

# Do Needs for Security and Certainty Predict Cultural and Economic Conservatism? A Cross-National Analysis

Ariel Malka  
Yeshiva University

Christopher J. Soto  
Colby College

Michael Inzlicht  
University of Toronto

Yphtach Lelkes  
University of Amsterdam

We examine whether individual differences in needs for security and certainty predict conservative (vs. liberal) position on both cultural and economic political issues and whether these effects are conditional on nation-level characteristics and individual-level political engagement. Analyses with cross-national data from 51 nations reveal that valuing conformity, security, and tradition over self-direction and stimulation (a) predicts ideological self-placement on the political right, but only among people high in political engagement and within relatively developed nations, ideologically constrained nations, and non-Eastern European nations, (b) reliably predicts right-wing cultural attitudes and does so more strongly within developed and ideologically constrained nations, and (c) on average predicts left-wing economic attitudes but does so more weakly among people high in political engagement, within ideologically constrained nations, and within non-Eastern European nations. These findings challenge the prevailing view that needs for security and certainty organically yield a broad right-wing ideology and that exposure to political discourse better equips people to select the broad ideology that is most need satisfying. Rather, these findings suggest that needs for security and certainty generally yield culturally conservative but economically left-wing preferences and that exposure to political discourse generally weakens the latter relation. We consider implications for the interactive influence of personality characteristics and social context on political attitudes and discuss the importance of assessing multiple attitude domains, assessing political engagement, and considering national characteristics when studying the psychological origins of political attitudes.

**Keywords:** ideology, political attitudes, cultural conservatism, economic conservatism

**Supplemental materials:** <http://dx.doi.org/10.1037/a0036170.supp>

Social scientists studying political attitudes have traditionally emphasized the social and institutional origins of political preference. But personality characteristics are often found to predict political attitudes, suggesting a possible causal influence of the former on the latter (e.g., Fraley, Griffin, Belsky, & Roisman, 2012; Perry & Sibley, 2012; Sibley & Duckitt, 2013). This view is bolstered by evidence that political attitudes have heritable components as well as psychophysiological and neurobiological correlates (e.g., Amodio, Jost, Master, & Yee, 2007; Hatemi, Eaves, & McDermott, 2012; Kandler, Bleidorn, & Riemann, 2012).

The personality characteristics most commonly identified as predictors of political orientation have been referred to collectively as *needs to manage uncertainty and threat* (Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost et al., 2007) or *needs for security and certainty*

(NSC; Johnston, 2012a, 2012b). Indeed, a long-running theoretical tradition posits a natural link between right-wing, or conservative, ideology and a psychological pattern involving aversion to novelty, complexity, and stimulation; valuing of social conformity, obedience, and order; and strong concern with threat and security (e.g., Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Jost et al., 2003; Rokeach, 1960). During the last decade, a great deal of research has explored the potential origins of conservative versus liberal ideology in personality characteristics pertaining to NSC. Those with high levels of NSC characteristics are said to find a conservative ideology naturally need-satisfying.

But the findings produced by this research leave unclear just how encompassing the effects of NSC characteristics on conservatism actually are. Most fundamentally, do NSC characteristics predict both cultural and economic forms of conservatism?<sup>1</sup> Are these relations consistent across nations, or are they contingent on aspects of the national context? Finally, what role does exposure to political dis-

---

Ariel Malka, Department of Psychology, Yeshiva University; Christopher J. Soto, Department of Psychology, Colby College; Michael Inzlicht, Department of Psychology, University of Toronto; Yphtach Lelkes, The Amsterdam School of Communications Research, University of Amsterdam.

Correspondence concerning this article should be addressed to Ariel Malka, Department of Psychology, Yeshiva University, 2495 Amsterdam Avenue, New York, NY 10033. E-mail: [amalka@yu.edu](mailto:amalka@yu.edu)

---

<sup>1</sup> The meaning of the terms *liberal* and *conservative* with reference to economic policy varies across historical period and across cultures and economic systems. We therefore generally refer to right-wing versus left-wing economic policies, with the former involving support of free markets, support of private economic activity, and opposition to redistributive policy. When we collectively refer to cultural and economic “conservatism,” this should be interpreted as including right-wing economic attitudes.

course play in these relations, and is this role similar across cultural and economic forms of conservatism and across different types of nations?

These questions have important implications for psychological perspectives on political ideology. If NSC characteristics underlie both economic and cultural conservatism across a range of contexts, this would suggest a type of organic coherence across these attitudes. To use the terminology of [Converse \(1964\)](#), there would be a psychological source of “constraint,” in that certain sets of attitudes would naturally cluster together along a single right versus left dimension (cf. [Judd, Krosnick, & Milburn, 1981](#)). This would mean that the substantive makeup of broad ideological coalitions is constrained by basic psychological processes, an intriguing possibility with considerable political implications. These questions are socially important and relevant to prior theorizing about political ideology, but as of this writing they have not been subjected to an authoritative cross-national investigation. We presently report such an investigation using data from 51 nations that vary considerably in development, institutions, and culture.

### Conceptualization of NSC Characteristics

The dominant accounts of personality influences on political conservatism versus liberalism have motivation at their core (see [Jost et al., 2003](#)). According to these accounts, a psychological attraction to a political orientation typically occurs because the policies and desired outcomes of that political orientation are perceived as likely to satisfy specific psychological needs.

The psychological needs most commonly specified as ideologically relevant are those concerning stability, security, and conformity, as opposed to novelty, stimulation, and creativity, referred to here as NSC characteristics ([Hetherington & Weiler, 2009](#); [Johnston, 2012a, 2012b](#)). Though various interrelated trait (e.g., openness to experience) and cognitive style (e.g., need for cognitive closure) measures have served as indicators of NSC, the personality measure with perhaps the closest conceptual resemblance to the NSC construct is the conservation versus openness value axis posited by Schwartz and colleagues (e.g., [Schwartz, 1992](#); [Schwartz & Bilsky, 1990](#)). In general, values refer to broad desired outcomes and modes of being. Thus, values are explicitly motivational in nature, as is the NSC construct. Furthermore, there is a good deal of stability in the structure of basic human values across nations (e.g., [Schwartz & Bilsky, 1990](#)), and longitudinal research provides evidence that values tend to be quite stable over time, though values, like personality traits, can change over the life span (e.g., [Caprara, Schwartz, Capanna, Vecchione, & Barbaranelli, 2006](#); [Lindeman & Verkasalo, 2005](#)).

Within the values domain, the conservation versus openness axis reflects the fact that values of conformity, security, and tradition to an important extent conflict with values of self-direction and stimulation. Efforts to satisfy one of these value clusters often thwart satisfaction of the other cluster ([Schwartz, 1996](#)). In a sense, then, this value axis represents a fundamental trade-off that humans face: seeking novel and potentially rewarding experience versus playing it safe and conforming. Thus, this axis succinctly captures the psychological content of NSC, a notion that is supported by a strong empirical convergence of this axis with other NSC indicators, such as openness to experience, authoritarian disposition, and need for cognitive closure ([Feldman,](#)

[2003](#); [Johnston & Wronski, 2013](#); [Roccas, Sagiv, Schwartz, & Knafo, 2002](#)).

### Two Views of NSC–Politics Relations: The Broad and Narrow Ideology Hypotheses

Two general views of how NSC characteristics influence political attitudes may be distinguished. In one view, NSC characteristics predict a broad, unidimensional conservative versus liberal ideology, encompassing stances on a wide range of political matters. Because conservative policies typically uphold traditional societal arrangements and resource allocations, they are said to naturally appeal to people with strong needs for security and certainty (e.g., [Adorno et al., 1950](#); [Jost, Nosek, & Gosling, 2008](#)). Those with high levels of NSC characteristics are said to find a broad conservative worldview need-satisfying, because of the continuity, comfort, and sense of protection that it provides. Most contemporary research on the psychological (and biological) origins of political preference reflects this approach, by examining predictors of “conservatism” without considering the possibility that different subdomains of conservatism have different origins (e.g., [Amodio et al., 2007](#); [Block & Block, 2006](#); [Eideman, Crandall, Goodman, & Blanchar, 2012](#); [Fraley et al., 2012](#); [Joel, Burton, & Plaks, 2014](#); [Kanai, Feilden, Firth, & Rees, 2011](#); [Lewis & Bates, 2011](#); [Schreiber et al., 2013](#)). This approach entails treating diverse political measures—including cultural attitudes, economic attitudes, and ideological or partisan identity—as interchangeable indicators of conservative versus liberal ideology. We refer to this position as the “broad ideology hypothesis.”

But other scholars contend that the major components of political ideology do not share common origins in NSC characteristics (e.g., [Duckitt & Sibley, 2009](#); [Feldman & Johnston, 2013](#); [Johnson & Tamney, 2001](#)). This second, less common, approach often focuses on the distinction between “cultural” and “economic” political attitudes (e.g., [Lipset, 1960](#); [Treier & Hillygus, 2009](#)). Cultural attitudes refer to preferences concerning preservation of traditional social arrangements and collective security, as manifested by positions on issues such as abortion, homosexuality, gender roles, immigration, and treatment of criminals.<sup>2</sup> Economic attitudes refer to preferences concerning government provision of social welfare and economic intervention and redistribution. The most prominent example of this approach is the dual process model of ideology (e.g., [Duckitt, 2001](#); [Duckitt & Sibley, 2009](#)), which specifies that right-wing authoritarianism (RWA; likened to cultural conservatism) and social dominance orientation (SDO; likened to economic conservatism) satisfy distinct motivational goals and thus have distinct psychological origins.

Some proponents of this approach have argued that culturally conservative preferences are indeed partially rooted in aspects of NSC, because people with high levels of NSC characteristics naturally find the prioritization of social protection and traditional morality to be need satisfying (e.g., [Duckitt, Wagner, du Plessis, & Birum, 2002](#); [Feldman & Johnston, 2013](#); [Hetherington & Weiler, 2009](#)). In contrast, according to this approach, right-wing eco-

<sup>2</sup> We use the term *cultural attitudes* rather than *social attitudes* to avoid confusion that might stem from the presence of the word or root *social* in terms relevant to redistributive economic policy, such as socialism, socialized medicine, social insurance, social welfare, and social security.

conomic preferences are not rooted in NSC characteristics. Some argue that economic conservatism stems from tough mindedness or low agreeableness (Duckitt & Sibley, 2009; Duckitt et al., 2002), which do not seem to predict cultural conservatism (e.g., Carney, Jost, Gosling, & Potter, 2008; Gerber, Huber, Doherty, Dowling, & Ha, 2010; Mondak, 2010). And it has even been proposed that NSC characteristics might in some cases lead to left-wing economic attitudes, because those high in NSC characteristics will sometimes desire the protection and security of government economic intervention (e.g., Johnston, 2012a, 2012b; Stenner, 2005; see also Kay & Eibach, 2013). In general, approaches such as these state that cultural conservatism naturally appeals to those high in NSC characteristics, whereas economic conservatism does not. We refer to this position as the “narrow ideology hypothesis.”

Does the available research evidence support the broad ideology hypothesis or the narrow ideology hypothesis? A good place to start when evaluating these hypotheses is with the studies of non-elite samples summarized in the influential review of Jost et al. (2003). This review provides evidence that higher levels of NSC characteristics generally predict higher scores on political conservatism indicators. However, a close look at the studies reviewed suggests that NSC characteristics might predict some indicators of conservatism more consistently than others.<sup>3</sup> Specifically, these studies show that NSC characteristics predict conservative position on political attitude measures that primarily contain cultural content (e.g., Altemeyer, 1998; Fay & Frese, 2000; Lavine, Polichak, & Lodge, 1999). However, the evidence that they predict economic conservatism is far less clear. In the few studies reviewed by Jost et al. (2003) that assessed ordinary citizen samples with measures that clearly focused on economic attitudes, NSC characteristics sometimes predicted right-wing economic attitudes, sometimes predicted left-wing economic attitudes, and sometimes predicted neither (Golec, 2001; now published as Golec, 2002; Jost & Thompson, 2000).<sup>4</sup>

Beyond the Jost et al. (2003) review, some other studies provide evidence for the narrow ideology hypothesis. For example, self-report and behavioral indicators relevant to NSC are sometimes found to predict cultural but not economic conservatism (e.g., Carney et al., 2008, Study 2; Chirumbolo, Areni, & Sensales, 2004; Crowson, 2009; Feldman & Johnston, 2013; Johnson & Tamney, 2001; Kossowska & Van Hiel, 2003, Study 2, Polish sample; Van Hiel & Mervielde, 2004). But the evidence has not been unequivocal. Some studies have indeed found that NSC characteristics predict both cultural and economic conservatism (Gerber et al., 2010; Hennes, Nam, Stern, & Jost, 2012; Kossowska & Van Hiel, 2003, Study 2, Flemish sample; Mondak, 2010; Weissflog, Choma, Dywan, van Noordt, & Segalowitz, 2013). In sum, evidence linking NSC with cultural conservatism is strong, but evidence linking NSC with economic conservatism is mixed.

Although the broad ideology hypothesis remains the most common conceptual approach for the study of personality influences on political attitudes, relatively few studies have directly compared the broad versus narrow ideology approaches, and the results of these studies have been inconsistent. Thus the first goal of the present research is to provide an authoritative cross-national test of whether cultural and economic conservatism are both rooted in NSC characteristics (the broad ideology hypothesis) or whether

NSC characteristics predict cultural, but not economic, conservatism (the narrow ideology hypothesis).

### Political Engagement and National Characteristics as Potential Moderators

It is a truism that behavior and experience result from an interaction of personal characteristics and social surroundings. Thus, as Mondak (2010) noted, “a comprehensive assessment of the impact of personality [on political attitudes] demands that conditional influences be examined” (p. 20). But such conditional influences have only been examined sporadically and in selective national contexts (usually the United States). We thus test theoretically derived hypotheses about individual-level and nation-level moderators of the effects of NSC characteristics on political attitudes in this study.

