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# Does Lower Cognitive Ability Predict Greater Prejudice?

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## Abstract

Historically, leading scholars proposed a theoretical negative association between cognitive abilities and prejudice. Until recently, however, the field has been relatively silent on this topic, citing concerns with potential confounds (e.g., education levels). Instead, researchers focused on other individual-difference predictors of prejudice, including cognitive style, personality, negativity bias, and threat. Yet there exists a solid empirical paper trail demonstrating that lower cognitive abilities (e.g., abstract-reasoning skills and verbal, nonverbal, and general intelligence) predict greater prejudice. We discuss how the effects of lower cognitive ability on prejudice are explained (i.e., mediated) by greater endorsement of right-wing socially conservative attitudes. We conclude that the field will benefit from a recognition of, and open discussion about, differences in cognitive abilities between those lower versus higher in prejudice. To advance the scientific discussion, we propose the Cognitive Ability and Style to Evaluation model, which outlines the cognitive psychological underpinnings of ideological belief systems and prejudice.

## Keywords

cognitive abilities, prejudice, intelligence, intolerance, ideology

Intergroup prejudice is both complex and multifaceted. Since the 1950s, psychologists have examined the psychological and personal bases of prejudice and ethnocentrism (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Allport, 1954). Sixty years of empirical research has convincingly illustrated that individuals expressing higher (vs. lower) prejudice are less agreeable and less open to new ideas and experiences (Sibley & Duckitt, 2008), exhibit stronger needs for simplicity and order (Roets & Van Hiel, 2011), and demonstrate more anxious reactivity to out-group members (Riek, Mania, & Gaertner, 2006). These accounts converge with earlier theorizing (Adorno et al., 1950; Allport, 1954) that tough-mindedness and cognitive rigidity influence whether social environments are considered threatening and characterize prejudiced individuals. Notably, these constructs involve personality traits, preferences for dealing with information, and manifestations of emotional reactivity, which in turn drive feelings of uncertainty, fear, and resistance toward unfamiliar and unknown groups (Dhont, Roets, & Van Hiel, 2011; Sibley & Duckitt, 2008).

But what about mental abilities, the psychological resources needed to process and retain knowledge, solve problems, and master challenging tasks? Theoretical

pioneers tentatively posited that prejudice and ethnocentrism may originate in lower mental abilities. For instance, Adorno et al. (1950) observed that “the most ethnocentric subjects are, on the average, less intelligent than the least ethnocentric” (p. 284). At that time, however, few studies addressed associations between mental ability and prejudice, and potential confounds limited firm conclusions. Consequently, consideration of mental abilities is noticeably absent from contemporary accounts of prejudice, with the field sidestepping this socially sensitive issue (Hodson, 2014). Yet methodological and statistical advances now permit a return to this lingering question: Does low cognitive ability predict greater prejudice?

## Empirical Evidence on the Relation Between Mental Abilities and Prejudice

Early empirical evidence (Adorno et al., 1950) revealed negative relations between scores on ethnocentrism

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(tapping blatant prejudice toward different minority groups) and mental abilities, across various adult samples (including maritime-school students and veterans). These relations were observed using various intelligence tests, including reading, mechanical-comprehension, and general-intelligence tests. Other researchers, using similar ethnocentrism scales, confirmed such relations among students (Rokeach, 1951) and young children (Kutner & Gordon, 1964). Furthermore, Kutner and Gordon (1964) reported that children who were highly prejudiced at age 7 remained more prejudiced 9 years later, scoring lower on intelligence at both time points.

Early scholars were, however, concerned about possible confounds such as socioeconomic status (SES) and educational experiences (Adorno et al., 1950; Allport, 1954; Christie, 1954). For instance, those with stronger cognitive abilities may hold more tolerant attitudes toward out-groups because of higher educational attainment or greater cross-cultural exposure in family and school contexts, factors associated with higher SES. Thus, increased cultural sophistication and greater educational experience, rather than mental abilities per se, could explain why those with stronger cognitive skills are generally less prejudiced (e.g., Allport, 1954; Christie, 1954).

