Political Polarization Projection:
Social Projection of Partisan Attitude Extremity and Attitudinal Processes

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What influences perceptions of political polarization? The authors examine the polarization of people's own political attitudes as a source of perceived polarization: Individuals with more extreme partisan attitudes perceive greater polarization than individuals with less extreme partisan attitudes. This "polarization projection" was demonstrated in 3 studies in which people estimated the distribution of others' political attitudes: one study with a nationally representative sample concerning the 2008 presidential election, and 2 studies concerning university students evaluating a policy regarding scarce resource allocation. These studies demonstrate that polarization projection occurs simultaneously with and independently of simple projection, the tendency to assume that others share one's partisan political attitudes. Polarization projection may occur partly because people assume that others engage in similar attitudinal processes as the self, such as extensive thought and emotional arousal. The projection of various attitudinal processes was demonstrated in a study concerning health care reform policies. Further supporting this explanation, polarization projection increased when people introspected about their own attitudinal processes, which increased the accessibility of those processes. Implications for perceptions of partisanship, social judgment, and civic behavior are discussed.

Keywords: attitude extremity, egocentrism, projection, polarization, politics

There's no doubt in my mind that, in history, this is the most polarized country and the most polarized partisan divide that we have ever seen.
—President Jimmy Carter (Hardball with Chris Matthews, 26 October 2010)

There is not a liberal America and a conservative America—there is the United States of America.
—President Barack Obama (2004 Keynote Address, Democratic National Convention)

Many people see Americans as politically polarized. Red states and blue states. A nation divided. "The most polarized partisan divide that we have ever seen," as President Carter (2010) said.

But not everyone sees Americans as politically polarized. Former senator Bill Bradley wrote, "One of the biggest lies perpetrated on the public in recent decades is the red/blue division of our country" (Bradley, 2008, p. 6). And much of President Obama's rhetoric emphasizes that Americans are more united than divided.

What influences perceptions of political polarization? Why do some people perceive sharp partisan divides among Americans whereas others do not? Understanding the bases of perceived political polarization is important because perceptions of polarization can independently influence behavior. Perceptions of political polarization may become self-fulfilling through conformity processes surrounding pluralistic ignorance (Prentice & Miller, 1996; Shamir & Shamir, 1997), as when moderately progressive individuals express strong support for left-leaning affirmative action policies, despite privately held doubts (Van Boven, 2000). Perceived polarization may also pose barriers to conflict resolution, as when people's assumption that partisans are in direct opposition impedes discovery of efficient agreements (Bazerman & Neale, 1992; Thompson, 1990). Perceived polarization generally fosters the seeming futility of civic engagement and bipartisan cooperation (Rutchick, Smyth, & Konrath, 2009).

We hypothesize that people with more extreme partisan attitudes perceive greater polarization than do people with more moderate partisan attitudes. That is, we suggest that people project their own political polarization onto others. This *polarization projection* is independent of other complementary processes that influence perceived political polarization, including social categorization, self-categorization, and naïve realism. We suggest that polarization projection arises partly because people assume that others engage in similar attitudinal processes as the self. This assumption implies that other people, on both sides of partisan issues, hold similarly extreme attitudes as the self.

As we later elaborate, polarization projection is conceptually and empirically different from *simple projection* (Krueger, 1998; Marks & Miller, 1987). Whereas simple projection is the tendency for people who hold a particular stance to perceive others as more

likely to hold that stance, polarization projection is the tendency for people with more extreme attitudes to perceive greater polarization. Polarization projection is also distinct from the simple, stereotypic, often false perception that people from different partisan groups—Democrats versus Republicans, Red states versus Blue states—are sharply polarized (e.g., Fiorina, Abrams, & Pople, 2010; Seyle & Newman, 2006). Polarization projection implies that individual differences in attitude extremity are associated with individual differences in perceived polarization.

In testing for polarization projection, we present a novel technique to measure people's perceptions of the distribution of others' attitudes. These perceived distributions afford measurement of people's perception of the polarization (variability) of others' attitudes, and their perception of others' average attitudes, all without directly asking people to report those distribution properties. Importantly, these perceived distributions allow us to test the simultaneous and independent occurrence of polarization projection and simple projection, which are otherwise statistically intertwined.

Perceived Polarization

Previous research has emphasized three forms of categorization that influence perceived polarization, and how these perceptions often exaggerate actual polarization (Chambers, Baron, & Inman, 2006; Chambers & Malnyk, 2006; Dawes, Singer, & Lemons, 1972; Judd & Johnson, 1981; Keltner & Robinson, 1993; Sherman, Nelson, & Ross, 2003; Spears, Eiser, & van der Pligt, 1989; van der Pligt, Ester, & van der Linden, 1983). First, the process of social categorization accentuates perceptions of differences between categories (Corneille & Judd, 1999; Tajfel, 1959; Tajfel & Wilkes, 1963). Just as categorizing various shades of color into, say, *red* and *blue* can sharpen perceived differences between *reds* and *blues*, categorizing Americans into Republicans and Democrats can sharpen perceived differences between those groups (Seyle & Newman, 2006). For example, merely presenting people with a map of the 50 United States displayed as red states and blue states increased perceived polarization (Rutchick et al., 2009).

Second, beyond categorizing Americans into Republicans and Democrats, most people categorize themselves as Republican or Democrat, creating political ingroups and outgroups. This self-categorization engenders judgments that affirm the distinctiveness of the ingroup relative to the outgroup (Turner, Hogg, Oakes, Recher, & Wetherell, 1987). One distinctiveness-affirming strategy is to accentuate perceived differences between the ingroup and outgroup. The more strongly people identify with the ingroup, the more motivated they are to differentiate between ingroups and outgroups (Mackie, 1986; Mullen, Dovidio, Johnson, & Copper, 1992; Turner et al., 1987). Self-categorization thus implies that the strength of individuals' partisan identification may be associated with greater perceived political polarization (Abrams & Hogg, 1988; Ellemers, Spears, & Doosje, 2002; Huber, Van Boven, Park, Teixeira, & Pizzi, 2012; Jetten, Spears, & Postmes, 2004; Sherman, Hogg, & Maitner, 2009; Westfall, Chambers, & Van Boven, 2012).

Finally, people also draw categorical distinctions between the "self" and "other people." People see their own attitudes on partisan issues as arising from unbiased, rational reasoning processes, whereas they see others' attitudes—particularly those on the "other side"—as influenced by biased, self-interested, ideological reasoning (Griffin & Ross, 1991; Pronin, Gilovich, & Ross, 2004; Pronin,

Puccio, & Ross, 2002; Ross & Ward, 1996; Sherman et al., 2003). According to *naïve realism*, people assume that they see the world "objectively, 'as it is,' and that others therefore will see it and respond to it differently only to the extent that their behavior is a reflection of something other than that reality" (Pronin et al., 2004, p. 781).

Because people frequently encounter others whose attitudes are different from their own, naïve realism contributes to the belief that others' attitudes—particularly the outgroup's attitudes—are biased.

> Opposing partisans may be well aware (in fact, all members of the body politic may be well aware) that the two groups construe the world differently. . . . However, these same partisans may attribute such construal differences to the biasing effects on others (but not, of course, on themselves) of ideology or self-interest. In other words, individuals may feel that whereas they themselves have proceeded from available evidence to reasonable interpretations and beliefs, those who hold opposing beliefs (and, to a lesser extent, even those who share their general ideological position) have done just the opposite. (Robinson, Keltner, Ward, & Ross, 1995, p. 405)

Naïve realism therefore implies that people perceive polarization because they assume that others are different from, more biased than themselves. Naïve realism also implies that both partisans and nonpartisans should perceive political polarization (Robinson et al., 1995).

These three processes—social categorization, self-categorization, and naïve realism—imply that perceived political polarization is grounded in categorical differences. Social categorization highlights differences between categorized political groups. Self-categorization highlights differences between ingroups and outgroups. And naïve realism highlights differences between the self and others. We believe that perceptions of political polarization are also grounded in *perceived similarities* between the self and others, a complementary yet distinct set of processes in which people assume that others share their attitude extremity.

Polarization Projection

Our central hypothesis is that people perceive political polarization insofar as they themselves are politically polarized. People with more extreme partisan attitudes perceive greater political polarization than do people with less extreme partisan attitudes, projecting their own attitude extremity onto others. Polarization projection implies that individual variability in perceived polarization is associated with individual variability in the extremity of the perceivers' political attitudes.

Polarization projection is distinct both in conceptualization and measurement from the well-documented simple projection, people's assumption that others share their attitudes (Cronbach, 1955; Ichheiser, 1946; Marks & Miller, 1987; Ross, Greene, & House, 1977; Sherif & Hovland, 1961). Conceptually, polarization projection reflects people's assumption that others share their attitude extremity, not that others share their particular attitudes. For example, in an American presidential election, polarization projection implies that people who are more extreme in their support of the Democrat perceive more extreme attitudes on both sides, both in support of and opposition to the Democratic candidate, than do people who are less extreme in their support of the Democrat. Simple projection, in contrast, implies that people who are more

extreme in their support of the Democrat perceive more support for the Democrat than do people who only moderately support the Democrat. Of course, both polarization projection and simple projection may occur simultaneously.

Attitudinal Process Projection

What might explain polarization projection? Explanations of simple projection concern the association between one's own particular stance (e.g., extreme support for the Democratic candidate) and others' stance (e.g., others' relatively extreme support for the Democratic candidate). These explanations therefore do not readily explain the association between the extremity of one's own stance and the extremity of others' stance (e.g., relatively extreme *opposition* to the Democratic candidate).

We suggest that polarization projection occurs partly because people perceive that others engage in similar attitudinal processes as themselves. That is, people not only project *what* they think (simple projection), they also project *how* they think. For example, people who engage in extensive thought about partisan topics, which has been shown to increase attitude extremity (Downing, Judd, & Brauer, 1992; Tesser & Leone, 1977), may assume that others similarly engage in extensive thought. Or people whose emotions are strongly aroused by partisan topics may assume that others' emotions are similarly aroused (Van Boven & Loewenstein, 2005a; Van Boven, Loewenstein, & Dunning, 2005). The assumed similarity in attitudinal processes—extensive thought and emotional arousal—might cause people with more extreme attitudes to perceive that others on both sides of the issue have similarly extreme attitudes.

The possibility that people project attitudinal processes onto others is consistent with at least four areas of previous research. First, research on "cross situational projection" implies that people predict others' reactions to emotional situations on the basis of their understanding of how emotional processes operate, rather than simply projecting their own current emotional state onto others (Van Boven, Dunning, & Loewenstein, 2000; Van Boven & Loewenstein, 2003, 2005a, 2005b; Van Boven et al., 2005). Second, person perception research implies that people sometimes understand others on the basis of mental models of how others' minds work, allowing people to make inferences about others from different backgrounds and in different types of situations from themselves (Baron-Cohen, 1995; Hebb, 1946; Heider, 1958). Third, research on self-perception and introspection imply that people rely on intuitive theories about how minds work to estimate and explain their own and others' attitudes and behaviors (Bem, 1972; Goldman, 1992; Gopnik, 1993; Gopnik & Wellman, 1994; Karniol, 2003; Nisbett & Wilson, 1977; Stich & Nichols, 1992). Finally, research on negotiation and intergroup conflict indicates that people often project their own prioritization of issues, which might be characterized as an attitudinal process, onto the other side (Chambers et al., 2006; Chambers & Malnyk, 2006; Thompson, 1990, 1995; Thompson & Hastie, 1990). These four areas of research imply that people perceive that others' attitudinal processes are similar to their own.