<sup>3</sup> Most studies reviewed by Jost et al. (2003) and most related studies published subsequently were not intended to distinguish the broad and the narrow ideology hypotheses. Thus, many of these studies have used as the political variable ideological or partisan self-placements that do not distinguish cultural and economic attitudes (e.g., Amodio et al., 2007; Caprara, Vecchione, & Schwartz, 2009; Chirumbolo, 2002; Federico & Goren, 2009; Inbar, Pizarro, Iyer, & Haidt, 2012; Janoff-Bulman, Sheikh, & Baldacci, 2008, Study 1; Jost et al., 2007, Studies 1 and 2; Jost et al., 2008; Kirton, 1978; Lewis & Bates, 2011, Study 1; Mondak & Halperin, 2008; Thorisdottir & Jost, 2011, Studies 2 and 3; Tybur, Merriman, Hooper, McDonald, & Navarrete, 2010, Studies 2 and 3). Other studies have used multi-item composites that combine across economic and cultural content (Block & Block, 2006; Boshier, 1969; Dodd et al., 2012; Eidelman et al., 2012; Fraley et al., 2012; Jost & Thompson, 2000, Study 4; Kossowska & Van Hiel, 2003, Study 1; Lewis & Bates, 2011, Study 2; Shook & Fazio, 2009; Sidanius, 1978, 1985; Thorisdottir & Jost, 2011, Study 4; Wilson, 1973). And other studies have used measures that assess a broad conceptualization of valuing equality or group-based social dominance (e.g., Duckitt et al., 2002; Thorisdottir, Jost, Liviatan, & ShROUT, 2007), which pertain a great deal to cultural forms of inequality (e.g., for homosexuals, for women) in addition to economic inequality (e.g., Bobbio, 1997; Brewer, 2003; Cornelis & Van Hiel, 2006; Duriez & Van Hiel, 2002; Ho et al., 2012; Jost et al., 2003; Pratto, Sidanius, Stallworth, & Malle, 1994; Sidanius & Pratto, 1999). Thus, most analyses reported in these studies are not suitable for distinguishing the broad and the narrow ideology hypotheses. Other studies have used elite political samples (e.g., Gruenfeld, 1995; Tetlock, 1983, 1984), often deriving cognitive style measures from the content of public speeches or judicial opinions. Though such work is indisputably important, there is good reason to suspect that its findings might have limited relevance to disposition-politics relations among ordinary citizens. It is well known that political attitudinal processes differ markedly between political elites and mass publics (e.g., Converse & Pierce, 1986; Fiorina, Abrams, & Pope, 2005; Jennings, 1992; McClosky, 1964). It is thus quite likely that elites display disposition-politics relations that do not characterize the overwhelming majority of people, whose careers do not depend on fitting into particular political coalitions by assuming all aspects of the coalition's political posture (e.g., Federico & Goren, 2009; Golec, 2002; Kimmelmeyer, 2007).

<sup>4</sup> Rokeach (1960; reviewed in Jost et al., 2003) reported a relation between “dogmatism” and “political-economic conservatism.” But this dogmatism scale has been widely criticized for containing overtly political content (e.g., “The United States and Russia have just about nothing in common”; see, e.g., Costin, 1971; Simons, 1968; Van Hiel et al., 2010), and the political-economic conservatism scale includes cultural content (e.g., “America may not be perfect, but the American Way has brought us about as close as human beings can get to a perfect society”).

## Political Engagement as an Individual-Level Moderator

We propose that the effects of personality characteristics on political preference cannot be adequately understood without explicit reference to the role of political discourse. Political discourse refers to the context of political messages that are conveyed through the news media and informal communication, and whose content ultimately stems from the strategic actions of politicians or the preferences of partisan activists or public intellectuals (e.g., Carmines & Stimson, 1989; Levendusky, 2009; Noel, 2012). Political scientists have typically assumed that there are no natural psychological linkages between substantively distinct political preferences, such as culturally and economically conservative preferences. Rather, the primary factor driving whatever ideological coherence exists in the population is a set of elite-driven messages from political discourse, messages that imply which packages of political preference are more and less appropriate. When individuals receive these messages, they become more likely to apply a right versus left schema to their organization of political preferences (e.g., Fuchs & Klingemann, 1990; Hamill, Lodge, & Blake, 1985; Sniderman & Bullock, 2004).

The role of political discourse in attitude structuring has potentially important implications for the relations of personality characteristics and political attitudes (cf. Feldman & Johnston, 2013; Jost, Federico, & Napier, 2009). Indeed, the relations between NSC characteristics and a broad conservative orientation tend to be clearest among people who are highly exposed to political discourse (e.g., Federico, Fisher, & Deason, 2011; Federico & Goren, 2009; Kemmelmeier, 1997). But exactly how personality characteristics and discursive context interact is unclear, and our second goal is to address this question.

One possibility is that politically engaged people are more likely to show relations between NSC characteristics and unidimensional ideology because political engagement better equips people to “select the ideology that is right for them” (Jost, Federico, & Napier, 2009, p. 318). In this view, “there are clear social psychological constraints on the types of attitudes, values and beliefs that can be bundled together” by political elites (Jost, Federico, & Napier, 2009, p. 328). Exposure to political discourse improves a person’s ability to select the entire ideological package that is most need satisfying; those high in NSC characteristics tend to select the broad conservative package.

But an alternative account leads to a rather different hypothesis (e.g., Johnston, 2012a, 2012b; Johnston & Wronski, 2013). In this view, NSC characteristics do lead to a natural affinity for culturally conservative attitudes, which are relatively straightforward and “easy” (Carmines & Stimson, 1980). This organic influence of NSC characteristics occurs even if the person is not politically engaged, because these political attitudes are directly need satisfying in a way that does not require much exposure to political discourse. But, according to this view, exposure to political discourse has important consequences for how NSC characteristics translate into economic attitudes. Those low in political engagement tend to view economic issues through the concrete frame of personal costs, benefits, and protections and not through the higher order lens of a broad conservative ideological worldview. Thus, among those low in political engagement, high levels of NSC characteristics might produce left-wing economic leanings, be-

cause those seeking structure, order, and protection desire the assurance of an economically interventionist government. But among those who are politically engaged, economic issues are understood to be packaged together within an abstract right versus left ideological framework. Thus, among these people, NSC characteristics should positively predict right-wing economic attitudes.

To our knowledge, no previous study has subjected these competing hypotheses to a direct and authoritative empirical test. Specifically, it is unclear if exposure to political discourse tends to (a) produce a stronger link between NSC characteristics and all types of conservative attitudes or (b) weaken the link between NSC characteristics and left-wing economic attitudes while having little influence on NSC’s relations with conservative cultural attitudes. Indeed, if the second hypothesis is correct, this would necessitate a rethinking of the claim that attitudes across a wide range of contexts are psychologically constrained to converge on a right versus left dimension, and that exposure to political discourse helps people better understand which broad ideology best satisfies their needs. Rather, it would suggest that exposure to political discourse can move individuals away from economic attitudes that are potentially need satisfying but ideologically “inconsistent” with their cultural orientation.

## National Characteristics as Moderators

Nations vary greatly in their cultural traditions and their political and economic institutions, but studies on personality characteristics and political attitudes have typically relied on American samples or samples from a narrow range of Western nations. Our third goal is thus to examine whether the effects of NSC characteristics on political attitudes vary across nations and to test hypotheses about nation-level factors that might account for this variability. And our fourth goal is to test whether the NSC  $\times$  Political engagement interaction is itself moderated by these nation-level characteristics.

**Eastern European location.** One hypothesis about cross-national differences centers around the consequences of living in a society that was under communist domination during the Cold War. The crux of this view is that under circumstances in which the historically prevailing ideology is strongly egalitarian, NSC characteristics might yield preference for economic equality (i.e., left-wing economic preferences). This is because those seeking security and certainty will prefer to keep social and institutional conditions as they have been. This may explain why Eastern European nations formerly subjected to communist rule sometimes show relations between high levels of NSC characteristics and left-wing economic preferences (e.g., Jost, Krochik, Gaucher, & Hennes, 2009; Kossowska & Van Hiel, 2003; Schwartz et al., 2013; Thorisdottir, Jost, Liviatan, & Shrouf, 2007). We thus examine whether or not this finding replicates.

**Development.** A second societal characteristic that might moderate the relations of NSC characteristics with political attitudes is overall level of human development. According to the threat-constraint model (Sibley, Osborne, & Duckitt, 2012), conditions of economic threat will constrain the degree to which NSC characteristics predict some conservatism indicators. This is because people who are low in NSC characteristics, who would hold left-wing attitudes under less threatening circumstances, are constrained from adopting such attitudes when social surroundings

provide clear indication of threat. As of yet, this hypothesis has not been tested with a wide range of nations in which samples are measured on both cultural and economic attitudes. We presently provide such a test.

**Ideological constraint.** Finally, a third type of national characteristic that might moderate relations between NSC characteristics and political attitudes is societal level of ideological constraint. Constraint refers to the degree to which diverse issue attitudes tend to be structured along a right versus left dimension within a society or a societal subgroup (e.g., Baldassari & Gelman, 2008; Converse, 1964). There is variability in overall levels of constraint across nations (e.g., Duriez, Van Hiel, & Kossowska, 2005; Fuchs & Klingemann, 1990), and this variability likely reflects differences in the degree to which the political discourse of a nation involves discussion of a broad set of cultural and economic matters in connection with right versus left conflict (e.g., Baldassari & Gelman, 2008; Jost, Federico, & Napier, 2009). In comparison to people from nations that are low in ideological constraint, those from high constraint nations are likely more exposed to messages implying that culturally and economically conservative preferences go naturally together under the right-wing label and that their opposites go naturally together under the left-wing label.

What implications might societal levels of ideological constraint have for the effects of NSC on political attitudes? Earlier we presented the hypothesis that exposure to political discourse might weaken relations between NSC characteristics and left-wing economic attitudes. Although a person high in NSC characteristics might organically prefer strong government economic intervention, exposure to messages about the right versus left alignment of diverse political attitudes might lead her to shift her economic preferences to the right, into consistency with her organically derived cultural conservatism. But it stands to reason that this movement might occur more strongly, or might only occur, in nations with relatively strong levels of ideological constraint.

We presently provide the first test, to our knowledge, of whether societal levels of ideological constraint moderate the relations of NSC characteristics with cultural and economic political attitudes. In particular, we test the hypothesis that effects of NSC characteristics on left-wing economic attitudes are especially weakened by exposure to discourse in societies that strongly constrain political attitudes along a single right versus left dimension.

### The Present Research

We use World Values Survey (WVS; World Values Survey Association, 2009) data from 51 nations to pursue four research goals. The first is to test whether, overall across nations, NSC characteristics predict both cultural and economic forms of conservatism. The second is to investigate whether and how political engagement moderates these effects. The third goal is to test whether the effects of NSC characteristics on political attitudes vary across nations and, if they do, what nation-level characteristics account for this variability. Finally, our fourth goal is to examine whether and how the moderating effects of political engagement vary across nations (i.e., testing for three-way interactions among NSC characteristics, political engagement, and nation-level characteristics).

Compared with previous studies examining the effects of NSC characteristics on political attitudes, the present research has a

number of important methodological strengths. Not the least among these is the use of a large sample that provides high statistical power and precise estimation. Furthermore, this study uses a cross-national design including nations that vary widely in their levels of development, political institutions, and cultural traditions. This allows us to provide authoritative tests of hypotheses concerning contextual variation in the psychological origins of political attitudes. Third, we explicitly distinguish ideological identification, cultural attitudes, and economic attitudes as dependent variables. Finally, we use measures of personality characteristics and political attitudes that minimize the problem of content overlap, which has plagued many investigations of personality-politics relations (for discussions of this issue, see Feldman, 2003; Smith, Oxley, Hibbing, Alford, & Hibbing, 2011b, footnote 5, pp. 381–382; Stenner, 2005).

## Method

### Participants and Procedure

Participants were 73,048 adult residents of 51 nations: Andorra, Argentina, Australia, Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Cyprus, Egypt, Ethiopia, Finland, France, Georgia, Germany, Ghana, Great Britain, India, Indonesia, Iran, Japan, Jordan, Malaysia, Mali, Mexico, Moldova, Morocco, Netherlands, Norway, Poland, Romania, Russia, Rwanda, Serbia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Trinidad and Tobago, Turkey, Ukraine, Uruguay, the United States, Vietnam, and Zambia. This set of nations is diverse in terms of geography, history, racial/ethnic composition, and level of development, as well as social, political, and economic systems. Nation-specific sample sizes ranged from 1,000 to 3,051 participants ( $M = 1,432.31$ ,  $SD = 496.43$ ). In the full sample, participants' ages ranged from 18 to 98 years ( $M = 42.00$  years,  $SD = 16.48$ ); 52.1% of the participants were female, 47.8% were male, and sex was not recorded for 0.1%.

All participants completed the fifth wave of the WVS between 2005 and 2008. This cross-national survey is conducted by a worldwide network of social scientists. Each national survey is supervised by a principal investigator, who is responsible for (a) translating the root WVS questionnaire into local languages, (b) recruiting a nationally representative sample of adults, (c) administering the WVS through face-to-face interviews, and (d) compensating the participants. Thus, each national survey is designed and conducted using the same basic methodology, although procedural details sometimes vary across nations. Regarding translation, the root WVS questionnaire is written in English. In each sampled nation, this root questionnaire is translated into all languages spoken by at least 15% of the national population, to ensure wide coverage of ethno-linguistic groups within nations. Translated questionnaires are then back-translated into English by individuals other than those who did the initial translations from English. Both the translated local language questionnaires and the back-translated English questionnaires are then returned to the WVS executive committee for approval.

### Measures

The WVS questionnaire includes a variety of items assessing values, attitudes, and other personal characteristics. In the present

study, we used these items to measure participants' demographic characteristics, political attitudes, NSC characteristics, and degree of political engagement.

Unless otherwise noted, we scaled all of the WVS items described below to range from 0.00 to 1.00. Because some of these items were not administered in some nations, each item was then centered around its grand mean, derived from the set of 34 nations in which all of the items were administered. Composite scales were then computed from the centered items.<sup>5</sup> This scoring procedure (a) minimizes the influence of missing item responses on scale scores and (b) allows values of 0 on a scale to be interpreted as equaling the scale's grand mean (across nations with complete data). Table 1 presents descriptive statistics and intercorrelations for the final set of individual-level variables (in the top half) and nation-level variables (in the bottom half); nation-specific descriptive statistics are presented in the online supplemental materials.

