychological studies. Most social psychological research is conducted on university campuses with student samples or online with most non-student participants living in liberal locations (e.g., in Jost et al., 2003, a major review of the relationship between ideology and cognitive rigidity related variables, the non-student samples were

from Berkeley, Palo Alto, British Columbia, and Tucson). When people belong to a minority group, the presence of members of the majority group make their stigmatized minority status more salient (Lucken & Simon, 2005; Mullin, 1991). Therefore, ideological minorities, like conservatives on college campuses, may have a greater potential to experience the threat of social rejection.

Stigma

Stigma is any attribute held that marks an individual as disgraced, socially undesirable, and tainted in a specific social context (Goffman, 1963). Stigmatized individuals exhibit decreased self-esteem, poorer academic performance, heightened depressive thought styles, increased anxiety and blood pressure, social disengagement, and reduced cognitive resources (Crocker & Major, 2003; Krieger & Sidney, 1996; Major, Spencer, Schmader, Wolfe, & Crocker, 1998; Pyszczynski & Greenberg, 1987; Swim, Hyers, Cohen, & Ferguson, 2001). Even people who do not hold a stigmatized identity, but are led to believe that people around them perceive that they do exhibit these negative physical and psychological outcomes (Farina, Allen, & Saul, 1967; Kleck & Strenta, 1980). The widespread negative consequences of stigma highlight the fundamental need to belong and the fear of being rejected by one's community (Baumeister & Leary, 1995; Williams, 2009).

There are three broad categories of attributes that give way to stigma. The first category may be considered to stem from "abominations of the body – the various physical deformities" (Goffman, 1963, p. 5). Research on this category of stigma typically focuses on individuals with attributes that are difficult to conceal, like being

overweight or physically handicapped (Crandall, 1995; Mays, Cochran, & Barnes, 2007). The second and third categories may be viewed as "blemishes of individual character perceived as weak will, domineering, or unnatural passions, *treacherous and rigid beliefs*, and dishonesty, these being inferred from a known record of, for example, mental disorder, imprisonment, addiction, alcoholism, homosexuality, unemployment, suicidal attempts, and *radical political behavior*," and, thirdly, as "tribal stigma of race, *nation* and *religion*" (Goffman, 1963, p. 5). The bulk of the research on these latter categories of stigma has focused primarily on individuals with mental illness, non-monogamous heterosexual relationships, homosexuality, and non-white racial identities (Conley et al., 2013; Sidanius & Pratto, 1999). With the exception of race, these latter attributes are concealable. And, concealable stigmatized identities pack a particularly powerful punch, as people who hold concealable stigmatized identities are actively trying to hide an aspect of themselves from others and are expending cognitive resources coping with the uncertain threat of having their undesirable characteristic revealed (Bosson, Weaver, & Prewitt-Freilino, 2011). Individuals bearing these concealable stigmas face elevated personal distress and poor health outcomes (Quinn & Chaudoir, 2009). Ideology is relatively concealable, but not ordinarily considered as stigmatizing.[1]

[1] Despite the explicit inclusion of political attitudes, beliefs, behaviors, and national and religious identification in the seminal text defining and describing stigma, there has been a dearth of research on how people with minority political attitudes, beliefs, behaviors, and ideological identities are subject to stigmatization. A simple Google Scholar search of articles including the word "stigma" and each of the attributes included in the original definition of stigma (specifically, race, ethnicity) returns more 11,450 publications in psychology journals. A similar search for "stigma" and "sexual minority" returns 352 publications in psychology journals. In contrast, "stigma" and "ideolog*" or "political" returns 2 publications. Of these, one is a book and the other is a non-empirical article in the *Journal of Theoretical and Philosophical Psychology* and focuses on psychotherapists' therapeutic orientations. Although this search was not exhaustive, it suggests a large blind spot where very little empirical attention has been paid. Making this blind spot even more glaring is that all people hold specific beliefs about what constitutes good

People, on the political left and right, are biased against people who hold ideological values that conflict with their own (Crawford, Chambers, Motyl, Inbar, & Reyna, 2014; Crawford, Modri, & Motyl, 2013). For example, liberals want to punish military generals who criticize President Obama, but not generals who criticize President Bush (Crawford, 2012). Similarly, liberals support Supreme Court rulings that allow universities to consider race, but not family connections and past monetary contributions, in making admission decisions. Conservatives show the opposite; they support Supreme Court rulings that allow universities to consider family connections and past monetary contributions, but not race, in making admissions decisions. Similarly, partisan students role-playing as members of a college admissions committee preferred weaker applicants to stronger applicants when those stronger applicants indicated on their applications that they were a member of a political party incongruent with the participants' party (i.e., Young Democrats or Young Republicans; Munro, Lasane, & Leary, 2010). Taken together, university environments may subtly or directly communicate that conservatives are socially undesirable, essentially stigmatizing people with conservative ideologies.

Being devalued for any reason, but especially for one's important moral and political values, is highly threatening and may lead to increased use of motivated cognitive strategies to fend off the psychological threat (Hobfoll, 1989; Jost et al., 2003; Richards & Gross, 2000). Under threat, people's cognitive resources are shifted to coping with the present threat, even if their present coping may harm later outcomes. In one

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character and what social, tribal identities are good and which are bad. Furthermore, given the strong attitudes and moral convictions held by ideologues across the ideological spectrum, "treacherous and rigid beliefs" may simply be the views of people who belong to a different ideological tribe from oneself.

example, threat led people to exhibit poorer self-control, earn less money over the course of an economic game, and fail to delay gratification (Gray, 1999). Similarly, threat leads to increased attitudinal rigidity; people primed with threat were more likely to seek out evidence confirming their pre-existing beliefs and became more committed to their pre-existing beliefs (Fischer, Greitemeyer, & Frey, 2008; Vail, Arndt, Motyl, & Pyszczynski, 2012). People belonging to social groups that are numerical minorities perceive threat, which may trigger more simplistic cognitive strategies as they devote their cognitive resources to coping with the threat. Therefore, if people with concealable social identities, such as being a liberal or conservative, perceive that they are in the numerical minority in a specific social context, they will be increasingly likely to perceive the threat of social rejection and rely on more rigid cognitive styles.

Recent research suggests that conservatives do indeed recognize their minority status in university settings and that their professors are predominantly liberal (Woessner & Kelly-Woessner, 2009). In cases where students perceive that their liberal professors attack their conservative beliefs, they experience dissonance as they try to reconcile their desire to obtain a good grade with the pressure they feel to argue against their own beliefs in class discussions and essay assignments (Kelly-Woessner & Woessner, 2006). These students also expressed that they did not believe their professors established a comfortable learning environment, cared about presenting the material objectively, cared about the students, or graded fairly. People with stigmatized identities sometimes cope with the distress experienced in the stigmatizing environments by psychologically disengaging, which may explain the relatively lower interest in pursuing graduate degrees

in the social sciences among conservative students (Major & Schmader, 1998). Qualitative studies of student experiences in college support this conclusion. One student stated, "In class, it might not be worth making an argument… especially when your teacher is very liberal and very 'Christians are dumb.' A lot of times, I just keep my mouth shut" (Moran, Lang, & Oliver, 2007, p. 32). Another student exclaimed, "My classes were very liberal. Anyone from a Republican/Catholic/Christian background would probably be tarred and feathered if they spoke up!" (Vaccaro, 2010, p. 209). Being tarred and feathered is being marked as socially undesirable – as being stigmatized.

Hypotheses

The current dissertation examines competing, but not mutually exclusive, hypotheses: (a) 'rigidity of the right,' and (b) 'rigidity of the rejected'. The strong form of the rigidity of the right hypothesis anticipates that cognitive rigidity is a function of conservatism, not the fear of social rejection that comes with being an ideological misfit. As a consequence, this hypothesis would be supported by a main effect of conservatism predicting cognitive rigidity, and no effect of ideological misfit. The strong form of the rigidity of the rejected hypothesis anticipates that cognitive rigidity is a function of the fear of being rejected due to being ideologically misfit, not conservatism per se. As a consequence, this hypothesis would be supported by ideological misfit predicting cognitive rigidity and no direct effect of conservatism.

It is also possible for both hypotheses to be true simultaneously. Conservatives may, in fact, be more cognitively rigid than liberals. Yet, ideological misfit may lead both liberals and conservatives to be more cognitively rigid. If conservatism has a main effect

on cognitive rigidity, and ideological misfit has an interactive effect with conservatism, then the rigidity-of-the-right hypothesis would be supported, but with an added nuance – ideological misfit triggers rigid cognitive styles among both liberals and conservatives, which is the typical psychological state for conservatives at universities and very liberal communities.

To compare these theoretical perspectives, I conducted 3 studies. In Study 1, I leveraged archival data to examine the relationships participant conservatism, community conservatism, and the degree of misfit between participant and community conservatism have with several self-report indicators of cognitive style. In Study 2, I leveraged a separate large national data archive to examine the relationships participant conservatism, community conservatism, and the degree of misfit between participant and community conservatism have with several facets of one self-report measure of cognitive style. Studies 1 and 2 allowed for direct comparison of how well the rigidity of the right and the rigidity of the rejected hypotheses are supported. If rigidity is more common among the political right, then participant conservatism will exhibit a direct, positive relationship with these self-report measures of cognitive style. If rigidity is more common among the rejected, then the degree of misfit between participant conservatism and their community's conservatism will exhibit a direct positive relationship with these self-report measures of cognitive style.

In Studies 3a and 3b, I experimentally manipulated ideological misfit by having liberal and conservative participants interact with confederates who advocate liberal or conservative positions and then have them complete a series of tasks. In Study 3a,

participants complete the same self-report measure of cognitive style as in Studies 1 and 2 and a categorization task designed to examine their confirmation bias. Study 3b is from the same data collection as Study 3a, but examines the nonverbal and verbal behavior of the participants from Study 3a who granted permission for me to analyze their video recorded data. Moreover, Studies 3a and 3b included a measure of ideological stigma consciousness, which assessed participants' fear of being rejected on the basis of their ideology. Stigma consciousness is a key psychological mechanism for the rigidity of the rejected hypothesis. Specifically, if the rigidity of the rejected hypothesis is supported, the relationship between ideological misfit and rigid cognitive style should be mediated by ideological stigma consciousness. If conservatives' fear of being rejected and stigmatized at their university can be meliorated, then the relationship between conservatism and rigid cognitive style should vanish. If liberals can be induced with fear of being rejected and stigmatized at their university, then a relationship between liberalism and rigid cognitive style should emerge.

Study 1: Ideological Misfit and Rigid Cognitive Style

I had two aims with Study 1. First, I sought to illuminate the relationship between ideological misfit and cognitive style. Second, I sought to compare the predictions made by the rigidity-of-the-rejected hypothesis and the rigidity-of-the-right hypothesis in a national sample of students and non-students.

Method

Participants

Participants were 143,656 visitors (53.6% men, 46.4% women) to YourMorals.org who provided valid responses for their current U.S. zip code and their overall political ideology, social political ideology, or economic ideology. To be included, participants must have also completed at least one of the measures of motivated social cognitive style described below. Participants ranged in age from 18 to 89 (M = 37.01, SD = 15.55), overall political ideology from Very Liberal to Very Conservative (22,151 Very Liberal, 48,947 Liberal, 20,347 Slightly Liberal, 18,649 "Moderate/Neutral," 8,587 Slightly Conservative, 11,216 Conservative, and 2,817 Very Conservative), social political ideology (23,742 Very Liberal, 22,324 Liberal, 9,115 Slightly Liberal, 6,907 "Moderate/Neutral," 4,352 Slightly Conservative, 5,211 Conservative, and 2,120 Very Conservative), and economic political ideology (6,126 Very Liberal, 15,081 Liberal, 10,200 Slightly Liberal, 13,039 "Moderate/Neutral," 9,043 Slightly Conservative, 11,216 Conservative, and 7,133 Very Conservative). Participants received no compensation for their participation, but received feedback on how their scores compared with other people who completed the same measures.

From the U.S. zip code responses provided by participants, I was able to incorporate data on the communities in which they resided from Riskind and Motyl's (2012) social climate database. This database includes dozens of community level variables including the percentage of people in a zip code holding at least a bachelor's degree, community per capita income, percent of residents who are white, and rural-urban commuting scores (dummy-coded, 0 = rural, 1 = urban). These variables were included in analyses to isolate the relationships between the predictor and outcome

variables while controlling for potentially related exogenous factors. Importantly, this database also included the percentage of people voting for Senator McCain in the 2008 U.S. Presidential Election. Participants resided in counties where the percentage of people voting for Senator McCain in the 2008 Presidential Election ranged from 7 to 92 (M = 39.98, SD = 14.16).

Power. Given the context of this data collection, where participants are heterogeneous and completed the study outside of a controlled setting (and likely somewhere that is ideologically safe, like their home or office), I anticipated ideological misfit to have small effects on the outcome measures. However, this study relied on secondary analyses of data collected for other projects in the past, and I did not collecting new data for this study. Assuming a small effect size for a simple linear regression with three continuous predictors (ideological fit or moral fit), an alpha of .05, and a desired power of 80%, I needed sample sizes of at least 191 participants to be reasonably likely to detect any true effects. With a known overrepresentation of liberals in this sample, and the variability in the communities where participants live, I assumed that I needed a sample size at least twice the minimum given the power analysis. Therefore, I only ran analyses on outcome variables with at least 382 participants. This prohibited analyses using social and economic conservatism as predictors, as fewer than 382 participants provided data on them, had valid zip codes, and completed the outcome measures of interest.

Materials and Procedure

During the YourMorals.org registration process, participants provided basic demographic information and selected one or more of the approximately 40 surveys listed. Upon selecting a study, participants provided informed consent, completed the study they selected, and were directed to a debriefing page that explained the survey that they completed and gave them feedback on what their scores were, and how their scores compared to other participants.

