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# The Impact of Need for Closure on Conservative Beliefs and Racism: Differential Mediation by Authoritarian Submission and Authoritarian Dominance

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*The present study explores the influence of need for closure as well as authoritarian submission (Right-Wing Authoritarianism [RWA]) and authoritarian dominance (Social Dominance Orientation [SDO]) on the genesis of conservative beliefs and racism. For this purpose, two structural equation models were compared. In Model 1, RWA and SDO were entered as independent variables and the need for closure facets Decisiveness and Need for Simple Structure acted as mediator variables. In Model 2, the need for closure facets served as independent variables and RWA and SDO acted as mediators. In two student samples (Sample 1, N = 399, Sample 2, N = 330) and one adult sample (Sample 3, N = 379), Model 2 showed superior fit to the data. These results corroborate the hypothesis that authoritarianism should be interpreted in terms of generalized beliefs rather than in terms of personality characteristics. In addition, analyses show that the effects of Need for Simple Structure on conservative beliefs and racism are fully mediated by RWA but only partly by SDO. These results suggest a differential genesis of RWA and SDO.*

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**Keywords:** *authoritarianism; social dominance orientation; cognitive conservatism; need for closure; conservatism; prejudice; racism*

The Authoritarian Personality (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950) can be considered as one of the cornerstones of political psychology and has been cited in more than 2,000 publications (Meloan, 1993). The authoritarianism concept has been widely used to explain profascist attitudes, politico-eco-

nomic conservatism, prejudice, stereotyping, discrimination, and intergroup conflict. In line with this research tradition, the present study is concerned with the interplay of authoritarianism and need for closure in the genesis of conservative beliefs and racism. In particular, two competing causal models of the genesis of conservative beliefs, both of them associated with a different conceptualization of the nature of authoritarianism, are tested against each other. In addition, in line with recent authoritarianism research, a distinction will be made between authoritarian submission and authoritarian dominance.

AUTHORITARIANISM, COGNITIVE CONSERVATISM,  
AND POLITICAL IDEOLOGY

Classic research on authoritarianism has been concerned with two main themes: its relation to conservative beliefs and prejudice and its relation to cognitive functioning. The former line of research revealed that authoritarianism is a powerful predictor of conservative beliefs and prejudice (e.g., Adorno et al., 1950; Altemeyer, 1998), whereas the latter line of research demonstrated that authoritarianism is accompanied by

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cognitive rigidity (e.g., Rokeach, 1948) and intolerance for ambiguity (e.g., Frenkel-Brunswik, 1949). People high on authoritarianism also were found to differ from people low on authoritarianism with respect to, for example, integrative complexity (e.g., Harvey, 1963), field dependence (e.g., Rudin & Stagner, 1958), and the use of conceptual categories (e.g., White, Alter, & Rardin, 1965). Studies relating authoritarianism to cognitive functioning led to the conclusion that authoritarianism is, above all, a mode of perceiving the world. An authoritarian vision of reality would apply to persons for whom the reality in which they live is hardly understandable and over which they have no cognitive control and who have a need to simplify this reality to get a grip on it.

The findings of this research tradition suggest that cognitive functioning may be linked to conservative beliefs and prejudice. In other words, these findings suggest that the processes that lead to conservative judgments can be reduced to conservatism in the cognitive, not traditional, sense (Kossowska & Van Hiel, 2003). Accordingly, Jost, Glaser, Kruglanski, and Sulloway (2003) argue that conservatism can be understood as a necessary or adaptive feature of human cognition. The presumed link between conservative ideology and cognitive conservatism has recently been studied by the cognitive conservatism approach (e.g., Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992; Jost et al., 2003; Kimmelmeier, 1997; Kossowska & Van Hiel, 2003; Shah, Kruglanski, & Thompson, 1998; Tetlock, 1983, 1993). According to this research line, cognitive conservatism involves both directional and nondirectional psychological motives that instigate belief formation and maintenance. Directional motives reflect the desire to reach a specific conclusion, such as that the self is valuable (e.g., Dunning, 1999; Kunda, 1990). Nondirectional motives reflect the desire for any firm belief on a given topic. Nondirectional motives include the need for closure (Kruglanski & Webster, 1996), the need for cognition (after inversion) (Cacioppo & Petty, 1982), and regulatory focus (Higgins, 1998). In addition, concepts such as dogmatism (Rokeach, 1960) and intolerance of ambiguity (Budner, 1962; Frenkel-Brunswik, 1949) also have been considered nondirectional motives by both its instigators and its commentators (e.g., Davies, 1998; Durrheim, 1997; Jost et al., 2003). Thus, because persons who show high levels of cognitive conservatism have low levels of motivation to process information, they should be more likely to support conservative ideologies because these rely on tradition, are aimed at (societal) stability, and imply the avoidance of ambiguity caused by change.