**Demographic characteristics.** Sex (which we coded  $-0.50 = \text{male}$ ,  $0.50 = \text{female}$ , and did not grand-mean center) was noted by the interviewer. Age was obtained by first asking participants to report their year of birth and then having them verify their current age. The participants also reported their current household income, which was recorded on a 10-point scale with levels representing income deciles ( $0.00 = \text{lowest decile}$  to  $1.00 = \text{highest decile}$ ), as well as their highest level of education completed (or expected to complete, if they were currently a student). We coded education level as  $0.00$  (*no formal education*),  $0.25$  (*some formal education, but did not complete secondary school*),  $0.50$  (*completed secondary school, but no university education*),  $0.75$  (*some university education, but no university degree*),  $1.00$  (*university degree*).

**Political attitudes and national ideological constraint.** In the present investigation we analyze political attitude items relevant to three constructs: ideological identification, cultural attitudes, and economic attitudes. Though our primary interest is in the latter two constructs, ideological identification was used to provide a basis of comparison with prior research in this area, which has typically operationalized right versus left ideology as a unidimensional construct. In the present research, ideological identification was assessed by an item that asked participants to rate their political views on a 10-point scale, which we coded to range from  $0.00$  (*the political left*) to  $1.00$  (*the political right*).

We selected eight items to measure attitudes about specific political issues. Five of these focused on cultural issues; specifically, they assessed the participants' beliefs regarding whether (a) homosexuality can be justified (rated on a 10-point scale, which we coded to range from  $0.00 = \text{always justifiable}$  to  $1.00 = \text{never justifiable}$ ); (b) abortion can be justified (10-point scale,  $0.00 = \text{always justifiable}$  to  $1.00 = \text{never justifiable}$ ); (c) men should have a greater right than women to jobs ( $0.00 = \text{disagree}$ ,  $0.50 = \text{neither}$ ,  $1.00 = \text{agree}$ ); (d) the government should allow people to immigrate (4-point scale,  $0.00 = \text{let anyone come who wants to}$  to  $1.00 = \text{prohibit people from coming here from other countries}$ ); and (e) severely punishing criminals is an essential characteristic of democracy (10-point scale,  $0.00 = \text{not an essential characteristic of democracy}$  to  $1.00 = \text{an essential characteristic of democracy}$ ).

Three items focused on economic attitudes. These items assessed the participants' attitudes toward (a) income inequality (rated on a 10-point scale, which we coded to range from  $0.00 = \text{incomes should be made more equal}$  to  $1.00 = \text{we need larger}$

*income differences as incentives for individual effort*); (b) public versus private business ownership (10-point scale,  $0.00 = \text{government ownership of business and industry should be increased}$  to  $1.00 = \text{private ownership of business and industry should be increased}$ ); and (c) government provision of social welfare (10-point scale,  $0.00 = \text{the government should take more responsibility to ensure that everyone is provided for}$  to  $1.00 = \text{people should take more responsibility to provide for themselves}$ ).

In preliminary analyses, we investigated the feasibility of constructing composite measures of right-wing versus left-wing (a) cultural attitudes, with the right-wing pole defined by preferences that uphold traditional morality and social order (opposition to abortion, homosexuality, and feminism) and maintain protection from outsiders and transgressors (opposition to immigration, support for harsh treatment of criminals), and (b) economic attitudes, with the right-wing pole defined by preferences that are economically free market rather than redistributive and interventionist (support for economic inequality and private business ownership, opposition to government-administered welfare programs). In the full sample, the five-item right-wing cultural attitudes scale had a Cronbach's alpha of .54 and mean interitem correlation of .19; the three-item right-wing economic attitudes scale had an alpha of only .17 and a mean interitem correlation of .06. Moreover, correlations between the political attitude items varied considerably across nations. We therefore report the results of analyses using both the attitude composites (for illustrative purposes) and individual attitude items as outcome variables.

That the structure of political attitudes varied considerably across nations underscores the potential importance of cross-national differences in ideological constraint. To test our hypothesis concerning ideological constraint as a moderator of NSC-politics relationships, we computed a nation-level index of ideological constraint, representing the extent to which, in a particular nation, political attitudes tend to cluster along the broad right-left dimension (Converse, 1964). We did so by computing the mean intercorrelation between the eight political attitude items in each nation, rescaling this index to range from 0.00 to 1.00, and centering the index (see the bottom half of Table 1).

**NSC characteristics.** Participants rated 10 items constituting a shortened version of the Schwartz Values Survey (SVS; Schwartz, 1992) on a 6-point scale, which we coded to range from  $0.00$  (*not at all like me*) to  $1.00$  (*very much like me*). We used these items to operationalize NSC characteristics. As discussed earlier, the value axis of conservation versus openness to change provides an appropriate theoretical match to the motivational constructs often posited as predictors of political attitudes. Moreover, the NSC-related items in this value inventory are devoid of direct political content: They are "basic values" as opposed to "political values" (see Caprara et al., 2006). They are thus appropriately

<sup>5</sup> We repeated our main analyses using within-nation (as opposed to grand-mean) centering of NSC and political engagement. The results were consistent with those presented and discussed here. Most importantly, all 10 of the statistically significant main effects of NSC reported in Table 2, as well as 36 of the 38 significant interactions reported in Tables 3, 5, and 7, remained significant after within-nation centering. Two previously significant interactions became marginally significant ( $p < .10$ ), whereas one interaction that had been marginally significant became significant ( $p < .05$ ).

Table 1  
Descriptive Statistics and Intercorrelations for the Key Variables

	N	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Individual-level variables																			
1. Right-wing identification	50,724	-.01	.27																
2. Opp. homosexuality	63,174	.03	.36	.18															
3. Opp. abortion	65,455	.03	.33	.15	.62														
4. Supp. preferential hiring of men	71,684	.06	.45	.05	.29	.21													
5. Opp. immigration	64,092	.04	.29	.02	.10	.07	.12												
6. Supp. harsh punishment of criminals	69,456	.03	.31	.07	.17	.11	.09	.04											
7. Supp. income inequality	70,544	.00	.33	.13	.07	.04	.03	.00	.05										
8. Supp. private business ownership	62,831	-.02	.31	.08	-.06	-.07	-.09	-.06	-.02	-.05									
9. Opp. social welfare programs	70,924	-.02	.32	.15	-.07	-.05	-.10	-.06	-.03	.19	.05								
10. Right-wing cultural composite	72,398	.04	.22	.13	.75	.69	.68	.42	.45	.07	-.11	-.12							
11. Right-wing economic composite	70,646	-.01	.20	.19	-.03	-.04	-.08	-.06	.01	.65	.53	.69	-.08						
12. Sex	72,973	.02	.50	-.03	-.06	-.01	-.11	.01	.00	-.03	-.05	-.04	-.06	-.06					
13. Age	71,839	-.01	.21	.00	.00	-.02	.03	.03	.01	-.06	.02	.01	.02	-.02	-.01				
14. Education level	72,531	-.01	.29	-.04	-.19	-.20	-.17	-.02	-.05	.06	.10	.06	.22	.11	-.06	-.15			
15. Income level	65,749	-.01	.25	.08	-.12	-.12	-.10	-.05	-.04	.09	.10	.13	.15	.16	-.04	-.10	.33		
16. NSC (conservation values)	70,992	.01	.14	.03	.23	.20	.14	.09	.12	-.01	-.08	-.09	.26	-.09	.12	.22	-.17	-.16	
17. Political engagement	72,461	-.02	.23	.07	-.10	-.09	-.09	-.07	-.04	-.05	.07	.10	-.14	.12	-.13	.01	.28	.21	-.16
Nation-level variables																			
18. Human development	48	.02	.28																
19. Ideological constraint	51	.01	.27	.58															
20. Location outside Eastern Europe	51	.32	.38	-.06	.29														
21. NSC internal consistency	51	.00	.24	.50	.37	-.49													

Note. All correlations between individual-level variables stronger than .01 and all correlations between nation-level variables stronger than .28 were statistically significant ( $p < .05$ ). Sex was coded -.50 = male, .50 = female. Location outside Europe was coded -.50 = Eastern Europe, .50 = Outside Eastern Europe. All other nation-level variables were scaled to range from 0 to 1 and then centered around the mean from nations with complete item administration. All other individual-level variables were scored from items scaled to range from 0 to 1 and then centered around the grand mean from nations with complete item administration. SD = standard deviation; Opp. = opposition to; Supp. = support for; NSC = needs for security and certainty.

considered “pre-political” as opposed to “political” measures (Federico, Hunt, & Ergun, 2009), and their use avoids the tautology of including political content within dispositional indicators posited to predict political attitudes.

First, following Schwartz (1992; Schwartz & Bilsky, 1990), we centered each participant’s set of 10 item responses around his or her within-person mean to control for individual differences in acquiescent responding. Next, we analyzed the six SVS items relevant to the conservation versus openness axis. These items assessed motivations for security (“Living in secure surroundings is important to this person; to avoid anything that might be dangerous”), tradition (“Tradition is important to this person; to follow the customs handed down by one’s religion or family”), and conformity (“It is important to this person to always behave properly; to avoid doing anything people would say is wrong”), as contrasted with motivations for stimulation (“Adventure and taking risks are important to this person; to have an exciting life”), self-direction (“It is important to this person to think up new ideas and be creative; to do things one’s own way”), and hedonism (“It is important to this person to have a good time; to ‘spoil’ oneself”). As noted above, this value axis corresponds closely with the concept of psychological needs for security and certainty, and reflects the fundamental trade-off between stability and safety, on the one hand, and creative self-expression, on the other hand.

The goal of these analyses with the conservation versus openness axis items was to construct an NSC measure that would best balance the aims of (a) capturing the conceptual meaning and breadth of the NSC construct, (b) maximizing scale reliability, and (c) maximizing the consistency of measurement characteristics across nations. These analyses yielded a five-item scale that contrasted motivations for security, tradition, and conformity with motivations for self-direction and stimulation. In the full sample, this scale had an alpha reliability of .56 and a mean interitem correlation of .20.<sup>6</sup> In analyses of individual nations, alphas ranged from .70 (in Serbia and Slovenia) to .21 (in India), with a median of .55 and mean of .52. Examination of the corrected item–total correlations, which represent the association of each individual item with the average of the other four items on the scale, revealed that 253 of the 255 nation-specific correlations (51 nations  $\times$  5 items) were in the expected direction.

To further examine measurement consistency and variability across nations, we conducted a series of multiple-group confirmatory factor analyses (CFAs) that tested the metric invariance of the five-item conservation scale (see Steenkamp & Baumgartner, 1998). Because within-person centered items are generally unsuitable for CFA due to linear dependencies among the data (Dunlap & Cornwell, 1994; Fisher & Milfont, 2010), we fit bifactor models to the raw data (see John, Naumann, & Soto, 2008). For each nation, we first fit a baseline model with the target nation as one group and all other nations as a pooled reference group. In this model, (a) each of the five items was allowed to load on both a conservation factor and an acquiescence factor, (b) each conservation loading was freely estimated in each group, (c) loadings on the acquiescence factor were constrained to be equal across items (to ensure that this factor represented acquiescent responding), and (d) the conservation and acquiescence factors were constrained to be uncorrelated with each other (to ensure that conservation was defined independently from acquiescent responding). These models fit the data well: comparative fit index (CFI) values ranged

from .956 to .962, with a median and mean of .959, and root-mean-square error of approximation (RMSEA) values ranged from .065 to .075, with a median and mean of .069. For each nation, we then fit a metric-invariance model that constrained all item loadings on the conservation factor to be equal across the target nation and the reference group. These models also fit the data well: CFI values ranged from .950 to .961, with a median of .958 and mean of .957, and RMSEA values ranged from .054 to .060, with a median and mean of .056. Of importance, for each nation, CFI declined only slightly from the baseline model to the metric-invariance model (range of .000 to .009, median and mean of .002); moreover, for each nation, RMSEA improved (i.e., decreased) from the baseline model to the metric-invariance model (range of .009 to .016, median of .014 and mean of .013), indicating better parsimony-adjusted fit for the metric-invariance model.

Taken together, these results indicate that a version of the conservation versus openness to change axis was recognizable in all, or almost all, nations (see Schwartz, 1992). We therefore scored the five-item conservation scale in each nation but also retained the nation-specific alphas as nation-level indices of internal consistency (scaled to range from 0 to 1, then centered; see the bottom half of Table 1). Scoring the scale allowed us to test how NSC relates with political attitudes, and retaining the internal consistency index allowed us to test whether cross-national variability in these relations could be explained by measurement characteristics.<sup>7</sup>

**Political engagement.** We measured degree of political engagement by averaging three indicators. The first two were items asking participants to rate (a) how important politics was in their life (on a 4-point scale, which we coded to range from 0.00 = *not at all important* to 1.00 = *very important*), and (b) their level of interest in politics (4-point scale, 0.00 = *not at all interested* to 1.00 = *very interested*). The third indicator was a prompt that asked participants whether, in the past week, they had obtained national or world news using each of seven sources: “daily newspaper,” “news broadcasts on radio or TV,” “printed magazines,” “in-depth reports on radio or TV,” “books,” “internet, email,” and “talk with friends or colleagues.” We coded this indicator as the proportion of sources that the participant had used. In the full sample, the political engagement composite had an alpha reliability of .58 and a mean interitem correlation of .30; nation-specific alphas ranged from .73 (in Germany and Egypt) to .34 (in Burkina Faso), with a median of .59 and mean of .57.

<sup>6</sup> With the nation used as the unit of analysis, national average score on each item was correlated positively with national average score on every other item. These nation-level interitem correlations ranged from .09 (between Tradition and Security) to .57 (between Tradition and reversed Self-Direction), with a mean of .30.

<sup>7</sup> Because the present research was conducted to examine the effects of NSC characteristics on political attitudes, we focus our results and discussion on the conservation versus openness values axis. However, we also explored effects of the other values axis proposed by Schwartz (1992): self-enhancement versus self-transcendence. These exploratory analyses indicated that although self-enhancement had small effects on right-wing economic attitudes it did not predict cultural conservatism (e.g., Duckitt & Sibley, 2009). Thus, the self-enhancement versus self-transcendence dimension does not appear to underlie a congruence between cultural and economic conservatism.



**Human development and Eastern European location.** In addition to indexing national levels of ideological constraint and measurement reliability, we indexed two other theoretically relevant nation-level characteristics: level of human development and whether the nation is located outside of Eastern Europe, including Russia and other former Soviet Republics (and therefore not a former member of the Eastern bloc). We coded geographical location as  $-0.50$  (*Eastern Europe*) or  $0.50$  (*outside of Eastern Europe*). We measured human development level with the 2005 United Nations Human Development Index (United Nations Development Programme, 2005). This index is a composite of life expectancy, gross national income per capita, and education. We scaled it to range from 0.00 (the lowest observed level, for Burkina Faso) to 1.00 (the highest observed level, for Norway), and we then centered this index around its grand mean derived from the same set of 34 nations used to center the WVS items.