Participants self-reported overall, social, and economic political orientations using a self-reported 7-point scale (1 = *Strongly Liberal*, 7 = *Strongly Conservative*). Participants indicated their zip code in a blank textbox.

Most people who visit YourMorals.org complete one or more other studies posted on the website. At any time, there may be more than 40 studies that are available for participants to complete. I analyzed the subset of these studies that include measures of cognition-related variables that have been included in past research examining the link between ideology and cognition (for a review, see Jost et al., 2003). In this database, most of the variables are self-report.

Need for cognitive closure. Some participants[2] elected to complete a 14-item version of the Need for Cognitive Closure (NCC; Webster & Kruglanski, 1994) scale. Participants indicate their agreement with each statement on a 6-point Likert-type scale (1 = *Strongly Disagree*, 6 = *Strongly Agree*). These statements fall into five different subscales. One subset assesses people's preference for structure in their environments (e.g., "I get very upset when things around me aren't in their place."). Another subset assesses people's discomfort with ambiguity (e.g., "Generally, I avoid participating in

[2] See Table 1 descriptions of the subset of participants that completed each of the measures.

discussions on ambiguous and controversial problems."). Another subset assesses people's urgent desire to judge a situation and decide quickly on how to address the problems at hand (e.g., "I feel uncomfortable when I do not manage to give a quick response to problems that I face."). Another subset assesses people's desire for predictable situations (e.g., "I prefer things that I am used to over those I do not know and cannot predict."). The fifth subset assesses people's unwillingness to have their beliefs challenged by alternative beliefs or evidence (e.g., "Generally, I do not search for alternative solutions to problems for which I already have a solution available."). The subsets of items have unique predictive validity and can be treated as correlated, but distinct components of need for cognitive closure (Webster & Kruglanski, 1994). Together, these subsets each contribute to the latent construct of a general Need for Cognitive Closure and may be assessed as a single average score. Across subsets, these items exhibit acceptable reliability, Cronbach's $\alpha = .80$. The actual scale as presented to and completed by participants is active and may be found online at http://www.yourmorals.org/closure.php.

Intolerance for ambiguity. Some participants elected to complete the Intolerance for Ambiguity scale (Budner, 1962). This scale consists of 10 statements (e.g., "If I were a doctor, I would prefer the uncertainties of a psychiatrist to the clear and definite work of someone like a surgeon or x-ray specialist," and "Vague and impressionistic pictures really have little appeal for me.") to which people indicate their agreement using a 6-point Likert-type scale (1 = *Strongly Disagree*, 6 = *Strongly Agree*). These items exhibited relatively low, but acceptable reliability, Cronbach's $\alpha = .67$. The actual scale

as presented to and completed by participants is active and may be found online at http://www.yourmorals.org/clarity.php.

Content-free dogmatism. Some participants elected to complete the Content-Free Dogmatism scale (Altemeyer, 2002). This scale consists of 31 statements pertaining to people's beliefs about nature of truth that are unrelated to specific political viewpoints (e.g., "My opinions are right and will stand the test of time," and "Flexibility-in-thinking is another name for being wishy-washy.") to which people indicate their agreement using a 6-point Likert-type scale (1 = *Strongly Disagree*, 6 = *Strongly Agree*). These items exhibited good reliability (Cronbach's $\alpha = .87$) and were averaged to form an overall dogmatism score. The actual scale as presented to and completed by participants is active and may be found online at http://www.yourmorals.org/altemeyer_beliefs1.php.

Need for cognition. Some participants elected to complete the Need for Cognition scale (NFC; Cacioppo & Petty, 1982). This scale consists of 18 statements pertaining to people's liking for thinking (e.g., "I prefer my life to be filled with puzzles that I must solve," and "I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something," reverse-scored) and asks participants indicate their agreement on a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*). The items exhibited acceptable reliability (Cronbach's $\alpha = .80$) and were averaged to form an overall need for cognition score. The actual scale as presented to and completed by participants is active and may be found online at http://www.yourmorals.org/cognition.php.

Results

Data Preparation

Participant conservatism was operationalized as self-reported political orientation and community conservatism was operationalized as the percent of people in a county who voted for Senator McCain in the 2008 Presidential election. Both participant (M = 2.91, SD = 1.59) and community conservatism (M = 39.98, SD = 14.16) were skewed and had means below their rational zero points (i.e., participant conservatism midpoint = "4: "Neutral/Middle of the Road;" and, community conservatism midpoint = 50% vote for Republicans). To establish a common metric, I standardized the participant and community conservatism scores (SD = 1) and retained their rational mid-points (0 = Neutral/middle of the road for participant conservatism; 0 = 50% vote for Republican for community conservatism). This means that all participants identifying as more liberal than "neutral/middle-of-the-road" have negative scores and all participants identifying as more conservative than "neutral/middle-of-the-road" have positive scores.[3] Similarly, all participants living in communities where more than 50% of voters voted for the Republican Party's candidate for President have positive scores, all participants living in communities where less than 50% of voters voted for the Republican Party's candidate for President have negative scores.[4] Then, I computed misfit by taking the absolute difference of participant and community conservatism. Therefore, bigger discrepancies

[3] I subtracted .68 from all standardized participant overall conservatism scores to retain the rational zero points (i.e., participants selecting "neutral / Middle of the road" as their ideology) of the skewed standardized participant conservatism score (M = 0.00, SD = 1.00 to M = -0.68, SD = 1.00).

[4] I subtracted .75 from all standardized community ideology scores to retain the rational zero point (i.e., communities where President Obama received 50% of the vote and Senator McCain received 50% of the vote) of the skewed standardized community ideology score (M = 0.00, SD = 1.00 to M = -0.75, SD = 1.00).

between participant conservatism and community conservatism yield greater misfit scores.

Analytic Strategy

All data were analyzed using sequential linear multiple regressions. The first step of the regression included the control variables of participant age, gender, and education, and the percentage of people in a zip code holding at least a bachelor's degree, community per capita income, percent of residents who are white, and rural-urban commuting scores (dummy-coded, 0 = rural, 1 = urban). The second step included participant and community conservatism. The third step included misfit. The overall model statistics and descriptions of the relationships between the individual predictors and the outcome variables are included in-text, but the regression coefficients are presented in Tables 2 and 3. The observed patterns of relationships do not change when the control variables are not included in the model. The model summaries, individual predictor coefficients, and simple slopes analyses are included in the Supplemental Materials.

Need for Cognitive Closure

Overall Need for Cognitive Closure. The overall regression model including community conservatism, participant conservatism, and the absolute difference between participant and community conservatism significantly predicted overall need for cognitive closure, $F(8, 1339) = 18.16$, $p < .000001$, $R^2 = .10$. Community conservatism showed a significant negative relationship with overall need for cognitive closure ($sr = -.06$) whereas participant conservatism showed a significant positive relationship with

overall need for closure (*sr* = .21). Misfit showed a significant positive relationship (*sr* = .13) and explained an additional 1% of the variance in need for cognitive closure, $F(1,1339) = 4.86$, $p < .0001$, $\Delta R^2 = .01$.

Intolerance for Ambiguity. The overall regression model significantly predicted intolerance for ambiguity, $F(8, 1339) = 5.72$, $p < .000001$, $R^2 = .04$. Community conservatism was not a statistically significant predictor of intolerance for ambiguity, but participant conservatism showed a significant positive relationship with intolerance for ambiguity (*sr* = .14). Misfit also showed a positive relationship (*sr* = .13) and explained an additional 1% of the variance in intolerance for ambiguity, $F(1,1339) = 3.87$, $p = .049$, $\Delta R^2 = .01$.

Decisiveness. The overall regression model significantly predicted decisiveness, $F(8, 1339) = 11.15$, $p < .000001$, $R^2 = .06$. Community conservatism showed a statistically significant negative relationship with decisiveness (*sr* = -.10), but participant conservatism showed a significant positive relationship with decisiveness (*sr* = .07). The relationship between misfit and decisiveness was not statistically significant and the addition of misfit to the regression model did not explain additional variance in decisiveness, $F(1, 1338) = 1.11$, $p = .29$, $\Delta R^2 = .001$.

Predictability. The overall regression model significantly predicted decisiveness, $F(8, 1339) = 5.05$, $p = .000003$, $R^2 = .03$. Community conservatism showed a non-significant relationship with predictability, but participant conservatism showed a significant positive relationship with predictability (*sr* = .14). Misfit was a significant

positive predictor of predictability (*sr* = .12) and misfit explained an additional 1% of the variance in predictability, $F(1,1338) = 8.65$, $p = .003$, $\Delta R^2 = .01$.

Need for Structure. The overall regression model significantly predicted need for structure, $F(8, 1339) = 15.77$, $p < .000001$, $R^2 = .08$. Community conservatism did not significantly relate to need for structure. Participant conservatism, however, significantly positively related to need for structure (*sr* = .19). Misfit did not significantly relate to need for structure, $F(1,1338) = 1.05$, $p = .30$, $\Delta R^2 = .001$.

Closed-mindedness. The overall regression model significantly predicted closed-mindedness, $F(8, 1339) = 14.22$, $p < .000001$, $R^2 = .08$. Community conservatism showed a significant negative relationship with closed-mindedness (*sr* = -.07) whereas participant conservatism showed a significant positive relationship with closed-mindedness (*sr* = .24). Misfit showed a significant positive relationship (*sr* = .12) and explained an additional 1% of the variance in closed-mindedness, $F(1,1339) = 6.11$, $p = .01$, $\Delta R^2 = .01$.

Other Measures of Cognitive Style

Content-free Dogmatism. The overall regression model significantly predicted content-free dogmatism, $F(8, 752) = 14.30$, $p < .000001$, $R^2 = .13$. Community conservatism showed a significant negative relationship with dogmatism (*sr* = -.07) whereas participant conservatism showed a significant positive relationship with dogmatism (*sr* = .30). Misfit showed a significant positive relationship (*sr* = .18) and explained an additional 3% of the variance in dogmatism, $F(1,752) = 24.58$, $p < .000001$, $\Delta R^2 = .03$.

Budner's (1962) Intolerance for Ambiguity. The overall regression model significantly predicted intolerance for ambiguity, $F(8, 568) = 4.05$, $p = .0001$, $R^2 = .05$. Community conservatism did not significantly relate to intolerance for ambiguity. Participant conservatism, however, significantly positively related to intolerance for ambiguity ($sr = .17$). Misfit did not significantly relate to intolerance for ambiguity, $F(1, 568) = 0.11$, $p = .74$, $\Delta R^2 < .001$.

Need for Cognition. The overall regression model significantly predicted need for cognition, $F(8, 6219) = 49.39$, $p < .000001$, $R^2 = .06$. Community conservatism was not a statistically significant predictor of need for cognition, but participant conservatism showed a significant negative relationship with need for cognition ($sr = .11$). Misfit was positively, but non-significantly related to need for cognition ($sr = .09$); it added less than 1% of explained variance to the regression model, $F(1,6219) = 3.20$, $p = .074$, $\Delta R^2 = .001$.

Discussion

Study 1 provides initial support for the rigidity-of-the-rejected hypothesis, while simultaneously replicating evidence for the rigidity-of-the-right hypothesis. Specifically, degree of misfit between the participants' conservatism and their communities' conservatism predicted more rigid social cognitive styles. Yet, conservatism still predicted rigid social cognitive style even after accounting for misfit with one's community. The effects were not large, and they were not observed on every dependent variable. But, in the aggregate they support both rigidity-of-the-rejected and rigidity-of-the-right effects.

The one puzzling observation was that community-level conservatism predicted *less* rigid cognitive styles. Neither theory of rigidity being tested in this dissertation makes any prediction about how community-level conservatism would relate to cognitive style. The lack of a theoretical explanation for this observation, along with the fact that the relationships were quite small and inconsistent across facets of cognitive style demands using caution in interpreting these observations until they have been replicated in other samples.

While these data cohere with the present theorizing and past research, the data are imperfect because they are correlational and are provided by participants who self-select into studies. Participants who visit YourMorals.org are typically more concerned with politics and are more educated than the average American. Additionally, the people who elect to complete surveys with titles pertaining to cognition (e.g., "What is your thinking style?," or "What are your attitudes toward certainty?") may be a unique subset of people who enjoy thinking or who may have distinct cognitive styles from people who do not self-select into studies on cognition. Study 2 replicates and extends this design to address some of these possibilities.

Study 2: Replication and Extension of Study 1 on a Separate Big(ger) Data Set

For Study 2, I pulled data from a larger study in which participants were randomly assigned to complete a wide array of psychological measures, of which some overlap with Study 1. This enabled a replication attempt with less self-selection bias and from a different source. At the data source, Project Implicit (http://implicit.harvard.edu), participants self-select to participate in research, but are randomly assigned to studies,

and the measures of interest for this research were relatively incidental in the context of the data collection.

Method

Participants

All participants were visitors to the Project Implicit (http://implicit.harvard.edu) website who consented to participate in randomly assigned studies in the research pool. Participants assigned to the present study were then randomly assigned to complete a small portion of measures from a pool of approximately 40 implicit measures, 30 self-report scales, 25 individual difference questionnaires, and dozens of single-items in a session lasting approximately 15 minutes (Graham, Hawkins, & Nosek, 2014). In order for participants to be included in the study, they needed to have provided a valid response for overall political ideology, or social and economic political ideology, zip code, and at least one measure of cognitive style. The measure in the database that most closely resembles cognitive style is the same form of the need for cognitive closure scale as used in Study 1 (Webster & Kruglanski, 1994).

The resulting sample consisted of 17,323 participants (66% women, 34% men) and ranged in overall political ideology (3,135 Strongly Liberal, 4,650 Liberal, 1,822 Slightly Liberal, 4,478 Moderate, 1,150 Slightly Conservative, 1,550 Conservative, and 538 Strongly Conservative). Participants ranged in age from 18 to 87 (M = 31.71, SD = 12.95) and lived in communities where 7 to 85% of voters voted for Senator McCain in 2008 (M = 41.61, SD = 14.17). These voting data extracted from the same social climate database as in Study 1 (Riskind & Motyl, 2012), allowing for the inclusion of

community-level data as control variables to assist in isolating the effects of participant conservatism, community conservatism, and the ideological misfit in predicting each of the outcome variables.