The possibility that polarization projection may be partly explained by process projection is a substantial theoretical extension beyond simple social projection. People have been shown to project everything from cheating behavior (Katz & Allport, 1931), simple behavioral choices (Ross et al., 1977), preferences for music and colors (Gilovich, 1990), competitive versus cooperative behavior (Kelley & Stahelski, 1970), voting behavior (Acevedo & Krueger, 2004), and, of course, political attitudes (Brody & Page, 1972; Conover & Feldman, 1982; Krosnick, 1988; Page & Brody, 1972). The possibility of attitudinal process projection implies that it is often unclear whether simple projection reflects the projection of particular attitudes and behavior (e.g., the projection of one's voting intentions; Acevedo & Krueger, 2004; Quattrone & Tversky, 1984) or the projection of underlying processes (e.g., considering civic participation to be highly important, which increases voting intentions).

Disentangling Polarization Projection and Simple Projection

In partisan contexts (e.g., American politics), it is common knowledge that populations are divided between partisan stances (e.g., between support for and opposition to Democratic candidates or policies). In these contexts, polarization projection and simple projection can be both confounded and mutually suppressive. For perceptions of those on the same side as the self, both polarization projection and simple projection imply a positive association between attitudes in the self and others. Both polarization projection and simple projection would imply that those with extreme support for the Democratic candidate see those on the same side as similarly extreme in their support for the Democrat. For perceptions of those on the opposite side, in contrast, polarization projection implies a negative association between the attitudes of the self and others, whereas simple projection implies a positive association between the attitudes of the self and others. Polarization projection implies that those with extreme support for the Democrat would see those who oppose the Democrat as more extreme in their opposition, a negative association; simple projection implies that those with extreme support for the Democrat would see those who oppose the Democrat as less, not more, extreme in their opposition, a positive association.

Polarization projection and simple projection are conceptually confounded when estimating others on the same side as the self, and mutually suppressive when estimating others on the opposite side as the self. The mutually suppressive effects of polarization projection and simple projection might help explain the attenuation of simple projection when people estimate the attitudes of an outgroup (Ames, 2004a, 2004b; Clement & Krueger, 2002; Krueger & Zeiger, 1993). Simple projection and polarization projection may cancel each other out.

The entangled effects of polarization projection and simple projection highlight the necessity of statistical disentanglement. This can be accomplished by recognizing the distinct predictions implied by the different forms of projection. Polarization projection implies an association between one's attitude extremity and perceived polarization in the distribution of others' attitudes. Simple projection implies an association between one's own attitude and the perceived mean of the distribution of others' attitudes.

Figure 1 displays a conceptual model illustrating these predictions. Portrayed in the figure are the potential relationships between people's attitude extremity (Self Extremity), their perceived polarization of others' attitudes (Others' Polarization), people's own attitude (Self Attitude), and their perceived mean of others'
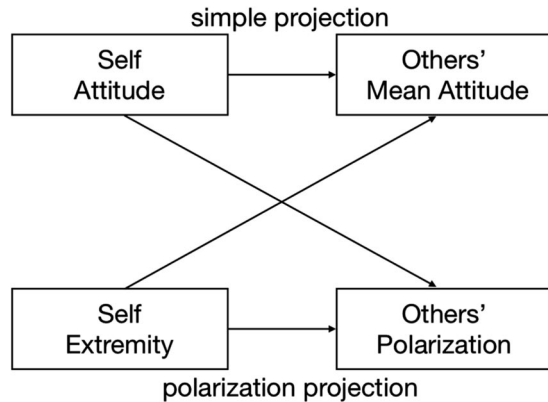
Figure 1. Conceptual model of the simultaneous relationships between people's own attitude (Self Attitude), their perception of the average of others' attitudes (Others' Mean Attitude), their own attitude extremity (Self Extremity), and their perception of the polarization of others' attitudes (Others' Polarization). *Polarization projection* is the association between Self Extremity and Others' Polarization, controlling for Self Attitude. *Simple projection* is the association between Self Attitude and Others' Mean Attitude, controlling for Self Extremity.

attitudes (Others' Mean Attitude). Polarization projection is the association between Self Extremity and Others' Polarization (the bottom association), independent of Self Extremity. Simple projection is the association between Self Attitude and Others' Mean Attitude (the top association), independent of Self Extremity. We test this model in the present studies using simultaneous regression models.

Measuring Perceptions of Distributions

Because prior research on perceived polarization has focused on categorical group-based distinctions, it has measured perceptions of typical or mean group attitudes. Respondents might be asked, "How much does the typical Democrat [Republican] support Barack Obama?" Such measures are methodologically simple, and are sufficient if the goal is to document perceived polarization in the average attitudes of partisan groups. As just discussed, however, examination of the simultaneous and independent occurrence of polarization projection and simple projection requires simultaneous assessment of both the mean and the variability of the perceived distribution of others' attitudes. More generally, perceived distributions afford more precise measurement and examination of broader psychological phenomena that often cannot be examined, and might even be obscured, by simple measures of central tendency (Nisbett & Kunda, 1985; Quattrone & Jones, 1980).

We have developed a novel means of measuring people's perceptions of attitude distributions. We begin with a simple procedure, described later, that trains people how to estimate distributions (histograms) of attitudes along a 5-point continuum. Respondents from broadly representative samples can reliably use this procedure (Judd, Van Boven, Huber, & Nunes, 2012). This procedure permits a relatively unobtrusive and simultaneous measurement of central tendency and polarization. People are not directly asked to estimate groups' typical response or how "polar-

ized" groups are. Rather, people's perceptions of central tendency and polarization are computed from their estimation of others' attitude distributions.

Overview of the Present Studies

We examined in four studies the simultaneous and independent occurrence of polarization projection and simple projection in the context of partisan topics. We also examined attitudinal process projection as an explanation for polarization projection. First, with data from a nationally representative sample collected just before the 2008 Presidential election (Study 1), we examined whether those with more extreme attitudes toward Barack Obama and John McCain perceived greater polarization among the American electorate than did those with less extreme attitudes, and whether people simultaneously engaged in simple projection of their attitudes onto the American electorate. Second, we tested whether people exhibit attitudinal process projection when estimating the processes underlying their own and other Americans' attitudes (Study 2). Third, we developed a laboratory paradigm that captures essential features of political partisanship to conceptually replicate the simultaneous occurrence of polarization projection and simple projection (Studies 3 and 4). Finally, we more directly examined our explanation of polarization projection by testing whether introspection, which increases the accessibility of perceptions of one's own attitudinal processes, increases both polarization projection and simple projection (Study 4).

Study 1: The 2008 Presidential Election

Study 1 was a survey of nationally representative respondents in the context of the 2008 presidential election. We tested whether the extremity of people's support for candidates Barack Obama versus John McCain would be associated with perceived polarization of Americans' support for the candidates (polarization projection). We also tested whether, simultaneously and independently, people's support for the candidates would be associated with perceived mean of American support for the two candidates (simple projection).

We examined whether polarization projection and simple projection occurred independently of people's strength of partisan identification. And we tested whether partisan identification was independently associated with perceived polarization, consistent with other research (Abrams & Hogg, 1988; Ellemers et al., 2002; Huber et al., 2012; Jetten et al., 2004; Sherman et al., 2009; Westfall et al., 2012).

Finally, we examined the potential behavioral consequences of perceived political polarization. We tested whether perceived polarization of Americans' support for the candidates was predictive of voting intentions. People whose own attitudes are more extreme not surprisingly express stronger voting intentions than those whose attitudes are less extreme (e.g., Lavine, 2001; Skitka & Bauman, 2008). We know of no demonstrations, however, that perceived polarization is associated with voting intentions, independent of one's own attitude extremity. We reasoned that election outcomes may seem "closer" and more uncertain in populations seen as polarized and that such perceptions may increase people's sense that their vote "counts." In elections that seem close, people may vote to adhere to prevailing social norms, or as an attempt to

sway others' votes (Acevedo & Krueger, 2004; Quattrone & Tversky, 1984).

Method

In conjunction with the 2008 National Election Study, data were collected from a nationally representative sample of 1,000 Americans. Voting age respondents were given Internet access in exchange for their willingness to periodically complete online surveys. Data were collected in late September and early October 2008, during the presidential election contest between Democrat Barack Obama and Republican John McCain.

Participants' were asked a series of questions about their own attitudes toward the two presidential candidates and their perception of the distribution of Americans' attitudes. Specifically, participants were asked, "To what extent do you favor or oppose Barack Obama [John McCain] becoming President of the United States?" They were also asked to indicate the relative frequency of Americans (*Few Americans*, *Many Americans*) whom they estimated "favored or opposed Barack Obama [John McCain] becoming President of the United States." After training (described below), responses to these questions were given on a nonnumeric 5-point scale, with numbers later assigned for data analyses (1 = *strongly favor*, 2 = *somewhat favor*, 3 = *neither favor nor oppose*, 4 = *somewhat oppose*, 5 = *strongly oppose*). A screen capture of this question is displayed in Figure 2.

Participants were randomly assigned first to complete the attitude distribution questions for either Obama or McCain and were trained how to use the histogram estimation measure for that candidate.[1] The training sequence involved asking the questions about one's own and others' support for a particular candidate, with increasing numbers of response options. Participants were initially asked very simple questions about both their own stance and their estimates of the relative frequency (*Few Americans*, *Many Americans*) of Americans' stance with only two response options (*favor*, *oppose*). They were then asked to respond again to both questions, reporting their own stance and estimating the relative frequency of Americans' stance, but with the addition of a third response option (*neither favor nor oppose*). Finally, partici-
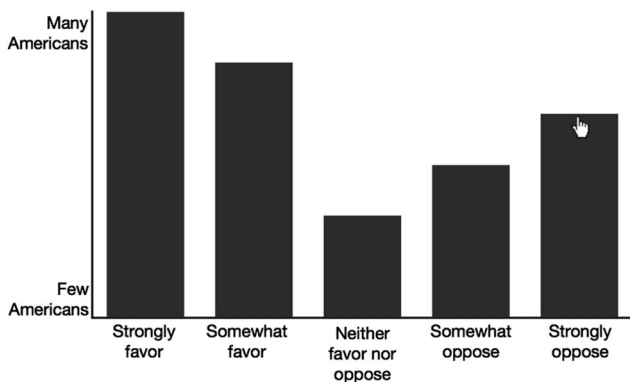
pants responded to both questions, but this time with five options (see Figure 2). In estimating the distribution of Americans' attitudes, participants could raise and lower the histogram bars independently. Participants were not given any numerical information about the relative height of each bar. Pilot testing confirmed the reliability of this training procedure and measure of perceived attitude distributions (Judd et al., 2012).

Two variables were computed for each participant on the basis of that person's estimated distribution. First, the mean perceived attitude of Americans toward each candidate was calculated. Each response option was weighted (using the scale values described earlier, where 1 = *strongly favor*, 5 = *strongly oppose*) by the relative height of the histogram bar associated with that option. Perceived mean values could range between 1 and 5. Lower numbers reflected participants' perception that Americans supported the candidate more.