**Results**

**Overall Effects of NSC Characteristics on Ideological Identification and Political Attitudes**

Our first goal was to test whether and how NSC characteristics predict right-wing versus left-wing ideological identification and political attitudes. To do so, we fit a series of multilevel models (also known as mixed models or hierarchical linear models) predicting identification with the political right, cultural attitudes, and economic attitudes. These models nested individuals (at Level 1) within nations (at Level 2). For each outcome variable, we fit a model that included fixed and random intercepts, as well as fixed and random effects of age, sex, education level, income level, and NSC (i.e., conservation vs. openness). The results of these models are presented in Table 2.

The fixed-effect coefficients shown in Table 2 represent estimates of the overall effects, across nations, of the demographic and NSC predictors on right-wing identification and political attitudes. The results of the model predicting right-wing identification, shown at the top of this table, indicate that male ( $b = -.013$ ,  $\beta = -.024$ ), less

educated ( $b = -.034$ ,  $\beta = -.036$ ), and higher income ( $b = .066$ ,  $\beta = .063$ ) individuals tended to identify with the political right (cf. Erikson, McIver, & Wright, 1987). Moreover, NSC uniquely predicted identification with the political right ( $b = .076$ ,  $\beta = .041$ ), and this NSC effect was comparable in size to the demographic effects.

Did the positive effect of NSC characteristics on identification with the political right generalize to both cultural and economic attitudes? The results of models predicting cultural attitudes are shown in the middle of Table 2. They indicate that NSC significantly predicted the cultural attitudes composite ( $b = .171$ ,  $\beta = .113$ ) and all five of the individual cultural attitudes, such that higher levels of NSC were associated with right-wing attitudes regarding homosexuality ( $b = .288$ ,  $\beta = .114$ ), abortion ( $b = .271$ ,  $\beta = .117$ ), preferential hiring of men ( $b = .061$ ,  $\beta = .020$ ), immigration ( $b = .080$ ,  $\beta = .040$ ), and harsh punishment of criminals ( $b = .167$ ,  $\beta = .079$ ). In fact, NSC had larger effects on right-wing cultural attitudes than on general ideological identification with the political right. Thus, NSC characteristics appear to more reliably and strongly predict cultural conservatism than general conservative identification.

Finally, the results of models predicting economic attitudes are shown in the bottom section of Table 2. NSC had very different effects on economic attitudes than on cultural attitudes. Specifically, higher levels of NSC significantly predicted left-wing, rather than right-wing, standing on the economic attitudes composite ( $b = -.055$ ,  $\beta = -.038$ ), and this effect extended to specific attitudes toward business ownership ( $b = -.067$ ,  $\beta = -.031$ ) and social welfare programs ( $b = -.063$ ,  $\beta = -.028$ ). These NSC effects were generally larger than the demographic effects of age, similar in size to the effects of sex, and smaller than the effects of education and income.

Taken together, these results replicate previous findings that higher levels of NSC characteristics generally predict ideological identification with the political right. Additionally, they show that these characteristics positively predict right-wing cultural attitudes. However, these positive associations did not extend to economic attitudes. In fact, higher levels of NSC characteristics had small main effects toward left-wing economic attitudes. These findings are consistent

Table 2  
Effects of Demographic Variables and NSC Characteristics on Right-Wing Attitudes

Outcome	Sex	Age	Education level	Income level	NSC
	<i>b</i> ( $\beta$ )	<i>b</i> ( $\beta$ )	<i>b</i> ( $\beta$ )	<i>b</i> ( $\beta$ )	<i>b</i> ( $\beta$ )
<b>Ideological identification</b>					
Right-wing identification	-.013 (-.024)**	.029 (.022)	-.034 (-.036)*	.066 (.063)***	.076 (.041)**
<b>Cultural attitudes</b>					
Right-wing cultural composite	-.036 (-.083)***	.080 (.076)***	-.097 (-.128)***	-.042 (-.049)***	.171 (.113)***
Oppose homosexuality	-.054 (-.074)***	.152 (.086)***	-.106 (-.083)***	-.060 (-.042)***	.288 (.114)***
Oppose abortion	-.011 (-.017)**	.076 (.047)***	-.084 (-.072)***	-.052 (-.039)***	.271 (.117)***
Support hiring men	-.107 (-.118)***	.136 (.062)***	-.196 (-.123)***	-.054 (-.030)***	.061 (.020)**
Oppose immigration	.004 (.007)	.016 (.011)	-.064 (-.064)***	-.042 (-.037)***	.080 (.040)***
Support harsh punishment	-.006 (-.011)*	.021 (.014)*	-.025 (-.023)	.000 (.000)	.167 (.079)***
<b>Economic attitudes</b>					
Right-wing economic composite	-.018 (-.045)***	.011 (.011)	.049 (.069)***	.104 (.129)***	-.055 (-.038)***
Support income inequality	-.013 (-.020)***	-.002 (-.001)	.058 (.050)***	.126 (.098)***	-.033 (-.015)
Support private businesses	-.028 (-.045)***	.017 (.011)	.068 (.062)***	.046 (.038)**	-.067 (-.031)**
Oppose welfare programs	-.014 (-.022)***	.022 (.014)	.029 (.026)**	.128 (.100)***	-.063 (-.028)**

Note. *b* = unstandardized fixed effect.  $\beta$  = fixed effect for variables standardized with the grand mean and standard deviation. Sex was coded  $-.50 =$  male,  $.50 =$  female. NSC = needs for security and certainty.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

with the narrow ideology hypothesis, rather than the broad ideology hypothesis.

### Examining Political Engagement as a Potential Moderator

As noted above, the coefficients shown in Table 2 represent estimates of NSC characteristics' overall effects, averaged across nations, on political attitudes. Our second goal was to examine whether these NSC effects were moderated by exposure to political discourse, as captured by individual differences in political engagement (e.g., Federico & Goren, 2009; Kemmelmeier, 1997). To do this, we fit a second series of multilevel models. In addition to the demographic and NSC predictors, each of these models also included fixed and random effects for (a) political engagement and (b) the interaction between political engagement and NSC.

The interaction effects from these models are presented in Table 3. As this table shows, political engagement consistently moderated the effects of NSC characteristics on identification with the political right and on economic attitudes. These interactions were positive and statistically significant for right-wing identification ( $b = .316$ ,  $\beta = .039$ ), the economic attitude composite ( $b = .196$ ,  $\beta = .031$ ), and all three of the specific economic attitudes: support for income inequality ( $b = .159$ ,  $\beta = .016$ ), support for private business ownership ( $b = .187$ ,  $\beta = .020$ ), and opposition to government welfare programs ( $b = .218$ ,  $\beta = .022$ ). These positive interactions indicate that NSC effects on right-wing identification and economic attitudes were more positive among politically engaged individuals than among disengaged individuals. Similarly positive interactions were found for NSC effects on opposition to immigration ( $b = .115$ ,  $\beta = .013$ ) and support for harsh punishment of criminals ( $b = .155$ ,  $\beta = .016$ ); however, this pattern did not extend to the three remaining cultural attitudes, nor to the cultural attitude composite ( $p > .05$ ).

Table 3  
*Interactions of NSC Characteristics With Political Engagement in Predicting Right-Wing Attitudes*

Outcome	Political engagement $\times$ NSC $b$ ( $\beta$ )
Ideological identification	
Right-wing identification	.316 (.039)***
Cultural attitudes	
Right-wing cultural composite	.031 (.005)
Oppose homosexuality	.065 (.006)
Oppose abortion	.002 (.000)
Support hiring men	-.089 (-.007)
Oppose immigration	.115 (.013)*
Support harsh punishment	.155 (.016)**
Economic attitudes	
Right-wing economic composite	.196 (.031)***
Support income inequality	.159 (.016)*
Support private businesses	.187 (.020)**
Oppose welfare programs	.218 (.022)**

Note.  $b$  = unstandardized fixed effect.  $\beta$  = fixed effect for variables standardized with the grand mean and standard deviation. NSC = needs for security and certainty.

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

For each of the seven significant interactions shown in Table 3, the simple effects of NSC characteristics on right-wing attitudes at different levels of political engagement are presented in Table 4. One striking pattern shown in this table is that all five of the interactions predicting right-wing identification and economic attitudes were strong enough to reverse the sign of the NSC effects. That is, among individuals who were very politically engaged, higher levels of NSC predicted greater identification with the political right, as well as holding right-wing economic attitudes. In contrast, among individuals who were politically disengaged, high NSC predicted greater identification with the political left, as well as holding left-wing economic attitudes. In contrast, the simple effects predicting cultural attitudes reveal that these interactions were not strong enough to reverse the main effects of NSC: At all levels of political engagement, greater NSC predicted holding right-wing cultural attitudes.

Taken together, these results support the hypotheses that exposure to political discourse (a) moderates the effects of NSC characteristics on political attitudes and (b) does so more consistently, and more strongly, for ideological identification and economic attitudes than for cultural attitudes. In general, exposure to political discourse appears necessary for NSC characteristics to positively predict right-wing identification and economic attitudes, but not for these characteristics to predict right-wing cultural attitudes. Regarding economic attitudes, the findings are consistent with the hypothesis that NSC promotes a left-wing economic preference but that exposure to political discourse counteracts this tendency.

### Between-Nation Differences in the Effects of NSC Characteristics on Conservatism

To this point, our analyses have focused on the global effects of NSC characteristics on political attitudes, averaged across nations. Our third major goal was to go beyond these average effects by examining cross-national variability. We first tested the variance of NSC's random (i.e., nation-specific) effects on our 11 political attitude measures (including composites and ideological identification), using the models shown in Table 2. In all 11 models, this variance was statistically significant ( $p < .001$ ), indicating that the strength—and potentially even the direction—of NSC characteristics' effects on political attitudes varied across nations. This variability highlights the importance of sampling a wide range of nations when investigating the psychological origins of political attitudes.

What explains the between-nation differences in the effects of NSC characteristics on political attitudes? We next tested whether NSC effects were moderated by three nation-level characteristics: levels of human development, location outside of Eastern Europe, and ideological constraint. We did so using a third series of multilevel models. In addition to the individual-level demographic and NSC predictors, each of these models also included fixed effects of (a) one nation-level variable and (b) the interaction between NSC and the nation-level variable. Table 5 presents these models' interaction effects; each statistically significant interaction indicates that a nation-level characteristic helps explain between-nation differences in the effect of NSC characteristics on a particular political attitude or attitude composite. For each significant interaction, simple NSC effects on the attitude variable, at different values of the nation-level characteristic, are presented in Table 6.

Table 4  
Simple Effects of NSC Characteristics on Right-Wing Attitudes, at Different Values of Political Engagement

Value	Model predicting right-wing identification	Models predicting cultural attitudes		Models predicting economic attitudes			
		Oppose immigration	Support harsh punishment	Right-wing economic composite	Support income inequality	Support private businesses	Oppose welfare programs
Very high	.208	.126	.231	.033	.044	.010	.031
High	.137	.100	.196	-.012	.008	-.033	-.019
Average	.066	.074	.161	-.056	-.028	-.075	-.068
Low	-.006	.048	.126	-.101	-.064	-.117	-.117
Very low	-.077	.022	.090	-.145	-.099	-.160	-.166

Note. Table entries are simple effects for models with statistically significant ( $p < .05$ ) interactions. Very high = 2 standard deviation units above the grand mean. High = 1 standard deviation unit above the grand mean. Average = at the grand mean. Low = 1 standard deviation unit below the grand mean. Very low = 2 standard deviation units below the grand mean. Columns representing attitudes that did not significantly interact with any nation-level characteristics are not shown. NSC = needs for security and certainty.

The results of models predicting identification with the political right are presented at the top of Table 5. All three of these models' interaction effects were statistically significant and positive. Specifically, NSC characteristics predicted right-wing identification more positively in nations with higher levels of human development ( $b = .296, \beta = .044$ ; cf. Sibley et al., 2012) and ideological constraint ( $b = .348, \beta = .048$ ), as well as in nations located outside Eastern Europe ( $b = .195, \beta = .038$ ). As shown in Table 6, all three of these interactions were strong enough to reverse the sign of the NSC effect. Higher levels of NSC characteristics tended to predict greater identification with the political right in high-development and high-constraint nations but predicted greater identification with the political left in low-development and low-constraint nations. Moreover, high NSC predicted greater left-wing identification in Eastern European nations but greater right-wing identification in other nations (cf. Kossowska & Van Hiel, 2003; Thorisdottir et al., 2007).

The middle section of Table 5 shows that the effects of NSC characteristics on right-wing cultural attitudes (except support for the harsh punishment of criminals) were frequently moderated by

human development and ideological constraint: All 12 of these interaction effects were positive, and eight were statistically significant. As shown by the simple effects in Table 6, in all cases NSC characteristics predicted right-wing cultural attitudes more strongly in nations with high levels of development and ideological constraint than in nations with low levels of these characteristics. However, only a few of these significant interactions (2 of 8) were strong enough to reverse the sign of the NSC main effect: In general, high levels of NSC characteristics predicted right-wing cultural attitudes even in low-development and low-constraint nations.

Finally, the bottom section of Table 5 shows that ideological constraint and location outside Eastern Europe moderated the effects of NSC characteristics on the economic attitude composite, as well as support for private business ownership and opposition to social welfare programs. All six of these interactions were positive and statistically significant. The simple effects presented in Table 6 reveal that high levels of NSC characteristics predicted right-wing economic attitudes only in nations with very high levels of ideological constraint; at all other constraint levels, high NSC

Table 5  
Interactions of NSC Characteristics With Nation-Level Characteristics in Predicting Right-Wing Attitudes

Interaction of NSC with . . .	Human development $b$ ( $\beta$ )	Attitude constraint $b$ ( $\beta$ )	Location outside Eastern Europe $b$ ( $\beta$ )
Ideological identification			
Right-wing identification	.296 (.044)***	.348 (.048)***	.195 (.038)**
Cultural attitudes			
Right-wing cultural composite	.179 (.032)***	.216 (.037)***	.012 (.003)
Oppose homosexuality	.151 (.016)	.224 (.023)**	-.012 (-.002)
Oppose abortion	.153 (.018)	.257 (.029)**	.080 (.013)
Support hiring men	.243 (.021)**	.219 (.018)*	-.041 (-.005)
Oppose immigration	.195 (.027)**	.144 (.019)*	-.026 (-.005)
Support harsh punishment	.092 (.012)	.125 (.015)	.057 (.010)
Economic attitudes			
Right-wing economic composite	.080 (.015)	.143 (.026)**	.103 (.027)**
Support income inequality	.086 (.010)	.077 (.009)	-.031 (-.005)
Support private businesses	-.001 (.000)	.168 (.020)**	.241 (.041)***
Oppose welfare programs	.146 (.018)	.220 (.025)**	.130 (.021)**

Note.  $b$  = unstandardized fixed effect.  $\beta$  = fixed effect for variables standardized with the grand mean and standard deviation. Location outside Eastern Europe was coded  $-.50 = Eastern Europe, .50 = Outside Eastern Europe$ . NSC = needs for security and certainty.