Power. As with Study 1, these data had already been collected and the analyses for this dissertation used existing data. And, as in Study 1, I assumed small effects, used an alpha of .05, and aimed for 80% statistical power. Therefore, I only included variables with at least 382 participants. Again, this prohibited analyses using social and economic conservatism as predictors, as fewer than 382 participants provided data on them, had valid zip codes, and completed the outcome measures of interest.

Materials and Procedure

Participants were randomly assigned to complete 15 minutes' worth of measures from a large pool of ~40 implicit measures, ~30 self-report scales, 25 individual difference questionnaires, and dozens of single-item self-report measures. Every study included at least one of each. Included measures were presented in random order. Participants could complete as many sessions as they liked, each time with a new random selection of measures. However, most participants completed a single session. Participants who completed items comprising one or more of the subscales of the need for cognitive closure scale were included in Study 2's analyses.

Results

All data were analyzed using sequential linear multiple regressions. The first step of the regression included the control variables of participant age, gender, and education, and the percentage of people in a zip code holding at least a bachelor's degree,

community per capita income, percent of residents who are white, and rural-urban commuting scores (dummy-coded, 0 = rural, 1 = urban). The second step included participant and community conservatism. The third step included misfit. The overall model statistics and descriptions of the relationships between the individual predictors and the outcome variables are included in-text, but the regression coefficients are presented in Table 4. The observed patterns of relationships do not change when the control variables are not included in the model. The model summaries, individual predictor coefficients, and simple slopes analyses are included in the Supplemental Materials.

Need for Cognitive Closure

Overall Need for Cognitive Closure. The overall regression model including community conservatism, participant conservatism, and the absolute difference between participant and community conservatism significantly predicted overall need for cognitive closure, $F(8, 17285) = 47.84$, $p < .000001$, $R^2 = .02$. Community conservatism was non-significantly negatively related with need for closure, and participant conservatism and misfit both had significant positive relationships with need for closure ($sr = .14$, and $sr = .12$, respectively). Misfit explained an additional 1% of the variance in need for closure, $F(1,17277) = 19.43$, $p < .000001$, $\Delta R^2 = .01$.

Intolerance for Ambiguity. The overall regression model significantly predicted intolerance for ambiguity, $F(8, 4829) = 27.07$, $p < .00001$, $R^2 = .04$. Community conservatism showed a significant negative relationship with intolerance for ambiguity ($sr = -.03$), but participant conservatism was significantly positively related to intolerance

for ambiguity (*sr* = .14). Moreover, misfit explained an additional 1% of the variance in intolerance for ambiguity (*sr* = .12), $F(1, 4929) = 27.48$, $p < .0000001$, $\Delta R^2 = .01$. Specifically, as misfit increased, so did intolerance for ambiguity.

Decisiveness. The overall regression model did not significantly predict decisiveness scale scores, $F(8, 4993) = 1.56$, $p = .13$, $R^2 = .003$. Of the individual predictors, only misfit showed a significant relationship with decisiveness scale scores. Misfit slightly positively related to decisiveness scores (*sr* = .13).

Predictability. The overall regression model significantly predicted preference for predictable situations, $F(8, 11527) = 7.37$, $p < .000001$, $R^2 = .01$. Neither community conservatism nor ideological misfit predicted preference for predictable situations. Participant conservatism, however, significantly positively related to preference for predictable situations (*sr* = .04).

Need for Structure. The overall regression model significantly predicted need for structure, $F(8, 8711) = 25.95$, $p < .000001$, $R^2 = .03$. Community conservatism had no direct relationship with need for structure, but participant conservatism and misfit each significantly positively related to need for structure (*sr* = .08, and *sr* = .07, respectively). Misfit contributed to the variance explained by the model by 1%, $F(1, 8711) = 6.55$, $p = .01$, $\Delta R^2 = .01$.

Closed-mindedness. The overall regression model significantly predicted closed-mindedness, $F(8, 11527) = 27.40$, $p < .000001$, $R^2 = .02$. Community conservatism negatively related to closed-mindedness (*sr* = -.02) whereas participant conservatism positively related to closed-mindedness (*sr* = .10). Moreover, misfit explained an

additional 1% of the variance in closed-mindedness, $F(1, 11527) = 13.00$, $p < .0000001$, $\Delta R^2 = .01$. Specifically, as misfit increased, so did closed-mindedness ($sr = .07$).

Discussion

Study 2 provided further correlational support for the rigidity-of-the-rejected hypothesis. Specifically, ideological misfit predicted greater cognitive rigidity on five out of six measures. Once again, participant conservatism predicted greater cognitive rigidity even after controlling for ideological misfit. Thus, these data also provide support for the rigidity-of-the-right hypothesis. Study 2 replicated Study 1 and suggests that conservatism and misfit independently correspond with cognitive rigidity. This replication of the patterns of relationships on a separate data set lend further confidence to the conclusions drawn in Study 1 and decrease the likelihood that relationships observed in Study 1 were due to participants self-selecting particular cognitive measures.

Study 2 failed to replicate the puzzling relationship between community-level conservatism and rigid cognitive style. This lack of replication of an unpredicted relationship may be due to something unique about the samples of Study 1 and Study 2, or that the relationships observed in Study 1 (or the non-relationship not observed in Study 2) were spurious.

Yet, Study 2 is still limited by the correlational nature of the data and prohibits demonstrating a causal model. It seems unlikely that people with particularly closed-minded, rigid cognitive styles would choose to live in communities where the majority of people around them do not share their ideological values, but this possibility cannot be ruled out without experimentally inducing misfit. More plausible would be the possibility

of an unknown third variable that accounts for this relationship. Moreover, Studies 1 and 2 do not provide evidence of a psychological process driving the relationship between ideological misfit and cognitive style.

Study 3a: Experimentally Inducing Misfit

In Study 3a, I experimentally manipulated ideological misfit and measured cognitive style. The experimental design of Study 3a allows for examination of the possible causal effects of misfit on rigid cognition. In addition, Study 3a included a measure of ideological stigma consciousness. If the rigidity-of-the-rejected hypothesis is correct, then ideological misfits should be more conscious of being rejected because of their ideological values. The ideological stigma consciousness questionnaire in Study 3a allows for testing whether this fear of rejection is the operative psychological mechanism that drives rigid cognition among ideological misfits. If the rigidity-of-the-right hypothesis is correct, ideology and stigma consciousness will show independent, non-interactive relationships with rigid cognition.

Method

Participants

One hundred and seventy seven undergraduate students (72% women, 28% men) at the University of Virginia were recruited from the Psychology Department participant pool. Only students who identified as strongly liberal, liberal, slightly liberal, slightly conservative, conservative, or strongly conservative on a department-wide pre-test were eligible to participate in the study. Students identifying as “moderate” were not permitted to participate. The sample included 30 Very Liberal, 48 Liberal, 31 Slightly Liberal, 24

Slightly Conservative, 24 Conservative, and 20 Very Conservative participants. The students ranged in age from 17 to 22 (M = 18.39, SD = 0.92). Participants received partial course credit. Unless otherwise noted, no participants who provided responses were excluded from any analyses.

Power. Given the increased control of the testing environment in a laboratory setting and the anticipated power of the manipulation, I assumed a moderate-to-large effect size, using an alpha of .05, and, due to limited resources, I aimed for 80% power. To obtain 80% power, I needed a minimum of 128 participants. The participant pool consists of approximately twice as many liberals as conservatives, so I could have had approximately 85 liberals and 43 conservatives. If random assignment worked perfectly and evenly distributed liberals and conservatives to the experimental conditions, I would have just barely surpassed a sample size of 20 for the conservative sample conditions (see Simmons, Nelson, & Simonsohn, 2012). Therefore, I aimed to collect data on as many participants as possible to have enough conservatives in the sample to have confidence in any estimates of differences among conservatives by condition.

Materials and Procedure

The experimenter informed participants that this is a study examining the political climate at the University of Virginia and how students communicate and think about political issues. After consenting, participants completed a short profile that was ostensibly designed to assist participant in getting to know two other participants (actually confederates with standardized profiles) with whom the participant would have a discussion with later in the experiment. This short profile asked the participants three

non-political questions (gender, major, and year in school) and three moral/political questions (church affiliation, support for abortion rights, gun ownership restrictions). After completing this profile, the participant was instructed to hand it to the experimenter so that the experimenter may photocopy it to share with the other participants with whom they will be interacting with later in the study. The experimenter then give participants a doctored news article presented on a laptop. The first three paragraphs are identical across conditions:

> Talking heads have been discussing how the political landscape in the United States has been changing in recent decades where liberals and conservatives have been moving into communities that are increasingly liberal and conservative, respectively. Bill Bishop, author of *The Big Sort*, has compiled data demonstrating how Americans have been sorting themselves into homogeneous communities – "not just at the regional level, or the red-state/blue-state level, but at the micro-level of city and neighborhood, too."
>
> Robert Putnam, author of *Bowling Alone: The Collapse and Revival of American Community*, suggests that this tendency may actually have positive health consequences, as people are finding themselves in communities where people share their values and where they do not need to fear being criticized for the beliefs about contentious political issues like global warming, intelligent design, and same-sex marriage.
>
> Researchers from US News and World Report, who release an annual report on the best colleges and provide advice to high school students on how to select the best college for them, found that the political landscapes of universities have been changing, too. While universities tend to be more liberal than conservative, these researchers found an emerging polarization at many schools. Students are becoming more liberal and more conservative, with fewer students identifying as "moderate" or "neutral."

The fourth paragraph contained the critical manipulation, providing information on which colleges were becoming more liberal and which were becoming more conservative. Specifically, the article paragraph stated:

> The upcoming 2012 edition of the US News and World Report on colleges and universities ranks Liberty University in Virginia as the most conservative and

> Macalester College in Minnesota as the most liberal. They noted that among large universities, the **University of Virginia [University of Arizona]** appears to be increasingly attractive to conservatives and the **University of Arizona [University of Virginia]** appears to be increasingly attractive to liberals. At the current rate of high school and university transfer applications, the University of Virginia will be one of the few universities where the majority of students are conservative and the University of Arizona will have the highest percentage of liberal students relative to the number of conservative students.

Past research demonstrates that this news article manipulates sense of fit at the University of Virginia among students (Motyl et al., 2014). After reading this article, participants will be handed the profiles of the confederates and instructed to read over them while the other participants finished reading the article before moving into the room where the three of them were to have a short discussion about politics. The profiles of the confederates were manipulated to reinforce the conclusion of the news article that the participant just read. Therefore, when participants read that the University of Virginia was becoming more liberal, the profiles of the two confederates indicated their liberalism in belonging to the Unitarian Universalist Church, opposing gun rights, and supporting women's rights to obtain abortions. In contrast, when participants read that the University of Virginia is becoming more conservative, the profiles of the two confederates indicated their conservatism in belonging to the Baptist Church, supporting gun rights, and opposing women's rights to obtain abortions.

Next, participants were told that they would spend 9 min discussing their views in a video-taped discussion with two other participants (the confederates) on the political issues on the survey they completed earlier in the study. This discussion was structured unobtrusively so that Confederate 1 spent 30 s describing his or her view on one of two

political issues (abortion rights or gun ownership restrictions). Then, Confederate 2 provided a short response affirming Confederate 1's view. Then, the confederates waited for the participant to respond and, for the rest of the interaction, had a number of prompts, questions, and standard responses that would minimize their speaking time and maximize the likelihood of the participant discussing their position.

When participants were in the condition where the news article told them that the University of Virginia was becoming more liberal, the confederates advocated the liberal position on these issues (i.e., opposing gun rights and supporting abortion rights). When participants were in the condition where the news article told participants that the University of Virginia was becoming more conservative, the confederates advocated the conservative position on these issues (i.e., supporting gun rights and opposing abortion rights). After the confederates expressed their position, participants stated their position. After 4 min 30 s elapsed, the experimenter requested that the participant (and confederates) move onto the second issue. In round 2 of this semi-structured discussion, Confederate 2 began spending 30 s describing his or her view on one of the remaining political issues from the initial survey, with Confederate 1 then providing a short response affirming Confederate 2's view.

Following the discussion, participants were led back to the computer on which they read the news article containing the experimental manipulation and completed a behavioral task and series of short surveys.

News consumption task. Upon returning to the computer terminal, the participant was introduced to the news consumption task. Participants indicated as

quickly as possible whether they would be more likely or less likely to read each of 50 different news headlines compared to the other articles that they ordinarily would read. Participants were instructed to indicate that they would be "more likely" to read approximately half of the articles and "less likely" to read approximately half of the articles. These headlines fell into four categories: (a) liberal, (b) conservative, (c) political and neutral, and (d) non-political and neutral (see Appendix A). "Liberal" and "conservative" headlines were ones that appeared to communicate a finding, issue, or opinion that was more favorable to one ideological position than the other. Politically neutral headlines were clearly political content but did not suggest an ideological position or conclusion. The headlines were presented in random order and participants would press the "F" key if they believed that they would be more likely to read an article with that headline and the "J" key if they believed that they would be less likely to read an article with that headline.

The news consumption task is a novel measure, so there is no standard procedure for scoring it. Thus, I analyze it in several different ways that each relate to cognitive style. First, I created a sum total of the number of articles participants indicated that they would be more likely to read. If participants are indicating that they would be more likely to read a greater number of articles, then they are indicating a willingness to expend more cognitive resources learning about the issues covered in those articles. Second, I created a proportion of liberal articles to conservative articles that participants indicated that they would be more likely to read. If participants are indicating that they are more likely to read articles that disproportionately support their own ideology, then they are exhibiting a

more simplistic, closed-minded cognitive strategy. Third, I created a standardized difference score by computing the difference between the articles from the liberal and the conservative headline categories divided by the standard deviation of all articles. Positive scores on this metric indicate a bias in favor of liberal articles and negative scores indicate a bias in favor of conservative articles being categorized as "more likely" to be read, adjusting for participants' variability in categorizing articles as more or less likely to be read.[5]

Discussion evaluation. Participants then answered six questions about their liking for the discussion that they had earlier in the study using a 6-point Likert-type scale (1 = *Strongly Disagree*, 6 = *Strongly Agree*). These items formed a reliable index (Cronbach's $\alpha = .88$) and an average of them was taken and used as overall index of liking for the interaction.

