Explicating the Black Box through Experimentation:

Studies of Individual Differences and Cognitive Processes

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Abstract

We advocate for an experimental approach to the study of personality and politics. In particular, we propose an "interactionist" model of political behavior in which the cognitive and behavioral effects of dispositional variables are qualified by experimentally-induced contexts. Our operating assumption is that the political effects of personality do not occur in a contextual vacuum, but instead are magnified by the presence of key precipitating or "activating" features of the political environment. We illustrate the approach with four experimental studies of authoritarianism. Results indicate that the effects of authoritarianism depend critically on the presence of situationally-induced threat. More generally, we argue that interactions between personality variables and experimental treatments can lead to valuable insights about when and why personality will make a meaningful contribution to public opinion and political behavior. Finally, we close with a critique of the traditional skepticism toward experimentation in political science, and suggest that external validity is an overrated virtue when the research goal is the development of theory rather than the description of "real world" phenomena.

1 Introduction

Theory and research on the underpinnings of public opinion is dominated by the study of political predispositions. Individual differences in personality, value orientation, ideology, and cognitive ability are central explanatory constructs in the areas of mass belief systems (Feldman 1988), opinion formation and change (Zaller 1992), and electoral behavior (Campbell, Converse, Miller and Stokes 1960). The centrality of such variables reflects both their key role in recent theoretical accounts of the origins of public opinion as well as longstanding empirical regularities. It is also a function of the methodological dominance of survey research in the field of political behavior. In essence, political predispositions present few measurement obstacles, and therefore are readily incorporated into models of political judgment and choice. Moreover, by using representative samples and naturalistic settings, external validity is maximized. However, the approach has two important weaknesses, one methodological and well-known, the other substantive and less so. First, survey data do not provide for strong causal inference, instead yielding conclusions of the type "X and Y are related," or the pseudo-causal "Y is predicted by X," rather than "X is the cause of Y." Second, research in social psychology suggests that the effects of individual differences are not consistent across situational contexts (Mischel, 1968). In harmony with the dictum that "every event depends upon the state of the person and at the same time on the environment" (Lewin, 1936), the effects of predispositions are likely to be variable, depending on features of the political context.

In this article, our task is to demonstrate the variable effects of individual differences on political judgment and choice. To do this, we advocate for an *experimental* approach to the study of personality and politics. However, our goal is not merely to affirm that situations matter (and that the experimental method is handy in this regard); rather, we aim to show that the effects of political predispositions are qualified by experimentally-induced variation in political context. In particular, we argue that the experimental approach can be useful in answering two fundamental questions about the influence of political predispositions: (1) *when* are they likely to influence political judgment and behavior (a

question of *prediction*) and (2) *why*, i.e., through which psychological processes (a question of *explanation*). As we will show in several experiments, the variable influence of predispositions can be profitably studied by crossing aspects of personality with manipulations of context in experimental designs. Our operating assumption is that the political effects of personality do not occur in a contextual vacuum, but instead are magnified by the presence of key precipitating or "activating" features of the political environment. We therefore expect the relationship between personality and political preference to be a contingent one, and that these contingencies can best be elucidated when they are brought under direct experimental control.

Beyond the virtue of enhanced prediction, experimental personality designs stand to deepen political scientists' understanding of the linkages between individual differences and political choice. Consider the relationship between political conservatism and opposition to government policies designed to create racial equality. Despite the robustness of this relationship, its meaning is far from clear. For example, does it reflect principled opposition to government intervention in the economy, as Sniderman and Carmines (1997) argue, or racial prejudice, as others (e.g., Sidinius, Pratto and Bobo 1996) have argued? That is, do conservatives oppose such legislation because they believe in individual rather than government responsibility or because they tend to hold negative beliefs about blacks and thus oppose policies designed to help them? Until we develop more powerful methods to pry open the black box, our models of political behavior will remain impoverished at the level of explanation. We do not claim that multivariate survey-based approaches are ill-suited to explicating the relations between individual differences and political judgments and preferences (for excellent examples, see Feldman and Stenner 1997; Sidanius et al. 1996; Sniderman, Brody and Tetlock 1991); what we do contend, and what we hope to demonstrate in this article, is that experiments can provide a powerful methodological tool for addressing this type of inferential problem.

In the next section, we introduce more formally the experimental approach to the study of personality and politics. Then, in the bulk of the article, we illustrate the approach with several

experimental studies of authoritarianism and threat. We then reverse figure and ground by demonstrating how interactions involving predispositions and experimental treatments can shed light on the nature and meaning of the *situational* or contextual determinants of political reasoning. Finally, we close with a critique of the traditional skepticism toward experimentation in political science, and suggest that external validity is an overrated virtue when the research goal is the development of theory rather than the description of phenomena.

2 An Experimental Approach to the Study of Personality and Politics

In our view, political judgment and behavior arise out of the joint (nonadditive) influence of longstanding political predispositions and exigencies of the immediate political context. The core feature of this perspective is that the influence of context on political behavior is not uniform in the electorate. In particular, features of political contexts can be identified in which political predispositions will be predictive of behavior and instances in which they won't. By bringing these environmental influences under direct experimental control, political scientists stand to gain valuable insights into when and why personality will make a meaningful contribution to public opinion and political behavior. In other words, by observing who takes the experimental bait and who doesn't, we can piece together *why* individual difference effects in politics emerge. But how does this occur? What features of a situation shift the causal locus of behavior to political predispositions, and to which predispositions in particular? Moreover, how can this "interactionist" approach shed light on the origins, nature, and dynamics of personality effects in politics? In our view, political behavior should be predictable (and explainable) in terms of personality when features of the situation *match* the content associated with a particular dimension of personality. Feature or "template" matching (see Bem and Funder 1978; Funder 1982) occurs when situational forces activate corresponding personality dispositions from memory, thus rendering them temporarily salient or "cognitively accessible." In turn, when the cognitive-behavioral propensities associated with a particular personality style are memorially active – when their contents are

transferred from long-term memory and deposited into working memory – they should exert a disproportionate effect on political judgment and decision-making (e.g., Higgins and King 1981; Huckfeldt, Levine, Morgan and Sprague 1999; Iyengar and Kinder 1986; Lavine 2001; Zaller and Feldman 1992). In other words, precipitating situations make personality *relevant* and thereby strengthen the connections between predispositions and their affective, cognitive, and behavioral manifestations. In the absence of trait-situational feature matching, such predispositions are likely to remain cognitively inactive and therefore relatively unlikely to influence subsequent judgments and behaviors.