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

Table 6  
Simple Effects of NSC Characteristics on Right-Wing Attitudes, at Different Values of the Nation-Level Characteristics

Value	Models predicting cultural attitudes					Models predicting economic attitudes			
	Models predicting right-wing identification	Right-wing cultural composite	Oppose homosexuality	Oppose abortion	Support hiring men	Oppose immigration	Right-wing economic composite	Support private businesses	Oppose welfare programs
Human development									
High	.150	.219			.123	.135			
Average	.068	.169			.056	.081			
Low	-.014	.120			-.011	.028			
Very low	-.095	.070			-.078	-.026			
Ideological constraint									
Very high	.257	.286	.403	.404	.178	.161	.022	.028	.054
High	.163	.228	.343	.334	.119	.123	-.017	-.017	-.005
Average	.069	.170	.282	.265	.060	.084	-.055	-.062	-.064
Low	-.024	.112	.222	.196	.001	.045	-.094	-.107	-.123
Location outside									
Eastern Europe									
Outside	.109						-.036	-.025	-.039
Not outside	-.085						-.139	-.266	-.169

Note. Table entries are simple effects for models with statistically significant ( $p < .05$ ) interactions. Very high = 2 standard deviation units above the grand mean. High = 1 standard deviation unit above the grand mean. Average = at the grand mean. Low = 1 standard deviation unit below the grand mean. Very low = 2 standard deviation units below the grand mean. Rows representing values beyond the observed range and columns representing attitudes that did not significantly interact with any nation-level characteristics are not shown. NSC = needs for security and certainty.

predicted left-wing economic attitudes. This is broadly consistent with the hypothesis (to be tested directly in the next section) that a strong context of ideological constraint leads politically engaged individuals high in NSC to move their economic attitudes to the right. As for geographic location, high NSC predicted left-wing economic attitudes both inside and outside of Eastern Europe but predicted these attitudes especially strongly in Eastern European nations (cf. Golec, 2002; Kossowska & Van Hiel, 2003; Thorisdottir et al., 2007).

Taken together, these results indicate that three nation-level characteristics—human development, location outside of Eastern Europe, and ideological constraint—help explain between-nation differences in the effects of NSC characteristics on political attitudes. In general, NSC effects on right-wing identification and attitudes were often more positive in nations with higher levels of human development and ideological constraint, as well as nations located outside Eastern Europe. Moreover, ideological constraint—how closely attitudes in a particular nation tend to cluster along the contemporary American version of the right versus left political dimension—emerged as the most consistent nation-level moderator. Thus, our findings strongly caution against using data from any single nation to draw conclusions about the psychological origins of political attitudes.

### Joint Moderation Effects of Political Engagement and Nation-Level Characteristics

The results presented in the two previous sections show that certain effects of NSC characteristics on right-wing versus left-wing political attitudes vary systematically across levels of political engagement and across nations. Our fourth and final goal was to test whether political engagement moderated the effects of NSC characteristics differently across nations; in other words, we aimed to test for three-way interactions between NSC characteristics,

political engagement, and nation-level characteristics in predicting political attitudes. To do this, we fit a final series of multilevel models. In addition to fixed and random effects for the demographic predictors, NSC, and political engagement, each model in this series also included (a) a fixed effect of one nation-level variable; (b) fixed effects for the three possible two-way interactions among NSC, political engagement, and the nation-level variable; and (c) a fixed effect for the three-way interaction among NSC, political engagement, and the nation-level variable.

The three-way interaction effects from these models are presented in Table 7. Of these 33 effects, 29 were positive and 14 were significantly positive; none were significantly negative. With regard to ideological identification and cultural attitudes, the pattern of interaction effects suggests that although high political engagement sometimes enhances the positive effects of NSC characteristics on right-wing identification, opposition to homosexuality, and support for harsh punishment of criminals (see Tables 3 and 4), these enhancement effects are sometimes stronger in nations with high levels of human development and ideological constraint and that are located outside Eastern Europe. Similarly, with regard to economic attitudes, the pattern suggests that although high political engagement generally counteracts the negative effects of NSC characteristics on right-wing economic attitudes, these counteractive effects tend to be strongest in nations with higher levels of ideological constraint, and, in some cases, in nations that are located outside Eastern Europe.

To help further interpret the significant three-way interactions, Table 8 presents the simple effects of NSC characteristics on right-wing identification, cultural attitudes, and economic attitudes for the various combinations of political engagement with the nation-level variables. For example, the first block of simple effects shown in the top-left corner of the table indicates that, in highly developed nations, the positive effect of NSC characteris-

Table 7  
 Three-Way Interactions of NSC Characteristics With Political Engagement and Nation-Level Characteristics in Predicting Right-Wing Attitudes

Interaction of political engagement × NSC with . . .	Human development <i>b</i> (β)	Attitude constraint <i>b</i> (β)	Location outside Eastern Europe <i>b</i> (β)
Ideological identification			
Right-wing identification	-.096 (-.003)	.245 (.008)	.296 (.013)*
Cultural attitudes			
Right-wing cultural composite	.353 (.014)***	.336 (.013)***	.055 (.003)
Oppose homosexuality	.639 (.016)***	.544 (.012)***	.030 (.001)
Oppose abortion	.282 (.008)	.266 (.007)	.050 (.002)
Support hiring men	.154 (.003)	.116 (.002)	-.047 (-.001)
Oppose immigration	.103 (.003)	.151 (.004)	.090 (.004)
Support harsh punishment	.567 (.017)***	.672 (.018)***	.240 (.009)*
Economic attitudes			
Right-wing economic composite	.158 (.007)	.337 (.014)***	.100 (.006)
Support income inequality	.185 (.005)	.316 (.008)*	-.203 (-.007)
Support private businesses	-.173 (-.005)	.094 (.002)	.284 (.011)*
Oppose welfare programs	.472 (.013)**	.568 (.015)***	.304 (.001)**

Note. *b* = unstandardized fixed effect. β = fixed effect for variables standardized with the grand mean and standard deviation. Location outside Eastern Europe was coded -.50 = Eastern Europe, .50 = Outside Eastern Europe. NSC = needs for security and certainty.  
 \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

tics on the right-wing cultural attitude composite was stronger among highly engaged individuals (*b* = .236) than among their less engaged peers (*b* = .175). However, the enhancing effect of high political engagement did not extend to nations with low levels of development. Similar patterns of simple effects emerged for all of the significant three-way interactions predicting right-wing identification and cultural attitudes (shown in the left and middle sections of Table 8): High political engagement enhanced the positive effects of NSC characteristics on right-wing attitudes more strongly—or, in some cases, only—in nations that had high levels of human development and ideological constraint and were located outside Eastern Europe.

With regard to economic conservatism, the pattern of simple effects was very consistent across interactions. High levels of NSC characteristics positively predicted right-wing economic attitudes only among highly politically engaged individuals who were also located either in nations with high ideological constraint or in a location outside Eastern Europe. At other levels of the national characteristics, or at a low level of political engagement (regardless of the national characteristics), high NSC predicted left-wing economic attitudes. As predicted, the combination of being from an ideologically constrained nation and being attentive to political discourse counteracted the effect of NSC on left-wing political attitudes.

**Cross-National Variability in NSC Internal Consistency**

As shown in Table 1, our measure of NSC characteristics tended to be more internally consistent in nations with higher levels of human development (*r* = .50) and ideological constraint (*r* = .37) and that were located in Eastern Europe (*r* = -.49). Could this cross-national variability in NSC measurement explain the moderating effects of human development, ideological constraint, and location outside Eastern Europe presented in Tables 5 and 7?

To test this possibility, we first conducted regressions at the nation level to partial the NSC internal consistency index out of human development, ideological constraint, and location outside Eastern Europe. We then repeated the multilevel moderation analyses reported in Tables 5 and 7 using these residualized indices of human development, ideological constraint, and location. The results of these analyses clearly replicated the overall pattern of effects reported in Tables 5 and 7. Of the 17 significantly positive two-way interactions reported in Table 5 between a nation-level characteristic and NSC, 14 remained significantly positive after partialing out NSC internal consistency. Three previously significant interactions—involving human development × NSC and ideological constraint × NSC predicting support for preferential hiring of men, as well as ideological constraint × NSC predicting opposition to abortion—remained positive but were no longer statistically significant, whereas one previously nonsignificant interaction, involving human development × NSC predicting the economic attitude composite, became significantly positive (*b* = .138, β = .023).

Three-way interactions of the nation-level characteristics with NSC and political engagement proved even more robust than the two-way interactions. All 14 of the statistically significant interactions reported in Table 7 remained significantly positive after partialing out NSC internal consistency. Moreover, four previously nonsignificant interactions became significantly positive: these involved human development × NSC × political engagement predicting opposition to abortion (*b* = .374, β = .009), as well as location outside Eastern Europe × NSC × political engagement predicting the cultural attitude composite (*b* = .148, β = .007), opposition to homosexuality (*b* = .243, β = .007), and the economic attitude composite (*b* = .158, β = .008). Taken together, the results of these partialing analyses further support the hypothesis that human development, ideological constraint, and location outside Eastern Europe moderate the effects of NSC characteristics on political attitudes, by indicating that the observed pattern of

This document is copyrighted by the American Psychological Association or one of its allied publishers. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

**Table 8**  
*Simple Effects of NSC Characteristics on Right-Wing Attitudes, at Different Values of Political Engagement and the Nation-Level Characteristics*

Value	Models predicting right-wing identification						Models predicting cultural attitudes						Models predicting economic attitudes									
	High PE		Low PE		PE		Right-wing composite		Oppose homosexuality		Support harsh punishment		Right-wing economic composite		Support income inequality		Support private businesses		Oppose welfare programs			
	High	Low	High	Low	PE	High	Low	PE	High	Low	PE	High	Low	PE	High	Low	PE	High	Low	PE		
High	.256	.175	.359	.253	.244	.114	.236	.181	.358	.272	.243	.099	.031	-.099	.023	-.078	.059	.055	-.115	-.115		
Average	.172	.154	.289	.263	.194	.134	.170	.154	.282	.262	.188	.126	-.013	-.102	-.002	-.065	-.015	-.003	-.115	-.115		
Low	.107	.133	.220	.274	.143	.154	.103	.127	.206	.253	.134	.154	-.057	-.105	-.028	-.052	-.090	-.062	-.115	-.115		
	Models with human development																					
	Models with ideological constraint																					
Outside	.181	.012	.214	.130	.109	.134	.214	.130	.109	.134	.214	.130	.109	.134	.214	.130	.109	.134	.214	.130	.109	.134
Not outside	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099	-.064	-.099

*Note.* Table entries are simple effects for models with statistically significant ( $p < .05$ ) interactions. High = 1 standard deviation unit above the grand mean. Average = at the grand mean. Low = 1 standard deviation unit below the grand mean. Columns representing attitudes without any significant three-way interactions are not shown. NSC = needs for security and certainty; PE = political engagement.

moderation effects cannot be explained by cross-national differences in measurement reliability.

**Discussion**

It is quite likely that stable psychological dispositions have an impact on political preference (e.g., Block & Block, 2006; Perry & Sibley, 2012). The explosion of research on this topic during the last decade has primarily involved investigation of main effects of psychological and biological characteristics on a broad-based right versus left ideology. The perspectives guiding this work have either explicitly or implicitly had motivation at their core (Jost et al., 2003). They have often posited that a family of characteristics bearing on needs for security and certainty lead one to gravitate toward a broad-based conservative worldview that preserves both prevailing cultural traditions and the prevailing economic hierarchy. If a common set of characteristics promotes both right-wing cultural and economic viewpoints, this would suggest that organization of diverse political attitudes along the right versus left dimension is to some extent psychologically natural. In this research we sought to critically examine this matter with a comprehensive and methodologically rigorous cross-national test.

The first goal of this research was to test the validity of the broad ideology hypothesis (that NSC characteristics predict both cultural and economic conservatism) and the narrow ideology hypothesis (that NSC characteristics predict cultural, but not economic, conservatism). The results unequivocally supported the narrow ideology hypothesis. Although NSC predicted self-identification with the political right, this appears to have been driven by conservative positions on cultural, but not economic, matters. Culturally conservative preferences involve protection of the cultural unit or enforced conformity to traditional patterns of behavior. In line with others (e.g., Duckitt, 2001; Jost et al., 2003), we argue that this type of ideological attitude satisfies needs having to do with social conformity and avoidance of stimulation and uniqueness. The present findings are consistent with the view of a direct motivational correspondence between cultural conservatism and NSC.

At the same time, NSC characteristics had small main effects on left-wing economic positions. Thus, it would not appear to be the case that needs for security and certainty promote a broad-based conservative ideology, encompassing economic as well as cultural views. We contend that right-wing economic views do not have the same motivational correspondence with NSC as do culturally conservative views. Rather, left-wing economic views—aimed at providing material security and protection—might often appeal to those high in NSC (e.g., Johnston, 2012a, 2012b).

There are certainly well-conducted studies whose results are inconsistent with this conclusion (e.g., Gerber et al., 2010; Hennes et al., 2012), and the present contribution is by no means the final word on the matter. But evidence from the present study is wholly inconsistent with the broad ideology hypothesis. Rather, this evidence is consistent with the classic argument of political scientists that bottom-up psychological characteristics generally do not account for the organization of diverse political attitudes along a single right versus left dimension (e.g., Converse, 1964; Feldman & Johnston, 2013). This does not mean, however, that such bottom-up dispositional influences on political attitudes (e.g., Jost, Federico, & Napier, 2009) are irrelevant to attitude organization.