Ideological stigma consciousness. Next, participants completed a four item measure of ideological stigma consciousness using a 6-point Likert-type scale (1 = *Strongly Disagree*, 6 = *Strongly Agree*). These items formed a reliable index (Cronbach's $\alpha = .84$) and an average of them was taken and used as an overall index of ideological stigma consciousness.

Belonging and perceived fit. Then, participants were asked to indicate their agreement with a single item assessing their sense of belonging ("I generally feel like I

[5] Participants indicated that they were more likely to read between 5 and 45 of the 50 articles ($M = 26.44$, $SD = 6.69$). The instructions suggested that they should select approximately 25 articles as being more likely to read. Therefore, most participants seemed to follow the task directions and only 6 out of 168 participants were more than 2 SD from the mean. These participants were distributed across conditions, suggesting condition did not affect whether participants followed directions. Moreover, when excluding those participants, the results reported in-text do not change in any substantive way.

belong in my community.") on a 6-point Likert-type scale (1 = *Strongly Disagree*, 6 = *Strongly Agree*). Next, participants were asked to estimate the percent of people in their community who shared their food preferences and the percent of people in their community who shared their political views, using a slider that ranged from 0% to 100%.

Need for cognitive closure. Self-reported cognitive style was assessed using the same NCC scale used in Studies 1 and 2.

After completing these surveys, participants were fully debriefed and thanked for their participation.

Results

I analyzed all data using sequential linear regressions including participant conservatism and the dummy-coded experimental condition (0 = Confederates Arguing Liberal Positions, 1 = Confederates Arguing Conservative Positions) entered in the first step and the interaction between participant conservatism and condition entered in the second step. The model summaries are presented in-text, whereas the coefficients, confidence intervals, *t*-tests, semi-partial r^2, and simple slopes statistics are reported in Tables 5, 6, and 7.

Manipulation Checks

Liking of Confederates. The overall regression model significantly predicted liking for the confederates, $F(3, 165) = 17.09$, $p < .00001$, $R^2 = .24$. Condition had a marginal effect where participants liked the confederates less when the confederates argued the conservative position (*sr* = -.09). Conservatism also predicted decreased liking of the confederates (*sr* = -.33). Together, these predictors explained 5% of the variance in

liking of the confederates. These effects, however, were qualified by a significant interaction between condition and conservatism, which explained an additional 19% of the variance of liking of the confederates, $F(1, 165) = 41.39$, $p < .00001$, $\Delta R^2 = .19$, $sr = .44$. When the confederates argued the liberal position, conservatism predicted significantly reduced liking of the confederates. When the confederates argued the conservative position, conservatism predicted significantly increased liking of the confederates.

Perceived Consensus. The overall regression model significantly predicted perceived consensus of political views, $F(3, 165) = 6.88$, $p = .0002$, $R^2 = .11$. Condition had no direct effect on perceived consensus, but conservatism predicted reduced perceived consensus of political views ($sr = -.30$). Together, these predictors explained 3% of the variance in perceived consensus of political views. The interaction between condition and conservatism significantly predicted perceived consensus of political views and explained an additional 7% of the variance in perceived consensus, $F(1, 165) = 12.98$, $p = .00004$, $\Delta R^2 = .07$, $sr = .26$. When the confederates argued the liberal position, conservatism predicted significantly decreased perceived consensus of political views. When the confederates argued the conservative position, conservatism did not relate to perceived consensus of political views.

The overall regression model did not significantly predict perceived consensus of food preferences, $F(3, 167) = 0.92$, $p = .43$, $R^2 < .001$. Neither individual predictor nor their interaction term significantly predicted perceived consensus of food preferences.

Sense of Belonging. The overall regression model significantly predicted sense of belonging, $F(3, 165) = 3.64$, $p = .01$, $R^2 = .06$. Condition had no direct effect on sense of belonging, but conservatism predicted reduced sense of belonging ($sr = -.17$). Additionally, the interaction between condition and conservatism significantly predicted sense of belonging and explained an additional 6% of the variance in belonging, $F(1, 165) = 10.60$, $p = .001$, $\Delta R^2 = .06$, $sr = .25$. When confederates argued the liberal position, conservatism predicted decreased sense of belonging. When confederates argued the conservative position, however, conservatism predicted increased sense of belonging.

Ideological Stigma Consciousness. The overall regression model significantly predicted ideological stigma consciousness, $F(3, 165) = 8.49$, $p = .000002$, $R^2 = .12$. Condition had no direct effect on ideological stigma consciousness, but conservatism predicted greater ideological stigma consciousness ($sr = -.32$). Together, these predictors explained 1.4% of the variance in ideological stigma consciousness. Further, condition and conservatism significantly interacted and this interaction explained an additional 10.8% of the variance in ideological stigma consciousness, $F(1, 165) = 20.60$, $p < .000001$, $\Delta R^2 = .108$, $sr = .33$. When the confederates argued the liberal position, conservatism predicted increased ideological stigma consciousness. When the confederates argued the conservative position, conservatism predicted marginally reduced ideological stigma consciousness.

News Consumption Information Search Task

Total Articles. The overall regression model did not significantly predict the number of articles that participants indicated that they would be more likely to read. Neither of the individual predictors nor the interaction between them had a significant effect on articles selected.

Absolute Difference in Ideological Articles. The overall regression model significantly predicted the absolute difference between the number of liberal articles and conservative articles categorized as more likely to be read, $F(3, 168) = 3.36$, $p = .02$, $R^2 = .06$. Condition had no direct effect on the absolute difference in ideological articles classified as being more or less likely to be read. Conservatism predicted an increased difference between liberal and conservative article categorization as being more likely to be read ($sr = .22$). Together, condition and conservatism explained 3.6% of the variance in the difference scores. Condition and conservatism positively, but non-significantly interacted and explained an additional 2.1% of the variance, $F(1, 168) = 3.67$, $p = .057$, $\Delta R^2 = .021$, $sr = -.14$.When the confederates argued the liberal position, conservatism predicted increased ideological bias in article selection. When the confederates argued the conservative position, conservatism did not relate to ideological bias in article selection.

Standardized Bias. The overall regression model predicted standardized bias scores, $F(3, 166) = 33.29$, $p = .00000001$, $R^2 = .36$. Conservatism predicted standardized bias where the more conservative participants preferred conservative article titles to liberal article titles ($sr = .48$). Condition and the interaction between condition and conservatism were not statistically significant predictors of standardized bias, $F(1, 166) = 1.78$, $p = .18$, $\Delta R^2 = .006$.

Need for Cognitive Closure

Overall Need for Cognitive Closure. The overall regression model including participant conservatism, condition, and the interaction between conservatism and condition significantly predicted overall need for cognitive closure, $F(3, 167) = 3.19$, $p = .02$, $R^2 = .05$. Condition had no direct effect on need for closure, but conservatism predicted increased need for closure ($sr = .10$). Together, condition and conservatism explained 1.4% of the variance in need for closure, $R^2_{adj} = .014$. The interaction between condition and conservatism significantly predicted need for closure and explained an additional 4% of the variance in need for closure, $F(1, 167) = 7.22$, $p = .008$, $\Delta R^2 = .04$, $sr = -.20$. When the confederates argued the liberal position, conservatism predicted increased need for closure. When the confederates argued the conservative position, however, the relationship between conservatism and need for closure vanished.

Intolerance for Ambiguity. The overall regression model statistically significantly predicted intolerance for ambiguity, $F(3, 167) = 3.16$, $p = .03$, $R^2 = .04$. Condition had no direct effect on intolerance for ambiguity, but conservatism predicted increased intolerance for ambiguity ($sr = .11$). Together, condition and conservatism explained 1.2% of the variance in intolerance for ambiguity, $R^2_{adj} = .012$. The interaction between condition and conservatism significantly predicted need for closure and explained an additional 4.1% of the variance in intolerance for ambiguity, $F(1, 167) = 7.31$, $p = .008$, $\Delta R^2 = .041$, $sr = -.20$. When the confederates argued the liberal position, conservatism predicted increased intolerance for ambiguity. When the confederates

argued the conservative position, however, the relationship between conservatism and intolerance for ambiguity vanished.

Urgent Decisiveness. The overall regression model did not meet traditional standards of statistical significance in predicted scores on the urgent decisiveness subscale, $F(3, 167) = 1.93$, $p = .12$, $R^2 = .03$. Neither condition nor conservatism significantly predicted urgent decisiveness. Together, they explained 0.7% of the variance in urgent decisiveness. The interaction between condition and conservatism explained an additional 2.7% of the variance in urgent decisiveness, $F(1, 167) = 4.64$, $p = .03$, $\Delta R^2 = .027$, $sr = .17$. When the confederates argued the liberal position, conservatism marginally predicted increased preferences for urgent decisiveness. When the confederates argued the conservative position, however, the relationship between conservatism and the preference for urgent decisiveness disappeared and conservatism was related to slightly lower preference for urgent decisiveness.

Predictability. The overall regression model did not significantly predict scores on the predictability subscale, $F(3, 167) = 0.53$, $p = .66$, $R^2 < .001$. Neither individual predictor nor their interaction term significantly predicted scores on the predictability subscale.

Need for Structure. The overall regression model did not show statistical significance in predicting scores on the need for structure subscale, $F(3, 167) = 1.21$, $p = .30$, $R^2 = .02$. Neither condition nor conservatism significantly predicted need for structure. Together, they explained 0.04% of the variance in need for structure. The interaction between condition and conservatism explained a non-significantly greater

1.7% of the variance in need for structure, $F(1, 167) = 2.95$, $p = .08$, $\Delta R^2 = .017$, $sr = -.13$. When the confederates argued the liberal position, conservatism slightly, but non-significantly, positively related to need for structure. When the confederates argued the conservative position, conservatism slightly, but not significantly, negatively related to need for structure.

Closed-mindedness. The overall regression model did not meet traditional standards of statistical significance in predicted scores on the closed-mindedness subscale, $F(3, 167) = 2.08$, $p = .10$, $R^2 = .02$. Condition had no direct effect on closed-mindedness, but conservatism predicted increased closed-mindedness ($sr = .17$). The interaction between condition and conservatism explained a marginally greater 1.4% of the variance in need for structure, $F(1, 167) = 2.47$, $p = .10$, $\Delta R^2 = .014$, $sr = -.13$. When the confederate argued the liberal position, conservatism positively predicted closed-mindedness. When the confederates argued the conservative position, however, the relationship between conservatism and closed-mindedness vanished.

Mediated Moderation

To test the prediction that ideological stigma consciousness mediates the moderated effect of condition on the relationship between conservatism and need for cognitive closure, I conducted a mediated moderation analysis following Muller, Judd, and Yzerbyt's (2005) recommendations (see also Baron & Kenny, 1986).

First, I confirmed that condition moderated the relationship between conservatism and need for cognitive closure, *unstandardized B* = .28, *SE* = .10, $t = 2.69$, $p = .008$. Next, I confirmed that condition moderated the relationship between conservatism and

ideological stigma consciousness, *unstandardized B* = .70, *SE* = .15, *t* = 4.54, *p* = .00001. Then, I confirmed that ideological stigma consciousness predicted need for cognitive closure, *unstandardized B* = .12, *SE* = .04, *t* = 2.53, *p* = .01. Finally, a regression model including the conservatism x condition interaction term and ideological stigma consciousness as predictors of need for cognitive closure showed that conservatism x condition interaction no longer predicted need for cognitive closure (*unstandardized B* = .15, *SE* = .10, *t* = 1.51, *p* = .13), while the hypothesized mediator, ideological stigma consciousness continued to predict need for cognitive closure (*unstandardized B* = .10, *SE* = .04, *t* = 2.09, *p* = .03). Sobel's significance test for mediation supported this hypothesis, *Sobel's z* = 2.52, *p* = .01 (see Figure 1).

Discussion

Study 3a demonstrated that participants were more ideologically stigma conscious when confronted with confederates who challenged their attitudes on abortion and gun control. This was true independent of participants' own conservatism.

Ideological misfit did not demonstrate any effects on the news search task. Conservatism did not predict the total number of articles that participants indicated that they would be more likely to read. Conservatism, however, did predict the number of ideologically-confirming articles that participants indicated saying they would be more likely to read. Specifically, the more conservative participants were, the more likely they were to show preferential interest in articles with headlines promoting a conservative position relative to headlines promoting a liberal position. The more liberal participants were, the more likely they were to show preferential interest in articles with headlines

promoting a liberal position relative to headlines promoting a conservative position. This replicates past research showing a general tendency for people to prefer information that confirms their pre-existing beliefs (e.g., Iyengar & Hahn, 2009).

Study 3a provided further support for the rigidity-of-the-rejected hypothesis. Specifically, the relationship between ideology and need for cognitive closure vanished when conservative participants were led to think that their community was becoming more conservative and then interacted with confederates affirming their attitudes on gun control and abortion. Yet, when conservatives were led to think that their community was becoming more liberal and then interacted with confederates challenging their attitudes on gun control and abortion, the oft-reported positive relationship between conservatism and rigid cognition emerged. In other words, the acute sense of ideological misfit induced in this experiment eliminated the relationship between conservatism and rigid cognition. Moreover, this finding was true across the overall measure of need for cognitive closure and on four of its five subscales. The only subscale on which this pattern was not observed was the preference for predictable outcomes (as is also the case in Study 2).