Historically, these factors were not convincingly eliminated, with scholars conceptually and theoretically de-emphasizing mental abilities in prejudice theories in the decades following the 1950s. Nevertheless, empirical evidence kept accruing, consistently revealing negative associations of mental abilities, such as verbal and mathematical abilities, with ethnocentrism or prejudice (e.g., racial prejudice: Meeusen, de Vroome, & Hooghe, 2013; Sidanius & Lau, 1989; homophobia: Keiller, 2010). For example, Costello and Hodson (2014) demonstrated that White children who were less able to recognize that a short, wide glass holds the same amount of water as a taller, thinner glass in a water-conservation task, or that objects from different categories (cars, trucks) belong to a shared superordinate category (vehicles), expressed more negative evaluations of Black children and attributed fewer uniquely human characteristics to Black people. Hence, cognitive ability also shows negative relations with measures representing rather indirect forms of bias and discrimination (e.g., subtle dehumanization), which are generally less likely to be affected by social-desirability tendencies (see Eyssel & Ribas, 2012).

Critically, Van Hiel, Onraet, and De Pauw (2010) conducted a meta-analytic review and statistically aggregated the findings from 92 studies (29,209 participants from 124 samples) reporting relations between cognitive styles and abilities, on the one hand, and social-cultural ideological attitudes, such as authoritarianism and ethnocentrism, on the other. In a subset of participants (1,409 participants from 12 samples) for whom data on indicators

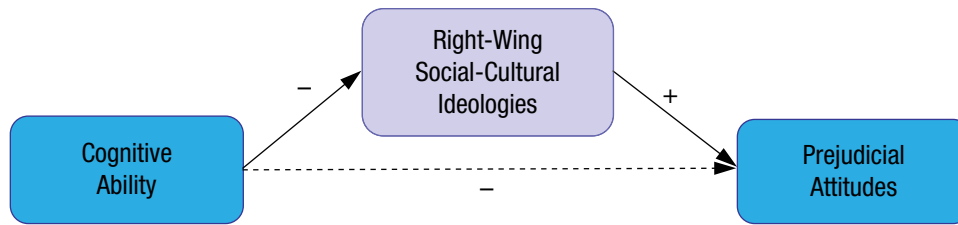
of cognitive ability and measures of ethnocentrism or prejudice were available, the authors uncovered a negative correlation ( $-.30$ ).

Three important shortcomings inherent to most of the studies reviewed above require discussion. First, most used cross-sectional data and cannot address whether lower cognitive abilities influence the subsequent development of negative out-group attitudes. Second, few examined population-representative samples. Third, most failed to remove SES or education confounds. Two recent studies compellingly addressed these issues. Deary, Batty, and Gale (2008a) and Schoon, Cheng, Gale, Batty, and Deary (2010) investigated the prospective association between general intelligence in childhood (ages 10 and 11, respectively) and a combined social-attitude measure of racism, social conservatism, and gender inequality in adulthood (ages 30 and 33, respectively), using large representative U.K. samples. Their results confirmed that children higher in mental ability were less likely to endorse socially conservative ideologies in adulthood. A reanalysis by Hodson and Busseri (2012) tested the effect of intelligence specifically on racial prejudice and found that greater general intelligence in childhood predicted less racism in adulthood (average correlation approximately  $-.22$ ). Although cognitive ability conceptually and statistically predicts lower SES and education (Deary et al., 2008a; Schoon et al., 2010), direct predictive effects of cognitive ability on social attitudes remain after controlling for SES, education, and social background (see also Hodson & Busseri, 2012), ruling out these potential confounds.