Second, the perceived polarization of Americans' support and opposition to each candidate was calculated. The standard deviation of each distribution was computed around the neutral scale midpoint (3 = *neither favor nor oppose*). Perceived polarization values could range between 0 and 2. Higher numbers indicate greater perceived polarization.

To illustrate the calculation of these measures, suppose that the relative heights of the bars in Figure 2 was .30, .25, .10, .15, and .20. The perceived mean would be 2.70, reflecting slight support for Obama: ([1 × .30] + [2 × .25] + [3 × .10] + [4 × .15] + [5 × .20]). The perceived polarization would be 1.55: the square root of ([-2^2 × .30] + [-1^2 × .25] + [0^2 × .10] + [1^2 × .15] + [2^2 × .20]). The histogram in Figure 2 thus illustrates a distribution we hypothesize would be generated by an individual whose support for Obama was relatively extreme: Americans are seen both as polarized (polarization projection) and favoring Obama (simple projection).

To measure participants' strength of political identification, participants were first asked whether they considered themselves a Democrat, a Republican, or an Independent. If participants indicated they were a Democrat or Republican, they were asked whether they "somewhat strongly" or "very strongly" identified with the party. If participants selected Independent, they were asked whether they "leaned towards" being a Democrat, Republican, or neither. From these responses, two measures were calculated: the direction of partisan identification (Democrat, Independent, or Republican); and strength of partisan identification (0 = neither; 1 = leaned toward the party; 2 = somewhat strongly identified; 3 = very strongly identified).

To measure voting intentions, participants were asked (yes or no) whether they intended to vote. Other questions not directly relevant to the present investigation were also asked.

Results

Of the 1,000 respondents, 848 provided complete data on the measures used in this analysis. The remaining 152 respondents either did not report their own attitudes toward the two candidates,

Figure 2. Screen capture taken from a procedure used to measure people's perception of the distribution of political attitudes. Participants could raise and lower the bars independently of each other. The graph displays a perceived distribution with overall support for Obama, but also with relatively high polarization around the scale midpoint.

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[1] There were no differences as a function of order or training target.

did not move the perceived histogram bars, or failed to indicate whether they intended to vote in the upcoming election.

Zero-order polarization projection and simple projection. The variables of central interest, for each candidate, were the respondent's own attitude, the respondent's own attitude extremity (absolute deviation from the scale midpoint of 3, range = 0–2), the respondent's perceived mean of Americans' attitude toward each candidate, and the respondent's perceived polarization of Americans' attitude toward each candidate. The means, standard deviations, and correlations for these eight variables are displayed in Table 1. These correlations provide preliminary support for both polarization projection and simple projection.

Regarding polarization projection, the correlation, averaged across the two candidates, between participants' own attitude extremity and their perceptions of polarization among Americans' attitudes toward that candidate is .26, $p < .0001$. Participants who were relatively extreme in their support for a particular candidate estimated that Americans were more polarized toward that candidate than did participants who were less extreme. Regarding simple projection, the correlation, averaged across the two candidates, between participants' own attitude and their perception of Americans' attitudes is .45, $p < .0001$. Participants who supported (opposed) a particular candidate saw Americans as more supportive of (opposed to) that candidate.

There is suggestive evidence of simple projection and polarization projection across candidates. For polarization projection, the more extreme participants' attitudes were toward Obama, the more polarized they estimated Americans' attitudes toward McCain to be ($r = .16$, $p < .0001$); and the more extreme participants' attitudes were toward McCain, the more polarized they estimated Americans' attitudes toward Obama to be ($r = .20$, $p < .0001$). For simple projection, the more participants opposed Obama, the more they estimated that Americans supported McCain ($r = -.39$, $p < .0001$); and the more participants opposed McCain, the more they estimated that Americans supported Obama ($r = -.44$, $p < .0001$). The cross-candidate correlations imply that simple projection and polarization projection occur somewhat at the level of a broader pattern of preferences between the two candidates rather than being specific to a particular candidate.

Simultaneous polarization projection and simple projection. To examine the independent occurrence of polarization projection and simple projection, we created four variables: (a) Self Attitude (participants' opposition to Obama minus their opposition to McCain, varying from −4, indicating strong support for Obama and strong opposition to McCain, to + 4, indicating strong opposition to Obama and strong support for McCain; $M = -0.38$, $SD = 3.10$); (b) Self Extremity (the absolute value of Self Attitude, varying from 0, indicating no candidate preference, to + 4, indicating strong support for one candidate and strong opposition to the other candidate; $M = 2.79$, $SD = 1.39$); (c) Americans' Mean Attitude (participants' mean of Americans' opposition to Obama minus participants' mean of Americans' opposition to McCain, varying from −4, indicating strong preference for Obama and strong opposition to McCain, to + 4, indicating strong opposition to Obama and strong support for McCain; $M = -0.22$, $SD = 0.68$); and (d) American Polarization (average perceptions of Americans' polarization toward McCain and Obama, varying from 0, indicating perception that every American was at the midpoint, to 2,

indicating every American was at one of the most extreme positions; $M = 1.47$, $SD = 0.12$).

We conducted two simultaneous regressions, predicting both Americans' Mean Attitude and Americans' Polarization simultaneously from Self Attitude and from Self Extremity. The resulting standardized partial regression coefficients are presented in Figure 3.[2] This analysis yielded significant effects for both polarization projection and simple projection.

For polarization projection, the more that respondents were extreme in their preference for one candidate over the other (Self Extremity), the more polarized they perceived Americans to be in their support or opposition to both candidates (Americans' Polarization; $\beta = .22$, $t(845) = 6.53$, $p < .0001$, controlling for Self Attitude. For simple projection, the more that respondents supported Obama and opposed McCain (Self Attitude), the more they perceived Americans as supporting Obama and opposing McCain (Americans' Mean Attitude; $\beta = .54$, $t(845) = 18.58$, $p < .0001$, controlling for Self Extremity.

Partisan identification. We next examined whether polarization projection and simple projection were independent of strength of partisan identification, and whether partisan identification was independently associated with perceived polarization. We estimated the simultaneous regression models just described with three additional predictors: strength of partisan identification, defined earlier, and two contrast codes for party preference (one for Independent vs. party affiliate, and one for Republican vs. Democrat).

For perceptions of Americans' polarization, Self Extremity remained significant ($\beta = .18$), $t(802) = 4.93$, $p < .001$, reflecting polarization projection. Strength of identification was also significant ($\beta = .27$), $t(802) = 3.68$, $p < .001$, indicating that more strongly identified participants perceived greater polarization. For perceptions of Americans' mean, Self Attitude remained significant ($\beta = .55$), $t(802) = 13.70$, $p < .001$, reflecting simple projection; strength of identification did not predict perception of Americans' mean, $t(802) < 1$. We also tested whether there were interactions between strength of identification and either Self Extremity or Self Attitude, neither of which was significant ($ts < 1$). Both polarization projection and simple projection were thus independent of and did not interact with strength of party identification.

Voting intentions. We conducted a logistic regression to examine whether perceived polarization predicted voting intentions. Of the 848 respondents on whom we had complete data, most intended to vote in the presidential election (87%). We estimated the log-odds of voting intention from Self Attitude, Self Extremity, Americans' Mean Attitude, and Americans' Polarization. Self Attitude was marginally significant, Wald $\chi^2(1) = 2.74$, $p = .098$, reflecting a tendency toward Obama supporters to report higher voting intentions. Unsurprisingly, Self Extremity was also significant, reflecting that the more extreme respondents were in

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[2] In a supplemental analysis, we included as predictors participant gender, ethnicity (coded as three contrast codes differentiating Whites, Latinos, Blacks, and Asians/others), and income (coded on a scale from 1, indicating $25,000 or less, to 9, indicating $150,000 or more). None of these demographic predictors were significant (all $ts < 1$), and the polarization projection and simple projection effects remained essentially unchanged.

Table 1
Zero-Order Correlations Among Variables in Study 1 (N = 848)

	Variable	A	B	C	D	E	F	G	H
A	Own Obama Attitude	—							
B	Own Obama Extremity	−.057	—						
C	American Obama Mean	.450	−.057	—					
D	American Obama Extremity	−.061	.247	−.124	—				
E	Own McCain Attitude	−.826	.111	−.437	.055	—			
F	Own McCain Extremity	−.007	.601	−.029	.196	.106	—		
G	American McCain Mean	−.394	.079	−.404	.086	.456	.075	—	
H	American McCain Extremity	−.064	.162	−.080	.578	.084	.268	−.080	—

Variable	M	SD	Variable definition
Own Obama Attitude	2.77	1.65	Own attitude toward Obama (higher numbers indicate greater opposition)
Own Obama Extremity	1.52	0.68	Own attitude extremity toward Obama (relative to scale midpoint, range = 0–2)
American Obama Mean	2.81	0.39	Perceived mean of American attitudes toward Obama (higher numbers indicate greater opposition)
American Obama Extremity	1.48	0.14	Perceived polarization of American attitudes toward Obama (standard deviation around scale midpoint)
Own McCain Attitude	3.15	1.59	Own attitude toward McCain (higher numbers indicate greater opposition)
Own McCain Extremity	1.44	0.70	Own attitude extremity toward McCain (relative to scale midpoint, range = 0–2)
American McCain Mean	3.04	0.43	Perceived mean of American attitudes toward McCain (higher numbers indicate greater opposition)
American McCain Extremity	1.46	0.14	Perceived polarization of American attitudes toward McCain (standard deviation around scale midpoint)

their support for one candidate, the stronger their intentions to vote in the upcoming election, Wald $\chi^2(1) = 44.01$, $p < .0001$. Most important, Americans' Polarization was significant. The more polarized respondents perceived Americans to be, the more inclined they were to vote, Wald $\chi^2(1) = 4.05$, $p = .044$.[3] Participants thus had stronger voting intentions to the degree that they perceived Americans as polarized in their support for the two candidates. This effect of Self Extremity highlights the importance of perceived polarization for political action.

Discussion

These results demonstrate—for the first time, and with a nationally representative sample—the simultaneous occurrence of polarization projection and simple projection. In the partisan context of a presidential election, people who were more extreme in their own support for one presidential candidate over the other perceived

Americans as more polarized compared with people who were more moderate in their support for the candidates. People also exhibited simple projection, estimating that other Americans tended to share their attitude.