Notably, though, the relationship between participant conservatism and rigid cognition mostly vanished when the confederates argued the conservative position. If the relationship between participant conservatism and rigid cognition reversed when the confederates argued the liberal positions, it would suggest that liberals are similarly sensitive to social threats as conservatives. This was not borne out by the data. Rather, the relationship between conservatism and rigid cognition was positive when the confederates advocated liberal positions and was minimal-to-non-existent when the

confederates advocated the conservative positions. One interpretation of this finding is that there is an asymmetry in social threat sensitivity among liberals and conservatives, which is consistent with previous research on the rigidity-of-the-right (e.g., Jost et al., 2003; Lavine, Lodge, & Freitas, 2005).

In addition, Study 3a showed that when participants were confronted with the thought of their community's ideology being incongruent with their own, they exhibited heightened ideological stigma consciousness. The more participants feared that they may be stigmatized due to their ideological misfit at the university, the greater their reported need for cognitive closure. When controlling for ideological stigma consciousness, the relationship between conservatism, condition, the interaction between conservatism, and need for cognitive closure was significantly weaker. This pattern is consistent with statistical mediation suggesting that ideological stigma consciousness may be driving the relationship between ideology and rigid cognition.

Study 3a reported possible effects on self-report measures and on a novel computer-based categorization task. Yet, the discussions that participants had in Study 3a were video-recorded, which allowed for examination of their actual behaviors.

Study 3b: Text analyses and Nonverbal Behavior Following Experimentally Induced Misfit

In Study 3b, I examined the verbal and nonverbal behaviors of all participants from Study 3a who were recorded and who consented to allow for their videos to be analyzed. This permits a deeper analysis of how ideological misfit may affect how people physically comport themselves, how they speak, and how they interact with others.

Method

Participants

Of the 177 participants in Study 3a, 142 of them were included in Study 3b. The recording system malfunctioned for 23 of the participants and another 12 participants (7 of whom were in the condition where the confederates argued the conservative position and 5 of whom were in the condition where the confederates argued the liberal position) did not provide consent to allow their video recording to be analyzed. The demographic composition of the final sample did not differ from that in Study 3a in any substantial way. Specifically, this sample (72% women, 28% men) included 23 Very Liberal, 41 Liberal, 26 Slightly Liberal, 19 Slightly Conservative, 19 Conservative, and 14 Very Conservative participants. The students ranged in age from 17 to 22 (M = 18.43, SD = 0.98). The similarity among the samples suggests that differential attrition cannot explain any observed effects in Study 3b.

Materials and Procedure

Nonverbal behaviors. Independent raters blind to condition watched 30 s thin slice videos of the participants' upper body with the audio muted and coded the subjective openness of the participants in each video. The independent raters also coded specific micro-nonverbal behaviors including: nodding, eye contact, direction of leaning (forward vs. backward), and body posture (open vs. closed). Independent raters made these ratings using a 7-point coding scale (1 = Does X substantially less than the average participant, 4 = Does X as much as the average participant, 7 = Does X substantially more than the average participant) and demonstrated adequate interrater reliability,

Cronbach's α = .78. As in past research, these ratings were combined into a single average score to reflect being nonverbally closed and rigid in the discussion (e.g., Richeson & Trawalter, 2005, who combined several nonverbal ratings to form a behavioral stress composite).

Verbal behaviors. The words spoken by the participants were also transcribed and text-analyzed using Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007). This program counts the number of words that, through extensive validation fit into broad categories like certainty, and will allow for a quantitative analysis of the participants' interactions (for an excellent and comprehensive review of text analytic methods and LIWC, see Tausczik & Pennebaker, 2010). The text of each participant's transcript was analyzed for words that are in the standard 2007 dictionary of LIWC that could serve as text proxies of cognitive style (e.g., inhibition, passivity, restraint, tentativeness, and verbal performance). In addition to the raw word count technique used by LIWC, independent raters provided holistic evaluations of the audio tracks of the recorded discussions. Specifically, the independent raters coded the verbal content for how closed-minded participants were during the discussion using a 7-point rating scale (e.g., 1 = Participant does not seem to care at all what the confederates and saying and do not ask any questions, 4 = Participant seems as open or closed-minded as average participant, 7 = Participant seems very interested in the confederates views and asks the confederates questions) and demonstrated adequate interrater reliability, Cronbach's α = .71. These ratings were combined to form a content-coded verbal closed-minded composite score.

Results

Nonverbal Behavior

To test my prediction, I entered participant conservatism, dummy-coded condition (0 = Confederates Arguing the Liberal Position, 1 = Confederates Arguing the Conservative Position) in the first step and the interaction between participant conservatism and condition in the second step of a sequential linear regression predicting how behaviorally closed the participants were. The overall regression model was statistically significant in predicting how nonverbally closed participants were, $F(3, 136) = 2.80$, $p = .04$, $R^2 = .06$. Condition had no effect on how nonverbally closed participants were, *unstandardized B* = 0.17, *SE* = .14, $t = 1.26$, $p = .21$, $sr^2 = .01$. Participant conservatism was marginally positively related to how nonverbally closed participants were, *unstandardized B* = 0.18, *SE* = .10, $t = 1.87$, $p = .06$, $sr^2 = .02$, $sr = .14$. The interaction between condition and participant conservatism, however, was a significant predictor (*unstandardized B* = -0.36, *SE* = .13, $t = -2.59$, $p = .01$, $sr^2 = .12$, $sr = -.34$) and explained an additional 12% of the variance in the degree of nonverbally closed behavior, $F(1, 135) = 6.41$, $p = .01$, $\Delta R^2 = .05$. When the confederates argued the liberal position, participant conservatism marginally predicted greater being more nonverbally closed, *simple slope* = .17, *SE* = .09, $t = 1.76$, $p = .08$. When the confederates argued the conservative position, however, participant conservatism predicted being less nonverbally closed, *simple slope* = -.19, *SE* = .10, $t = -1.91$, $p = .05$.

Mediated moderation via ideological stigma consciousness. To test the prediction that ideological stigma consciousness mediates the moderated effect of

condition on the relationship between participant conservatism and being behaviorally closed, I conducted a mediated moderation analysis following Muller and colleagues' (2005) recommendations.

First, I confirmed that condition moderated the relationship between participant conservatism and being behaviorally closed, *unstandardized B* = -.41, *SE* = .14, *t* = -2.76, *p* = .007. Next, I confirmed that condition moderated the relationship between participant conservatism and ideological stigma consciousness, *unstandardized B* = -.89, *SE* = .16, *t* = -5.42, *p* < .00001. Then, I confirmed that ideological stigma consciousness predicted being behaviorally closed, *unstandardized B* = .23, *SE* = .06, *t* = 3.30, *p* = .001. Finally, a regression model including the conservatism x condition interaction term and ideological stigma consciousness as predictors of being behaviorally closed showed that conservatism x condition interaction no longer predicted being behaviorally closed (*unstandardized B* = -.20, *SE* = .16, *t* = -1.30, *p* = .20), while the hypothesized mediator, ideological stigma consciousness continued to predict being behaviorally closed (*unstandardized B* = .19, *SE* = .07, *t* = 2.40, *p* = .01). Sobel's significance test for mediation supported this hypothesis, *Sobel's z* = 3.15, *p* = .0007 (see Figure 2).

Verbal Behaviors

The overall regression model statistics and description of the relationships between the predictor and outcome variables are described in-text. The individual coefficient statistics and simple slopes analyses are reported in Table 8.

Total words spoken. The overall regression model did not significantly predict the total number of words spoken, $F(3, 142) = 1.34$, $p = .26$, $R^2 = .02$. Neither participant

conservatism nor condition, nor the interaction between them significantly predicted the total number of words spoken.

Big words. The overall regression model significantly predicted the frequency of use of big words, $F(3, 142) = 5.31$, $p = .001$, $R^2 = .10$. Participant conservatism had no direct relationship with big word use, but being in the condition where the confederates argued the conservative position significantly decreased use of big words ($sr = -.20$). Together, participant conservatism and condition predicted 4% of the variability in use of big words. The interaction between participant conservatism and condition significantly predicted use of big words and explained an additional 5% of the variability in the use of big words, $F(1, 142) = 7.60$, $p = .007$, $\Delta R^2 = .05$, $sr = .22$. When the confederates argued the liberal position, participant conservatism predicted using fewer big words. When the confederates argued the conservative position, however, participant conservatism predicted using more big words.

Restraint. The overall regression model significantly predicted restraint-related words, $F(3, 142) = 2.95$, $p = .04$, $R^2 = .04$. Participant conservatism predicted using fewer restraint related words ($sr = -.20$). This relationship, however, seems to emerge due to conditional differences. Specifically, the participant conservatism significantly predicts use of restraint-related words when the confederates are advocating the liberal position, but not when the confederates are advocating the conservative position (where there is no relationship between participant conservatism and use of restraint-related words). Condition and the interaction between participant conservatism and condition did not significantly predict use of restraint-related words.

Inhibition. The overall regression model significantly predicted inhibition-related word use, $F(3, 142) = 3.43$, $p = .01$, $R^2 = .05$. Participant conservatism did not relate significantly to use of inhibition-related words. Condition, however, did significantly affect use of inhibition-related words, where participants in the condition where the confederates argued the conservative position used more inhibition-related words (*sr* = .14). This main effect appears to be driven by a marginal interaction between participant conservatism and condition, which explains an additional 3% of the variability in use of inhibition-related words, $F(1, 142) = 3.48$, $p = .06$, $\Delta R^2 = .03$, *sr* = -.17. When the confederates argued the liberal position, participant conservatism was not significantly related to use of inhibition-related words. When the confederates argued the conservative position, however, participant conservatism predicted using fewer inhibition-related words.

Tentativity. The overall regression model did not significantly predict the use of tentativity words, $F(3, 142) = 0.92$, $p = .43$, $R^2 = .02$. Participant conservatism and condition did not significantly predict the use of tentativity words. The interaction between participant conservatism and condition was not significant in predicting use of tentativity words, but shows numerically (not statistically) different relationships between ideology and tentativity word use by condition. Specifically, when the confederates argued the liberal position, participant conservatism corresponded with slightly greater use of tentativity words. And, when the confederates argued the conservative position, participant conservatism corresponded with slightly less use of tentativity words.

Ideological stigma consciousness does not significantly relate to any of the word categories, *r*s(136) < .10, *p*s > .20. Therefore, the data did not meet the requirements for mediation suggesting that ideological stigma consciousness may not mediate the relationship between ideological misfit and language use, or that the effect of ideological stigma consciousness on language use may be smaller than I have statistical power to detect.

Content-coded verbal closed-mindedness. I entered participant conservatism, dummy-coded condition (0 = Confederates Arguing Liberal Position, 1 = Confederates Arguing Conservative Position) in the first step and the interaction between participant conservatism and condition in the second step of a sequential linear regression predicting content-coded verbal closed-mindedness. The overall regression model was statistically significant in predicting verbal closed-mindedness, $F(3, 137) = 8.04$, $p = .00005$, $R^2 = .13$. Condition had a marginal effect on closed-mindedness, where participants were slightly more closed-minded when encountering the confederates arguing the conservative position, *unstandardized B* = 0.33, *SE* = .19, $t = 1.77$, $p = .08$, $sr^2 = .02$, *sr* = .14. Participant conservatism was significantly positively related to closed-mindedness, *unstandardized B* = 0.54, *SE* = .14, $t = 4.02$, $p = .0001$, $sr^2 = .01$, *sr* = .10. The interaction between condition and participant conservatism, however, qualified these apparent main effects and explained an additional 12% of the variance in closed-mindedness, $F(1, 137) = 18.77$, $p = .00002$, $\Delta R^2 = .12$, *sr* = -.35. When the confederates argued the liberal position, participant conservatism predicted greater closed-mindedness, *simple slope* = .55, *SE* = .13, $t = 4.02$, $p = .00009$. When the confederates argued the conservative

position, however, participant conservatism predicted less closed-mindedness, *simple slope* = -.30, *SE* = .14, *t* = 2.14, *p* = .03.

Partially mediated moderation via ideological stigma consciousness. To test the prediction that ideological stigma consciousness mediates the moderated effect of condition on the relationship between participant conservatism and holistically-rated verbal closed-mindedness, I conducted a mediated moderation analysis following Muller and colleagues' (2005) recommendations (see also Baron & Kenny, 1986).

First, I confirmed that condition moderated the relationship between participant conservatism and verbal closed-mindedness, *unstandardized B* = -.80, *SE* = .20, *t* = -3.99, *p* = .0001. Next, I confirmed that condition moderated the relationship between participant conservatism and ideological stigma consciousness, *unstandardized B* = -.89, *SE* = .16, *t* = -5.42, *p* < .00001. Then, I confirmed that ideological stigma consciousness predicted verbal closed-mindedness, *unstandardized B* = .44, *SE* = .09, *t* = 4.76, *p* = .000005. Finally, a regression model including the conservatism x condition interaction term and ideological stigma consciousness as predictors of rated verbal closed-mindedness showed that conservatism x condition interaction still predicted verbal closed-mindedness, but did so more weakly than in the regression without ideological stigma consciousness in the model (*unstandardized B* = -.52, *SE* = .22, *t* = -2.37, *p* = .02), while the hypothesized mediator, ideological stigma consciousness continued to predict verbal closed-mindedness (*unstandardized B* = .33, *SE* = .10, *t* = 3.10, *p* = .002). Sobel's significance test for mediation supported this hypothesis, *Sobel's z* = 3.57, *p* = .0002 (see Figure 3). This pattern suggests that ideological stigma consciousness may partially

mediate the relationship between the condition x participant conservatism interaction and verbal closed-mindedness.