In sum, the classic research on authoritarianism focused on the relation between authoritarianism and both cognitive functioning (i.e., cognitive conservatism

*avant la lettre*) and conservative beliefs and prejudice, whereas the recent cognitive conservatism approach highlights the relationship between cognitive conservatism and conservative beliefs and prejudice. However, with the notable exception of Chirumbolo (2002), a theory that integrates authoritarianism, cognitive conservatism, and conservative beliefs and prejudice has not been advanced yet. In our opinion, such an integrated theory needs to address two important issues. First, it should take into account recent findings that point to the necessity of distinguishing between two forms of authoritarianism: authoritarian submission and authoritarian dominance. Second, it should clarify the nature of authoritarianism. Throughout the authoritarianism literature, two distinct conceptualizations have been proposed. According to one view, authoritarianism is a personality characteristic. According to the second view, it only reflects generalized beliefs. We will elaborate on these issues before discussing our specific research aims.

#### AUTHORITARIAN SUBMISSION AND AUTHORITARIAN DOMINANCE

Although initially considered an integral part of the same monolithic authoritarianism concept (Adorno et al., 1950), researchers only recently developed an interest in the study of authoritarian dominance. Pratto, Sidanius, Stallworth, and Malle (1994) constructed a scale—the Social Dominance Orientation (SDO) scale—that measures authoritarian dominance in its own right. SDO has been found to correlate substantially with variables such as racism, militarism, punitiveness, and conservatism, which also have been reported to show solid relations with RWA (Right-Wing Authoritarianism) (or, authoritarian submission). Subsequent research compared the predictive validity of RWA and SDO (Altemeyer, 1998; Duckitt, 2001; Duckitt, Wagner, du Plessis, & Birum, 2002; Van Hiel & Mervielde, 2002b) and found these to independently predict conservative beliefs and prejudice and to relate differentially to other relevant variables such as cultural and economic conservatism, value orientations, religiosity, and moral competence (Altemeyer, 1998; Duriez & Van Hiel, 2002; Duriez, Van Hiel, & Kossowska, in press; Lippa & Arad, 1999; McFarland, 1998, 1999; McFarland & Adelson, 1996). These findings led to the conclusion that RWA and SDO constitute different prejudice dispositions. According to Duckitt (2001; Duckitt et al., 2002), RWA is driven by fear and feelings of being threatened, which generate self-protective, defensive motivational needs for social control and security. Outgroups are disliked because they are seen as threatening and dangerous to social and group cohesion, values, security, order, and stability. This generates a categorization of the social

world into good, decent people (us) and bad, disruptive, and deviant people (them). In contrast, SDO is driven by a view of the world as a competitive jungle characterized by a ruthless, amoral struggle for power and resources in which the fit succeed and the unfit fail. This generates self-enhancement motives for status, power, superiority, and dominance. Outgroups are disliked because they are seen as inferior and weak, generating a categorization of the social world into superior, strong, competent, and dominant people (us) and inferior, weak, incompetent, and worthless people (them).

Given the differential relationships of RWA and SDO with a host of variables and given their supposedly different psychological background and genesis, an important issue that has to be raised is whether RWA and SDO also relate differentially to individual differences in cognitive conservatism. Based on both the theorizing on this topic and the results of the research that has been conducted from this point of view (for an overview, see Durrheim, 1997), one should expect a positive relationship between RWA and cognitive conservatism. With respect to the relationship between SDO and cognitive conservatism, however, the situation is less clear. Social Dominance Theory (e.g., Pratto et al., 1994; Sidanius & Pratto, 1999) has not made any statement about the relationship between SDO and cognitive conservatism. Moreover, no direct empirical evidence is available with respect to this issue.