To illustrate the feature matching approach within an experimental context, consider the following examples, one from the realm of race and politics, and other from the literature on priming and electoral judgment. Within the realm of racial politics, Sniderman and Carmines (1997) challenge long-held wisdom about the determinants of white Americans' racial policy attitudes by embedding a series of randomized experiments within national public opinion surveys. The authors capitalize on the strong inference logic of experimentation to gauge, among other things, the hold of racial prejudice and concerns about social desirability on public opinion. For example, in their "List Experiment," the authors attempt to gain explanatory purchase on ideological differences in attitudes toward affirmative action by varying the format by which respondents report their policy preferences. In the overt response condition, policy attitudes are assessed in the usual manner, and unsurprisingly, liberals are substantially more likely than conservatives to express support for affirmative action. To examine the role of social desirability (among liberals) in producing this ideological effect, Sniderman and Carmines devised a clever covert strategy for assessing respondents' policy attitudes without their knowledge. To do this, one half of the respondents were given a list of three issues (tax increases on gasoline, the high salaries of professional athletes, and corporate environmental pollution), and are asked to list how many of them – but importantly, not which ones – make them angry. The remaining respondents were given the same instructions and the same list, but with an additional item: "black leaders asking the government for affirmative action." Because there is no way for the interviewer to know which of the items on the list

engendered the respondent's anger (unless of course all of them did so), there should be little compunction toward masking any anger that respondents might feel toward affirmative action. However, by subtracting the mean in the three item condition from the mean in the four item condition, the proportion of respondents who are angry about affirmative action – presumably untainted by social desirability bias – can be readily ascertained. The experimental (overt-covert) response format produced a significant effect on policy attitudes, but only for liberals: On the overt measure, 32.7 percent of liberals and 50.9 percent of conservatives expressed anger about affirmative action. On the covert measure, levels of anger among conservatives increased only slightly, to 59.1 percent; in contrast, levels of anger among liberals shot up to 55.8 percent. Thus, the liberal-conservative policy attitude difference seen on the overt measure is eliminated almost entirely when attitudes are assessed covertly, providing some suggestion that ideological differences in attitudes toward affirmative action are more apparent than real (i.e., produced largely by social desirability pressures among liberals).

Several recent experiments in the realm of priming exemplify the feature-matching aspect of the interactional approach (e.g., Iyengar and Kinder 1987; Valentino, Hutchings and White 2002; for a quasi-experimental demonstration, see Krosnick and Kinder 1990). As a class, these studies demonstrate that the influence of a given dimension of personality (or attitude or belief) on political judgment depends on the extent to which that dimension has been made situationally salient. In psychological terms, by cognitively highlighting a particular feature of the environment, experimental manipulations of political context can alter the judgmental influence of individual differences. For example, in their studies of priming and presidential performance, Iyengar and Kinder (1987) experimentally varied whether respondents were exposed to several TV news stories about a particular issue (e.g., defense, inflation, unemployment). Consistent with the priming hypothesis, they found that the impact of ratings of the president's performance on specific issues on overall presidential performance was substantially stronger when the issue had been primed in the news stories. Thus, respondents who had been primed by defense stories were more likely to rate the president's overall performance on the basis of his perceived

performance on defense than were respondents who were primed by news stories about inflation or unemployment, and vice-versa.

The foregoing examples are intended to illustrate the value of the experimental method in elucidating personality effects in political judgment. What we see is that the links between individual differences on one hand and judgment and choice on the other depend critically on environmental context. In the next section, we illustrate more extensively the experimental approach to the study of personality and politics by reporting on a program of research on the personality trait of authoritarianism, and examining how its effects on a variety of attitudinal judgments are conditioned by the presence of a key situational instigator: threat.

3 Authoritarianism and Threat

Authoritarianism is among the most widely invoked dispositional concepts in the social sciences. Although originally conceived to explicate the psychological roots of prejudice and intolerance (e.g,. Adorno, Frankel-Brunswik, Levinson and Sanford 1950), it has emerged in more contemporary research as a robust predictor of policy attitudes and voting behavior (Altemeyer 1988; Peterson, Doty and Winter 1993). However, despite a vast empirical literature, authoritarianism has remained a theoretically impoverished concept. Aside from the notion that authoritarians are highly conventional, submissive to legitimate authority figures, and aggressive toward socially sanctioned outgroups, scholars disagree about what authoritarianism is, what its origins are, and what dynamics are involved in its expression. Our aim here is not to stake out new theoretical ground but rather to illustrate the value of the experimental approach in highlighting the relevance of the concept of threat in the activation of authoritarian dispositions.

Although threat is routinely implicated as an instigator of authoritarianism, the empirical evidence to date is sparse. At the aggregate level, archival studies have shown that citizens exhibit heightened authoritarian attitudes and behavior (e.g., a concern for power, authoritarian aggression,

submission, cynicism, superstition) during periods marked by social, economic, and political threat (e.g., high unemployment, high crime, civil disorder, war; Doty, Peterson and Winter 1991; McCann 1997, 1999; Sales 1972, 1973). At the individual level, Altemeyer (1988) has reported substantial correlations between his measure of right-wing authoritarianism and perceptions of the world as a dangerous place. More in line with the interactionist perspective, Feldman and Stenner (1997) argued that the punitive and intolerant dispositions of authoritarians should be activated by the presence of threat, and that the connection between authoritarianism and political preference should therefore be strongest when threat is high. This is just what they found: when threat was high – in the form of perceived ideological diversity in particular – relations between authoritarianism and a variety of political attitudes, including policy issues, attitudes toward ingroups and outgroups, stereotypes about minorities, and political values, were substantially strengthened (see also Greenberg et al 1990).