Discussion

Study 3b replicated the general relationships observed on self-report measures in Studies 1, 2, and 3a, but extended them to behavior. Ideological misfit increased people's tendency to comport their bodies in a closed way – avoiding eye contact, crossing their arms crossed, leaning back, and occupying less physical space. Additionally, ideological misfit led to decreased use of words containing more than six characters. As past research has linked use of words with more than six characters to education and verbal performance (e.g., Mehl & Pennebaker, 2003), this finding suggests that ideological misfit may impair educational and verbal performance. The effects of ideological misfit on the other word categories were generally small, but suggest a pattern of verbal behavior that is more closed-minded, inhibited, restrained, and tentative when communicating with others who challenge one's attitudes about abortion and gun control. Moreover, the effects of ideological misfit on the behavioral outcomes are partially mediated by ideological stigma consciousness.

Therefore, Study 3b provides stronger support for the rigidity-of-the-rejected hypothesis. Specifically, the relationship between participant conservatism and cognitive performance was largely (if not entirely) explained by the interaction between participant conservatism and condition. Overall, the pattern in Study 3b shows that participant conservatism is mostly related to rigid cognitive performance when the participants were confronted by the confederates arguing the liberal positions relative to when the

participants were confronted by the confederates arguing the conservative positions. Again, as with the self-report measures in Study 3a, there was a lack of a full reversal of the relationship between conservatism and rigid cognition by condition.

General Discussion

In this dissertation, I proposed that rigid cognitive styles are affected by being stigmatized as an ideological minority in one's community. This rigidity-of-the-rejected hypothesis was offered as an alternative hypothesis to the dominant view that rigid cognitive styles characterize those holding ideologically conservative values, regardless of the social context.

Studies 1, 2, 3a, and 3b provide evidence for both of these hypotheses (for a summary of the evidence, see Supplemental Table). Specifically, conservatism and ideological misfit independently predicted self-reported preference for more rigid cognitive styles in Studies 1 and 2. In Studies 3a and 3b, conservatism predicted more rigid cognitive style when participants interacted with liberal confederates, and became a non-predictor rather than a reversed relationship when interacting with conservative confederates. In sum, the data simultaneously support both hypotheses. Regardless of the degree of ideological misfit, conservatives reported a greater preference for more rigid cognitive styles, supporting the rigidity-of-the-right hypothesis. Also, regardless of conservatism, the degree of ideological misfit related to a greater preference for more rigid cognitive styles, supporting the rigidity-of-the-rejected hypothesis.

Study 3a provided initial support for the presumed mechanism of the rigidity-of-the-rejected hypothesis – stigma consciousness. Also, Study 3b included nonverbal and

verbal assessments of rigid cognition, extending beyond the self-report measures of Studies 1, 2, and 3a. A strong form of the rigidity-of-the-rejected hypothesis would predict a reversal of the positive relationship between conservatism and rigid cognition when the conservative confederates induced the threat of rejection to the more liberal participants. No reversal was observed; rather, the relationship between conservatism and rigid cognitive style vanished when participants encountered conservative confederates. If liberals and conservatives were equally sensitive to threats, this reversal should have been observed. The fact that this reversal was not observed suggests support for past research suggesting that conservatives may be more sensitive to changes in their environments and to threatening stimuli (Hibbing et al., 2013; Tritt, Inzlicht, & Peterson, 2013), which indirectly supports the rigidity-of-the-right hypothesis. The observation, however, that experimentally inducing ideological misfit led to the emergence of a positive relationship between conservatism and rigid cognitive styles lends support for a soft form of the rigidity-of-the-rejected hypothesis. Specifically, when people are confronted with the prospect of being rejected by liberal interaction partners, they exhibited a greater preference for rigid, simplistic cognitive styles, poorer verbal performance, more closed-mindedness in their conversational style, and comport themselves in a more closed manner (i.e., crossing their arms, burying their heads in their hands, and occupying less physical space).

Moreover, the zero-order correlations between ideological stigma consciousness and the various measures of rigidity are slightly larger than the zero-order correlations between participant conservatism and the various measures of rigidity. In fact, in Studies

3a and 3b, conservatism only significantly relates to rigidity when condition and the interaction between condition and conservatism are entered into the model. This suggests that, independent of people's conservatism, the fear of rejection as a result of their ideological values may lead people to use more rigid cognitive styles.

Ideological Expansion in Everyday Life

Historically, some political scientists have questioned whether people have ideologies at all (e.g., Converse et al., 1964). Yet, the bulk of recent evidence is suggesting that Americans are growing increasingly ideological over the past 50 years (see Abramowitz, 2012; Jost, 2006; but, see also Fiorina, Abrams, & Pope, 2005). Today, ideology in the United States includes culture war issues including abortion, capital punishment, gun rights, same-sex marriage, and stem-cell research. Yet, ideology even predicts non-political matters including church affiliation and attendance, parenting styles, and the communities in which people choose to live (Bishop, 2008; Hetherington & Weiler, 2008; Stenner, 2005). This expansion of ideology makes the experience of ideological (mis-)fit more relevant and impactful in daily life. As a consequence, people appear to be self-segregating into ideological and moral enclaves where their ideological values fit with the values endorsed by the majority of their neighbors (Motyl et al., 2014).

People also seem to be self-selecting into specific occupations that tend to be populated by people with similar values. For example, liberals are more likely than conservatives to be employed by civil liberties organizations, and conservatives are more likely than liberals to be employed by the police department (Haley & Sidanius, 2005). Similarly, very few conservatives choose to pursue and sustain careers in the social

sciences in typical academies that tend to be heavily populated by liberals (Redding, 2001). Social psychology is among the most segregated of fields, where approximately 90% of those employed as academic social psychologists identity as liberals (Inbar & Lammers, 2012).

With liberal and conservative ideologies being well-represented in the United States' population, it is highly unlikely for such extreme disparities to emerge by chance. One possibility is that occupational choices are a function of differential topical interests and values related to the subject matter and responsibility of the occupation. These certainly play some role in occupational choices. The present research and theoretical context suggests an additional influence – the perception of whether one would fit in with the culture and identities of the others in that occupation. Given that belonging is a fundamental human need and that social pain activates similar neural pathways as those activated following physical pain (Eisenberger, Lieberman, & Williams, 2003), the fear of social rejection seems to be one of the potential factors contributing to ideological clustering in communities and occupations where a given ideology is welcomed.

Another consequence of the rigid cognitive style used by ideological misfits is that they may perform more poorly in tasks at their schools or at their jobs, putting ideological misfits at a disadvantage when being graded or being considered from financial raises or occupational promotions. These findings parallel resume studies of hiring discrimination where applicants with nonwhite and stereotypically female names were less likely to be offered a job interview (e.g., Bertrand & Mullainathan, 2004; Gartner, 1986; Inbar & Lammers, 2012; King, Mendoza, Madera, Hebl, & Knight, 2006).

The present research suggests that conservatives employed by predominantly liberal organizations or liberals employed by predominantly conservative organizations may feel threatened in their workplace, which may make them more rigid in their thinking and perform their jobs more poorly.

Combating Ideological Stigma and its Cognitive Consequences

Future research could examine ways to reduce the perceived threat of ideological diversity, so that people may be less likely to stigmatize and reject the bearers of minority ideological viewpoints. One technique for reducing defensiveness and perceived threats that is relatively minimal is the short writing exercise used to induce self-affirmation. When racial minorities wrote a short essay affirming their important values, their academic performance was significantly enhanced (Cohen, Garcia, Apfel, & Master, 2006; Walton & Cohen, 2011). This short essay writing task has also been used in political contexts. After partisans wrote a short essay affirming their values, they were less threatened by information critical of their ideology and more willing to compromise with people holding different political beliefs (Cohen et al., 2007). Therefore, self-affirmation exercises tend to buffer people from social threats and may reduce ideological minority group members from fearing rejection by the ideological majority group members. In addition, self-affirmation may reduce the threat that ideological majority group members perceive from ideological minority group members and be less likely to stigmatize and reject them.

Ideological stigmatization may further be minimized if members of those ideological groups recognize that they have many shared goals and that people who

belong to that other group are not crazy, evil, or ignorant (Ditto & Koleva, 2011; Kosloff, Greenberg, Schmader, Dechesne, & Weise, 2010; Motyl et al., 2011; Pyszczynski, Henthorn, Motyl, & Gerow, 2010; Pyszczynski, Motyl, et al., 2012). One pathway to improved intergroup understanding is increased intergroup contact and the fostering of personal relationships between members of the different groups (Allport, 1954; Motyl & Pyszczynski, 2010; Shaw & Zarate, 2007). The tendency to self-segregate into ideological enclaves leads to the reduction in likelihood of chance contact with each other, making this intervention more difficult (Motyl, 2014; Motyl et al., 2014). Some non-profit organizations (e.g., The Village Square, Living Room Conversations, and Civil Politics) have organized social gatherings in which they specifically invite people with differing political values to assist in the formation of personal relationships across the ideological divide and to assist people to better understand the issues that are important to those with dissimilar political values. The research examining these events is too preliminary to draw any conclusions about their effectiveness.

In addition to local events, reforms of political institutions could cultivate relationships between members of differing political parties. For example, the current Congressional schedule is such that members of Congress do not generally live in Washington, D. C., which limits their likelihood of interacting with and befriending each other. If the Congressional calendar reverted back to what it was prior to 1994, it could increase the likelihood that members of Congress reside in Washington, D.C. again instead of community to-and-from their home states. In that case, members of Congress might be more likely to befriend each other via social engagements outside of work

session. Then, perhaps, constituents might take cues from their elected representatives and realize that talking to members of "the other party" is acceptable (Zaller, 1990, 1994). Again, forming positive personal relationships with others who hold discrepant political values will make it more difficult to stigmatize them.

Limitations

The current research provides evidence that cognitive rigidity stems, in part, from the fear of being rejected by the majority group in a given community. Yet, the research leaves open a number of questions.

The samples were not representative and tended to be disproportionately liberal. Even though the overall samples in Studies 1 and 2 were quite large, there were few people in any particular community. Given that most participants lived in communities where their ideologies were more fit than misfit, the number of participants residing in misfit communities was comparatively small. The disproportionate liberal bias of the sample led to a very small number of conservatives living in misfit communities. Conceptually, conservatives living in very liberal communities and liberals living in very conservative communities would exhibit the greatest cognitive rigidity. Yet, there were very few extreme ideologues living in communities that conflicted with their values. Despite concerns with the distributions of ideologies across community types, the general patterns replicated past research and conformed to some of the predictions made by the rigidity-of-the-rejected hypothesis advanced in this dissertation.

Further, the observed relationships were relatively weak. The relative size of the effects of participant conservatism and the degree of ideological misfit varied across

measures and studies. Participant conservatism showed a slightly stronger positive relationship with overall need for cognitive closure and the intolerance for ambiguity subscale relative to the degree of ideological misfit in Studies 1 and 2, but a significantly smaller relationship in Study 3a. This may be due to the heavy-handed manipulation in Study 3a, or it may be due to the salience of ideology-related social threat in the measurement environment. In Studies 1 and 2, participants completed the questionnaires on computers on their own time, likely in offices or homes, and were likely not facing any immediate threat of being rejected in that environment because of their ideology (or any other identity-relevant characteristic). In Study 3, participants had undergone a 9 minute discussion with two people who spent that time criticizing their ideological beliefs and making them cognizant that their positions were misfit at their university. Perhaps this heavy-handed reminder augments the importance of ideological misfit and minimizes the general importance of conservatism in predicting cognitive rigidity. The meaning and origins of these differences are unclear.

In Study 1, community conservatism predicted slightly lower scores on need for cognitive closure. This relationship accounted for less than 0.04% of the variance in need for cognitive closure, so it may not be practically significant, but it might suggest that conservative communities cultivate a slight preference for more rigid cognitive styles. Alternately, this may emerge due to the limited sample of people who lived in very liberal communities, the limited sample of conservative participants, and the especially limited sample of conservative participants living in very liberal communities.

Additionally, Studies 1, 2, and 3a consisted mostly of self-report measures of cognitive style. Studies 2 and 3a used just one self-report measure of cognitive style (i.e., need for cognitive closure; Kruglanski & Webster, 1994). While need for cognitive closure had been used in past research on the rigidity of the right hypothesis and it encompasses five different facets of cognitive style, it may not represent the full range of domains of cognition that may be closed and rigid. Study 3b incorporated verbal and nonverbal behaviors, which extends the findings beyond the self-report measures in Studies 1, 2, and 3a. The social interaction in Study 3b was crafted in such a way that ideological fit or misfit was especially salient, and there was no true control condition in which non-ideological fit or misfit was made salient. Therefore, the behavioral data in Study 3b might simply capture people's general discomfort resulting from disagreement in social settings. Regardless, the behavioral data do show that people are more verbally and nonverbally closed-minded and simplistic in their cognition when induced with misfit than fit. Study 3b, though, is unable to specify whether ideological misfit is distinct from other types of misfit.

Additionally, the current research presumes that cognitive rigidity is related to cognitive performance. This link has not been established in the past literature. Past research has linked ideology to cognitive rigidity (e.g., Adorno et al., 195; Jost et al., 2003), ideology to cognitive performance (e.g., Kemmelmeier, 2008; van Hiel, Onraet, & DePauw, 2010), and social rejection to cognitive performance (e.g., Cohen et al., 2006; Murphy, Steele, & Gross, 2007). Conceptually, cognitive style and cognitive performance are related, but these distinct literatures have not mapped out the exact

causal effects of cognitive styles on cognitive performance. Future research should experimentally manipulate cognitive style and examine how cognitive performance varies.

Future Directions

People seem to value similarity on some dimensions, like lifestyle preferences and moral values, more than on other dimensions, like race or socioeconomic status (Haidt, Rosenberg, & Hom, 2003). Therefore, ideological, lifestyle, and moral misfit may be more socially threatening than demographic misfit. According to the rigidity-of-the-rejected hypothesis, the heightened ideological, lifestyle, and moral misfit should have a greater effect on cognitive rigidity than demographic misfit. Demographic characteristics may convey ideological, lifestyle, and moral characteristics, too, as some demographic groups systematically vary in their ideological, lifestyle, and moral preferences. For example, Black people in the United States overwhelmingly prefer the Democratic Party to the Republican Party, and this may drive negative attitudes towards Black people among conservatives who presume that Black people hold threatening values (e.g., Chambers, Schlenker, & Collisson, 2012). Research comparing and contrasting various types of misfit should attend to the interrelationships between demographic, ideological, lifestyle, and moral characteristics.