#### AUTHORITARIANISM: PERSONALITY CHARACTERISTIC OR GENERALIZED BELIEF?

Adorno et al. (1950) reported that profascist attitudes, prejudice, politico-economic conservatism, stereotyping, and discrimination covaried powerfully to form a general attitudinal syndrome, which in their view, could be seen as an expression of a basic personality dimension. This dimension—the authoritarian personality—was later reconceptualized to RWA by Altemeyer (1981). Although Adorno et al. considers authoritarianism a personality characteristic, commentators have pointed out that the items of their authoritarianism scales capture social attitudes and beliefs of a broadly ideological nature rather than personality characteristics (see Duckitt, 2001; Duckitt et al., 2002). As such, authoritarianism can be considered as a set of generalized beliefs and attitudes that, because of its level of generality, may predict prejudice as well as specific conservative beliefs and attitudes. In addition, the conceptualization of authoritarianism as a set of generalized beliefs suggests that authoritarianism is a product of political socialization, which is thought to take place during late adolescence (Duckitt, 2001; Duckitt et al., 2002).

The conceptualization of authoritarianism as a deeply ingrained personality characteristic or a set of general beliefs has important implications toward the integration of authoritarianism, cognitive conservatism, and conservative beliefs and prejudice into a single theoretical framework. On one hand, if authoritarianism is considered to be a personality characteristic, individual differences in cognitive conservatism should be considered as a consequence of the authoritarian mind. In this case, people with high authoritarianism levels can be seen as predisposed to develop a cognitive conservative style, which in turn, will lead them to adopt conservative beliefs and prejudice. On the other hand, if authoritarianism is considered as a general belief, it should be shaped by differences in cognitive conservatism. In this case, people with high levels of cognitive conservatism can be seen as predisposed to develop an authoritarian belief system that predisposes them to adopt specific conservative beliefs and prejudice. In line with this perspective, cognitive style variables and information-processing strategies are assumed to already have an influence at a young age, whereas RWA and SDO are assumed to be predominantly a product of political socialization during adolescence (Alwin & Krosnick, 1991). Hence, the fact that cognition and ideology become important at various points in time suggests that cognitive styles lay out a necessary basis on which ideology develops.

Recently, Chirumbolo (2002) found both authoritarianism and need for closure to relate positively to right-wing political ideology. In addition, he found that authoritarianism mediates the influence of need for closure on political orientation. This seems to support the conceptualization of authoritarianism as a set of generalized beliefs. However, Chirumbolo did not test the two conceptualizations against each other. Moreover, besides being restricted to political party preferences, an authoritarianism measure that was based on the F scale (Adorno et al., 1950) was used, neglecting the fact that the F scale has attracted a lot of criticism during the years (see Altemeyer, 1981). Finally, Chirumbolo did not take into account the growing literature on the differentiation of authoritarianism in authoritarian submission and authoritarian dominance.

#### RESEARCH AIMS

The aim of the present study is twofold. First, we want to pit the two different conceptualizations of authoritarianism against each other. If authoritarianism reflects a personality characteristic, cognitive conservatism should mediate the effect of RWA and/or SDO on conservative beliefs and prejudice. However, if authoritarianism reflects a collection of generalized beliefs, RWA

and/or SDO should mediate the effect of cognitive conservatism on conservative beliefs and prejudice. To test these two conceptualizations against each other, the fit of the corresponding structural equation models will be compared. Second, we want to replicate recent findings that suggest that RWA and SDO constitute different forms of authoritarianism. Therefore, we will test whether RWA and SDO relate differently to cognitive conservatism and conservative beliefs and prejudice. The proposed models allow us to examine this. In particular, we can test whether the fit of the best-fitting model is affected by assuming mathematical equality of the paths between any given variable and either RWA or SDO. If this is the case, this would indicate that at least some of the given variables differentially affect (or are differentially affected by) RWA and SDO.