Polarization projection and simple projection were also independent of people's partisan identification. To be sure, people who more strongly identified as a Democrat or Republican perceived more polarization than did people who identified less strongly (Huber et al., 2012; Sherman et al., 2009; Westfall et al., 2012). But the effects of polarization projection and simple projection were independent of political identification. Finally, these results demonstrate that perceived polarization was a significant independent predictor of voting intentions, beyond the extremity of people's own attitudes toward the candidates. This finding highlights that voting behavior is determined not only by characteristics of one's own attitude (i.e., extremity) but also by the perception of others' attitudes.
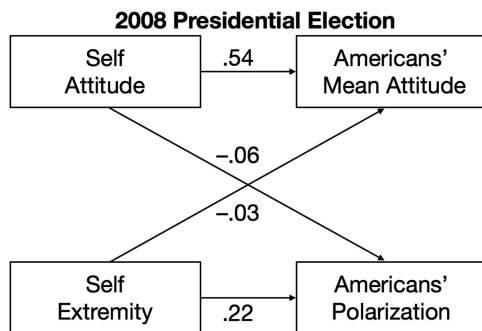
Study 2: Attitudinal Process Projection

Having demonstrated polarization projection and simple projection in an important political context outside the laboratory, we next turned our attention to understanding better the processes that might explain polarization projection. It seemed important, initially, to examine a critical assumption of our analysis: namely, that people project their perceptions of the processes underlying their own attitudes on partisan topics. The projection of processes such as engaging in extensive thought, self-interest, and emotion may contribute to polarization projection. If people think others engage in the same attitudinal processes contributing to their own

Figure 3. Standardized partial regression coefficients from simultaneous regressions estimating respondents' perception of Americans' Mean Attitude (support for Obama minus McCain) and estimating Americans' Attitude Polarization from respondents' Self Attitude (support for Obama minus McCain) and Self Extremity (extremity of support for Obama minus McCain). For presentational ease, the association between Self Attitude and Self Extremity are not presented.

[3] The effect of Americans' Polarization remained significant in a subsequent analysis including respondents' strength of partisan identification, Wald $\chi^2(1) = 4.23$, $p = .040$. The effect of Self Extremity also remained significant, Wald $\chi^2(1) = 24.11$, $p < .0001$. Strength of partisan identification was also significant, Wald $\chi^2(1) = 9.43$, $p = .002$.

relatively extreme attitudes, then others should similarly hold extreme attitudes.

It is worth noting two considerations about this explanation of polarization projection. First, it does not require that people accurately perceive attitudinal processes. Even if people had limited introspective awareness of the processes underlying their own attitudes (Nisbett & Wilson, 1977), their perception of such causal relationships and the projection of those perceived processes onto others could contribute to polarization projection.

Second, attitudinal process projection implies a correlation between perceived attitudinal processes in the self and others that is independent of people's tendency to perceive their own processes as more rational, less biased than others' processes (Pronin et al., 2004; Pronin, Lin, & Ross, 2002; Ross & Ward, 1996; Van Boven, White, Kamada, & Gilovich, 2003). As previously discussed, polarization projection and attitudinal processes projection explain individual variability in perceived polarization and attitude processes. Naïve realism, in contrast, implies mean differences in perceptions of biased processing as a basis for false perceptions of polarization. Of course, process projection and naïve realism are complementary and may occur simultaneously. People may, for example, perceive that extensive thought influences their own attitudes more than others' attitudes, even as those who see themselves as engaged in more extensive thought also see others as engaged in relatively more extensive thought.

We tested for attitudinal processes projection by asking people to contemplate their attitude toward a salient political issue, President Obama's efforts in 2009 to reform health care, and to report how much several attitudinal processes shaped their attitude. We also asked people to estimate how much those processes influenced other Americans' attitudes toward the same issue. We predicted that people's perceptions of their own attitudinal processes would be positively correlated with their perceptions of others' processes, even as they might perceive their own attitudinal processes as more rational, less biased than others' attitudinal processes.

Method

One hundred twenty-nine respondents (69 women, 31 men, 29 unreported) completed an online survey in exchange for entry into a $100 lottery.[4] Respondents were recruited from online classified advertisements in the metropolitan areas of Atlanta, Denver, Los Angeles, and New York. The study was conducted between July and October 2009.

Participants were first asked to spend a few moments thinking about their own attitudes toward President Barack Obama's efforts to reform health care, a controversial issue salient at the time of the study. Participants were then asked to report how much (1 = *not at all*, 7 = *a great deal*) five different attitudinal processes caused them to hold their particular stance: discussions with like-minded people, learning new information, repeatedly expressing their opinions to other people, extensive thought, and their upbringing and values. After rating how much the five processes influenced their own attitudes toward health care reform, participants were asked to rate how much the same five processes influenced other Americans' attitudes toward Obama's health care reform efforts.

Results and Discussion

We examined the relationship between participants' ratings of how much they engaged in different attitudinal processes and their estimates of how much Americans engaged in those processes, using both between-persons and within-person analyses. Participants' ratings of how much they engaged in each of the five processes were positively correlated with their estimates of how much Americans engaged in those processes. For example, participants who thought that learning new information contributed more to their attitudes also thought that learning new information contributed to the political attitudes of other Americans, $r = .35$, $p < .05$ (see the final column of Table 2).

We also calculated, for each respondent, the correlation between ratings of how much they themselves engaged in the four processes and how much they estimated Americans engaged in the four processes. A correlation was computed for each participant, and these within-person correlations were treated as data in a one-sample t test against 0. The average of these within-person correlations was significantly positive (average $r = .18$), $t(114) = 3.43$, $p = .001$.[5] People thus projected onto others their perceptions of processes underlying their own attitudes.

These results also reveal several mean differences between people's perceptions of their own and other Americans' attitudinal processes (see Table 2). Participants perceived their own attitudes, compared with others' attitudes, as more influenced by learning new information, paired $t(128) = 2.27$, $p = .025$, and extensive thought, paired $t(128) = 3.68$, $p < .001$. People perceived their own attitudes as less influenced by discussions with like-minded others, paired $t(128) = 6.83$, $p < .001$; repeated attitude expression, paired $t(128) = 4.71$, $p < .001$; and (nonsignificantly) upbringing and values, paired $t(128) = 1.49$, *ns*. These perceived differences are consistent with research indicating that people perceive their own attitudinal processes as more favorable than others' processes (Pronin et al., 2004; Pronin, Lin, & Ross, 2002; Van Boven et al., 2003).

Together, then, these findings indicate that people project onto others perceptions of the processes underlying their own attitudes toward a partisan topic. This process projection occurred even as people perceive others as engaging in less rational, more biased processing than themselves. Attitudinal process projection may contribute to political polarization projection. Because people are obviously aware that Americans are divided in their attitudes toward partisan topics, the perception that others engage in similar processes as the self implies that others' attitudes—on both sides of the issue—are seen as similarly extreme or moderate as one's own attitudes.

Study 3: Laboratory-Induced Polarization Projection

We next sought to conceptually replicate polarization projection in a more tightly controlled laboratory setting with a novel issue and with naturally occurring partisan groups. Demonstrating po-

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[4] There were no significant sex differences on any of the measures.

[5] The analyses excluded 14 participants for whom there was zero variance either in perceptions of their own attitudinal processes or in perceptions of others' attitudinal processes, which precluded calculation of the relevant within-person correlation. Resulting $N = 115$.

Table 2

Participants' Ratings of How Much Five Different Attitudinal Processes Influenced Their Own Attitudes Toward President Obama's Efforts to Reform Health Care, Their Ratings of How Much Those Five Processes Influenced Other Americans' Attitudes Toward President Obama's Efforts to Reform Health Care, and the Correlations Between Those Two Ratings

| | Target | | | | |
| | Self | | Other Americans | | |
Attitudinal process	M	SD	M	SD	r
Learning new information	4.95$_a$	1.53	4.60$_b$	1.53	.35*
Extensive thought	5.02$_a$	1.46	4.36$_b$	1.64	.16
Discussions with like-minded others	4.08$_a$	1.69	5.12$_b$	1.54	.42*
Repeated expression of opinion	3.98$_a$	1.80	4.78$_b$	1.48	.32*
Values and upbringing	5.16	1.71	5.40	1.45	.34*

Note. Means with different subscripts within a row are significantly different, $p < .05$.
* $p < .05$.

larization projection regarding a novel partisan issue would avoid potential confounds associated with preexisting partisan issues such as a presidential election (Study 1) and health care reform (Study 2). Preexisting partisan topics have a history of partisan conflict and extensive media coverage that might inflate perceptions of political polarization. This history might account for polarization projection if people with more extreme attitudes are exposed to more extensive partisan media coverage.

The use of a novel (fictional) partisan issue would also avoid the possibility, unavoidable in "real world" partisan issues outside the lab, that people believe their own exposure to information regarding the issue is different from others. Outside the lab, with genuine partisan issues, people may believe that they have been exposed to more objective information sources than others, that they are therefore better informed than others about the relevant facts, and that these informational differences may influence perceptions of polarization (Griffin & Ross, 1991; Ross & Ward, 1995). We are skeptical, as discussed earlier, that such considerations explain the association between individual differences in attitude extremity and perceived polarization. Nevertheless, examining the phenomenon for a novel issue would minimize any lingering questions about the role of perceived information exposure.

We created a fictional political issue that entailed essential features of political partisan conflict: well-defined groups with somewhat polarized attitudes toward a policy concerning the allocation of scarce resources between groups. Undergraduate students at a large public university were told about a potential policy being considered by university administrators to offer nonresident, "out of state" students, who pay substantially higher tuition than "in-state" students, privileged benefits such as priority access to desirable dorms, priority class registration, and free printing. We reasoned that resident and nonresident students would naturally develop partisan attitudes toward this policy, which allocates scarce resources to one group (nonresident students) at the expense

of another group (resident students). More important for the present investigation, we predicted that those who themselves formed extreme attitudes, either in support of or in opposition to the policy, would estimate greater polarization among other university students, resulting in polarization projection. We also examined whether, as in Study 2, people would project the processes they perceived underlying their own attitudes onto other students.

Method

Twenty-eight undergraduate students (9 women) at the University of Colorado Boulder (CU-Boulder) participated in exchange for course credit. Participants were told that they would learn about a policy under consideration by the CU-Boulder administration and would answer some questions about their own and other students' opinions about the policy.

A fictional policy was created that would capture the essential features of partisan politics. Participants were reminded that approximately one third of students at CU-Boulder were enrolled as nonresident "out of state" students who pay substantially higher tuition than resident "in state" students. "Among students in Arts & Sciences, for example, Nonresidents pay approximately $27,000 in tuition for both semesters whereas Residents enrolled full-time pay a total of $7,300 tuition for both semesters—a difference of about $20,000." By stating the relative frequency of nonresident (one third) and resident (two thirds) students, the possibility that participants' perceptions of the attitude distribution would be influenced by assumptions about the relative frequency of nonresident and resident students was minimized.

Participants further learned that because nonresident students pay more tuition than do resident students, "it is obviously in CU-Boulder's interests to attract and retain nonresident students." Participants were told that CU-Boulder was therefore considering a Nonresident Attraction and Retention Program (NARP). The NARP policy would provide desirable benefits to nonresident students who pay higher tuition, some of which would entail a cost to resident students. The benefits included priority access to register for required courses in high demand, waiver of printing fee on campus computers, and priority selection of dorms. "The purpose of these enticements would be to attract and retain nonresident students who pay higher tuition than resident students. These policies would be implemented immediately and indefinitely."

Participants were first asked to provide open-ended descriptions of their opinions about NARP. What did they like or dislike about the policy? Did it violate their sense of fairness? Participants reported their own attitude toward NARP on a 5-point scale (1 = *strongly favor*, 2 = *somewhat favor*, 3 = *neither favor nor oppose*, 4 = *somewhat oppose*, 5 = *strongly oppose*). Participants then estimated the distribution of attitudes among CU-Boulder students using the histogram measure from Study 1, estimating the relative frequency of CU-Boulder students (*very few*, *very many*) at each of the five response options participants had used to report their own attitude. Earlier in the study, before learning about NARP, participants had been trained to use the histogram task, as in Study 1, regarding their own and other CU-Boulder students' attitudes toward President Barack Obama.