Our review suggests an affirmative answer to the question "Does lower cognitive ability predict greater prejudice?" This negative association has been found cross-sectionally, with various intelligence measures across different age groups, and longitudinally, with representative samples. Furthermore, cognitive ability exerts an effect on prejudice independently of SES and education. But *why* does lower mental ability predict greater prejudice?

### **The Explanatory Role of Right-Wing Socially Conservative Ideologies**

Right-wing ideologies offer well-structured and ordered views about society that preserve traditional societal conventions and norms (e.g., Jost, Glaser, Kruglanski, & Sulloway, 2003). Such ideological belief systems are particularly attractive to individuals who are strongly motivated to avoid uncertainty and ambiguity in preference for simplicity and predictability (Jost et al., 2003; Roets & Van Hiel, 2011). Theoretically, individuals with lower mental abilities should be attracted by right-wing social-cultural ideologies because they minimize complexity



**Fig. 1.** Mediation model showing the relation between cognitive ability and prejudice as mediated by right-wing ideologies (see Hodson & Busseri, 2012). The dashed line reflects a weakened relation with the mediator included.

and increase perceived control (Heaven, Ciarrochi, & Leeson, 2011; Stankov, 2009). Conversely, individuals with greater cognitive skills are better positioned to understand changing and dynamic societal contexts, which should facilitate open-minded, relatively left-leaning attitudes (Deary et al., 2008a; Heaven et al., 2011; McCourt, Bouchard, Lykken, Tellegen, & Keyes, 1999). Lower cognitive abilities therefore draw people to strategies and ideologies that emphasize what is presently known and considered acceptable to make sense and impose order over their environment. Resistance to social change and the preservation of the status quo regarding societal traditions—key principles underpinning right-wing social-cultural ideologies—should be particularly appealing to those wishing to avoid uncertainty and threat.

Indeed, the empirical literature reveals negative relations between cognitive abilities and right-wing social-cultural attitudes, including right-wing authoritarian (e.g., Keiller, 2010; McCourt et al., 1999), socially conservative (e.g., Stankov, 2009; Van Hiel et al., 2010), and religious attitudes (e.g., Zuckerman, Silberman, & Hall, 2013). Although some studies have found that people on both the far left and the far right ends of the political spectrum possess greater cognitive abilities or sophistication (Kemmelmeyer, 2008; Sidanius & Lau, 1989), evidence for such curvilinear relations have typically been found when (a) cognitive-ability measures were themselves political in nature or (b) researchers have measured participants' motivation to maintain a viewpoint with dogmatic tenacity (vs. developing multidimensional views), which taps motivated cognitive styles but not ability (e.g., Sidanius & Lau, 1989; Van Hiel & Mervielde, 2003).

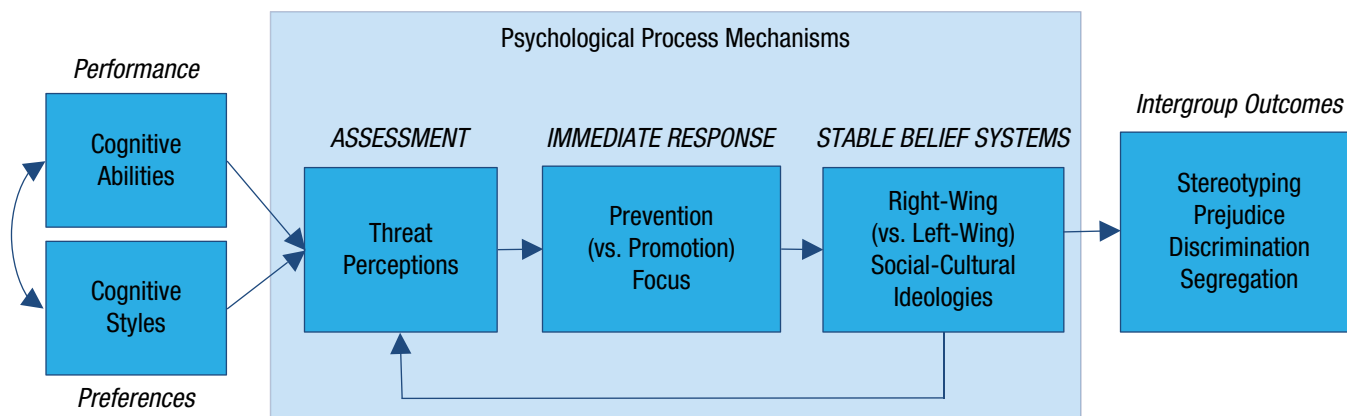
Importantly, linear relations of the sort we emphasize, in which lower scores on cognitive ability and complexity are associated with right-leaning ideologies, persist despite potential curvilinear trends (Kemmelmeyer, 2008; Van Hiel et al., 2010). Furthermore, Eidelman, Crandall, Goodman, and Blanchard (2012) have provided experimental support that low-effort thinking promotes political conservatism. Linear relations have also been confirmed longitudinally, with poorer mental abilities in