Future research should also consider the ways in which fit or misfit is conveyed to the inhabitants of communities. Studies 3a and 3b involved a very explicit, heavy-handed induction of misfit in which participants' ideological beliefs were affirmed or attacked. Studies 1 and 2, however, merely looked at the relationship between ideology and

cognitive style in communities with no clear sense as to how the respondents were aware of the ideological leanings of the communities in which they resided. Yet, all three studies showed some relationship between ideological misfit and cognitive style. The relationships observed in Studies 1 and 2 were smaller than those observed in Studies 3a and 3b, which may be explained by differential impact of the misfit induction or assessment. The fact that misfit generally predicted cognitive rigidity in Studies 1 and 2 suggest that subtle environmental cues of fit or misfit may be sufficient to foster greater cognitive rigidity. Other work has demonstrated that the presence of stereotypically male cues in science, technology, engineering, and math (STEM) classrooms decreases female's interest in participating in STEM fields (Cheryan et al., 2008). Therefore, there may be subtle cues that convey acceptance or rejection of certain ideological beliefs in communities and these cues may lead those who endorse the rejected beliefs to exhibited greater cognitive rigidity. For example, posters containing symbols from many different world religions and stating that people should "celebrate diversity," may make evangelical Christians feel that their beliefs are under attack and not accepted in their community. Similarly, if there is a crucifix in a classroom or a nativity scene in a public square, non-Christians may feel that their beliefs are under attack and not accepted in their community. These subtle community cues of ideology may elicit effects similar to those observed in Studies 1 and 2 – small, reliable, and cognitively troubling for the ideological misfits. More explicit endorsements of ideologies, like public protests berating specific ideologies, may display effects more similar to those observed in Studies 3a and 3b – larger, reliable, and especially troubling for the ideological misfits.

Future research should also examine how the subtlety or explicitness of misfit may impair cognition.

Moreover, the link between cognitive rigidity, cognitive depletion, and cognitive performance should be examined. The present work demonstrates that ideological misfit increases cognitive rigidity, but does not show that it depletes cognitive resources and only provides slight support for harming cognitive performance (e.g., misfit decreasing the number of words with more than six characters being used). Thus, future studies could examine whether misfit increases people's tendency to make perseverative errors, exhibit greater interference in Stroop task performance, and even perform more poorly in classrooms where their ideology is particularly salient.

Conclusion

This dissertation describes an alternative explanation for why people with ideologically conservative values tend to exhibit more rigid cognition. Specifically, it considers the role of social context in creating a relationship between ideology and cognitive rigidity. Most of the past work linking conservative ideology with rigid cognition was conducted in locations where conservatives were in the numerical minority and faced potential social rejection due to the ideological misfit between them and the broader community around them. The current work shows that being an ideological misfit cultivates cognitive rigidity – particularly among ideologically conservative college students. Therefore, much like women in STEM fields and Black students at predominantly White universities, conservative students at predominantly liberal universities face a cognitive cost not shared by men in STEM fields, White students, or

liberal students at most universities. An accepting educational and occupational social climate where people do not fear discrimination or rejection on the basis of gender or racial identities has long been a goal of educators, policymakers, and social scientists. Yet, the present work suggests that ideological misfits face a social climate where they do fear discrimination and rejection in the classroom and social settings, and this fear of discrimination makes their thinking more rigid. Therefore, educators, policymakers, and social scientists should be mindful of this as they preach tolerance for other minority social groups.

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Table 1
Summary of sub-samples for each analysis

Outcomes	***N***	**Age**	**% Female**	**% Liberal**	**% Conservative**	**% Vote for McCain**
Study 1						
Need for Cognitive Closure	1542	38.62 (14.74)	53	75	14	39.29 (14.47)
Intolerance of Ambiguity	956	37.76 (15.15)	41	58	11	42.25 (13.77)
Dogmatism	1183	37.25 (15.09)	37	65	11	41.88 (14.23)
Need for Cognition	7265	40.54 (15.58)	47	75	12	38.76 (14.07)
Study 2						
Preference for Structure	8736	31.57 (12.81)	67	57	18	41.55 (14.31)
Intolerance of Ambiguity	4946	31.82 (13.14)	67	54	19	41.60 (14.13)
Decisiveness	5009	31.67 (12.94)	66	55	19	41.74 (14.28)
Liking for Predictability	8861	31.69 (12.95)	68	55	18	41.50 (14.26)
Closed-mindedness	11557	31.79 (12.99)	67	56	18	41.65 (14.10)

Note. Parenthetical values are standard deviations.

Table 2

Summary of regression coefficients for NFC subscales for Study1

Outcome	**Predictor**	*B*	*SE*	*Lower 95% CI (B)*	*Upper 95% CI (B)*	*t*	*p*	sr^2
General Need for Closure (*N* = 1347)	Community Conservatism	-.07	.03	-.12	-.02	-2.53	.01	.004
	Participant Conservatism	.24	.02	.19	.28	10.11	<.001	.06
	Misfit (Absolute Difference of P-C)	.07	.03	.01	.13	2.20	.02	.01
Intolerance of Ambiguity Subscale (*N* = 1347)	Community Conservatism	.02	.05	-.07	.12	0.49	.62	<.001
	Participant Conservatism	.19	.04	.11	.27	4.59	<.001	.02
	Misfit (Absolute Difference of P-C)	.11	.05	.001	.21	-1.97	.049	.01
Decisiveness subscale (*N* = 1347)	Community Conservatism	-.15	.05	-.25	-.05	-2.86	.004	.01
	Participant Conservatism	.18	.04	.09	.27	4.06	<.001	.006
	Misfit (Absolute Difference of P-C)	.06	.06	-.05	.17	1.05	.29	.001
Predictability Subscale (*N* = 1347)	Community Conservatism	-.07	.04	-.15	.01	-1.82	<.001	.003
	Participant Conservatism	.18	.03	.12	.25	5.54	.07	.02
	Misfit (Absolute Difference of P-C)	.13	.04	.04	.21	2.94	.003	.01
Need for Structure Subscale (*N* = 1347)	Community Conservatism	-.04	.04	-.12	.05	-0.89	.38	<.001
	Participant Conservatism	.27	.04	.19	.33	7.40	<.001	.04
	Misfit (Absolute Difference of P-C)	.05	.05	-.04	.14	1.03	.30	<.001
Closed-mindedness Subscale (*N* = 1347)	Community Conservatism	-.09	.03	-.16	-.02	-2.56	.01	.006
	Participant Conservatism	.29	.04	.23	.35	9.36	<.001	.06
	Misfit (Absolute Difference of P-C)	.10	.04	.02	.18	2.47	.01	.01

Table 3

Summary of regression coefficients for other measures of cognitive style in Study1

Outcome	**Predictor**	*B*	*SE*	*Lower 95% CI (B)*	*Upper 95% CI (B)*	*t*	*p*	sr^2
Content-free Dogmatism (*N* = 760)	Community Conservatism	-.09	.04	-.15	-.01	-2.34	.02	.006
	Participant Conservatism	.32	.03	.25	.38	9.93	<.001	.10
	Misfit (Absolute Difference of P-C)	.20	.04	.12	.28	4.96	<.001	.03
Budner's (1962) Intolerance for Ambiguity (*N* = 576)	Community Conservatism	.01	.03	-.04	.06	0.32	.75	<.001
	Participant Conservatism	.09	.02	.04	.13	3.92	<.001	.03
	Misfit (Absolute Difference of P-C)	.01	.02	-.04	.06	0.33	.74	<.001
Need for Cognition (*N* = 6228)	Community Conservatism	-.01	.01	-.02	.01	-0.56	.57	<.001
	Participant Conservatism	-.08	.01	-.10	-.06	-9.72	<.001	.01
	Misfit (Absolute Difference of P-C)	.02	.01	-.002	.04	1.79	.07	.001

Table 4

Summary of regression coefficients by measure for Study 2

Outcome	**Predictor**	*B*	*SE*	*Lower 95% CI (B)*	*Upper 95% CI (B)*	*t*	*p*	sr^2
General Need for Closure (*N* = 17731)	Community Conservatism	-.02	.01	-0.05	0.00	-1.94	.053	.002
	Participant Conservatism	0.16	.01	0.13	0.19	11.49	<.001	.02
	Misfit (Absolute Difference of P-C)	.06	.01	0.03	0.08	-4.41	<.001	.01
Intolerance of Ambiguity Subscale (*N* = 5087)	Community Conservatism	-.09	.03	-0.03	0.11	-2.793	.005	<.001
	Participant Conservatism	0.25	.03	0.18	0.32	7.54	<.001	.02
	Misfit (Absolute Difference of P-C)	.16	.03	0.003	0.16	5.24	<.001	.01
Decisiveness subscale (*N* = 4993)	Community Conservatism	-.04	.03	-0.06	0.08	-1.21	.23	<.001
	Participant Conservatism	.002	.02	-0.05	0.07	0.10	.92	<.001
	Misfit (Absolute Difference of P-C)	.07	.03	0.01	0.13	2.37	.01	.01
Predictability Subscale (*N* = 8841)	Community Conservatism	0.03	.02	-0.01	0.08	1.42	.16	<.001
	Participant Conservatism	0.09	.02	0.05	0.13	4.18	<.001	.002
	Misfit (Absolute Difference of P-C)	.02	.03	-0.03	0.07	-0.64	.52	<.001
Need for Structure Subscale (*N* = 8910)	Community Conservatism	-.02	.02	-0.06	0.02	-1.09	.28	<.001
	Participant Conservatism	.21	.02	0.17	0.24	11.29	<.001	.007
	Misfit (Absolute Difference of P-C)	.06	.02	.01	.10	2.56	.01	.005
Closed-mindedness Subscale (*N* = 11850)	Community Conservatism	-.04	.02	-0.07	-.004	-2.17	.03	<.001
	Participant Conservatism	.18	.02	0.14	0.22	11.39	<.001	.01
	Misfit (Absolute Difference of P-C)	.06	.02	0.03	0.10	3.61	<.001	.01

Table 5

Summary of regression coefficients for manipulation checks in Study 3

Outcome	**Predictor**	*B*	*SE*	*Lower 95% CI (B)*	*Upper 95% CI (B)*	*t*	*p*	sr^2
Liking of Interaction	Condition	-0.41	0.13	-0.67	-0.15	-3.13	.002	.01
	Conservatism	-0.45	0.09	-0.63	-0.27	-4.98	<.001	.11
	Interaction	0.85	0.13	0.59	1.11	6.43	<.001	.19
	Conservatism when confederates are…							
	Conservative	0.40	0.09	0.21	0.59	4.14	<.001	
	Liberal	-0.45	.09	-0.63	-0.27	-4.98	<.001	
Perceived Political Consensus	Condition	-2.55	2.36	-7.21	2.12	-1.08	.28	.006
	Conservatism	-6.55	1.60	-9.71	-3.39	-4.09	<.001	.09
	Interaction	8.38	2.32	3.79	12.97	3.60	<.001	.07
	Conservatism when confederates are…							
	Conservative	1.82	1.68	-1.50	5.15	1.08	.28	
	Liberal	-6.55	1.60	-9.71	-3.39	-4.09	<.001	
Perceived Food Preference Consensus	Condition	1.23	3.53	-5.63	7.96	0.34	.74	<.001
	Conservatism	2.70	2.37	-1.98	7.40	1.14	.26	<.001
	Interaction	0.35	3.48	-6.53	7.22	0.09	.92	<.001
	Conservatism when confederates are…							
	Conservative	3.05	2.55	-1.97	8.08	1.19	.23	
	Liberal	2.71	2.37	-1.98	7.40	1.14	.26	
Sense of Belonging	Condition	0.17	.16	-0.15	0.48	1.05	.30	<.001
	Conservatism	-0.26	.11	-0.47	-0.05	-2.40	.01	.03
	Interaction	0.51	.16	0.20	0.82	3.26	.001	.06
	Conservatism when confederates are…							
	Conservative	0.25	.11	0.03	0.47	2.21	.02	
	Liberal	-.26	.10	-0.47	-0.05	-2.40	.01	
Ideological Stigma Consciousness	Condition	0.11	0.15	-0.19	0.42	0.75	.45	<.001
	Conservatism	0.50	0.10	0.28	0.7	4.68	<.001	.11
	Interaction	-0.70	0.15	-1.00	-0.40	-4.54	<.001	.11
	Conservatism when confederates are…							
	Conservative	-0.20	0.11	-0.42	0.02	-1.82	.07	
	Liberal	0.50	.10	0.29	0.71	4.68	<.001	

Table 6
News bias task coefficient summary

Outcome	Predictor	*B*	*SE*	*Lower 95% CI (B)*	*Upper 95% CI (B)*	*t*	*p*	sr^2
Sum Total Articles	Condition	-0.16	1.02	-2.17	1.85	-0.16	.87	<.001
	Conservatism	-0.33	.71	-1.73	1.07	-0.47	.64	.001
	Interaction	-0.53	1.02	-2.55	1.48	-0.52	.60	.002
	Conservatism when confederates are…							
	Conservative	-0.86	.74	-2.32	0.59	-1.17	.24	
	Liberal	-0.32	.71	-1.73	1.07	-0.47	.64	
Absolute Difference Between Liberal and Conservative Articles	Condition	-0.32	.35	-1.02	0.37	-0.92	.36	.009
	Conservatism	0.73	.25	0.24	1.22	2.96	.003	.049
	Interaction	-0.68	.35	-1.38	0.02	-1.92	.057	.02
	Conservatism when confederates are…							
	Conservative	0.05	.26	-0.45	0.55	0.20	.84	
	Liberal	0.73	.25	0.24	1.22	2.96	.003	
D-score [(Lib Articles - Con Articles / SD of articles)	Condition	0.10	.07	-0.04	0.24	1.39	.17	.01
	Conservatism	-0.39	.05	-0.49	-0.29	-7.83	<.001	.23
	Interaction	0.10	.07	-0.05	0.24	1.34	.18	.006
	Conservatism when confederates are…							
	Conservative	-0.29	.05	-0.40	-0.19	-5.74	<.001	
	Liberal	-0.39	.05	-0.49	-0.29	-7.83	<.001	