Rather, our view is consistent with the comment by Gerber et al. (2010) that there may exist “genuine differences in personality-shaped preferences across domains that do not conform to elite or academic notions of ideological constraint” (p. 129). Further support for this type of view has been obtained in recent studies that have distinguished the genetic and social contributions to associations among political attitudes using genetically informative samples. For example, Verhulst, Hatemi, and Eaves (2012) found that the genetic underpinnings of economic attitudes are distinct from those of cultural attitudes and that the associations between these attitude domains are the result of socialization experiences. Hatemi et al. (2012) reached the more general conclusion that the structure of political attitudes imposed by genes is different from, and sometimes acts in opposition to, the attitude structure imposed by the context of political discourse. In their words, “the structure imposed on social and political attitudes by the social environment is a cultural veneer laid on a potentially *divergent* underlying structure of genetic differences” (Hatemi et al., 2012, p. 345). The present findings are broadly consistent with these conclusions.

### The Nature of Political Engagement as a Moderator

But main effects of personality characteristics do not tell the whole story of the role of personality in political preference. Rather, personality characteristics interact with situational features to produce political preferences. Our remaining research goals were thus to test hypotheses about person  $\times$  situation interactions in the prediction of political attitudes.

Political scientists have long known that political discourse influences the structuring of political attitudes (e.g., Baldassari & Gelman, 2008; Levendusky, 2009), and a high level of exposure to political discourse does appear to strengthen (or perhaps to be a necessary condition for) the link between NSC characteristics and a broad conservative ideology (Federico et al., 2011; Federico & Goren, 2009; see also Malka, Lelkes, Srivastava, Cohen, & Miller, 2012). The predominant explanation for this phenomenon is that exposure to discourse enhances a person’s ability to select the broad ideological package that is most need satisfying (Jost, Federico, & Napier, 2009). However, other theoretical considerations (Johnston, 2012a, 2012b) suggest that those with high needs for security and certainty might naturally gravitate toward left-wing economic preferences, because of the material protection that left-wing economic policies aim to provide. If this is so, exposure to political discourse might counteract a natural relation between NSC characteristics and left-wing economic preference, by informing people that right-wing economic preferences should go together with cultural conservatism in a consistent ideological package.

Consistent with prior work (e.g., Federico & Goren, 2009), exposure to political discourse moderated the effect of NSC characteristics on conservative identification. As political engagement increased, so did the effect of NSC characteristics on right-wing identification. As for cultural attitudes, political engagement was associated with stronger NSC–conservatism relations in two out of five domains (immigration and punishment), providing some evidence that exposure to discourse might promote a better sense of what is need satisfying in certain cultural domains. But the moderated effects on economic attitudes were quite different. Political engagement reliably moderated the effects of NSC characteristics

on economic attitudes. In all three economic domains, those low in political engagement displayed relations between NSC characteristics and left-wing views. But as political engagement increased, this effect was counteracted, with those highest in political engagement showing small effects of NSC characteristics on right-wing economic views. This pattern suggests that exposure to discourse does not simply promote a better understanding of which economic views are need satisfying; rather, it would seem to move economic attitudes in a direction away from what is most need satisfying and toward what is deemed by elites to be ideologically appropriate.

### Cross-National Differences

Political engagement is an individual-level variable representing exposure to a theoretically relevant situational feature, political discourse. In addition to examining this type of contextual moderator, we provided a comprehensive and authoritative test of three nation-level moderation predictions. These are predictions derived from (a) considerations of the ideological context in formerly communist nations (e.g., Thorisdottir et al., 2007), (b) the threat-constraint model (Sibley et al., 2012), and (c) a novel set of considerations regarding the degree to which a right–left attitude structuring prevails within a given national context. We describe these cross-national findings here.

**Formerly communist nations.** The communist ideology that dominated Russia, the former Soviet Republics, and Eastern European dictatorships during the Cold War was a radically egalitarian belief system. Thus, it has been proposed that members of these nations who are dispositionally inclined to seek security, stability, and order will prefer left-wing economic policies because of their consistency with the historically dominant belief system. Consistent with prior work (Kossowska & Van Hiel, 2003; Schwartz et al., 2013; Thorisdottir et al., 2007), NSC predicted left-wing economic attitudes more strongly in formerly communist nations than in other nations. This would appear to be a rather reliable finding showing the importance of one historically relevant contextual moderator of personality–politics relations.

**Human development.** The threat-constraint model posits that NSC characteristics will predict an overall conservative ideology only to the extent that the national context is not especially threatening (Sibley et al., 2012). Only in such nonthreatening situations will a relative lack of concern with security, order, and stability lead people to prefer liberal political views. But threatening circumstances will counteract this tendency. Sibley et al. (2012) found support for this hypothesis in a meta-analysis of findings from 71 undergraduate and community samples from 10 nations. We not only replicated the findings of Sibley et al. (2012) but also obtained evidence suggesting that the weakened effect of NSC on overall conservative ideology might be driven most strongly by attitudes about women and immigration, although near-significant trends were found for several other cultural attitudes. Furthermore, higher levels of development seem to strengthen the role of political engagement as a moderator of NSC–cultural attitude relations. These findings might suggest that nonthreatening circumstances allow those low in NSC to act on inclinations toward greater social inclusiveness, whereas threatening circumstances lead such people to feel that they do not have the luxury to do so. Future research should explore this possibility.

**Nation-level ideological constraint.** Among the most novel aspects of the present research is our investigation of the role of nation-level ideological constraint in the relations between NSC and political attitudes. We found that a high level of political engagement weakened the effect of NSC on left-wing economic attitudes. This is consistent with the view that exposure to political discourse compelling a right–left structuring of political attitudes leads those high in NSC to adjust their economic preferences rightward to match their culturally conservative preferences. Findings involving nation-level ideological constraint further supported this view. Specifically, political engagement had its greatest counteractive influence in nations where the discursive context compelled a relatively strong right–left structuring of political attitudes. This suggests that a context favoring right–left attitude structuring does not only help people choose the ideology that is most need satisfying; rather, it can move certain people away from the economic preferences they would otherwise have held. However, context of ideological constraint also tended to promote stronger relations between NSC and cultural conservatism, suggesting that in some cases discursive context might enhance an already existing effect of NSC on cultural conservatism.

### Conceptual Overlap and Divergence Across Two-Dimensional Models of Political Ideology

The present theorizing and findings are in line with the perspective that a unidimensional model of right versus left ideology is insufficient for understanding the dispositional roots of political preference (e.g., Duckitt & Sibley, 2009; Feldman & Johnston, 2013; Iyer, Koleva, Graham, Ditto, & Haidt, 2012; Johnston & Wronski, 2013; Schwartz et al., 2013). On the basis of prior theorizing and empirical work (e.g., Treier & Hillygus, 2009), we conceptualized political attitudes as falling within two broad categories: cultural attitudes dealing with traditional views of sex and family and protection of the social unit and economic attitudes dealing with government economic intervention and redistribution. A question arises, then, about whether the present findings would be expected to generalize to other political measures based on distinct, but related, multidimensional conceptualizations of ideology. One prominent conceptualization posits opposition to change and opposition to equality as the core aspects of right versus left ideology (Jost et al., 2003; Jost et al., 2008). Another posits right-wing authoritarianism (RWA) and social dominance orientation (SDO) as the two core aspects of right versus left ideology (Duckitt, 2001; Duckitt & Sibley, 2009). It is thus theoretically important to map the similarities and divergences across these various two-dimensional conceptualizations, particularly in terms of expected relations with NSC characteristics.

**Opposition to change.** Opposition to (vs. support of) change is sometimes regarded as a fundamental aspect of conservative ideology (e.g., Jost et al., 2003). Opposition to change tends to be measured in one of two ways: with indicators of culturally conservative attitudes (e.g., Kandler et al., 2012; Malka & Lelkes, 2010) or with pure content-free measures that straightforwardly assess aversion to change (e.g., Stenner, 2005). We contend that the first type of measure ought to be referred to as cultural or social conservatism, rather than opposition to change, and we would expect (and we and others have indeed found) that such measures are predicted by NSC. The term *opposition to change* should be

reserved for measures that straightforwardly assess aversion to change. This latter type of measure has been appropriately described as a “content-free” indicator, because it does not contain overtly right versus left political content (Jost, Krochik, et al., 2009). One might oppose change toward more progressive policies (e.g., oppose the Affordable Care Act), and one might oppose change toward more conservative policies (e.g., oppose radical cuts to food stamps and unemployment insurance spending). Such opposition to change measures might then be considered pre-political basic values, whose relations with conservative versus liberal political attitudes should be the topic of empirical investigation (e.g., Caprara et al., 2006).

**Right-wing authoritarianism.** Whereas opposition to change is likened to cultural conservatism in one conceptual model, RWA is likened to cultural conservatism in another (Duckitt, 2001). The RWA scale was originally intended to measure a construct defined as a combination of conventionalism, authoritarian aggression, and authoritarian submission (Altemeyer, 1981, 1988). It was considered a measure of a broad socially learned syndrome encompassing both nonpolitical psychological characteristics and political attitudes. The political content of the measure focuses on culturally traditional attitudes, although consistent with the original conceptualization such attitudes are often assessed in a way that mixes in content pertaining to vicious hostility against deviants (e.g., “Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs”). In line with others (Duckitt et al., 2002; Jost et al., 2003), we consider it reasonable to treat RWA as a measure of culturally conservative attitudes but one that includes elements of hostility and aggression in addition to straightforward opinions about cultural matters. We thus expect that RWA would be robustly predicted by NSC characteristics, similarly to the types of cultural attitudes sampled presently (e.g., Duckitt & Sibley, 2009).

**Equality and SDO.** Valuing of equality versus tolerance of inequality is juxtaposed with opposition to change in an influential two-dimensional model of conservative versus liberal ideology (Jost et al., 2003; cf. Bobbio, 1997). Similarly, SDO, which reflects a generalized valuing of inequality and group-based dominance, is juxtaposed with RWA in another influential model (Duckitt, 2001). With some exceptions (e.g., Kluegel & Smith, 1986), measures of equality value (including SDO) do not focus exclusively on economic forms of equality. Rather they ask about equality in general and thus blend cultural content (e.g., equality for homosexuals, muscular domination of ethnic minorities) with economic content (e.g., efforts to promote income equality). Though measures of equality value represent an important political construct, we believe they are insufficient for distinguishing the broad versus narrow ideology hypotheses because they simultaneously tap preference for cultural and economic equality.

One might counter that the very fact that equality measures, such as SDO, relate to both cultural and economic political attitudes (e.g., Ho et al., 2012) is, itself, evidence for the broad ideology hypothesis. We contend, on the other hand, that these relations reveal information about the structuring of political attitudes, rather than the psychological origins of political attitudes. Measures tapping generalized support of equality and measures of SDO should be regarded as political variables, not as nonpolitical psychological predictors of political attitudes (e.g., Duckitt et al., 2002; Jost et al., 2003; Thorisdottir et al.,



2007). As we have described, the extent to which concerns with cultural equality (e.g., for women, for homosexuals) and economic equality might go together under a broad ideological banner emphasizing general equality is something that varies across nations and varies across individuals, depending on the nature of political discourse and degree of exposure to it. When such concerns are combined into single equality measures, some of the processes linking personality characteristics with political preference (and some of the processes linking political preferences with one another) are obscured.

### Limitations

The present research design has several important strengths, including (a) a large, cross-national sample; (b) measures that distinguished between NSC characteristics, ideological identification, cultural attitudes, and economic attitudes; and (c) tests of contextual moderators. However, this work is also limited in certain key respects. For one thing, the item content of the WVS prevented us from using a comprehensive personality taxonomy as a basis for examining dispositional influences on political attitudes. Mondak (2010), for example, recommended using the Big Five model as a basis for examining personality–politics relations, because its five dimensions capture much of the stable personality variation across people. We agree that such an endeavor is worthwhile, but we also note key advantages of focusing on NSC characteristics. First, the traits falling under the NSC rubric capture many of the psychological characteristics theoretically emphasized to have relevance to conservatism (Jost et al., 2003). Thus, we build on a rich basis of existing theory (e.g., Adorno et al., 1950; Duckitt & Sibley, 2009; Jost et al., 2008; Wilson & Patterson, 1968). Second, three of the Big Five traits are to some extent represented within the NSC construct—openness to experience, conscientiousness (or at least its facets pertaining to needs for structure and order), and neuroticism—with the former two emerging as the most reliable predictors of political attitudes among the Big Five (e.g., Carney et al., 2008; Mondak, 2010). Thus, we did address many relevant aspects of what a more comprehensive personality taxonomy would have captured. Third, the other Big Five trait sometimes considered relevant to political attitudes, Agreeableness, does not seem to underlie constraint across cultural and economic attitudes. For example, Gerber et al. (2010) found that agreeableness correlates with economic liberalism and cultural conservatism, suggesting that “agreeable individuals are pulled in opposite directions by their economic and social policy attitudes” (pp. 122–123). Fourth, other dispositions—most notably disgust sensitivity—also do not appear to underlie constraint, as they appear to reliably predict culturally conservative but not economically conservative political positions (Inbar, Pizarro, & Bloom, 2009, Study 2; Inbar, Pizarro, Iyer, & Haidt, 2012, Study 2; Olatunji, 2008; Smith, Oxley, Hibbing, Alford, & Hibbing, 2011a; Terrizzi, Shook, & Ventis, 2010, Study 1). Thus, we do not believe that a more comprehensive approach to dispositions would have revealed strong evidence for the broad ideology hypothesis.

A second limitation is that the WVS is designed to interview each respondent about a wide variety of topics, rather than about a few topics in great depth. Therefore, our measures of NSC characteristics and political attitudes were necessarily brief. In view of this limitation, the present results might be interpreted as

somewhat attenuated estimates—weakened by measurement error—of both (a) the relations between NSC characteristics and political attitudes and (b) the power of political engagement and national context to moderate these relations. Additional research, using longer and consequently more reliable measures, is needed to accurately gauge these effects’ true magnitudes. But it is also worth noting that the relatively small overall effects of NSC characteristics on political attitudes observed here in part reflect the fact that we sampled a range of countries with varied levels of development and ideological constraint. We demonstrated, for example, that some of these effects were stronger in wealthier nations (see also Sibley et al., 2012), the types of nations most often studied in political psychology. Thus, the tendency to sample advanced nations might, according to these findings, yield inflated estimates of the effects of NSC characteristics on some conservatism indicators, when compared with the corresponding effects in the world population.