Participants' strength of identification was also measured. Participants reported how much (1 = *not very strongly*, 7 = *extremely strongly*) they identified with being a resident student at CU-

Boulder, and, separately, how much they identified with being a nonresident student at CU-Boulder.

Participants also reported how much (1 = *not at all*, 7 = *a great deal*) four different processes influenced their attitudes, and they estimated how much the four processes influenced other CU-Boulder students' attitudes toward NARP: emotional reactions, extensive thought, self-interest, and a sense of fairness. Finally, after providing demographic information and answering several questions unrelated to the present analyses, participants were thanked and thoroughly debriefed, particularly regarding the fictional nature of NARP.

Results

Manipulation check. As intended, resident students' attitudes toward NARP were less favorable ($n = 20$, $M = 3.90$, $SD = 1.17$) than were nonresident students' attitudes ($n = 8$, $M = 2.00$, $SD = 1.31$), $t(26) = 3.77$, $p < .001$. One resident student wrote, "This proposal is bullshit! If anything Residents should get special treatment for staying close to home and supporting a semilocal school. Instead CU should encourage Nonresidents to attend CU based upon its academics, sports, beautiful campus, and so on." One nonresident student, by contrast, wrote, "I like this proposal a lot. This is because I am biased because I am out of state and I want the sweet hookups." Resident and nonresident students did not significantly differ in their attitude extremity, measured as the absolute difference from the scale midpoint of 3 (range = 0–2; M resident = 1.30; M nonresident = 1.50; $t < 1$). Participants thus had partisan attitudes toward NARP as a function of their residency status.

Polarization projection and simple projection. From their distribution estimates, we computed, as in Study 1, participants' perception of polarization around the scale midpoint of other CU-Boulder students' attitudes toward NARP (Other Students' Polarization), and participants' perceived mean of other CU-Boulder students' attitudes toward NARP (Other Students' Mean Attitude). We then conducted two simultaneous regressions, estimating both Other Students' Polarization and Other Students' Mean Attitude from participants' own attitude (Self Attitude) and their own attitude extremity (Self Extremity), controlling for residency status (–1 = nonresident, +1 = resident).

Participants exhibited the predicted polarization projection and simple projection (see Figure 4). For polarization projection, Self Extremity predicted Other Students' Polarization ($\beta = .46$), $t(24) = 2.48$, $p = .021$, controlling for Self Attitude and residency status.[6] For simple projection, Self Attitude predicted Other Students' Mean Attitude, although the effect was not significant ($\beta = .36$), $t(24) = 1.59$, $p = .12$, controlling for their Self Extremity and residency status. We thus replicated polarization projection in a controlled laboratory setting with a novel partisan policy and naturally occurring partisan groups.

Partisan identification. Polarization projection was independent of partisan identification. We calculated the absolute value of the difference between participants' identification as a resident minus nonresident student ($M = 3.89$, $SD = 2.45$). We used a difference score to measure strength of identification to allow for conflicting or ambivalent identities.

For polarization projection, we added to the previously described model strength of identification and its interaction with
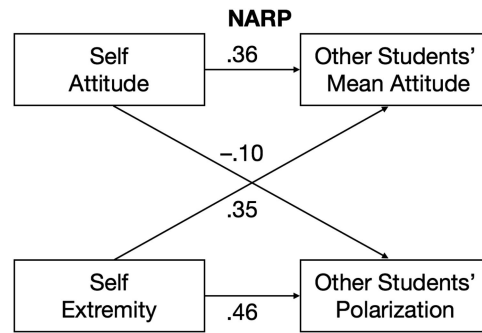

Figure 4. Standardized partial regression coefficients from simultaneous regressions estimating participants' perception of Other Students' Mean Attitude and estimating Other Students' Polarization from participants' Self Attitude and Self Extremity, controlling for participants' residency status. For presentational ease, the association between Self Attitude and Self Extremity are not presented. NARP = Nonresident Attraction and Retention Program.

Self Extremity, neither of which were significant (both ts < 1). The effect of Self Extremity was essentially unchanged ($\beta = .51$), $t(23) = 2.39$, $p = .025$. For simple projection, we added to the previously described model strength of identification and its interaction with Self Attitude, neither of which were significant (both ts < 1). The effect of Self Attitude was slightly reduced ($\beta = .31$), $t(23) = 1.25$, *ns*.

Attitudinal process projection. Participants projected perceptions of their own attitudinal process onto other students, replicating Study 2. We calculated both between-persons and within-person correlations, as we did in Study 2. As seen in the last column of Table 3, participants' perceptions of how much they engaged in attitudinal processes were positively correlated with their estimates of how much other students engaged in the same attitudinal processes. We also calculated, for each participant, the correlation between ratings of how much the participant engaged in the four processes and how much the participant estimated other CU-Boulder students engaged in the four processes. The average of these within-participant correlations was significantly positive (average $r = .27$), $t(24) = 2.34$, $p = .028$.[7] People thus assumed that others engaged in similar attitudinal processes as themselves.

Participants tended to perceive themselves, compared with other students, as somewhat less influenced by self-interest, $t(27) = 1.89$, $p = .07$, and more influenced by a sense of fairness, $t(27) = 2.68$, $p = .012$ (see Table 3). These mean differences probably reflect people's tendency to see themselves as engaging in relatively more favorable attitudinal processes than others (Pronin et al., 2004; Pronin, Lin, & Ross, 2002). Participants thus projected onto others the processes that they perceived as influencing their

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[6] In a subsequent analysis, there was a significant effect of participant sex, $t(23) = 2.83$, $p = .009$, reflecting that males perceived more polarization than did females. Participant sex did not interact with attitude extremity, however, $t < 1$. The effect of polarization projection remained significant and essentially unchanged ($\beta = .58$), $t(23) = 3.43$, $p = .002$.

[7] The analyses excluded two participants for whom there was zero variance either in perceptions of their own attitudinal processes or in perceptions of others' attitudinal processes. Resulting $N = 25$.

Table 3

Participants' Ratings of How Much Four Different Attitudinal Processes Influenced Their Own Attitudes Toward the Nonresident Attraction and Retention Program, Their Ratings of How Much Those Four Processes Influenced Other Students' Attitudes, and the Correlations Between Those Two Ratings

| | Target | | | | |
| | Self | | Other Students | | |
Attitudinal process	M	SD	M	SD	r
Extensive thought	4.39	1.69	4.43	1.53	.48*
Sense of fairness	5.64$_a$	1.37	5.04$_b$	1.40	.26
Self-interest	5.18	1.85	5.89	1.37	.63*
Emotion	4.04	1.93	4.46	1.62	.55*

Note. Means with different subscripts within a row are significantly different, $p < .05$.
* $p < .05$.

own attitude toward NARP, even as they perceived themselves as engaging in relatively more favorable attitudinal processes.

Discussion

These results conceptually replicate the central findings of Studies 1 and 2, but in a more tightly controlled laboratory setting, with naturally occurring partisan groups and with a novel issue. Participants were confronted with a fictional partisan issue regarding the allocation of resources to naturally occurring groups of resident and nonresident students at a large public university. Their attitudes toward the policy were based on their identification as resident and nonresident students. The more polarized their attitudes, the more they perceived polarization in the distribution of attitudes among other students, independent of simple projection. Participants also tended to socially project their own attitudes toward the policy when estimating the distribution of other students' attitudes toward the issue, independent of polarization projection. Although the effect of simple projection was of a moderate size, it was not statistically significant, which we attribute to the study's relatively small sample size. Importantly, neither participants' perceptions of polarization nor their perceptions of mean support were independently predicted by their strength of identification. Finally, consistent with our thesis that polarization projection is associated with process projection, participants assumed that others engage in similar attitudinal processes as themselves when reasoning about partisan issues.

Study 4:
Introspection Increases Polarization Projection

Our idea is that people exhibit polarization projection partly because they assume others' political minds work in similar ways as their own. We next sought more direct evidence for this explanation of polarization projection by experimentally manipulating the accessibility of people's perceptions of their own attitudinal processes. Our approach was to establish a "causal chain" across studies (Spencer, Zanna, & Fong, 2005). Studies 1 and 3 demonstrated polarization projection, an association between people's

attitude extremity and perceptions of polarization. Studies 2 and 3 demonstrated process projection, which we hypothesize explains polarization projection. In Study 4, we sought to moderate polarization projection by experimentally manipulating process projection. Polarization projection should be larger when process projection is stronger.

In a replication of Study 3, we told public university students about the NARP policy. We asked some people to introspect about the processes underlying their own attitudes toward NARP. We reasoned that introspection, like other forms of self-focus (Fenigstein & Abrams, 1993), should increase the accessibility of people's perceptions of these processes. Our central prediction was that experimentally manipulated introspection would increase polarization projection. Specifically, people who read about potential attitudinal processes and described the processes underlying their attitudes toward NARP should exhibit a stronger association between their attitude extremity and their perceived polarization compared with people who did not describe the processes underlying their attitudes toward NARP.

We also predicted that introspection would increase simple projection, the association between people's own attitude toward NARP, and their perception of others' mean attitude. As mentioned earlier, both polarization projection and simple projection may be partly attributable to process projection. This possibility implies that increasing the accessibility of self-perceived attitudinal processes should increase simple projection, just as it should increase polarization projection.

Method

One hundred one undergraduate students at CU-Boulder (60 women) participated in exchange for course credit. The procedure was similar to Study 3. Participants learned about the fictional NARP policy and were asked to provide open-ended descriptions of and to report their attitude toward NARP (1 = *strongly favor*, 2 = *somewhat favor*, 3 = *neither favor nor oppose*, 4 = *somewhat oppose*, 5 = *strongly oppose*).

Before estimating the distribution of other CU-Boulder students' attitudes, participants were randomly assigned to the introspection or control conditions. Participants in the introspection condition were asked to describe the processes that led them to hold their attitude, "how you came to hold [your] particular stance." They were asked about various processes: "What factors, different thought processes, and experiences might have caused you to hold your stance? Did you consider if the proposal was in your self-interest? Did you engage in careful and extensive thought? Do you think your upbringing and values influence your position? Does your position on the proposal engage your sense of fairness?" This manipulation increased the accessibility of participants' perceptions of attitudinal processes by describing processes that are known to influence attitude extremity (self-interest, extensive thought, upbringing and values, and fairness) and by asking people to introspect about their use of these processes. Participants in the control condition did not answer these questions.

Participants then estimated the distribution of other CU-Boulder students' attitudes toward NARP. (Participants had previously learned to use the histogram with evaluation of President Barack Obama as a training topic, as in Study 3.) As a measure of participants' strength of identification, participants were asked

how much (1 = *not very strongly*, 7 = *extremely strongly*) they identified with being a resident student, and, separately, how much they identified with being a nonresident student at CU-Boulder. After providing demographic information and answering several questions not directly related to the present analyses, participants were thanked and debriefed.