4 The Present Studies

The studies that we report in this article are conceptually similar to the trait-situational matching work of Feldman and Stenner, with two key changes. First, rather than measuring pre-existing levels of perceived threat, we manipulate threat experimentally. This allows us to make more confident inferences about the causal role of threat in activating authoritarian dispositions. Second, rather than examining political attitudes and beliefs congruent with the ideological content of authoritarianism (e.g., intolerance toward nonconformists and minorities), our work encompasses on a more diverse set of psychological reactions plausibly linked to authoritarianism, including heightened automatic cognitive recognition of threatening stimuli, biased or "motivated" information seeking, and biased evaluation of persuasive message arguments. By exerting direct experimental control over the presence and type of threat, and by examining a diverse set of dependent variables, we hope to achieve a deeper understanding of what authoritarianism is and how it works. Our first two experiments examine whether the hypothesized sensitivity to threat among authoritarians can be detected on an unobtrusive, nonreactive information

processing task (i.e., response latency) that bypasses "controlled" or intentional cognitive processing. Experiment 3 examines whether authoritarianism is associated with biased information seeking in the presence but not in the absence of threat. Finally, in Experiment 4, we examine whether authoritarianism is associated with a preference for threat- rather than reward-based persuasive messages. Given the variety of threats to which authoritarians appear to be sensitized, we do not advocate for any particular type of threat – whether political, economic, personal, or something else – as the primary activator of authoritarian predispositions. Instead, to increase the generalizability of our findings, we manipulate threat in different ways across the experiments.

4.1 Study 1: Threat, Authoritarianism, and Automatic Cognitive Responses

In this section, we explore the possibility that the origins of authoritarianism lie in a general – and uncontrollable – sensitivity and reactivity to threats to the self, whether those threats emanate from political (e.g., threat to one's cultural values) or personal (e.g., natural disasters, car accidents, AIDS) events. In particular, we examine whether a generalized perception of threat can be detected on an unobtrusive, nonreactive task that bypasses "controlled" or intentional cognitive processing. To do this we employed a cognitive methodology to directly assess whether representations of threatening concepts (e.g., reading the word "mugger" on a computer screen) are automatically activated (i.e., without intention, effort, or control, see Wegner and Bargh 1998) in the cognitive systems of high authoritarians. Participants responded to a set of noun words normed for level of threat on the basis of a pretest (e.g., "mugger," "cancer," "crime," "poison," "telescope," "poetry," "potato"). Specifically, participants determined as quickly as possible (by pressing one of two keys on the keyboard) whether each letter string presented on a computer screen represented a legal English word or a pronounceable nonword (e.g., "shrac"). Theoretically, automatic word recognition – the speed with which respondents are able to identify words – is an index of the baseline accessibility of the corresponding concepts (Meyer and Schvaneveldt 1971).[1] Thus, in our studies, individual differences in the speed of lexical access for high

threat words reflect differences in the accessibility of or sensitivity to threatening concepts. We expected that reaction times would depend jointly on threat and authoritarianism such that high authoritarians would respond more quickly to threatening but not nonthreatening words.

Participants and Procedure

Ninety four undergraduate native speakers of English (*n*=49 men; *n*=45 women) at the State University of New York at Stony Brook participated in the study for extra course credit.[2] Upon arrival at the lab, participants completed a lexical decision task on the computer. One hundred eighty four test trials were preceded by 20 practice trials. Half of the test trials consisted of legal English words and half consisted of nonword letter strings. Participants were instructed to respond to each target letter string "as quickly as possible without making too many errors." After completing the lexical decision component of the study, participants completed a survey that included Altemeyer's (1988) 30-item Right-Wing Authoritarianism Scale (α=.89).

Identification of Threatening and Nonthreatening Words. Prior to the study, one hundred five separate SUNY – Stony Brook undergraduates participated in a pretest in which they rated the degree to which 92 noun words possessed "dangerous" and "useful" attributes for human survival. Ratings were made on an eight point scale where 1="not at all dangerous to (useful for) human survival" to 8="extremely dangerous to (useful for) human survival." From this word list, ten words (cancer, snake, mugger, plague, crime, collision, lava, tobacco, quicksand, and poison) with mean dangerous ratings above 5.0 (*M*=6.85) and mean usefulness ratings below 3.0 (*M*=2.00) were chosen for the threatening word condition. Ten words (potato, telescope, tree, shoe, leaf, clothes, wood, wool, canteen, and ointment) with mean usefulness ratings above 5.0 (*M*=6.29) and mean dangerousness ratings below 3.0 (*M*=1.86) were chosen for the nonthreatening word condition.

To create reaction time (RT) scores for each participant for each of the 20 words, we first averaged each participant's 10 RTs within each of the two within-subject cells (i.e., threatening and

nonthreatening word conditions). Then, we subtracted from these means the mean RT for the 82 remaining words not appearing in the given condition. Negative numbers thus indicate quicker (i.e., more accessible) responses. This procedure controls for the extraneous effects of individual differences in overall speed of RT by creating scores that represent the extent to which the condition RTs for each participant represent a "fast" or a "slow" mean response time relative to each participant's overall RT from the 92 word trials (see Fazio, 1990; Lavine, 1997).

Results

To examine whether high authoritarians responded more quickly than low authoritarians to the threatening (but not the nonthreatening) words, we performed a tertile split on RWA scores (i.e., we used the top and bottom thirds of the authoritarianism distribution) and performed a 2 (authoritarianism: low vs. high) x 2 (word type: threatening vs. nonthreatening) mixed effects analysis of variance with repeated measures on the second factor. Our hypothesis translates into an interaction between authoritarianism and word type such that high authoritarians are predicted to respond more quickly to the threatening but not the nonthreatening words. This interaction was the only effect to achieve significance, $F(1, 59) = 3.32$, $p < .05$ (main effect Fs<1).[3] Follow-up contrasts revealed that high authoritarians responded marginally more quickly to the threatening words than did their low authoritarian counterparts, $t(59) = 1.49$, $p < .10$ (one-tailed). Interestingly, this pattern was reversed for the nonthreatening words (i.e., low authoritarians responded faster), $t(59) = 1.59$, $p < .10$ (see Table 1).