childhood predicting stronger endorsement of right-wing authoritarianism and social conservatism (e.g., Deary et al., 2008a; Heaven et al., 2011; Hodson & Busseri, 2012; Schoon et al., 2010) and right-leaning voting behavior (Deary, Batty, & Gale, 2008b) in adulthood. Together, the findings from these studies demonstrate that those with lower mental abilities are more likely to endorse socially conservative, right-wing authoritarian, and religious belief systems (Deary et al., 2008a; McCourt et al., 1999), as has been confirmed in meta-analytic syntheses (Van Hiel et al., 2010; Zuckerman et al., 2013).

Particularly relevant to our discussion, socially conservative ideologies are well-established predictors of ethnocentrism and prejudice against minority, disadvantaged, or socially deviant groups (e.g., Everett, 2013; see meta-analyses by Hall, Matz, & Wood, 2010; Sibley & Duckitt, 2008). Indeed, adherents of socially conservative ideologies are more likely to perceive out-groups as threats to traditional values and societal order, which results in heightened prejudice (e.g., Dhont & Hodson, 2014; Hodson, Hogg, & MacInnis, 2009). Longitudinal studies, using both student and representative adult samples, have confirmed that right-wing attitudes significantly predict increased prejudice over time (Asbrock, Christ, Duckitt, & Sibley, 2012; Asbrock, Sibley, & Duckitt, 2010).

Given the established relations between lower mental ability and adherence to socially conservative right-wing ideologies and between right-wing ideologies and prejudice, it is conceivable that mental abilities predict prejudice through socially conservative right-wing ideologies (see Fig. 1). Hodson and Busseri (2012) explicitly tested this mediation model, and their results confirmed that lower childhood intelligence predicted greater prejudice in adulthood through stronger endorsement of right-wing social-cultural attitudes (independent of SES or education).

In sum, meaningful differences in mental abilities exist between those lower versus higher in right-wing social conservatism and prejudice, despite being absent from contemporary theoretical accounts of prejudice (Hodson, 2014). In response, we propose a conceptual framework, the *Cognitive Ability and Style to Evaluation (CASE)*



**Fig. 2.** The Cognitive Ability and Style to Evaluation model of the effects of cognitive ability and style on intergroup outcomes via psychological processes, controlling for factors such as education and socioeconomic status.

*model*, which integrates empirical and theoretical literatures to advance our collective discussion of, and inspire future research on, the cognitive psychological underpinnings of ideological belief systems and prejudice.

### An Integrative Model of Cognitive Ability and Style to Evaluation

Building on Hodson (2014), we propose the CASE model to explain the theoretical relations between cognitive abilities and styles on the one hand and intergroup outcomes (e.g., stereotyping, prejudice, discrimination) on the other (see Fig. 2). It is worth bearing in mind that the causes of prejudice are multifaceted, with cultural and societal factors impinging on expressions of bias in ways that lie outside the scope of our review. Here, we focus on the predictive role of cognitive abilities or cognitive styles, arguing that these cognitive predictors are relatively distal to intergroup outcomes and that their effects are thus indirect.