Results

Manipulation check. Resident and nonresident students had somewhat partisan attitudes toward NARP. Resident students' attitudes toward NARP were less favorable ($n = 62$, $M = 3.90$, $SD = 1.22$) than were nonresident students' attitudes ($n = 39$, $M = 2.13$, $SD = 1.42$), $t(99) = 6.67$, $p < .001$. Resident and nonresident students did not, however, differ in their attitude extremity, relative to the scale midpoint (M resident = 1.39, M nonresident = 1.54), $t(99) = 1.22$, *ns*. The introspection manipulation did not influence mean-level perceptions of polarization (calculated as in Study 3, $M = 1.44$, $SD = 0.18$), perceptions of others' mean attitude (calculated as in Study 3, $M = 3.24$, $SD = 0.42$), or participants' strength of identification (all $ts < 1.29$, *ns*).

Introspection, polarization projection, and simple projection. To test our central prediction that introspection would increase polarization projection and simple projection, we conducted two simultaneous regressions. We estimated participants' perceptions of Other Students' Polarization and participants' perceptions of Other Students' Mean from: participants' attitude (Self Attitude, mean centered); participants' attitude extremity (Self Extremity, mean centered); introspection condition (Introspection; −1 = control, +1 = introspection); the Self Attitude × Introspection interaction; the Self Extremity × Introspection interaction; Residency status (nonresident = −1, resident = +1); and the Introspection × Residency interaction.

As predicted, participants who introspected about their own attitudinal processes exhibited more polarization projection than did participants in the control condition. Self Extremity significantly predicted Other Students' Polarization ($\beta = .38$), $t(93) = 3.93$, $p < .001$, replicating polarization projection. More important, the Self Extremity × Introspection interaction was significant ($\beta = .23$), $t(93) = 2.36$, $p = .021$. Polarization projection was significantly greater in the introspection condition ($\beta = .61$) than in the control condition ($\beta = .15$; see Figure 5).

Introspection also increased simple projection. Self Attitude significantly predicted Other Students' Mean Attitude ($\beta = .42$), $t(93) = 3.81$, $p < .001$, demonstrating simple projection. More important, the Self Attitude × Introspection interaction was significant ($\beta = .23$), $t(93) = 2.04$, $p = .044$. Simple projection was significantly greater in the introspection condition ($\beta = .65$) than in the control condition ($\beta = .20$; see Figure 5).[8]

Partisan identification. The effects of introspection on polarization projection and simple projection were independent of strength of identification. We calculated strength of identification as the absolute value of the difference between participants' identification as a resident student minus their identification as a nonresident student, as in Study 3 ($M = 4.33$, $SD = 1.98$). For polarization projection, we added to the relevant model strength of identification, the Identification × Introspection interaction, the Identification × Self Extremity interaction, and the Identification × Introspection × Self Extremity interaction. Self Extremity
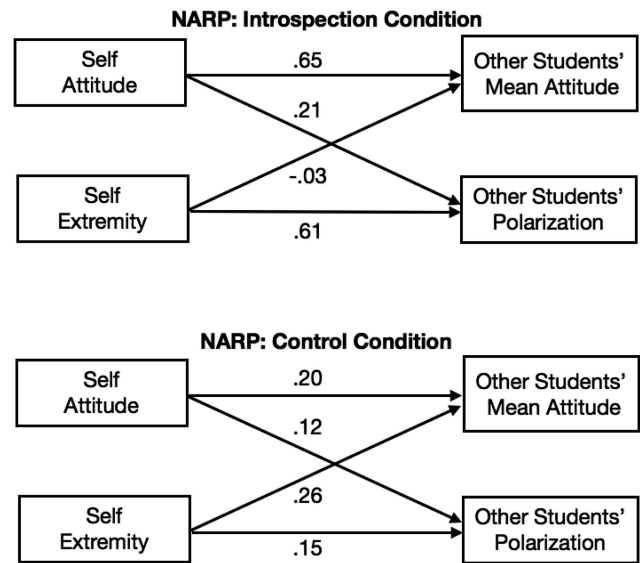

Figure 5. The standardized partial regression coefficients, separately, for the control and introspection conditions. These standardized estimates were calculated from the raw slopes using the pooled between-group standard deviations. Also included in the model, but not displayed in the figure, are the mean effects of Introspection, participants' Residency, the Introspection × Residency interaction, and the associations between Self Attitude and Self Extremity. NARP = Nonresident Attraction and Retention Program.

($\beta = .36$), $t(89) = 3.55$, $p = .001$, and the Introspection × Self Extremity interaction ($\beta = .24$), $t(89) = 2.40$, $p = .018$, remained significant. Neither Identification, $t(89) = 1.21$, *ns*, nor the Identification × Self Extremity interaction ($t < 1$), nor the Identification × Introspection interaction ($t < 1$) was significant. The Identification × Self Extremity × Introspection interaction was significantly negative ($\beta = −.24$), $t(89) = −2.19$, $p = .031$, reflecting that the introspection manipulation increased polarization projection less among participants with stronger partisan identification than among participants with weaker identification.

For simple projection, we added to the relevant model described earlier strength of identification, the Identification × Introspection interaction, the Identification × Self Attitude interaction, and the Identification × Introspection × Self Attitude interaction. Self Attitude ($\beta = .46$), $t(89) = 3.92$, $p < .001$, and the Introspection × Self Attitude interaction ($\beta = .26$), $t(89) = 2.22$, $p = .029$, remained significant. Neither Identification nor the Identification × Self Attitude, nor the Identification × Introspection interactions was significant ($ts < 1$). Analogous to the model of polarization projection, the Identification × Self Attitude × Introspection interaction was negative ($\beta = −.20$), $t(89) = −1.98$, $p = .051$, indicating that the introspection manipulation increased sim-

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[8] In the model predicting Others' Mean Attitude, there was an unanticipated Introspection × Residency interaction ($\beta = −.23$), $t(93) = 1.97$, $p = .052$; none of the other effects were significant (all $ts < 1.49$, all *ns*). In subsequent analyses that included additional interaction terms, none of the interactions involving participants' residency status were significant when predicting participants' perceived polarization or participants' perceived mean ($ts < 1.15$, all *ns*).

ple projection to a lesser extent among participants with stronger identification than with weaker identification.

We speculate that the three-way interactions in these models reflect the fact that perceptions of attitudinal processes toward NARP are highly accessible among those participants who more strongly identify as a resident or nonresident student. The introspection manipulation therefore has a diminished effect among these individuals. In any event, the central observation is that the predicted two-way interactions—between Introspection and Self Extremity for polarization projection, and between Introspection and Self Attitude for simple projection—remained significant when strength of identification and its relevant interactions were included in the models. The simultaneous, independent effects of polarization projection, simple projection, and their exacerbation by introspection were again not attributable to participants' strength of identification as a resident versus nonresident.

Discussion

These results indicate that introspection about the processes underlying one's partisan attitudes increased both polarization projection and simple projection. Introspection increased the relationship between people's own attitude extremity and their perception of polarized attitudes among others (polarization projection). And introspection increased the relationship between people's own attitude and their perception of the mean attitude among others (simple projection). Because introspection increases the accessibility of people's perceptions of their own attitudinal processes, these results provide more direct evidence that assumed similarity of attitudinal processes contributes to polarization projection and to simple projection.

General Discussion

Perceptions of political polarization can serve as a "call to action," increasing the likelihood of civic action (Bendor, Deirmier, & Ting, 2003; Cox & Munger, 1989; Riker & Ordeshook, 1968). We found in our Study 1, for example, that respondents in a nationally representative sample of Americans were more likely to vote in a presidential election to the extent they perceived Americans as polarized. This effect was independent of respondents' attitude extremity and partisanship. That perceptions of political polarization are predictive of civic action highlight the importance of understanding what predicts perceived polarization.

We found evidence for a psychological phenomenon of polarization projection. People project the extremity of their own partisan attitudes onto others such that those with more extreme attitudes perceive greater polarization than do those with less extreme attitudes. We introduced a novel procedure to measure people's perceptions of the distribution of partisan attitudes in a population. Using this unobtrusive methodology, which does not explicitly call for reflection of how "polarized" the population is or for separate ratings of partisan group attitudes, we obtained evidence for polarization projection in a nationally representative sample that evaluated candidates Obama and McCain before the 2008 Presidential election (Study 1). We replicated this polarization projection in more controlled laboratory studies with samples of university undergraduates evaluating a hypothetical policy that would divide resources among state residents and nonresidents

(Studies 3 and 4). This pattern of polarization projection occurred independently of and simultaneously with simple projection, the tendency for people to project their partisan attitudes onto others.

We explained polarization projection by suggesting that people project onto others the processes that they perceive underlie their own attitudes. In contexts in which the distribution of attitudes in the population is obviously divided, this process projection implies that the extremity of others' attitudes, on both sides of a partisan issue, is similar to one's own attitude extremity. We found both correlational and experimental support for this explanation. People who reflected on various attitudinal processes, such as extensive thought and emotionality, underlying their own attitudes projected perceptions of these processes onto others (Studies 2 and 3). Following an experimental manipulation of the accessibility of perceptions of one's own attitudinal processes, which involved asking some people to introspect on those processes, polarization projection was significantly increased (Study 4). The process projection explanation may also explain many instances of social projection, as implied by the fact that the introspection manipulation also increased simple projection (Study 4).

Our studies demonstrate that polarization projection is independent of the strength of people's partisan identification. To be sure, in the context of the 2008 presidential election, people who more strongly identified with either the Democratic or Republican party perceived greater polarization compared with people with weaker partisan identification (Study 1). Independent of the effect of partisan identification, however, individuals whose support for either Obama or McCain was relatively extreme perceived Americans as more polarized compared with individuals whose support was less extreme. Attitude extremity and strength of partisan identification thus independently and simultaneously influence perceived political polarization.

Questions for Future Research

The present results raise for future research at least four questions regarding the moderators and mediators of polarization projection. First, how much does attitude extremity influence perceived polarization, and how much do perceptions of polarization influence attitude extremity? Perceptions of political polarization may be somewhat self-fulfilling. Individuals who see more polarization may themselves become polarized through such processes as "choosing sides" and conforming to perceived group norms (Prentice & Miller, 1996; Shamir & Shamir, 1997; Van Boven, 2000). Our focus, in contrast, has been on how one's own attitude extremity can influence perceived polarization. We are confident that the present results demonstrate that attitude extremity influences polarization projection. In Study 4, attitude extremity was measured before the introspection manipulation, which increased polarization projection but did not increase perceived polarization.

We nevertheless suspect that attitude extremity and perceived polarization often have a reciprocal relationship. This relationship between actual extremity and perceptions of polarization may be particularly strong for those who see the political parties as homogeneous, agentic groups, and may be particularly acute during periods of uncertainty and threat (Huber et al., 2012; Sherman et al., 2009). Of course the same kind of reciprocal relationship may also hold for simple projection: The relationship between one's own attitude and perceptions of others' mean attitude derives both

from the projection of one's own attitude as well as from the assimilative influences of others' mean attitude. An important task for future research will be to examine these reciprocal influences.