Insert Table 1 here

These results indicate that high authoritarians' sensitivity to threat can be observed on a subtle task that measures *automatic* responses that are generally thought to preclude conscious control. In our next experiment, using an automatic priming task, we attempt to provide further support for the idea that threat selectively activates the responses of high authoritarians.

4.2 Study 2: Priming Threat

If high authoritarians are chronically more sensitive to threat than their low authoritarian brethren, priming threatening concepts should facilitate lexical responses to semantically related target concepts to a greater extent among high than low authoritarians. For example, priming the word "arms" should provide stronger activation of the concepts "weapons," "guns" and "war" among high than low authoritarians. In Study 2, we used a priming paradigm to further explore whether threat-related concepts are especially cognitively accessible in the belief systems of high authoritarians.

Participants and Procedure

Ninety one undergraduate native speakers of English (*n*=31 men; *n*=59 women; 1 subject failed to respond to the gender item) at the State University of New York at Stony Brook completed 144 trials of a prime-target lexical decision experiment.[4] Half of the target words consisted of nonword letter strings. Forty eight of the remaining 72 trials consisted of legal English word prime-target pairings in which the primes consisted of homographs (i.e., words with multiple meanings) with threatening and neural meanings (e.g., "arms," "beat"). Participants were instructed to attend to both the prime and the target words, but to respond ("as quickly as possible without making too many errors") only to the target word in each pair (in terms of whether or not the letter string is a legal English word). Two characteristics of the pairing were manipulated: (1) The target words were either semantically related or unrelated to the primes ("arms-weapons" vs. "arms-book"), and (2) the target words were related either to the threatening or the neutral connotations of the primes (e.g., "arms-weapons" vs. "arms-legs"). If high authoritarians are more sensitized to threat than are low authoritarians, priming threat-related concepts should facilitate responses to semantically related target words to a greater extent among high than low authoritarians when the targets are linked to the threatening but *not* the neutral connotation of the prime. Thus, priming effects should be stronger among high than low authoritarians for the pairing "arms-weapons" but not "arms-legs." This translates into a two-way interaction between authoritarianism and

type of prime-target relatedness (threat-related vs. neutral-related prime-target conditions; threat-unrelated and neutral-unrelated conditions excluded). Moreover, authoritarians should respond more quickly to target words when they are semantically related to the threatening connotations of the primes but *not* when they are unrelated to the threatening connotations of the primes. Thus, priming effects should be stronger among high than low authoritarians when the target word "weapons" is preceded by the prime word "arms" (threat-related condition) but not when "weapons" is preceded by the prime word "beat" (threat-unrelated condition). This translates into a two-way interaction between authoritarianism and prime-target relatedness (threat-related vs. threat-unrelated prime-target conditions; neutral-related and neutral-unrelated conditions excluded).

To create RT scores for each participant for each of the four within-subject conditions (threat-related, threat-unrelated, neutral-related, neural-unrelated), we first averaged each participant's RTs from the 12 prime-target pairs comprising each condition. Then, we subtracted from each of these means the mean RT for the 36 prime-target pairs comprising the three other conditions. For example, final RT scores for the threat-related condition (e.g., "arms-weapons") were created by subtracting each participant's mean RT for the 36 pairs comprising the three additional within-subject conditions from the participant's mean RT score in the threat-related condition. Negative numbers thus indicate quicker (i.e., more accessible) responses. As in Study 1, this procedure eliminates the extraneous effects of individual differences in overall speed of responding.

Results

To evaluate whether the effects of priming were moderated by authoritarianism, we performed two focused analyses of variance. First, to determine whether greater response facilitation occurred among high than low authoritarians for threat-related (e.g., "arms-weapons") but not neural-related ("arms-legs") prime-target pairs, we performed a 2 (authoritarianism: low vs. high [based on a tertile split]) x 2 (type of prime-target pair: threat-related vs. neutral-related) mixed effects ANOVA with

repeated measures on the second factor. Only the expected interaction of authoritarianism and type of prime-target pair approached significance, $F(1, 54) = 2.26$, $p = .07$ (main effect Fs<1). As can be seen in Table 2, high authoritarians responded more quickly than low authoritarians to threat-related (t[54] = 2.31, $p < .05$) but not neutral-related (t[54] = -1.52, *ns*.) prime-target pairs.

Second, to determine whether greater response facilitation occurred among high than low authoritarians for threat-related (e.g., "arms-weapons") but not threat-unrelated ("beat-weapons") prime-target pairs, we performed a 2 (authoritarianism: low vs. high) x 2 (type of prime-target pair: threat-related vs. threat-unrelated) mixed effects ANOVA with repeated measures on the second factor. The analysis produced a main effect for authoritarianism, $F(1,54) = 3.98$, $p = .05$; across priming conditions, high authoritarians responded more quickly (M = 6.44 *msecs*) than low authoritarians (M = 23.84 *msecs*). Although the authoritarianism x type of prime-target pair interaction did not reach significance (F[1, 54)] = 1.46, *ns.*), the effect of authoritarianism was significant for threat-related primes (t[54] = 2.63, $p < .01$) but not for the threat-unrelated primes (t[54] = –0.19, *ns*.; see columns 1 and 3 of Table 2).

Insert Table 2 here

Study 2 provides corroborating evidence that authoritarian individuals are especially sensitive to threat, and that this sensitivity can be primed on an automatic cognitive processing task. Specifically, when primed with threatening concepts, high authoritarians responded more quickly to semantically related concepts, but only if the related concepts (the target words) were semantically linked to the threatening meaning of the prime (e.g., "revolution-war"). When the semantic associate of the prime referred to its nonthreatening meaning (e.g., "revolution-spin"), no effect of authoritarianism emerged.