A third limitation also concerns measurement: the internal consistency of our NSC measure varied across nations. We suspect that this complication cannot be completely avoided—that measures of complex psychological constructs like NSC will always function somewhat differently across diverse sets of nations, due to cultural differences in the constructs being measured, as well as differences in language and scale usage. To address this issue in the present research, we have (a) attempted to construct a measure of NSC that is reasonably consistent across nations, (b) examined the pattern of cross-national variability in this measure’s internal consistency, and (c) tested whether this cross-national measurement variability might explain the effects of other nation-level characteristics. Our results suggest that cross-national differences in internal consistency cannot fully explain the moderating effects of nation-level human development, ideological constraint, and geographic location. However, to our knowledge the present research is the first large-scale study to examine nation-level moderators of the relations between NSC characteristics and political attitudes. More research is clearly needed to further examine the measurement of NSC characteristics across cultures and to further examine how cross-national differences in NSC measurement might influence the observed effects of possible nation-level moderators.

A final limitation is that the present research design did not enable us to examine the psychological processes involved in the “movement” of economic attitudes to the right among high NSC people who were politically engaged and from ideologically constrained nations. We propose that those high in NSC adjust their economic attitudes rightward to match their cultural attitudes to the extent that they are highly exposed to discourse encouraging a broad right–left political attitude structuring. The processes involved in this movement might pertain to dissonance reduction aimed at reducing inconsistencies within one’s belief system (e.g., Gawronski, 2012) as well as motivated reasoning aimed toward reaching identity-consistent views (e.g., Kahan, 2013). Future research should investigate the psychological mechanisms involved in this movement using experimental and longitudinal designs.

### Conclusion and Implications

Discussions of psychological influences on political attitudes often assume that a broad-based conservative versus liberal ideol-

ogy is rooted in particular dispositional, neurobiological, and genetic characteristics. We contend that these discussions should focus on (a) whether different political attitude domains (e.g., cultural vs. economic) are influenced by different dispositions and (b) whether the effects of dispositions on specific political attitudes vary depending on contextual factors, such as national characteristics and exposure to political discourse.

A good deal of work is now examining biological, in addition to psychological, correlates of political attitudes. But most of this work is not examining the potentially differential correlates of cultural and economic political attitudes (e.g., Amodio et al., 2007; Kanai et al., 2011). When these domains are assessed distinctly, differential effects are sometimes found. For example, Oxley et al. (2008) found that skin conductance in response to threatening images and the defensive startle response to noxious noise were associated with many culturally conservative preferences, but not with a single right-wing economic preference that was assessed. Similarly, Smith et al. (2011a) found that skin conductance and heart rate responses to disgusting images predicted certain culturally conservative preferences pertaining to sex and family but none of the right-wing economic preferences assessed.

As researchers continue to investigate dispositional effects on political attitudes, we make three methodological suggestions. First, preferences in particular political domains should be measured separately, including at least cultural views pertaining to sex, family, and collective security and economic views pertaining to redistributive social welfare policy (e.g., Treier & Hillygus, 2009). Second, such research should involve the assessment of political engagement and examine which disposition–political attitude relations are contingent on exposure to political discourse. Third, researchers should further investigate national and historical context as potential moderators of the links between dispositional traits and political attitudes. Genetic and dispositional influences on political preferences are conditioned by the societal context; a genetic or dispositional makeup that produces a political preference in one context will not necessarily do so in another context. Thus, attention to distinct attitude domains, the role of political discourse, and national context is essential to a realistic person  $\times$  situation interactionist account of political preference.

## References

- Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. J., & Sanford, R. N. (1950). *The authoritarian personality*. New York, NY: Harper.
- Altemeyer, R. A. (1981). *Right-wing authoritarianism*. Winnipeg, Manitoba, Canada: University of Manitoba Press.
- Altemeyer, R. A. (1988). *Enemies of freedom: Understanding right-wing authoritarianism*. San Francisco, CA: Jossey-Bass.
- Altemeyer, R. A. (1998). The other "authoritarian personality". *Advances in Experimental Social Psychology*, 30, 47–92.
- Amodio, D. M., Jost, J. T., Master, S. L., & Yee, C. M. (2007). Neurocognitive correlates of liberalism and conservatism. *Nature Neuroscience*, 10, 1246–1247.
- Baldassari, D., & Gelman, A. (2008). Partisans without constraint: Political polarization and trends in American public opinion. *American Journal of Sociology*, 114, 408–446.
- Block, J., & Block, J. H. (2006). Nursery school personality and political orientation two decades later. *Journal of Research in Personality*, 40, 734–749.
- Bobbio, N. (1997). *Left and right: The significance of a political distinction*. Chicago, IL: The University of Chicago Press.
- Boshier, R. (1969). A study of the relationship between self-concept and conservatism. *Journal of Social Psychology*, 77, 139–140. doi:10.1080/00224545.1969.9919856
- Brewer, P. R. (2003). Values, political knowledge, and public opinion about gay rights: A framing-based account. *Public Opinion Quarterly*, 67, 173–201. doi:10.1086/374397
- Caprara, G. V., Schwartz, S., Capanna, C., Vecchione, M., & Barbaranelli, C. (2006). Personality and politics: Values, traits, and political choice. *Political Psychology*, 27, 1–28. doi:10.1111/j.1467-9221.2006.00447.x
- Caprara, G., Vecchione, M., & Schwartz, S. H. (2009). Mediation role of values in linking personality traits to political orientation. *Asian Journal of Social Psychology*, 12, 82–94. doi:10.1111/j.1467-839X.2009.01274.x
- Carmines, E. G., & Stimson, J. A. (1980). The two faces of issue voting. *American Political Science Review*, 74, 78–91. doi:10.2307/1955648
- Carmines, E. G., & Stimson, J. A. (1989). *Issue evolution: Race and the transformation of American politics*. Princeton, NJ: Princeton University Press.
- Carney, D. R., Jost, J. T., Gosling, S. D., & Potter, J. (2008). The secret lives of liberals and conservatives: Personality profiles, interaction styles, and the things they leave behind. *Political Psychology*, 29, 807–840. doi:10.1111/j.1467-9221.2008.00668.x
- Chirumbolo, A. (2002). The relationship between need for cognitive closure and political orientation: The mediating role of authoritarianism. *Personality and Individual Differences*, 32, 603–610. doi:10.1016/S0191-8869(01)00062-9
- Chirumbolo, A., Areni, A., & Sensales, G. (2004). Need for cognitive closure and politics: Voting, political attitudes and attributional style. *International Journal of Psychology*, 39, 245–253. doi:10.1080/00207590444000005
- Converse, P. E. (1964). The nature of belief systems in mass publics. In D. Apter (Ed.), *Ideology and discontent* (pp. 206–261). New York, NY: Free Press.
- Converse, P. E., & Pierce, R. (1986). *Political representation in France*. Cambridge, MA: Harvard University Press.
- Cornelis, I., & Van Hiel, A. (2006). The impact of cognitive styles on authoritarianism based conservatism and racism. *Basic and Applied Social Psychology*, 28, 37–50. doi:10.1207/s15324834basps2801\_4
- Costin, F. (1971). Dogmatism and conservatism: An empirical follow-up of Rokeach's findings. *Educational and Psychological Measurement*, 31, 1007–1010.
- Crowson, H. M. (2009). Are all conservatives alike? A study of the psychological correlates of cultural and economic conservatism. *Journal of Psychology: Interdisciplinary and Applied*, 143, 449–463. doi:10.3200/JRL.143.5.449-463
- Dodd, M. D., Balzer, A., Jacobs, C. M., Gruszczynski, M. W., Smith, K. B., & Hibbing, J. R. (2012). The political left rolls with the good and the political right confronts the bad: Connecting physiology and cognition to preferences. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 367, 640–649. doi:10.1098/rstb.2011.0268
- Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology*, 33, 41–113.
- Duckitt, J., & Sibley, C. G. (2009). A dual-process motivational model of ideology, politics, and prejudice. *Psychological Inquiry*, 20, 98–109. doi:10.1080/10478400903028540
- Duckitt, J., Wagner, C., du Plessis, I., & Birum, I. (2002). The psychological bases of ideology and prejudice: Testing a dual-process model. *Journal of Personality and Social Psychology*, 83, 75–93. doi:10.1037/0022-3514.83.1.75
- Dunlap, W. P., & Cornwell, J. M. (1994). Factor analysis of ipsative measures. *Multivariate Behavioral Research*, 29, 115–126. doi:10.1207/s15327906mbr2901\_4

- Duriez, B., & Van Hiel, A. (2002). The march of modern fascism: A comparison of social dominance orientation and authoritarianism. *Personality and Individual Differences, 32*, 1199–1213. doi:10.1016/S0191-8869(01)00086-1
- Duriez, B., Van Hiel, A., & Kossowska, M. (2005). Authoritarianism and social dominance in Western and Eastern Europe: The importance of the sociopolitical context and of political interest and involvement. *Political Psychology, 26*, 299–320. doi:10.1111/j.1467-9221.2005.00419.x
- Eidelman, S., Crandall, C. S., Goodman, J. A., & Blanchar, J. C. (2012). Low-effort thought promotes political conservatism. *Personality and Social Psychology Bulletin, 38*, 808–820. doi:10.1177/0146167212439213
- Erikson, R. S., McIver, J. P., & Wright, G. C., Jr. (1987). State political culture and public opinion. *American Political Science Review, 81*, 797–813. doi:10.2307/1962677
- Fay, D., & Frese, M. (2000). Conservatives' approach to work: Less prepared for future work demands? *Journal of Applied Social Psychology, 30*, 171–195. doi:10.1111/j.1559-1816.2000.tb02310.x
- Federico, C. M., Fisher, E. L., & Deason, G. (2011). Expertise and the ideological consequences of the authoritarian predisposition. *Public Opinion Quarterly, 75*, 686–708. doi:10.1093/poq/nfr026
- Federico, C. M., & Goren, P. (2009). Motivated social cognition and ideology: Is attention to elite discourse a prerequisite for epistemically motivated political affinities? In J. T. Jost, A. C. Kay, & H. Thorisdottir (Eds.), *Social and psychological bases of ideology and system justification* (pp. 267–291). New York, NY: Oxford University Press.
- Federico, C. M., Hunt, C. V., & Ergun, D. (2009). Political expertise, social worldviews, and ideology: Translating “competitive jungles” and “dangerous worlds” into ideological reality. *Social Justice Research, 22*, 259–279.
- Feldman, S. (2003). Enforcing social conformity: A theory of authoritarianism. *Political Psychology, 24*, 41–74.
- Feldman, S., & Johnston, C. D. (2013). Understanding the determinants of political ideology: Implications of structural complexity. *Political Psychology*. Advance online publication. doi:10.1111/pops.12055
- Fiorina, M. P., Abrams, S. J., & Pope, J. C. (2005). *Culture war? The myth of a polarized America*. New York, NY: Longman.
- Fisher, R., & Milfont, T. L. (2010). Standardization in psychological research. *International Journal of Psychological Research, 3*, 89–97.
- Fraley, R. C., Griffin, B. N., Belsky, J., & Roisman, G. I. (2012). Developmental antecedents of political ideology: A longitudinal investigation from birth to age 18 years. *Psychological Science, 23*, 1425–1431. doi:10.1177/0956797612440102
- Fuchs, D., & Klingemann, H. D. (1990). The left–right schema. In M. K. Jennings & J. W. van Deth (Eds.), *Continuities in political action: A longitudinal study of political orientations in three western democracies* (pp. 203–234). Berlin, Germany: de Gruyter.
- Gawronski, B. (2012). Back to the future of dissonance theory: Cognitive consistency as a core motive. *Social Cognition, 30*, 652–668. doi:10.1521/soco.2012.30.6.652
- Gerber, A. S., Huber, G. A., Doherty, D., Dowling, C. M., & Ha, S. E. (2010). Personality and political attitudes: Relationships across issue domains and political contexts. *American Political Science Review, 104*, 111–133. doi:10.1017/S0003055410000031
- Golec, A. (2001, July). *Need for cognitive closure and political conservatism: Studies on the nature of the relationship*. Paper presented at the meeting of the International Society of Political Psychology, Cuernavaca, Mexico.
- Golec, A. (2002). Need for cognitive closure and political conservatism: Studies on the nature of the relationship. *Polish Psychological Bulletin, 33*, 5–12.
- Gruenfeld, D. H. (1995). Status, ideology, and integrative complexity on the U.S. Supreme Court: Rethinking the politics of political decision making. *Journal of Personality and Social Psychology, 68*, 5–20. doi:10.1037/0022-3514.68.1.5
- Hamill, R., Lodge, M., & Blake, F. (1985). The breadth, depth, and utility of partisan, class, and ideological schemata. *American Journal of Political Science, 29*, 850–870. doi:10.2307/2111184
- Hatemi, P. K., Eaves, L., & McDermott, R. (2012). It's the end of ideology as we know it. *Journal of Theoretical Politics, 24*, 345–369. doi:10.1177/0951629812437749
- Hennes, E. P., Nam, H. H., Stern, C., & Jost, J. T. (2012). Not all ideologies are created equal: Epistemic, existential, and relational needs predict system-justifying attitudes. *Social Cognition, 30*, 669–688. doi:10.1521/soco.2012.30.6.669
- Hetherington, M. J., & Weiler, J. D. (2009). *Authoritarianism and polarization in American politics*. New York, NY: Cambridge University Press.
- Ho, A. K., Sidanius, J., Pratto, F., Levin, S., Thomsen, L., Kteily, N., & Sheehy-Skeffington, J. (2012). Social dominance orientation: Revisiting the structure and function of a variable predicting social and political attitudes. *Personality and Social Psychology Bulletin, 38*, 583–606. doi:10.1177/0146167211432765
- Inbar, Y., Pizarro, D. A., & Bloom, P. (2009). Conservatives are more easily disgusted than liberals. *Cognition & Emotion, 23*, 714–725. doi:10.1080/02699930802110007
- Inbar, Y., Pizarro, D., Iyer, R., & Haidt, J. (2012). Disgust sensitivity, political conservatism, and voting. *Social Psychological & Personality Science, 3*, 537–544. doi:10.1177/1948550611429024
- Iyer, R., Koleva, S., Graham, J., Ditto, P., & Haidt, J. (2012). Understanding libertarian morality: The psychological dispositions of self-identified libertarians. *PLOS ONE, 7*, e42366. doi:10.1371/journal.pone.0042366
- Janoff-Bulman, R., Sheikh, S., & Baldacci, K. G. (2008). Mapping moral motives: Approach, avoidance, and political orientation. *Journal of Experimental Social Psychology, 44*, 1091–1099. doi:10.1016/j.jesp.2007.11.003
- Jennings, M. K. (1992). Ideological thinking among mass publics and political elites. *Public Opinion Quarterly, 56*, 419–441. doi:10.1086/269335
- Joel, S., Burton, C. M., & Plaks, J. E. (2014). Conservatives anticipate and experience stronger emotional reactions to negative outcomes than liberals. *Journal of Personality, 82*, 32–43. doi:10.1111/jopy.12031
- John, O. P., Naumann, L., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114–158). New York, NY: Guilford Press.
- Johnson, S. D., & Tamney, J. B. (2001). Social traditionalism and economic conservatism: Two conservative political ideologies in the United States. *Journal of Social Psychology, 141*, 233–243. doi:10.1080/00224540109600549
- Johnston, C. D. (2012a). *Needs for certainty and security and partisanship: Individual and contextual heterogeneity*. Unpublished manuscript, Duke University.
- Johnston, C. D. (2012b). *Personality, uncertainty, and economic preferences*. Unpublished manuscript, Duke University.
- Johnston, C. D., & Wronski, J. (2013). Personality dispositions and political preferences across hard and easy issues. *Political Psychology*. Advance online publication. doi:10.1111/pops.12068
- Jost, J. T., Federico, C. M., & Napier, J. L. (2009). Political ideology: Its structure, functions, and elective affinities. *Annual Review of Psychology, 60*, 307–337. doi:10.1146/annurev.psych.60.110707.163600
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129*, 339–375. doi:10.1037/0033-2909.129.3.339
- Jost, J. T., Krochik, M., Gaucher, D., & Hennes, E. P. (2009). Can a psychological theory of ideological differences explain contextual vari-