In the first stage, cognitive variables directly influence assessments of threat concerning the social and/or physical world. Thus, possessing lower cognitive abilities and having preferences for simple structure, order, and predictability predispose individuals to perceive changing and dynamic contexts as especially threatening. The immediate response to this threat involves prevention (vs. promotion) reactions that emphasize what is already known and familiar (i.e., the status quo), in the interest of reducing uncertainty and anxiety and minimizing potential harm or danger. As such, prevention responses and “conservative” reactions are both basic and normal (Eidelman et al., 2012), triggered by an oversensitivity to the unfamiliar (or to perceived threats) but also representing a reasonable response based on a critical evaluation of threatening environmental factors.

Over time, this prevention focus fuels more stable forms of prevention-focused orientations toward the social world (Janoff-Bulman, 2009), such as socially conservative and religious belief systems that emphasize resistance to change and protection of the status quo (see Jost et al., 2003). Indeed, when threatened, people generally shift to the ideological right (Hetherington & Suhay, 2011; Onraet, Dhont, & Van Hiel, 2014), which in turn increases stereotypical thinking (Castelli & Carraro, 2011), prejudicial attitudes (Sibley & Duckitt, 2008), discrimination (Sidanius & Pratto, 1999), and out-group avoidance (Hodson, 2011).

Importantly, endorsing socially conservative ideologies will also generally feed back into stronger threat perceptions, motivating interpretations of the social world as threatening, which further confirms and justifies conservative beliefs (e.g., Onraet et al., 2014). Furthermore, perceived threat from specific out-groups can also directly enhance negative outcomes toward those out-groups (Riek et al., 2006), which in turn may promote right-wing political beliefs consistent with a prevention-protection focus against out-group threat. Threat perceptions, right-wing socially conservative attitudes, and negative attitudes toward out-groups may thus mutually reinforce each other. Overall, the CASE model provides a framework that integrates related but distinct literatures in a meaningful way, proposing mechanisms through which cognitive variables (e.g., ability and style) can impact more distal outcomes (e.g., intergroup relations) through threat perceptions and prevention-oriented responses.

### Current and Future Directions

Our review highlights limitations warranting further inquiry. First, the studies reviewed have overwhelmingly examined self-reported prejudice. Although individuals



with stronger cognitive skills might be better at masking socially unacceptable attitudes, responses to straightforward questions about out-group attitudes are unlikely to require elaborate cognitive skills of the sort that differentiate those with lower versus higher mental abilities (for a discussion, see Hodson & Busseri, 2012). Furthermore, negative relations between mental abilities and prejudice also occur among university students (e.g., Keiller, 2010) and young children (e.g., Costello & Hodson, 2014), and occur independently of education, rendering this account unlikely. However, in more complex or nuanced contexts (e.g., job-hiring decisions about candidates with ambiguous qualifications), those lower in cognitive ability may be less able to inhibit biases, failing to recognize and execute socially appropriate responses. We therefore urgently encourage the future use of nonreactive and implicit measures of prejudice.

Second, extant research has examined only Westerners, limiting the generalizability of its findings to other socio-political contexts. Psychological characteristics typically associated with right-wing socially conservative ideologies are also likely manifest among defenders of the status quo in totalitarian communist regimes. More research is needed to advance our understanding of social conservatism in non-Western societies and its relations with cognitive ability, resistance to change, and out-group attitudes. Finally, associations between cognitive abilities and ideological attitudes in the economic-hierarchical domain remain underinvestigated. Theoretically, economic (vs. social) conservatism represents an unlikely mediator (Heaven et al., 2011), but this remains untested. In closing, we want to be clear that this review does not inform the rationality, accuracy, or validity of right- or left-wing ideologies, but rather helps to illuminate cognitive factors contributing to ideological and intergroup attitudes.