Second, might individual differences contribute to polarization projection? It may be that individuals with more extreme attitudes have integratively simplistic cognitive styles (Sidanius, 1985, 1988; Tetlock, 1986; Tetlock, Armor, & Pterson, 1994) that cause them to see attitude distributions as more simplistic, polarized, and "black and white" (or "Red and Blue," in this case). We are skeptical that individual differences in cognitive style explain the totality of the present results. Simple versus complex cognitive styles do not readily explain the process projection demonstrated in Studies 2 and 3 or the introspection manipulation in Study 4. Although simplistic cognitive styles may well explain partly why some people have more extreme attitudes than others, they are unlikely to explain why people project attitude extremity onto others. We suspect that cognitive styles primarily influence attitude extremity, which then influences perceived polarization, possibly because people project their cognitive styles onto others. That is, people with more simplistic cognitive styles may hold relatively extreme attitudes, assume that others' cognitive styles are relatively simplistic, and therefore perceive that others' attitudes are relatively extreme.

Third, what are the boundaries on polarization projection? We suspect that polarization projection will emerge in domains in which populations can be grouped according to the direction of bipolar attitudes. Political partisanship in the American context exemplifies such a domain because the population is largely grouped into partisans who have directionally different attitudes. Nearly everyone recognizes that Americans' attitudes toward prominent presidential candidates are divided primarily between Democrats and Republicans. The same could be said of other nonpolitical domains. Polarization projection might even emerge for simple preference questions that can be aligned on a bipolar dimension, such as whether the American East Coast or West Coast contributes more favorably to American culture. Individuals might assume that Easterners and Westerners would respond differently, and the extremity of individuals' own opinion might be associated with perceived polarization in attitudes toward the American cultural divide.

There also may be political issues on which there is no clear, underlying partisan divide, such as whether to support subsidies for midwestern corn farmers. Because the partisan alignment is less clear on such issues, we would not necessarily expect polarization projection. There may also be political contexts with multidimensional partisanship, for example, European multiparty systems. In these cases, people might exhibit polarization projection along multiple dimensions. People with more extreme stances on a particular dimension (e.g., support for increased environmental protection) might expect other groups to exhibit extreme support on the dimension most relevant to that group (e.g., opposition to Euro monetary policy). Questions about when and where polarization projection emerges will be fruitful for future research.

Finally, given that perceptions of political polarization are multiply determined, what shapes the relative importance of different determinants? By way of example, self-categorization implies that people perceive distinctions between political ingroups and outgroups to the degree that they personally identify with the ingroup and are motivated to accentuate group differences (Huber et al.,

2012; Mackie, 1986; Mullen et al., 1992; Turner et al., 1987; Westfall et al., 2012). The influence of personal partisan identification is different from the influence of attitude extremity; the results of Study 1 indicate that both identification and attitude extremity are associated with perceived polarization. We suspect that partisan identification may be relatively more strongly associated with perceived polarization in those contexts in which partisan identities are particularly salient.

Relatedly, naïve realism implies that people perceive political polarization partly because they expect others to engage in more biased, self-interested, less objective processing than the self (Pronin, Puccio, & Ross, 2002; Robinson et al., 1995; Sherman et al., 2003). Although polarization projection and naïve realism are independent, there may be some contexts that naturally elicit one process more than the other. One idea is that the framing of questions can highlight different processes (Schwarz, 1999). In our studies, participants estimated the distribution of partisan attitudes in superordinate groups (e.g., "What is the distribution of Americans' attitudes?"), whereas participants in previous studies estimated the typical response of specific subordinate partisan groups (e.g., "What is the typical Republican attitude?"). The former, superordinate framing may elicit processes grounded in perceived similarities more than partisan subordinate framing, which may elicit processes grounded in perceived differences.

Broader Implications

The present results have important theoretical and practical implications. The underlying ideas presented here, that polarization projection arises from assumed similarities in the way partisan minds work, echoes developmental and social psychological theories of perspective taking (Nisbett & Wilson, 1977; Van Boven & Loewenstein, 2005a, 2005b) and mind perception (Epley & Waytz, 2009). Such theories describe the development and nature of people's mental models of how the mind works, models that allow people to make estimates about others' reactions to different situations (Goldman, 1992; Gopnik, 1993; Gopnik & Wellman, 1994; Karniol, 2003; Stich & Nichols, 1992). Intuitive understanding of how the (political) mind works, in addition to understanding the mind's (political) contents, is a powerful, versatile tool for social perception that goes beyond the simple assumption that other people think and feel what people themselves think and feel. Projecting a mental model of generative attitudinal processes, as opposed to a mental representation of others' attitudinal stances, allows people to estimate the outputs (i.e., political attitudes) of those who have different attitudinal inputs (e.g., backgrounds, information, and interests).

The present results also have implications for intergroup political behavior. As highlighted by our study of a nationally representative sample of potential voters, the perception of polarization is associated with stronger intentions to vote in the 2008 presidential election, beyond the extremity of people's personal preference for one candidate over another. These results suggest that the extremity of people's own political attitudes influences civic behavior (i.e., behavior) both directly and indirectly, through their influence on perceived polarization.

Conclusion

We believe that the present results shed light on an important source of political rancor and conflict. Those who are extreme with strong partisan identification are most likely to perceive polarization. By perceiving greater polarization, individuals with extreme attitudes may see partisan others as stereotypic caricatures of the Democrats and Republicans, Liberals and Conservatives. If those with extreme attitudes are also more likely to be politically active, their perception of a polarized, stereotypic partisan landscape may lead them to adopt confrontational and defensive partisan behavior. Such aggressive politicking on the part of partisan extremists may explain why they seem to live in a different political reality.

References

Abrams, D., & Hogg, M. A. (1988). Comments on the motivational status of self-esteem and social identity and intergroup discrimination. *European Journal of Social Psychology, 18,* 317–334. doi:10.1002/ejsp.2420180403

Acevedo, M., & Krueger, J. (2004). Two egocentric sources of the decison to vote: The voter's illusion and the belief in personal relevance. *Political Psychology, 25,* 115–134. doi:10.1111/j.1467-9221.2004.00359.x

Ames, D. (2004a). Inside the mind-reader's toolkit: Projection and stereotyping in mental state inference. *Journal of Personality and Social Psychology, 87,* 340–353. doi:10.1037/0022-3514.87.3.340

Ames, D. (2004b). Strategies for social inference: Projecting to the similar and stereotyping to the different attribute prevalence judgments. *Journal of Personality and Social Psychology, 87,* 573–585. doi:10.1037/0022-3514.87.5.573

Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind.* Cambridge, MA: MIT Press/Bradford Books.

Bazerman, M. H., & Neale, M. A. (1992). *Negotiating rationally.* New York, NY: John Wiley & Sons.

Bem, D. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York, NY: Academic Press.

Bendor, J., Deirmier, D., & Ting, M. (2003). A behavioral model of turnout. *The American Political Science Review, 97,* 261–280. doi:10.1017/S0003055403000662

Bradley, B. (2008). *The New American story.* New York, NY: Random House Trade Paperbacks.

Brody, R. A., & Page, B. I. (1972). Comment: The assessment of policy voting. *American Political Science Review, 66,* 450–458. doi:10.2307/1957788

Carter, J. (2010, October 26). *Hardball With Chris Matthews.*

Chambers, J. R., Baron, R. S., & Inman, M. L. (2006). Misperceptions in intergroup conflcit. *Psychological Science, 17,* 38–45. doi:10.1111/j.1467-9280.2005.01662.x

Chambers, J. R., & Malnyk, D. (2006). Why do I hate thee? Conflict misperceptions and intergroup mistrust. *Personality and Social Psychology Bulletin, 32,* 1295–1311. doi:10.1177/0146167206289979

Clement, R. W., & Krueger, J. (2002). Social categorization moderates social projection. *Journal of Experimental Social Psychology, 38,* 219–231. doi:10.1006/jesp.2001.1503

Conover, P. J., & Feldman, S. (1982). Projection and the perceptoin of candidates. *Western Political Quarterly, 35,* 228–244. doi:10.2307/448017

Corneille, O., & Judd, C. M. (1999). Accentuation and sensitization effects in the categorization of multifaceted stimuli. *Journal of Personality and Social Psychology, 77,* 927–941. doi:10.1037/0022-3514.77.5.927

Cox, G. W., & Munger, M. C. (1989). Closeness, expenditures, and turnout in the 1982 U.S. House elections. *The American Political Science Review, 83,* 217–231.

Cronbach, L. J. (1955). Processes affecting scores on "understanding others" and "assumed similarity." *Psychological Bulletin, 52,* 177–193. doi:10.1037/h0044919

Dawes, R. M., Singer, D., & Lemons, F. (1972). An experimental analysis of the contrast effect and its implications for intergroup communication and the indirect assessment of attitude. *Journal of Personality and Social Psychology, 21,* 281–295. doi:10.1037/h0032322

Downing, J. M., Judd, C. M., & Brauer, M. (1992). Effects of repeated expressions on attitude extremity. *Journal of Personality and Social Psychology, 63,* 17–29. doi:10.1037/0022-3514.63.1.17

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual Review of Psychology, 53,* 161–186.

Epley, N., & Waytz, A. (2009). Mind perception. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., pp. 498–541). New York, NY: Wiley.

Fenigstein, A., & Abrams, D. (1993). Self-attention and the egocentric assumption of shared perspectives. *Journal of Experimental Social Psychology, 29,* 287–303. doi:10.1006/jesp.1993.1013

Fiorina, M. P., Abrams, S. J., & Pople, J. C. (2010). *Culture war? The myth of a polarized America* (3rd ed.). New York, NY: Longman.

Gilovich, T. (1990). Differential construal and the false consensus effect. *Journal of Personality and Social Psychology, 59,* 623–634. doi:10.1037/0022-3514.59.4.623

Goldman, A. I. (1992). In defense of the simulation theory. *Mind & Language, 7,* 104–119. doi:10.1111/j.1468-0017.1992.tb00200.x

Gopnik, A. (1993). How we know our minds: The illusion of first-person knowledge of intentionality. *Behavioral and Brain Sciences, 16,* 1–14. doi:10.1017/S0140525X00028636

Gopnik, A., & Wellman, H. M. (1994). The theory theory. In L. A. Hirschfeld & S. A. Gelman (Eds.), *Mapping the mind: Domain specificity in cognition and culture* (pp. 257–293). New York, NY: Cambridge University Press. doi:10.1017/CBO9780511752902.011

Griffin, D. W., & Ross, L. (1991). Subjective construal, social inference, and human misunderstanding. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 319–359). San Diego, CA: Academic Press.

Hebb, D. O. (1946). Emotion in man and animal: An analysis of the intuitive processes of recognition. *Psychological Review, 53,* 88–106. doi:10.1037/h0063033

Heider, F. (1958). *The psychology of interpersonal relations.* New York, NY: Wiley. doi:10.1037/10628-000

Huber, M., Van Boven, L., Park, B., Teixeira, C. P., & Pizzi, W. (2012). *Seeing red: Anger exacerbates in-group protectionism in politically significant national tragedies.* Unpublished manuscript, University of Colorado Boulder.

Ichheiser, D. (1946). Projection as another form of false social perception. *American Psychologist, 1,* 258.

Jetten, J., Spears, R., & Postmes, T. (2004). Intergroup distinctiveness and differentiation: A meta-analytic integration. *Journal of Personality and Social Psychology, 86,* 862–879. doi:10.1037/0022-3514.86.6.862

Judd, C. M., & Johnson, J. T. (1981). Attitudes, polarization, and diagnosticity: Exploring the effect of affect. *Journal of Personality and Social Psychology, 41,* 26–36. doi:10.1037/0022-3514.41.1.26

Judd, C. M., Van Boven, L., Huber, M., & Nunes, A. (2012). Measuring everyday perceptions of the distribution of the American Electorate. In J. H. Aldrich & K. McGraw (Eds.), *Improving public opinion surveys: Interdisciplinary innovation and the American Natioal Election Studies* (pp. 195–219). Princeton, NJ: Princeton University Press.