4.3 Study 3: Threat, Authoritarianism, and Biased Information Processing

In Study 3, we take up one of the oldest and most enduring aspects of attitude theory, the notion that all aspects of cognition – information selection, perception, judgment, memory – are biased by people's "priors," that is, by their attitudes, beliefs, values, motives, goals, and expectations (for reviews, see Eagly and Chaiken 1993; Eagly, Chen, Kulesa and Chaiken 2001). While from a normative perspective, the collection, evaluation, and integration of new information should be kept independent of one's prior judgments and commitments, it appears that individuals often behave otherwise. They selectively attend to information that upholds their attitudes and beliefs while ignoring or actively avoiding information that challenges their validity, they critically scrutinize and counterargue attitude-discrepant information while accepting congenial information at face value, and they selectively remember information that accords rather than conflicts with their prior opinions. In short, citizens are often biased or "partisan" in their information processing, motivated more by their desire to maintain prior beliefs than by their desire to make "accurate" or otherwise optimal decisions. More telling, even when people try hard to be faithful to the evidence, they are often unable to treat information evenhandedly, for affect and cognition are inseparably linked in cognitive architecture and information processing. Cognition is "hot"— affect becomes information in the decision-making calculus (Lodge and Taber 2000). Theoretically, such selectivity or "motivated reasoning" effects occur as people attempt to reduce cognitive dissonance associated with the acceptance of incongruent information (Festinger, 1957). Translated into the terms of the present context, incongruent information should be experienced as threatening. Biased or "motivated" reasoning thus serves to defend the validity of current opinions, and thereby minimize threat.

Although attitude-based information processing biases appear to be rather robust phenomena, they do not occur ubiquitously (see Freedman and Sears 1965). From a Lewinian perspective, their occurrence depends on aspects of the person and aspects of the situation (for a review of the conditional nature of selectivity effects, see Frey, 1986). For example, a preference for exposure to congenial

information reliably occurs when people are highly committed to their attitudes and decisions (i.e., when involvement is high e.g., Brock and Balloun, 1967). In Experiment 3, we test the proposition that departures from normative information seeking depend jointly on authoritarianism and threat. We expect that in the absence of threat, both low and high authoritarians should be responsive to salient norms of evenhandedness in information selection. In particular, when individuals are offered a choice of op-ed type articles to read to learn more about a political issue, they should be more likely (in the absence of threat) to choose a two-sided article that presents the merits of both sides of an issue than an article that selectively touts the benefits of only one side of the issue. However, in the presence of threat, the predispositions of high authoritarians should be activated; specifically, we expect that in the presence of threat, high but not low authoritarians should depart from a preference for exposure to a balanced, two-sided discussion of an issue to a one-sided format that argues only in favor of the respondent's preferred position.

Participants and Procedure

One hundred seventy undergraduates (*n*=86 men; *n*=84 women) at the State University of New York at Stony Brook participated in the study for extra credit.[5] The experimental threat induction, conveyed at the outset of the study, consisted of a "mortality salience" manipulation used in research on terror management theory (Greenberg et al. 1990). The theory holds that the awareness of the inevitability of human mortality is highly anxiety provoking, and that societies develop worldviews and cultural beliefs to combat mortality fear and to provide a sense of meaning in life. In our study, respondents assigned to the high threat condition were reminded of their mortality by answering the following two questions: "What will happen to you as you physically die and once you are dead?" and "Describe the feelings that the thought of your own death arouses in you." Seven lines were provided to answer these questions "as seriously and honestly as possible." Respondents assigned to the low threat

control condition did not complete the mortality salience task. Respondents then completed Altemeyer's (1988) right-wing authoritarianism scale, and reported their opinion on the issue of capital punishment.

Respondents were then presented with the titles of three editorial articles about capital punishment, one favorable toward the policy ("America Needs Capital Punishment: Let's Not Get Rid of a Good Policy"), one unfavorable toward the policy ("Capital Punishment is Bad for America: Let's Get Rid of It"), and one two-sided article noting the merits of each side of the issue ("The Good and the Bad About Capital Punishment in America"). Respondents were asked to choose the article that they would most like to read, and to rate their interest in reading each article on a 7-point scale where 1="definitely would not like to read" and 7="definitely would like to read." Respondents were then provided with an approximately 300-word message containing either pro- or anti-capital punishment arguments, or a two-sided message, depending on which article the respondent chose to read. To obtain a measure of attitude extremity, respondents' opinions toward the policy were then reassessed on four 7-point semantic differential scales (bad-good, harmful-beneficial, foolish-wise, and unnecessary-necessary; the items were averaged, and the absolute deviation from the scale midpoint served as the extremity score). In addition, we assessed respondents' ambivalence toward the policy by separately assessing the extent to which the policy was perceived to be associated with positive and negative attributes.[6]

Results

To create a measure of exposure preference, we subtracted each respondent's interest rating for the article containing challenging arguments (e.g., the pro-capital punishment article for respondents with anti-capital punishment attitudes) from his or her interest rating for the article containing congenial arguments (e.g., the pro-capital punishment article for respondents with pro-capital punishment attitudes). Higher numbers thus reflect a greater preference for attitude-congruent over incongruent information. We also coded whether the respondent chose to read the two-sided article, the pro-capital punishment article, or the anti-capital punishment article. Respondents who chose to read the article congruent with their policy

preference were given a score of 1, whereas those who chose to read either the two-sided article or the article incongruent with their policy preferences were given a score of 0. These two measures – the dichotomous choice score and the rating difference score – were then standardized, averaged (r=.57), and recoded to a 0-1 scale to form an index of selective exposure. A 2 (authoritarianism: low vs. high [based on a tertile split]) x 2 (threat: low vs. high) between-groups ANOVA, performed on selective exposure scores, revealed both a main effect for authoritarianism $F(1,101) = 3.64$, $p<.06$, such that high authoritarians were more likely than low authoritarians to engage in selective exposure (Ms = .39 and .48 for low and high authoritarians, respectively), and the expected authoritarianism x threat interaction, $F(1,101) = 3.18$, $p<.05$. As can be seen in Table 3, selective exposure scores were heightened by the joint presence of authoritarianism and threat. A contrast comparing selective exposure scores in the high authoritarianism/high threat condition with the average scores in the three remaining conditions (+3, - 1, -1, -1) was significant, $F(1,101) = 7.97$, $p<.01$.[7] This contrast accounted for more than 95 percent of the treatment sum of squares (SS), and when the SS corresponding to this contrast was removed, the residual treatment SS (i.e., the SS associated with the two main effects and the interaction, after removal of that portion associated with the focused contrast) did not approach significance, $F(2,101) = 0.19$, *ns*. In line with the interactionist perspective, authoritarianism is associated with biased information seeking, but only in the presence of threat.