In the present study, the proposed structural equation models were tested using a variety of indicators of conservative beliefs and (racial) prejudice. Need for closure was used as an indicator of cognitive conservatism because it relates to political ideology (e.g., Kimmelmeier, 1997; Kossowska & Van Hiel, 2003) as well as to ill-motivated information processing evinced by, for example, low levels of cognitive complexity (e.g., Van Hiel & Mervielde, 2003; Webster & Kruglanski, 1994), a greater proneness to use cognitive heuristics (Kruglanski & Freund, 1983), and a less extensive search for information (e.g., Klein & Webster, 2000; Van Hiel & Mervielde, 2002a). Finally, different samples (i.e., two student samples and one adult sample) were used to assess the robustness of our results.

## METHOD

### *Participants*

Sample 1 ( $N = 399$ ) and Sample 2 ( $N = 330$ ) consisted of 1st-year psychology students from a large Belgian university. Participants in Sample 1 ranged in age from 17 to 31 years with a mean age of 19 (82% female), and participants in Sample 2 ranged in age from 17 to 23 years with a mean age of 18 (75% female). All participants had Belgian nationality and belonged to the Flemish-speaking part of the country. They participated in partial fulfillment of a research experience requirement for introductory psychology courses. The fact that these samples consist of 1st-year psychology students—an ideologically rather homogeneous group—constitutes a limitation for the generalizability of the results. That is, about 70% of the 1st-year psychology students have a preference for the political program of parties that represent the left-wing side of the political spectrum in Flanders (i.e., the Green Party and the Social Democrats; for a short description of these parties as well as their numerical

support, see Van Hiel & Mervielde, 2002c). Therefore, a third sample was collected. Sample 3 is an adult sample ( $N = 379$ ) that was gathered in Flanders (Belgium) by undergraduate students asking their neighbors to participate to obtain a heterogeneous sample. The mean age was 44 years ( $SD = 13$ ). This sample consisted of 207 men, 140 women, and 32 persons who did not specify their gender. Of these participants, 182 attended higher education, 140 completed secondary education, 14 left school at age 14, and 43 did not specify their educational level.

### *Measures*

#### *AUTHORITARIANISM*

Five-point scale items anchored by *certainly disagree* and *certainly agree* were used for all measures.<sup>1</sup> In all three samples, a 14-item SDO scale (Pratto et al., 1994, translated by Van Hiel & Duriez, 2002; Cronbach's alpha = .87, .85, and .83) was administered. In Samples 1 and 2, a shortened 11-item RWA scale (Altemeyer, 1981, translated by Melen, 1991; Cronbach's alpha = .71 and .72) was administered. In Sample 3, however, a more elaborated 30-item RWA scale was used (Melen, 1991; Cronbach's alpha = .94). Joint exploratory factor analysis of the RWA and SDO items indicated a two-factor solution with the RWA items loading on one factor and the SDO items loading on the other factor. This testifies to the importance of distinguishing between both types of authoritarianism.

#### *NEED FOR CLOSURE*

In Samples 1 and 2, a 42-item Need for Closure (NFC) scale (Webster & Kruglanski, 1994, translated by Cratylus, 1995) was administered. According to Webster and Kruglanski (1994), this scale comprises five domains that are additive in their impact on the total NFC: (a) preference for order and structure in the environment, (b) preference for predictability of future contexts, (c) decisiveness of judgments and choices, (d) affective discomfort occasioned by ambiguity, and (e) closed-mindedness. Cronbach's alphas for these five domains were, respectively, .80, .79, .80, .53, and .51 in Sample 1 and .82, .72, .72, .41, and .58 in Sample 2. Exploratory Factor Analysis (EFA) with OBLIMIN rotation of the NFC items revealed the quasi-orthogonal ( $\kappa = .03$  and  $-.02$ ,  $p > .59$  and  $p > .69$ ) two-factor structure previously obtained in several studies (e.g., Neuberg, Judice, & West, 1997; Neuberg, West, Judice, & Thompson, 1997; see also Kossowska, Van Hiel, Chun, & Kruglanski, 2002; Kruglanski, DeGrada, Mannetti, Atash, & Webster, 1997). In line with Neuberg et al., the first factor could be identified as Need for Simple Structure (NFSS). High loading items primarily belonged to the preference for

order and preference for predictability facets and to a lesser extent also to the discomfort occasioned by ambiguity and the closed-mindedness facets (correlations with the above-mentioned NFC facets were, respectively, .85, .90, -.10, .38, and .59 in Sample 1 and .89, .88, -.08, .42, and .33 in Sample 2). Also in line with Neuberg et al., the second factor could be identified as Decisiveness (correlations with the NFC facets were, respectively, .34, .01, .94, .10, and -.11 in Sample 1 and .13, -.08, .95, .02, and -.15 in Sample 2).