- ability in the contents of political attitudes? *Psychological Inquiry*, 20, 183–188. doi:10.1080/10478400903088908
- Jost, J. T., Napier, J. L., Thorisdottir, H., Gosling, S. D., Palfai, T. P., & Ostafin, B. (2007). Are needs to manage uncertainty and threat associated with political conservatism or ideological extremity? *Personality and Social Psychology Bulletin*, 33, 989–1007. doi:10.1177/0146167207301028
- Jost, J. T., Nosek, B. A., & Gosling, S. D. (2008). Ideology: Its resurgence in social, personality, and political psychology. *Perspectives on Psychological Science*, 3, 126–136. doi:10.1111/j.1745-6916.2008.00070.x
- Jost, J. T., & Thompson, E. P. (2000). Group-based dominance and opposition to equality as independent predictors of self-esteem, ethnocentrism, and social policy attitudes among African Americans and European Americans. *Journal of Experimental Social Psychology*, 36, 209–232. doi:10.1006/jesp.1999.1403
- Judd, C. M., Krosnick, J. A., & Milburn, M. A. (1981). Political involvement and attitude structure in the general public. *American Sociological Review*, 46, 660–669. doi:10.2307/2094947
- Kahan, D. M. (2013). Ideology, motivated reasoning, and cognitive reflection. *Judgment and Decision Making*, 8, 407–424.
- Kanai, R., Feilden, T., Firth, C., & Rees, G. (2011). Political orientations are correlated with brain structure in young adults. *Current Biology*, 21, 677–680. doi:10.1016/j.cub.2011.03.017
- Kandler, C., Bleidorn, W., & Riemann, R. (2012). Left or right? Sources of political orientation: The roles of genetic factors, cultural transmission, assortative mating, and personality. *Journal of Personality and Social Psychology*, 102, 633–645. doi:10.1037/a0025560
- Kay, A. C., & Eibach, R. P. (2013). Compensatory control and its implications for ideological extremism. *Journal of Social Issues*, 69, 564–585. doi:10.1111/josi.12029
- Kemmelmeier, M. (1997). Need for closure and political orientation among German university students. *Journal of Social Psychology*, 137, 787–789. doi:10.1080/00224549709595501
- Kemmelmeier, M. (2007). Political conservatism, rigidity, and dogmatism in American foreign policy officials: The 1966 Mennis data. *Journal of Psychology: Interdisciplinary and Applied*, 141, 77–90. doi:10.3200/JRPL.141.1.77-90
- Kirton, M. J. (1978). Wilson and Patterson's Conservatism Scale: A shortened alternative form. *British Journal of Social and Clinical Psychology*, 17, 319–323.
- Cluegel, J. R., & Smith, E. R. (1986). *Beliefs about inequality: Americans' views of what is and what ought to be*. New York, NY: Transaction.
- Kossowska, M., & Van Hiel, A. V. (2003). The relationship between need for closure and conservative beliefs in western and eastern Europe. *Political Psychology*, 24, 501–518. doi:10.1111/0162-895X.00338
- Lavine, H., Polichak, J., & Lodge, M. (1999). *Authoritarianism and threat: A response latency analysis*. Paper presented at the annual meeting of the American Political Science Association, Atlanta, GA.
- Levendusky, M. (2009). *The partisan sort: How liberals became Democrats and conservatives became Republicans*. Chicago, IL: University of Chicago Press.
- Lewis, G. J., & Bates, T. C. (2011). From left to right: How the personality system allows basic traits to influence politics via characteristic moral adaptations. *British Journal of Psychology*, 102, 546–558. doi:10.1111/j.2044-8295.2011.02016.x
- Lindeman, M., & Verkasalo, M. (2005). Measuring values with the short Schwartz's Value Survey. *Journal of Personality Assessment*, 85, 170–178. doi:10.1207/s15327752jpa8502\_09
- Lipset, S. M. (1960). *Political man: The social basis of modern politics*. New York, NY: Doubleday.
- Malka, A., & Lelkes, Y. (2010). More than ideology: Conservative-liberal identity and receptivity to political cues. *Social Justice Research*, 23, 156–188. doi:10.1007/s11211-010-0114-3
- Malka, A., Lelkes, Y., Srivastava, S., Cohen, A. B., & Miller, D. T. (2012). The association of religiosity and political conservatism: The role of political engagement. *Political Psychology*, 33, 275–299. doi:10.1111/j.1467-9221.2012.00875.x
- McClosky, H. (1964). Consensus and ideology in American politics. *American Political Science Review*, 58, 361–382. doi:10.2307/1952868
- Mondak, J. J. (2010). *Personality and the foundations of political behavior*. New York, NY: Cambridge University Press.
- Mondak, J. J., & Halperin, K. D. (2008). A framework for the study of personality and political behavior. *British Journal of Political Science*, 38, 335–362. doi:10.1017/S0007123408000173
- Noel, H. (2012). The coalition merchants: The ideological roots of the civil rights realignment. *Journal of Politics*, 74, 156–173. doi:10.1017/S0022381611001186
- Olatunji, B. O. (2008). Disgust, scrupulosity and conservative attitudes about sex: Evidence for a mediational model of homophobia. *Journal of Research in Personality*, 42, 1364–1369. doi:10.1016/j.jrp.2008.04.001
- Oxley, D. R., Smith, K. B., Alford, J. R., Hibbing, M. V., Miller, M. S., Scalora, M., . . . Hibbing, J. R. (2008, September 19). Political attitudes vary with physiological traits. *Science*, 321, 1667–1670. doi:10.1126/science.1157627
- Perry, R., & Sibley, C. G. (2012). Big Five personality prospectively predicts social dominance orientation and right-wing authoritarianism. *Personality and Individual Differences*, 52, 3–8. doi:10.1016/j.paid.2011.08.009
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741–763. doi:10.1037/0022-3514.67.4.741
- Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). Basic values and the five factor model of personality traits. *Personality and Social Psychology Bulletin*, 28, 789–801. doi:10.1177/0146167202289008
- Rokeach, M. (1960). *The open and closed mind*. New York, NY: Basic Books.
- Schreiber, D., Fonzo, G., Simmons, A. N., Dawes, C. T., Flagan, T., Fowler, J. H., & Paulus, M. P. (2013). Red brain, blue brain: Evaluative processes differ in Democrats and Republicans. *PLOS ONE*, 8, e52970.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65. doi:10.1016/S0065-2601(08)60281-6
- Schwartz, S. H. (1996). Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The Ontario Symposium: Vol. 8. The psychology of values* (pp. 53–75). Mahwah, NJ: Erlbaum.
- Schwartz, S. H., & Bilsky, W. (1990). Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology*, 58, 878–891. doi:10.1037/0022-3514.58.5.878
- Schwartz, S. H., Caprara, G. V., Vecchione, M., Bain, P., Bianchi, G., Caprara, M. G., . . . Zaleski, Z. (2013). Basic personal values underlie and give coherence to political values: A cross national study in 15 countries. *Political Behavior*. Advance online publication. doi:10.1007/s11109-013-9255-z
- Shook, N. J., & Fazio, R. H. (2009). Political ideology, exploration of novel stimuli, and attitude formation. *Journal of Experimental Social Psychology*, 45, 995–998.
- Sibley, C. G., & Duckitt, J. (2013). The dual process model of ideology and prejudice: A longitudinal test during a global recession. *Journal of Social Psychology*, 153, 448–466. doi:10.1080/00224545.2012.757544
- Sibley, C. G., Osborne, D., & Duckitt, J. (2012). Personality and political orientation: Meta-analysis and test of a threat-constraint model. *Journal of Research in Personality*, 46, 664–677.

- Sidanius, J. (1978). Intolerance of ambiguity and socio-political ideology: A multidimensional analysis. *European Journal of Social Psychology*, 8, 215–235.
- Sidanius, J. (1985). Cognitive functioning and sociopolitical ideology revisited. *Political Psychology*, 6, 637–661.
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York, NY: Cambridge University Press.
- Simons, H. W. (1968). Dogmatism scales and leftist bias. *Communications Monographs*, 35, 149–153.
- Smith, K. B., Oxley, D. R., Hibbing, M. V., Alford, J. R., & Hibbing, J. R. (2011a). Disgust sensitivity and the neurophysiology of left–right political orientations. *PLOS ONE*, 6, e25552. doi:10.1371/journal.pone.0025552
- Smith, K. B., Oxley, D. R., Hibbing, M. V., Alford, J. R., & Hibbing, J. R. (2011b). Linking genetics and political attitudes: Reconceptualizing political ideology. *Political Psychology*, 32, 369–397.
- Sniderman, P. M., & Bullock, J. (2004). A consistency theory of public opinion and political choice: The hypothesis of menu dependence. In W. E. Saris & P. M. Sniderman (Eds.), *Studies in public opinion: Attitudes, nonattitudes, measurement error, and change* (pp. 337–357). Princeton, NJ: Princeton University Press.
- Steenkamp, J.-B. E. M., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research*, 25, 78–107. doi:10.1086/209528
- Stenner, K. (2005). *The authoritarian dynamic*. London, England: Cambridge University Press.
- Terrizzi, J. A., Shook, N. J., & Ventis, W. L. (2010). Disgust: A predictor of social conservatism and prejudicial attitudes toward homosexuals. *Personality and Individual Differences*, 49, 587–592. doi:10.1016/j.paid.2010.05.024
- Tetlock, P. E. (1983). Cognitive style and political ideology. *Journal of Personality and Social Psychology*, 45, 118–126. doi:10.1037/0022-3514.45.1.118
- Tetlock, P. E. (1984). Cognitive style and political belief systems in the British House of Commons. *Journal of Personality and Social Psychology*, 46, 365–375. doi:10.1037/0022-3514.46.2.365
- Thorisdottir, H., & Jost, J. T. (2011). Motivated closed-mindedness mediates the effect of threat on political conservatism. *Political Psychology*, 32, 785–811.
- Thorisdottir, H., Jost, J. T., Liviatan, I., & Shrouf, P. E. (2007). Psychological needs and values underlying left–right political orientation: Cross-national evidence from Eastern and Western Europe. *Public Opinion Quarterly*, 71, 175–203. doi:10.1093/poq/nfm008
- Treier, S., & Hillygus, D. S. (2009). The nature of political ideology in the contemporary electorate. *Public Opinion Quarterly*, 73, 679–703.
- Tybur, J. M., Merriman, L. A., Hooper, A. E. C., McDonald, M. M., & Navarrete, C. D. (2010). Extending the behavioral immune system to political psychology: Are political conservatism and disgust sensitivity really related? *Evolutionary Psychology*, 8, 599–616.
- United Nations Development Programme. (2005). *Human Development Report 2005* [Aggregate data file]. Retrieved from <http://hdr.undp.org/en/statistics/hdi>
- Van Hiel, A., & Mervielde, I. (2004). Openness to experience and boundaries in the mind: Relationships with cultural and economic conservative beliefs. *Journal of Personality*, 72, 659–686. doi:10.1111/j.0022-3506.2004.00276.x
- Van Hiel, A., Onraet, E., & De Pauw, S. (2010). The relationship between social-cultural attitudes and behavioral measures of cognitive style: A meta-analytic integration of studies. *Journal of Personality*, 78, 1765–1800.
- Verhulst, B., Hatemi, P. K., & Eaves, L. J. (2012). Disentangling the importance of psychological predispositions and social constructionism in the organization of American political ideology. *Political Psychology*, 33, 375–393. doi:10.1111/j.1467-9221.2012.00882.x
- Weissflog, M., Choma, B. L., Dywan, J., van Noordt, S. J., & Segalowitz, S. J. (2013). The political (and physiological) divide: Political orientation, performance monitoring, and the anterior cingulate response. *Social Neuroscience*, 8, 434–447. doi:10.1080/17470919.2013.833549
- Wilson, G. D. (1973). *The psychology of conservatism*. Oxford, England: Academic Press.
- Wilson, G. D., & Patterson, J. R. (1968). A new measure of conservatism. *British Journal of Social and Clinical Psychology*, 7, 264–269. doi:10.1111/j.2044-8260.1968.tb00568.x
- World Values Survey Association. (2009). *World values survey 1981–2008 official aggregate* [Aggregate data file]. Retrieved from <http://www.wvsevsdb.com/wvs/WVSDData.jsp>

Received March 12, 2013

Revision received January 9, 2014

Accepted February 3, 2014 ■