### Recommended Reading

- Hibbing, J. R., Smith, K. B., & Alford, J. R. (2014). Differences in negativity bias underlie variations in political ideology. *Behavioral & Brain Sciences*, *37*, 297–307. A comprehensive review of the literature on the differences between liberals and conservatives in their physio- and psychological responses to negative environmental stimuli.
- Hodson, G., & Busseri, M. A. (2012). (See References). An article presenting evidence that lower mental abilities in childhood predict greater prejudice in adulthood through right-wing ideologies.
- Van Hiel, A., Onraet, E., & De Pauw, S. (2010). (See References). A meta-analytic overview of research on the relation between right-wing ideologies and behavioral measures of cognitive style and ability.
- Zuckerman, M., Silberman, J., & Hall, J. A. (2013). (See References). A theoretical and meta-analytical overview of research on the relation between intelligence and religiosity.

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### References

- Adorno, T. W., Frenkel-Brunswick, E., Levinson, D. J., & Sanford, R. N. (1950). *The authoritarian personality*. New York, NY: Harper and Row.
- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Asbrock, F., Christ, O., Duckitt, J., & Sibley, C. G. (2012). Differential effects of intergroup contact for authoritarians and social dominators: A dual process model perspective. *Personality and Social Psychology Bulletin*, *38*, 477–490.
- Asbrock, F., Sibley, C. G., & Duckitt, J. (2010). Right-wing authoritarianism, social dominance orientation and the dimensions of generalized prejudice: A longitudinal test. *European Journal of Personality*, *24*, 324–340.
- Castelli, L., & Carraro, L. (2011). Ideology is related to basic cognitive processes involved in attitude formation. *Journal of Experimental Social Psychology*, *47*, 1013–1016.
- Christie, R. (1954). Authoritarianism re-examined. In R. Christie & M. Jahoda (Eds.), *Studies in the scope and method of "the authoritarian personality"* (pp. 123–196). New York, NY: Free Press.
- Costello, K., & Hodson, G. (2014). Explaining dehumanization among children: The interspecies model of prejudice. *British Journal of Social Psychology*, *54*, 175–197.
- Deary, I. J., Batty, G. D., & Gale, C. R. (2008a). Bright children become enlightened adults. *Psychological Science*, *19*, 1–6.
- Deary, I. J., Batty, G. D., & Gale, C. R. (2008b). Childhood intelligence predicts voter turnout, voting preferences, and political involvement in adulthood: The 1970 British Cohort Study. *Intelligence*, *36*, 548–555.
- Dhont, K., & Hodson, G. (2014). Why do right-wing adherents engage in more animal exploitation and meat consumption? *Personality and Individual Differences*, *64*, 12–17.
- Dhont, K., Roets, A., & Van Hiel, A. (2011). Opening closed minds: The combined effects of intergroup contact and need for closure on prejudice. *Personality and Social Psychology Bulletin*, *37*, 514–528.
- 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.
- Eyssel, F. A., & Ribas, X. (2012). How to be good (or bad): On the fakeability of dehumanization and prejudice against outgroups. *Group Processes & Intergroup Relations*, *15*, 804–812.
- Everett, J. A. C. (2013). The 12 item social and economic conservatism scale (SECS). *PLoS ONE*, *8*(12), e82131. Retrieved from <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0082131>