In Sample 3, an abridged NFC scale was administered. Because poor reliability was obtained for these subscales in Sample 1 and 2, the discomfort with ambiguity and closed-mindedness subscales were dropped to reduce the extent of the questionnaire. For each of the three remaining subscales, we administered the seven best items only. Cronbach's alphas were .84, .78, and .72, respectively. Again, EFA with OBLIMIN rotation revealed a quasi-orthogonal ( $r = -.07$ ,  $p > .18$ ) two-factor structure. As in Samples 1 and 2, the first factor could be identified as NFSS (correlations with the remaining NFC facets were .91, .89, and .02, respectively) and the second factor could be identified as Decisiveness (correlations with the NFC facets were .10, -.08, and .97, respectively).

#### CONSERVATISM AND RACISM

In Sample 1, participants completed measures of cultural conservatism and racism. In the cultural domain, progressive ideology stands for the freedom to arrange one's life according to one's own insights, whereas conservatism relates to the endorsement of traditional values and norms. Cultural conservatism thus favors issues such as authoritarian parent-child relationships, traditional work ethics, and conventional female roles (see Middendorp, 1978). Examples of items are as follows: "Working hard makes you a better person" and "A woman is more capable of raising children than a man is." Cronbach's alpha for this 12-item scale (De Witte, 1990; Duriez, Luyten, Snauwaert, & Hutsebaut, 2002) was .75. The racism scale that was administered was originally constructed to measure the two conceptually different aspects of xenophobia and racism (Billiet & De Witte, 1991). An example of a xenophobia item is as follows: "In general, immigrants are not to be trusted." An example of a racism item is as follows: "We have to keep our race pure and fight mixture with other races." However, contrary to the presumed two-factorial structure, the scree test pointed to one factor only (cf. Duriez, in press; Duriez et al., 2002; Duriez, Fontaine, & Hutsebaut, 2000; Duriez & Hutsebaut, 2000). Cronbach's alpha for this 9-item scale was .88.

In Sample 2, attention was paid to the differentiation between cultural and economic conservatism. This distinction became apparent in the work of several promi-

nent scholars (e.g., Eysenck, 1954; Lipset, 1981; Middendorp, 1978; Saucier, 2000; Wilson, 1973). From an economic perspective, progressive ideology emphasizes equality and rejects inequality of the distribution of power, income, and opportunities. Economic progressive ideology therefore favors issues such as worker participation, state economic intervention, and trade unionism. Economic conservatism favors adherence to capitalist ideology, private initiative, and unrestricted competition among individuals. Examples of items are as follows: "Trade unions should have more to say in companies (after inversion)" and "Economic growth can only be realized when the government allows unrestricted private enterprise." In the present study, both the cultural and the economic conservatism scale (De Witte, 1990; Duriez et al., 2002) were extended from 12 to 18 items to obtain a balanced scale, containing nine pro- and nine con-trait items (Cronbach's alphas = .67 and .76, respectively). Exploratory factor analysis of the conservatism items indicated a two-factor solution with the cultural conservatism items loading on one factor and the economic conservatism items loading on the other factor. This testifies to the importance of distinguishing between both types of conservatism. The nine-item racism scale that was used in Sample 1 was also administered. Again, the scree test pointed to one factor only. Cronbach's alpha was .88.

In Sample 3, general conservatism, classical racism, and symbolical racism were assessed. A 10-item conservatism scale (Van Hiel & Mervielde, 1996), which was designed to cover a wide range of political statements that can be used to discriminate between people adhering left-wing political beliefs and people adhering (conservative) right-wing political beliefs and encompasses items referring to attitudes as diverse as attitudes toward immigration, softdrugs, aid for third-world countries, and the independence of Flanders, proved to be reliable (Cronbach's alpha = .71). Examples of items are "Liberalization of softdrugs" and "More police control to reduce criminality." In Samples 1 and 2, a general racism scale that consists of items referring to xenophobia and blatant racism was used. Such instances of racist convictions also can be categorized as "traditional racism" as opposed to "symbolic racism" (Kinder & Sears, 1981; Sniderman & Tetlock, 1986). Symbolic racism refers to a more subtle and less direct form of racism. This subtle form of racism is thought to surface whenever it is safe, socially acceptable, or easy to rationalize. Therefore, in Sample 3, a four-item classic racism scale and a four-item symbolic racism scale (derived from Kinder & Sears, 1981) were administered. Examples of classic racism items are as follows: "I would object if a member of my family wanted to bring a migrant home to dinner" and "I would not mind that a migrant family would move into