Insert Table 3 here

In addition to manipulating threat, we also experimentally varied whether respondents chose and then actually read an article about capital punishment *before* or *after* the assessment of the extremity and ambivalence of their attitudes. When extremity and ambivalence are measured prior to information exposure, the relationship between attitude structure and the propensity to seek out attitude-consistent information can be ascertained. However, when extremity and ambivalence are measured after information exposure has occurred, the causal effect of selective exposure on the structure of respondents' attitudes can be determined. If exposure to congenial policy arguments increases the ratio of proattitudinal to counterattitudinal considerations in respondents' belief systems, biased information exposure should produce more extreme and

less ambivalent attitudes. This causal effect can be determined by examining whether the relationship between selective exposure and attitude extremity/ambivalence was stronger in the condition in which information exposure occurred before rather than after the measurement of attitude structure. Consistent with a causal flow from information exposure to attitude change, the correlations between selective exposure on one hand and attitude extremity and ambivalence on the other were higher for respondents who read capital punishment articles before (*r*s = .48 and -.41, *p*s<.01, for extremity and ambivalence, respectively) rather than after their attitudes were assessed (*r*s = .32, *p*<.05 and -.16, *ns.*); however, the experimental effect of task order reached a marginal level of significance (i.e., the correlations were significantly different across the experimental conditions, $z = 1.44$, $p<.08$) only for ambivalence (*r*s = -.41 vs. -.16).

4.4 Study 4: Threat, Authoritarianism, and Judgments of Message Quality

In the realm of persuasion, the trait-situational interaction model holds that message arguments should be evaluated positively to the extent that qualities of the message recipient and aspects of the persuasive message are psychologically congruent or matching (e.g., Cacippo, Petty and Sidera 1982; Lavine and Snyder, 1999). That is, persuasive communications should be successful to the extent that they are specifically tailored to relevant motivational or cognitive characteristics of the message recipient. In our final threat-authoritarianism experiment, we varied whether respondents were exposed to a "threat-based" or a "reward-based" persuasive message in favor of voting in a presidential election. Because, as our experiments thus far suggest, high authoritarians are especially sensitive and responsive to threat, they should be more likely than low authoritarians to resonate to a message framed in terms of threat-reduction than one framed in terms of reward enhancement. Therefore, we hypothesized that message type (reward vs. threat) would interact with recipients' authoritarianism propensities such that high authoritarian recipients would perceive the threat message as more valid and persuasive than the reward message. We also explored the possibility that low authoritarians would resonate more strongly to a message emphasizing reward than to one emphasizing threat.

Participants and Procedure

Participants were eighty five voting-eligible undergraduates at the University of Minnesota (*n*=34 men; *n*=52 women), who participated in the study for extra course credit. Scores on a shortened 10-item version of Altemeyer's (1988) right-wing authoritarianism score permitted a classification of these students into low (*n*=39) or high (*n*=46) authoritarianism conditions. Five days before the 1996 presidential election, respondents completed a questionnaire containing the persuasive message manipulation and a measure of perceptions of the quality of the message. The message type manipulation concerned whether respondents were exposed to a voting appeal framed in terms of the rewards or benefits to be derived from voting (reward condition) versus a message framed in terms of the threats or punishments that may occur for failing to vote (threat condition). The reward message held that voting provides a way for people to express their values and principles, that voting helps to bring about the kinds of public policies that the respondent believes in, and that voting conveys a positive image to others. The threat message emphasized that voting provides a way to prevent one's values from being undermined, that failing to vote allows others to take away the respondent's right of self-expression, and that voting provides a way to prevent the other side from advancing their political agenda (a full transcript of the messages is available from the authors). To assess perceptions of message quality, respondents completed a scale composed of 12 7-point Likert items (where –3=strongly disagree and +3=strongly agree). The items included "I found the arguments to be convincing," and "The material did not contain persuasive arguments." The 12 items were averaged to create an index of perceptions of message quality (=.85), with positive numbers indicating more positive perceptions of the message.

Results

To assess whether high authoritarians perceived the threat message to contain more persuasive and valid (i.e., stronger) arguments than the reward message, and whether low authoritarians perceived the reward message to contain more persuasive and valid arguments than the threat message, we performed a 2 (authoritarianism: low vs. high) x 2 (message type: threat vs. reward) between-subjects ANOVA on respondents' perceptions of message quality. The analysis produced only the expected interaction, $F(1,81) = 8.63$, $p<.01$. Follow-up contrasts revealed that high authoritarians viewed the threat message (M=.69) as more persuasive than the reward message (M=-.04), $t(44) = 2.52$, $p<.01$, and that low authoritarians were marginally more likely to perceive the reward message (M=.63) as more persuasive than the threat message (M=.10), $t(37) = 1.71$, $p < .10$. Moreover, high authoritarians perceived the threat message as more peruasive than did low authoritarians $t(42) = 2.03$, $p.<05$, whereas low authoritarians perceived the reward message as more persuasive than did high authoritarians, $t(39) = 2.16$, $p<.05$ (for a more detailed explication of these results, see Lavine et al. 1999).