Table 7
Summary of predictors and simple slopes analyses for Need for Cognitive Closure scale in Study 3

Outcome	Predictor	*B*	*SE*	*Lower 95% CI (B)*	*Upper 95% CI (B)*	*t*	*p*	sr^2
General Need for Closure	Condition	-0.04	.10	-0.25	0.16	-0.41	.68	.003
	Conservatism	0.20	.07	0.06	0.35	2.89	.004	.01
	Interaction	-0.28	.10	-0.49	-0.07	-2.69	.007	.04
	Conservatism when confederates are…							
	Conservative	-0.07	.08	-0.21	.07	-0.94	.34	
	Liberal	0.21	.07	0.07	0.35	2.89	.004	
Intolerance of Ambiguity Subscale	Condition	0.01	.22	-0.43	0.45	0.04	.96	.002
	Conservatism	0.46	.16	0.15	0.76	2.94	.003	.01
	Interaction	-0.61	.22	-1.05	-0.16	-2.71	.008	.04
	Conservatism when confederates are…							
	Conservative	-0.14	.16	-0.46	0.16	-0.92	.35	
	Liberal	0.46	.16	0.15	0.77	2.94	.003	
Decisiveness subscale	Condition	-0.19	.19	-0.56	0.19	-0.99	.32	.011
	Conservatism	0.23	.13	-0.04	0.49	1.71	.09	.017
	Interaction	-0.41	.19	-0.78	-0.34	-2.15	.03	.027
	Conservatism when confederates are…							
	Conservative	-0.18	.14	-0.45	0.08	-1.34	.18	
	Liberal	0.22	.13	-0.03	0.49	1.71	.09	
Predictability Subscale	Condition	0.03	.14	-0.24	0.29	0.19	.85	<.001
	Conservatism	0.10	.09	-0.09	0.28	1.03	.30	.006
	Interaction	-0.17	.14	-0.44	0.10	-1.23	.22	.009
	Conservatism when confederates are…							
	Conservative	-0.07	.10	-0.26	0.12	-0.72	.47	
	Liberal	0.09	.09	-0.09	0.28	1.03	.30	
Need for Structure Subscale	Condition	-0.11	0.14	-0.38	0.16	-0.81	0.42	.007
	Conservatism	0.11	0.09	-0.07	0.3	1.19	0.23	.008
	Interaction	-0.24	.14	-0.51	.03	-1.72	.08	.017
	Conservatism when confederates are…							
	Conservative	-0.12	.10	-0.32	0.07	-1.24	.21	
	Liberal	0.11	.10	-0.08	0.30	1.19	.23	
Closed-mindedness Subscale	Condition	-0.02	.15	-0.31	.27	-0.15	.88	.001
	Conservatism	0.25	.10	0.05	0.46	2.47	.01	.03
	Interaction	-0.24	.15	-0.53	0.06	-1.57	.11	.01
	Conservatism when confederates are…							
	Conservative	0.02	.11	-0.19	0.23	0.20	.83	
	Liberal	0.26	.10	0.05	0.46	2.47	.01	

Table 8
Summary of individual predictors and simple slopes analyses for Study 3b word count data

Outcome	Predictor	*B*	*SE*	*Lower 95% CI (B)*	*Upper 95% CI (B)*	*t*	*p*	sr^2
Word Count	Condition	-21.56	16.54	-54.27	11.14	-1.30	.20	.01
	Conservatism	16.73	11.62	-6.26	39.72	1.43	.15	.01
	Interaction	-13.17	16.95	-46.69	20.35	-0.78	.43	.004
	Conservatism when confederates are…							
	Conservative	3.56	12.34	-20.84	27.96	0.29	.77	
	Liberal	16.73	11.62	-6.26	39.72	1.43	.15	
6-Letter Words	Condition	1.08	.42	-.25	1.91	2.57	.01	.04
	Conservatism	-0.45	.30	-1.03	0.13	-1.52	.13	.01
	Interaction	1.31	.42	.46	2.16	3.05	.002	.05
	Conservatism when confederates are…							
	Conservative	0.86	.31	.24	1.47	2.76	.006	
	Liberal	-0.45	.30	-1.03	0.13	-1.53	.13	
Restraint	Condition	-0.35	.23	-0.79	0.09	-1.57	.12	.01
	Conservatism	-0.40	.16	-0.71	-0.09	-2.56	.01	.04
	Interaction	0.36	.23	-0.09	0.82	1.58	.11	.02
	Conservatism when confederates are…							
	Conservative	-0.04	.16	-0.37	0.29	-0.25	.80	
	Liberal	-0.40	.16	-0.71	-0.09	-2.56	.01	
Inhibition	Condition	0.34	.16	0.02	0.66	2.11	.03	.02
	Conservatism	0.04	.11	-0.18	0.26	0.33	.74	<.001
	Interaction	-0.31	.16	-0.64	0.01	-1.87	.06	.03
	Conservatism when confederates are…							
	Conservative	-0.27	0.12	-0.52	-0.03	-2.22	0.02	
	Liberal	0.04	.11	-0.18	0.26	0.33	.74	
Tentativity	Condition	0.04	.22	-0.40	0.49	0.19	.85	<.001
	Conservatism	0.12	.16	-0.19	0.43	0.77	.44	<.001
	Interaction	-0.36	.23	-0.82	0.09	-1.58	.11	.02
	Conservatism when confederates are…							
	Conservative	-0.24	.16	-0.57	0.09	-1.44	.15	
	Liberal	0.12	.15	-0.19	0.43	0.77	.44	

Figure 1. Stigma consciousness mediates the moderated relationship between misfit and cognitive rigidity, as operationalized as need for cognitive closure.

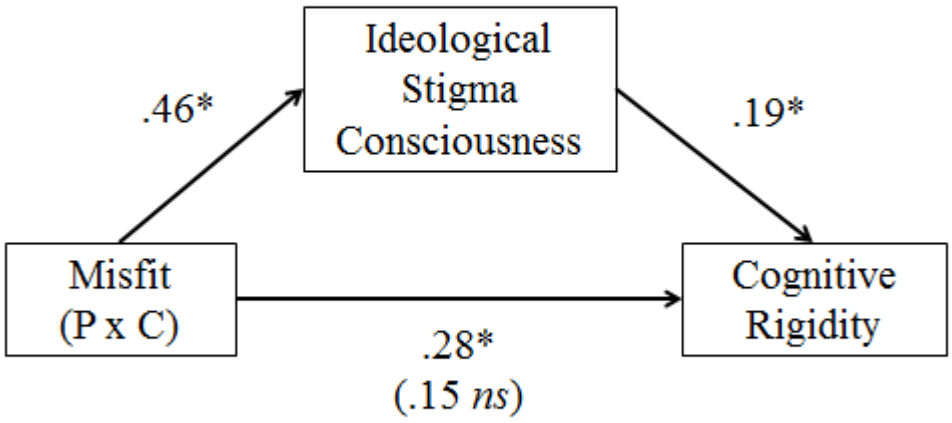


Figure 2. Ideological stigma consciousness mediates the moderated relationship of ideology on being behaviorally closed.

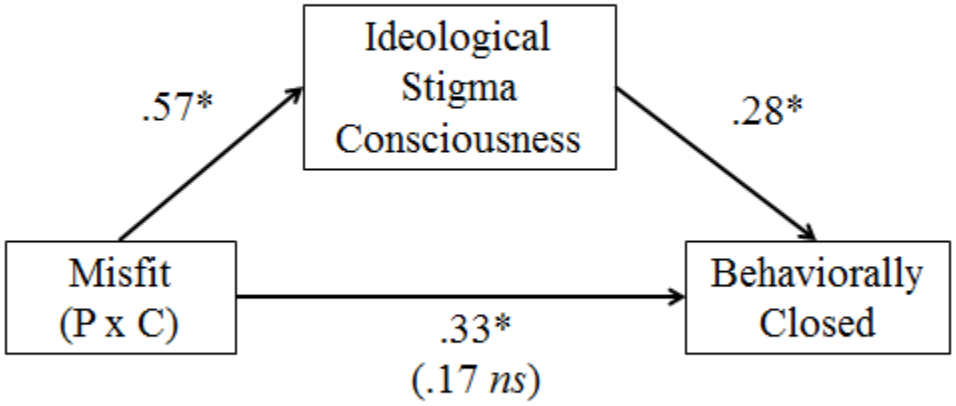
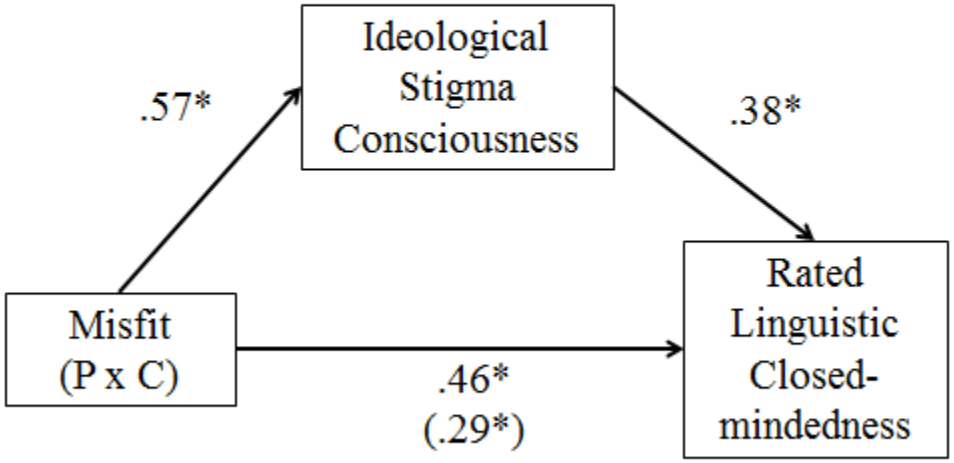


Figure 3. Ideological stigma consciousness partially mediates the moderated relationship of ideology on being linguistically closed-minded.



Appendix A
Headlines for News Consumption Task

Liberal	**Conservative**
Why Obama-care is Working	Why Obama-care Will Fail
New Study: Gun Control Laws Reduce Violent Crime	Review suggests violent crime higher in states with stricter gun control
Planned Parenthood Improves Community Health	Abortion Providers Create Tension in Community
Republicans obstruct Democrats' effort to help families	Republicans aim to create jobs, Democrats say no
Death penalty ineffective in reducing violent crimes	New evidence that capital punishment deters violent crime
Food Stamp Program Reduces Hunger in Working Class Families	Food Stamp Program Decreases Motivation to Find Employment
EPA Crackdown on Polluters Found to Improve Drinking Water Quality	EPA Regulations Found to be Major Hurdle for Small Businesses
Republican Refusals to Vote, Harm Economic Recovery	Democratic Refusals to Compromise are Hurting Economic Recovery
Survey Shows Young Americans Are Increasingly Liberal on Most Social Issues	Study Shows Young Americans Becoming Increasingly Conservative on Abortion Attitudes
Week in Review: Conservatives Discriminate Against Working Class	Week in Review: Conservatives Push for Merit-Based Pay Raises
Democrats: "We Need To Expand the Department of Education"	Republicans: "We Need to Abolish the Department of Education"
Week in Review: Liberals Push for Equal Pay	Week in Review: Liberals Engaging in Class Warfare
New Evidence that an Old Liberal Idea Works Wonders	Surprising Findings Validate Recommendations of Conservative Sociologist

Neutral	**Non-Political**
A progress report on Obama-care	New Exhibit at the Zoo: Pandas Have Arrived
The facts behind the gun control versus gun rights debate	School Board Meeting to Discuss New Curriculum
Committee reviews policy on abortion	Renovations Planned for Art Museum
Parties disagree on steps to improve the economy	The Growing Use of Steroids in Sports
Data on the Death Penalty	The health benefits of drinking milk
Legislators to Discuss Food Stamp Program	How much sugar we should consume
Progress Report on Initiatives to Preserve and Restore Environment	28 Cups of Coffee Per Day May Not Be Healthy For Young People
Democratic and Republican Plans to Fix Economy	Unearthing and Analyzing Fossils
The Changing Politics of the American People	How Woodstock Came Together
Week in Review: Assigning Salaries in the Workplace	5 Simple Steps to a Faster Computer
Reforming Schools in America	The Rise and Fall of the Smartphone
Week in Review: Two Perspectives on Social Safety Net Programs	
Which Governmental Programs Actually Work?	

Supplemental Table

Summary of effect sizes and p-values across studies for misfit and participant conservatism

	Misfit			**Participant Conservatism**		
	Study 1	Study 2	Study 3	Study 1	Study 2	Study 3
Cognitive Closure	0.02*	0.01*	0.04*	0.06*	0.02*	0.01*
Intolerance for Ambiguity	0.02*	0.01*	0.04*	0.02*	0.02*	0.01*
Decisiveness		0.01*	0.03*	0.006*		
Predictability	0.01*				0.002*	
Need for Structure		0.01*	0.02+	0.04*	0.007*	
Closed-mindedness	0.01*	0.01*	0.01+	0.06*	0.01*	0.03*
Dogmatism	0.03*			0.10*		
Intolerance for Ambiguity (B)				0.03*		
Need for Cognition	0.001*			0.01*		
Verbal Complexity			0.05*			
Observed Linguistic Rigidity			0.12*			0.02*
Behaviorally Closed			0.06*			

Note. * $p < .05$. + $p < .10$. All values reported in cells are *partial* r^2 values.