- Hall, D. L., Matz, D. C., & Wood, W. (2010). Why don't we practice what we preach? A meta-analytic review of religious racism. *Personality and Social Psychology Review, 14*, 126–139.
- Heaven, P. C. L., Ciarrochi, J., & Leeson, P. (2011). Cognitive ability, right-wing authoritarianism, and social dominance orientation: A five-year longitudinal study amongst adolescents. *Intelligence, 39*, 15–21.
- Hetherington, M. J., & Suhay, E. (2011). Authoritarianism, threat, and Americans' support for the war on terror. *American Journal of Political Science, 55*, 546–560.
- Hodson, G. (2011). Do ideologically intolerant people benefit from intergroup contact? *Current Directions in Psychological Science, 20*, 154–159.
- Hodson, G. (2014). Is it impolite to discuss cognitive differences between liberals and conservatives? *Behavioral & Brain Sciences, 37*, 313–314.
- Hodson, G., & Busseri, M. A. (2012). Bright minds and dark attitudes: Lower cognitive ability predicts greater prejudice through right-wing ideology and low intergroup contact. *Psychological Science, 23*, 187–195.
- Hodson, G., Hogg, S. M., & MacInnis, C. C. (2009). The role of "dark personalities" (narcissism, Machiavellianism, psychopathy), Big Five personality factors, and ideology in explaining prejudice. *Journal of Research in Personality, 43*, 686–690.
- Janoff-Bulman, R. (2009). To provide or protect: Motivational bases of political liberalism and conservatism. *Psychological Inquiry, 20*, 120–128.
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129*, 339–375.
- Keiller, S. W. (2010). Abstract reasoning as a predictor of attitudes toward gay men. *Journal of Homosexuality, 57*, 914–927.
- Kemmelmeier, M. (2008). Is there a relationship between political orientation and cognitive ability? A test of three hypotheses in two studies. *Personality and Individual Differences, 45*, 767–772.
- Kutner, B., & Gordon, N. B. (1964). Cognitive functioning and prejudice: A 9-year follow-up study. *Sociometry, 27*, 66–74.
- McCourt, K., Bouchard, T. J., Lykken, D. T., Tellegen, A., & Keyes, M. (1999). Authoritarianism revisited: Genetic and environmental influences examined in twins reared apart and together. *Personality and Individual Differences, 27*, 985–1014.
- Meeusen, C., de Vroome, T., & Hooghe, M. (2013). How does education have an impact on ethnocentrism? A structural equation analysis of cognitive, occupational status and network mechanisms. *International Journal of Intercultural Relations, 37*, 507–522.
- Onraet, E., Dhont, K., & Van Hiel, A. (2014). The relationships between internal and external threat and right-wing attitudes: A three-wave longitudinal study. *Personality and Social Psychology Bulletin, 40*, 712–725.
- Riek, B. M., Mania, E. W., & Gaertner, S. L. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review, 10*, 336–353.
- Rokeach, M. (1951). Prejudice, concreteness of thinking, and reification of thinking. *Journal of Abnormal and Social Psychology, 46*, 83–91.
- Roets, A., & Van Hiel, A. (2011). Allport's prejudiced personality today: Need for closure as the motivated cognitive basis of prejudice. *Current Directions in Psychological Science, 26*, 349–354.
- Schoon, I., Cheng, H., Gale, C. R., Batty, G. D., & Deary, I. J. (2010). Social status, cognitive ability, and educational attainment as predictors of liberal social attitudes and political trust. *Intelligence, 38*, 144–150.
- Sibley, C. G., & Duckitt, J. (2008). Personality and prejudice: A meta-analysis and theoretical review. *Personality and Social Psychology Review, 12*, 248–279.
- Sidanius, J., & Lau, R. R. (1989). Political sophistication and political deviance: A matter of context. *Political Psychology, 10*, 85–109.
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. Cambridge, England: Cambridge University Press.
- Stankov, L. (2009). Conservatism and cognitive ability. *Intelligence, 37*, 294–304.
- Van Hiel, A., & Mervielde, I. (2003). The measurement of cognitive complexity and its relationship with political extremism. *Political Psychology, 24*, 781–801.
- 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*, 1765–1799.
- Zuckerman, M., Silberman, J., & Hall, J. A. (2013). The relation between intelligence and religiosity: A meta-analysis and some proposed explanations. *Personality and Social Psychology Review, 17*, 325–354.