4.5 Study 5: Interpreting the Effects of Experimental Manipulations Through Trait-Situation Interactions

Thus far, we have argued that by examining trait-situation interactions within an experimental context, we gain insight into when and even why dispositional effects in politics emerge. In this final experimental section, we reverse figure and ground to argue that such interactions can also be used to facilitate the explication of experimental manipulations. Take, for example, the case of motivated political reasoning. As we argued above, citizens are rarely, if ever, dispassionate when thinking about politics. Rather than treating information about political parties, candidates, or issues evenhandedly, as normative models of rational decision making prescribe, they are prone to accept those facts and arguments they agree with and to discount or actively counterargue those which challenge their convictions. But why does this occur? What cognitive and motivational processes are responsible for producing congruence effects in political judgment?

On the motivational side, we argue that without strong priors to defend on a given issue, citizens might be expected to approach arguments and evidence on that issue more evenhandedly. However, as opinions become more cystallized and involving, challenges to their validity should be perceived as increasingly threatening (Lavine, Borgida and Sullivan 2000). If this is accurate, judgments of the quality of political argument should depend on an interaction of argument congruence and the strength of individuals' priors, with bias effects increasing from weak to strong priors. Beyond such motivational considerations, biased political reasoning may also depend on informational factors, demanding as it does the ability to denigrate or counterargue the evidence or arguments that violate our prior attitudes. At a minimum we might expect that politically knowledgeable citizens will be better able than their unwashed brethren to engage in motivated reasoning. Thus, we expect the effect of argument congruence to hinge on individuals' level of political information or sophistication, with bias effects increasing from unknowledgeable to knowledgeable citizens.

Participants and Procedure

To test these interaction hypotheses, one hundred thirty-six undergraduates at SUNY – Stony Brook participated (for extra course credit) in a study of political judgment. Upon arrival at our laboratory, students were seated at a computer and informed that they would be participating in a study of public opinion. First, they were asked to evaluate a number of political issues, including a battery of items on either affirmative action or gun control (sample split by random assignment) designed to measure attitude strength (six items with 100-point sliding response scales, which we combine into a single additive scale) and position (six 9-point Likert-type agree-disagree items, likewise combined into an additive scale). Respondents also completed a 17-item test of general political knowledge (e.g., "What proportion of Congress is needed to override a presidential veto?"), which we used to measure political sophistication.

Participants were then presented with eight arguments, four pro and four con presented in random order, taken from the policy debate on the given issue and asked to rate the strength of these arguments. They were instructed several times and in several different ways to be evenhanded and to "leave their own feelings aside." Finally, they completed a distractor task followed by a post-test attitude battery.

Results

To determine whether pro-attitudinal biases in political judgment are moderated by the motivational and informational considerations outlined above, we performed a 2 (sophistication: low vs. high) x 2 (strength of prior attitude: low vs. high) x 2 (type of argument rated: consistent vs. inconsistent) mixed effects ANOVA with repeated measures on the third (experimental) factor for each issue and pooled across the two issues. Unsurprisingly, a main effect for type of argument emerged in all analyses, $F(1, 131) = 45.94$, $p<.001$ for pooled data such that arguments consistent with respondents' attitudes ($M = 62.76$) were rated as stronger than inconsistent arguments ($M = 46.53$). No other main effects emerged in any of the analyses. Our major interest is in whether this main effect was qualified by the dispositional variables. For affirmative action, the sophistication x argument type interaction was significant, $F(1, 63) = 2.92$, $p<.05$, but the strength of priors x argument type interaction failed to approach significance. The gun control issue produced stronger support for our trait-situation interactions: Both the sophistication x argument interaction ($F[1, 64] = 3.21$, $p<.05$) and the strength of priors x argument interaction ($F[1, 64] = 10.33$, $p<.001$) were significant, with means patterned according to hypotheses. Specifically, contrasts revealed that sophisticates in the affirmative action condition were (marginally) more likely than nonsophisticates to rate consistent arguments highly, $t(65) = 1.26$, $p=.10$ (one-tailed), and they were marginally less likely than nonsophisticates to rate inconsistent arguments highly, $t(65) = 1.43$, $p<.10$ (one-tailed). The corresponding contrasts were in the right direction but nonsignificant for gun control. By contrast, those with strong prior attitudes on gun control

were more likely than those with weak attitudes to rate consistent arguments highly, $t(66) = 2.80$, $p < .01$, and tended to rate inconsistent arguments less highly, $t(66) = 1.09$, $p=.14$. The parallel analyses for affirmative action did not approach significance (see Table 4 for cell means).

Insert Table 4 here

What we learn here is that the effect of the experimental manipulation of argument type (congruent vs. incongruent, which itself is an interaction of pro- vs. anti-policy argument x respondent attitude) does not occur uniformly in the population, but depends both on people's desire and ability to defend their attitudes. The presence of the main effect of the experimental variable is informative only of the existence of the phenomenon. When examined jointly with dispositional variables that condition its strength, we learn something about when such effects emerge, and importantly, we gain valuable clues – which can subsequently serve as the grist for future experiments – about why such biased reasoning effects emerge.

5 Conclusions

Experimentation has not come lately to political science (see Kinder and Palfrey 1993; McGraw and Hoekstra 1994). For decades now, political scientists have exploited the technique of random assignment to examine central disciplinary questions, including belief system constraint (Sullivan, Piereson and Marcus 1978), candidate evaluation (Lodge, McGraw and Stroh 1989), and the effects of the media on public opinion (Iyengar and Kinder 1987), just to name a few. In this article, we have suggested that experimentation can be used profitably by political scientists to identify the boundary conditions and the processes through which dispositional effects in politics emerge. By bringing theoretically-relevant contextual factors under direct experimental control, we stand to move from the realm of knowing *that* a particular relationship exists to one in which we know *when* and *why* such a relationship exists. The work of Sniderman and his colleagues (e.g., Sniderman and Carmines 1997; Sniderman et al 1991), in which experimental manipulations are embedded within representative surveys

to explicate the bases of racial opinion, must be regarded as the definitive contemporary example of the experimental study of personality and politics. We hope that our work on authoritarianism presented here provides a conceptually similar blueprint for how experimentation can be used to probe the meaning of dispositional factors on political judgment and choice. Taken as a whole, our experimental work suggests that the cognitive and behavioral dispositions of authoritarians require the presence of at least a modicum of environmental threat to be put into action. Our work thus implies that authoritarians think and act as they do in order to reduce an apparently acute sensitivity to threat.