Karniol, R. (2003). Egocentrism versus protocentrism: The status of the self in social prediction. *Psychological Review, 110,* 564–580. doi:10.1037/0033-295X.110.3.564

Katz, C., & Allport, F. (1931). *Students' attitudes.* Syracuse, NY: Craftsman Press.

Kelley, H. H., & Stahelski, A. J. (1970). Social interaction basis of

cooperators' and competitors' beliefs about others. *Journal of Personality and Social Psychology, 16,* 66–91. doi:10.1037/h0029849

Keltner, D., & Robinson, R. J. (1993). Imagined ideological differences in conflict escalation and resolution. *International Journal of Conflict Management, 4,* 249–262. doi:10.1108/eb022728

Krosnick, J. A. (1988). The role of attitude importance in social evaluation: A study of policy preferences, presidential candidate evaluations, and voting behavior. *Journal of Personality and Social Psychology, 55,* 196–210. doi:10.1037/0022-3514.55.2.196

Krueger, J. (1998). On the perception of social consensus. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 163–240). San Diego, CA: Academic Press.

Krueger, J., & Zeiger, J. S. (1993). Social categorization and the truly false consensus effect. *Journal of Personality and Social Psychology, 65,* 670–680. doi:10.1037/0022-3514.65.4.670

Lavine, H. (2001). The electoral consequences of ambivalence toward presidential candidates. *American Journal of Political Science, 45,* 915–929. doi:10.2307/2669332

Mackie, D. M. (1986). Social identification effects in group polarization. *Journal of Personality and Social Psychology, 50,* 720–728. doi:10.1037/0022-3514.50.4.720

Marks, G., & Miller, N. (1987). Ten years of research on the false consensus effect: An empirical and theoretical review. *Psychological Bulletin, 102,* 72–90. doi:10.1037/0033-2909.102.1.72

Mullen, B., Dovidio, J. F., Johnson, C., & Copper, C. (1992). In-group-out-group differences in social projection. *Journal of Experimental Social Psychology, 28,* 422–440. doi:10.1016/0022-1031(92)90040-Q

Nisbett, R. E., & Kunda, Z. (1985). Perception of social distributions. *Journal of Personality and Social Psychology, 48,* 297–311. doi:10.1037/0022-3514.48.2.297

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84,* 231–259. doi:10.1037/0033-295X.84.3.231

Page, B. I., & Brody, R. A. (1972). Policy voting and the electoral process: The Vietnam War issue. *American Political Science Review, 66,* 979–995. doi:10.2307/1957489

Prentice, D. A., & Miller, D. T. (1996). Pluralistic ignorance and the perpetuation of social norms by unwitting actors. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 28, pp. 161–209). San Diego, CA: Academic Press.

Pronin, E., Gilovich, T., & Ross, L. (2004). Objectivity in the eye of the beholder: Divergent perceptions of bias in self versus others. *Psychological Review, 111,* 781–799. doi:10.1037/0033-295X.111.3.781

Pronin, E., Lin, D. Y., & Ross, L. (2002). The bias blind spot: Perceptions of bias in self versus others. *Personality and Social Psychology Bulletin, 28,* 369–381. doi:10.1177/0146167202286008

Pronin, E., Puccio, C., & Ross, L. (2002). Understanding misunderstanding: Social psychological perspectives. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 636–665). New York, NY: Cambridge University Press.

Quattrone, G. A., & Jones, E. E. (1980). The perception of variabiltiy within in-groups and out-groups: Implications for the law of small numbers. *Journal of Personality and Social Psychology, 38,* 141–152. doi:10.1037/0022-3514.38.1.141

Quattrone, G. A., & Tversky, A. (1984). Causal versus diagnostic contingencies: On self-deception and on the voter's illusion. *Journal of Personality and Social Psychology, 46,* 237–248. doi:10.1037/0022-3514.46.2.237

Riker, W., & Ordeshook, P. (1968). A theory of the calculus of voting. *American Political Science Review, 62,* 25–42. doi:10.2307/1953324

Robinson, R. J., Keltner, D., Ward, A., & Ross, L. (1995). Actual versus assumed differences in construal: "Naive realism" in intergroup perception and conflict. *Journal of Personality and Social Psychology, 68,* 404–417. doi:10.1037/0022-3514.68.3.404

Ross, L., Greene, D., & House, P. (1977). The "false-consensus effect:" An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology, 13,* 279–301. doi:10.1016/0022-1031(77)90049-X

Ross, L., & Ward, A. (1995). Psychological barriers to dispute resolution. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 27, pp. 255–304). San Diego, CA: Academic Press.

Ross, L., & Ward, A. (1996). Naive realism in everyday life: Implications for social conflict and misunderstanding. In E. S. Reed, E. Turiel, & T. Brown (Eds.), *Values and knowledge* (pp. 103–135). Hillsdale, NJ: Lawrence Erlbaum Associates.

Rutchick, A. M., Smyth, J. M., & Konrath, S. (2009). Seeing red (and blue): Effects of electoral college depictions on political group perception. *Analyses of Social Issues and Public Policy, 9,* 269–282. doi:10.1111/j.1530-2415.2009.01183.x

Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist, 54,* 93–105. doi:10.1037/0003-066X.54.2.93

Seyle, D. C., & Newman, M. L. (2006). A house divided? The psychology of red and blue America. *American Psychologist, 61,* 571–580. doi:10.1037/0003-066X.61.6.571

Shamir, J., & Shamir, M. (1997). Pluralistic ignorance across issues and over time: Information cues and biases. *Public Opinion Quarterly, 61,* 227–260. doi:10.1086/297794

Sherif, M., & Hovland, D. (1961). *Social judgment: Assimilation and contrast effects in communication and attitude change.* New Haven, CT: Yale University Press.

Sherman, D. K., Hogg, M. A., & Maitner, A. T. (2009). Perceived polarization: Reconciling ingroup and intergroup perceptions under uncertainty. *Group Processes and Interpersonal Relations, 12,* 95–109. doi:10.1177/1368430208098779

Sherman, D. K., Nelson, L. D., & Ross, L. D. (2003). Naive realism and affirmative action: Adversaries are more similar than they think. *Basic and Applied Social Psychology, 25,* 275–289. doi:10.1207/S15324834BASP2504_2

Sidanius, J. (1985). Cognitive functioning and sociopolitical ideology revisited. *Political Psychology, 6,* 637–661. doi:10.2307/3791021

Sidanius, J. (1988). Political sophistication and political deviance: A structural equation examination of context theory. *Journal of Personality and Social Psychology, 55,* 37–51. doi:10.1037/0022-3514.55.1.37

Skitka, L. J., & Bauman, C. W. (2008). Moral conviction and political engagement. *Political Psychology, 29,* 29–54. doi:10.1111/j.1467-9221.2007.00611.x

Spears, R., Eiser, J. R., & van der Pligt, J. (1989). Attitude strength and perceived prevalence of attitude positions. *Basic and Applied Social Psychology, 10,* 43–55. doi:10.1207/s15324834basp1001_5

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology, 89,* 845–851. doi:10.1037/0022-3514.89.6.845

Stich, S., & Nichols, S. (1992). Folk psychology: Simulation or tacit theory? *Mind and Language, 7,* 35–71. doi:10.1111/j.1468-0017.1992.tb00196.x

Tajfel, H. (1959). Quantitative judgement in social perception. *British Journal of Psychology, 50,* 16–29. doi:10.1111/j.2044-8295.1959.tb00677.x

Tajfel, H., & Wilkes, A. L. (1963). Classificaton and quantitative judgment. *British Journal of Psychology, 54,* 101–114. doi:10.1111/j.2044-8295.1963.tb00865.x

Tesser, A., & Leone, C. (1977). Cognitive schemas and thought as determinants of attitude change. *Journal of Experimental Social Psychology, 13,* 340–356. doi:10.1016/0022-1031(77)90004-X

Tetlock, P. E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology, 50,* 819–827. doi:10.1037/0022-3514.50.4.819

Tetlock, P. E., Armor, D., & Peterson, R. S. (1994). The slavery debate in antebellum America: Cognitive style, value conflict, and the limits of compromise. *Journal of Personality and Social Psychology, 66,* 115–126. doi:10.1037/0022-3514.66.1.115

Thompson, L. (1990). Negotiation behavior and outcomes: Empirical evidence and theoretical issues. *Psycholgical Bulletin, 108,* 515–532. doi:10.1037/0033-2909.108.3.515

Thompson, L. (1995). They saw a negotiation: Partisanship and involvement. *Journal of Personality and Social Psychology, 68,* 839–853. doi:10.1037/0022-3514.68.5.839

Thompson, L., & Hastie, R. (1990). Social perception in negotiation. *Organizational Behavior and Human Decision Processes, 47,* 98–123. doi:10.1016/0749-5978(90)90048-E

Turner, J. C., Hogg, M. A., Oakes, P., Recher, S., & Wetherell, M. (1987). *Rediscovering the social group: A self-categorization theory.* Oxford, England: Basil Blackwell.

Van Boven, L. (2000). Pluralistic ignorance and political correctness: The case of affirmative action. *Political Psychology, 21,* 267–276. doi:10.1111/0162-895X.00187

Van Boven, L., Dunning, D., & Loewenstein, G. (2000). Egocentric empathy gaps between owners and buyers: Misperceptions of the endowment effect. *Journal of Personality and Social Psychology, 79,* 66–76. doi:10.1037/0022-3514.79.1.66

Van Boven, L., & Loewenstein, G. (2003). Social projection of transient drive states. *Personality and Social Psychology Bulletin, 29,* 1159–1168. doi:10.1177/0146167203254597

Van Boven, L., & Loewenstein, G. (2005a). Cross-situational projection. In M. D. Alicke, D. Dunning, & J. Krueger (Eds.), *The self in social perception* (pp. 43–64). New York, NY: Psychology Press.

Van Boven, L., & Loewenstein, G. (2005b). Empathy gaps in emotional perspective taking. In B. Malle & S. Hodges (Eds.), *Other minds* (pp. 284–297). New York, NY: Guilford Press.

Van Boven, L., Loewenstein, G., & Dunning, D. (2005). The illusion of courage in social predictions: Underestimating the impact of fear of embarrassment on other people. *Organizational Behavior and Human Decision Processes, 96,* 130–141. doi:10.1016/j.obhdp.2004.12.001

Van Boven, L., White, K., Kamada, A., & Gilovich, T. (2003). Intuitions about situational correction in self and others. *Journal of Personality and Social Psychology, 85,* 249–258. doi:10.1037/0022-3514.85.2.249

van der Plight, J., Ester, P., & van der Linden, J. (1983). Attitude extremity, consensus and informativeness. *European Journal of Social Psychology, 14,* 187–191.

Westfall, J., Chambers, J. R., & Van Boven, L. (2012). *Perceiving polarization in the American electorate.* Unpublished manuscript, University of Colorado Boulder.