Finally, we wish to address the question of experimentation and external validity: To what extent are the results of our experiments generalizable across populations, research settings, and treatments? Like much of the experimental work conducted in the lab, our studies rely on the ever convenient college undergraduate, that peculiar brand of humanity uniquely socialized to decipher the arcane stimulus materials of social scientists. Beyond that well-noted problem (e.g., Sears, 1986), experimental treatments concocted in the lab (and the settings themselves) often have a dubious resemblance to anything that might be expected to occur in the real world of politics.[8] We do not pretend that these are trivial problems. However, we do believe that there are circumstances in which they are not as serious as some would suppose them to be. Perhaps most obviously, *process-oriented* work, especially that which examines basic mechanisms of attention, representation, and memory (such as our automatic cognitive processing experiments), is more likely to generalize than work focusing on content or outcomes. That is, while we would hardly expect college students to mirror the political behavior of the public at large, we do believe that the basic cognitive processes that underlie opinion formation and decision-making are substantially similar among undergraduates and adults.

Less obviously, we believe, there are circumstances in which generalizability is simply not an important research goal.[9] In particular, if the primary aim of an experiment is to test a theoretical proposition – and not to gauge the theory's relevance to a particular real world political problem – what is necessary and sufficient is that the theory be afforded a fair test. That is, the research context requires

only that the theory make a strong prediction about what *ought* to occur if it is valid. If, put to such a test, the predicted data pattern fails to obtain, the theory can be claimed to be false. Thus, whether or not the setting or experimental treatments or subjects mirror the "real world" doesn't enter into it. However, even if one accepts this argument, at least in principle, isn't political science primarily concerned with understanding what actually *does* occur in the political world, and only secondarily with the validity of associated theoretical frameworks (e.g., on-line vs. memory-based processing)? Probably so. But as we argued at the outset, until we explicate the black box, our understanding of the political world will be impoverished. With respect to deepening our understanding of the relations between personality and politics in particular, we believe that the experimental method may prove to be a powerful tool.

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Endnotes

1. The lexical decision task has been used in numerous studies of social and nonsocial cognition to assess the cognitive accessibility of concepts and the structure of semantic memory (e.g., Meyer and Schvaneveldt 1971; Rudman and Borgida 1995).

2. Participants' ages ranged from 18 to 52 with a mean of 21.96 years. Eight (8.5%) participants were African-American, nine (9.6%) were Asian-American, 69 (73.4%) were European-American, and 4 (4.3%) were Hispanic-American (4 participants failed to complete the relevant ethnicity item).

3. The p-value is based on a one-tailed test, derived by transforming the test statistic F (with df=1 in the numerator) to t by taking its square-root (see Rosenthal and Rosnow, 1991). This procedure is followed throughout the article when (as in most cases) directional predictions are made.

4. Participants' ages ranged from 18 to 60 with a mean of 23.29 years. Fifteen (16.5%) participants were African-American, eleven (12.1%) were Asian-American, 47 (51.6%) were European-American, and 13 (14.3%) were Hispanic-American (5 participants failed to complete the ethnicity item).

5. Participants' ages ranged from 18 to 44 with a mean of 22.04 years. Twenty (11.8%) participants were African-American, 26 (15.3%) were Asian-American, 104 (61.2%) were European-American, and 13 (7.6%) were Hispanic-American (7 participants failed to complete the ethnicity item).

6. Respondents separately rated the extent to which arguments in favor of and against capital punishment were strong, on a 4-point scale where 0=not at all strong and 3=very strong. Following Thompson, Zanna and Griffin (1995; see also Lavine 2001), an ambivalence score for each respondent was created by subtracting the absolute value of the difference between these two ratings from their average. High scores represent attitudes in which the positive and negative components are intense and similar (i.e., highly ambivalent).

7. This contrast does not provide a pure test of the interaction variance; rather it captures the overall expected pattern of means.

8. This of course is often deliberate, in order to control extraneous variation and to “separate the factors that do not come separately in nature-as-you-find-it” (Mook, 1983, p. 384).

9. We are indebted to the classic paper in psychology by Mook (1983) for this argument.

Table 1. Effects of Authoritarianism on Threatening and Nonthreatening Words (in msecs).

	Nonthreatening	Threatening
Authoritarianism		
Low	-49.49	-11.55
High	-10.49	-48.53

Note: Mean RTs were faster in both the threatening and nonthreatening conditions (for both low and high authoritarians) than they were for control stimulus words. This accounts for why the mean RTs in all four conditions are negative.

Table 2. Effects of Authoritarianism and Prime-Target Pair Type on RT (in *msecs*).

	Type of Prime-Target Pair		
	Threat-Related	Neutral-Related	Threat-Unrelated
Authoritarianism			
Low	30.68	-29.22	16.99
High	-23.21	6.20	13.12

Table 3. Effects of Authoritarianism and Threat on Selective Exposure.

	Low Threat	High Threat
Authoritarianism		
Low	.40	.36
High	.41	.56

Table 4. Effects of Argument Congruence, Sophistication, and Strength of Prior Attitudes on Judgments of Argument Quality.

	Argument Type	
	Consistent	Inconsistent
Affirmative Action		
Low Sophistication		
Weak Priors	58.72	48.89
Strong Priors	54.60	51.10
High Sophistication		
Weak Priors	62.81	48.88
Strong Priors	60.89	40.55
Gun Control		
Low Sophistication		
Weak Priors	53.81	57.12
Strong Priors	69.38	43.60
High Sophistication		
Weak Priors	62.77	46.24
Strong Priors	74.61	45.41

Note: Scores range from 0-100, with higher numbers indicating greater perceived argument quality.