my neighborhood (after inversion).” Examples of symbolic racism items are as follows: “Migrants who receive money from welfare programs could get along if they really tried” and “Migrants shouldn’t push themselves where they’re not wanted.” However, contrary to the presumed two-factorial structure, in a joint exploratory factor analysis of the racism items, the scree test pointed to one component only. Cronbach’s alpha was .88.

## RESULTS

### *Initial Analyses*

To adjust for measurement error, structural equation modeling with latent variables (SEM; Bollen, 1989) was performed using Lisrel 8.54 (Jöreskog & Sörbom, 1996a). SEM with latent variables requires multiple indicators for all the constructs that are assessed. Instead of using separate items as indicators, except for NFSS, three parcels of items were created in a random fashion for each construct (i.e., RWA; SDO; Decisiveness; general, cultural, and economic conservatism; and racism), and these were used as indicators of the latent constructs. In the case of NFSS, preference for order and preference for predictability facets (as well as the discomfort occasioned by ambiguity and the closed-mindedness facets when available) were used as indicators of this latent construct: According to Marsh, Hau, Balla, and Grayson (1998), parceling has some advantages with respect to the modeling of latent factors. Parceling results in a smaller number of indicators per latent factor, individual parcels are likely to have a stronger relation to the latent factor, are less likely to be influenced by method effects, and are more likely to meet the assumptions of normality. In addition, the reliability of the factors is unaffected by the use of parcels because the same items are used to form the latent factor.<sup>2</sup>

### *Measurement Model*

To evaluate the goodness of fit of the measurement models, the Standardized Root Mean Squared Residual (SRMR; Bentler, 1995) and the Root Mean Squared Error of Approximation (RMSEA; Steiger & Lind, 1980) were selected. According to Hu and Bentler (1999), the combined cut-off values of .09 for SRMR and .06 for RMSEA indicate good fit. In all samples, initial estimation of the measurement model by means of confirmatory factor analysis indicated good model fit (SRMR = .055, .054, and .040 and RMSEA = .051, .050, and .053). All of the parcels had a strong loading on their corresponding latent factor (mean lambda = .51, .42, and .71). In sum, adequate measurement models were obtained.

### *Correlational Analyses*

Correlations between the latent variables in this study can be found in Table 1. Results reveal that Decisiveness is not significantly related to NFSS, RWA, SDO, the conservatism measures, and racism. In contrast, NFSS is on average strongly related to RWA, general and cultural conservatism, and racism; weakly related to SDO; and not significantly related to economic conservatism. In addition, results indicate that both RWA and SDO (which are significantly positively related) are significantly positively related to the measures of conservative beliefs and racism. Finally, the measures of conservatism and racism were significantly positively related to each other. Note that due to the large sample size, our analyses attained high power. To preclude that small effects were flagged as significant, an alpha level of .01 was used in our analyses.

### *Structural Equation Modeling*

Two causal models with respect to the genesis of conservatism beliefs and racism were tested. In the personality model (Model 1), RWA and SDO were conceptualized as personality characteristics. Accordingly, their effect on conservative beliefs and racism was assumed to be mediated by need for closure. To test this model, a structural equation model was tested. In this model, both RWA and SDO affect Decisiveness and NFSS directly. In turn, Decisiveness and NFSS directly affect the measures of conservative beliefs and racism. Neither RWA nor SDO had a direct effect on these measures. In the generalized belief model (Model 2), RWA and SDO are conceptualized as broad ideological beliefs. As such, they are assumed to mediate the effect of need for closure (Decisiveness and NFSS) on the included measures conservative beliefs and racism. To test this model, a second structural equation model was tested. In this model, both Decisiveness and NFSS affect RWA and SDO directly. In turn, RWA and SDO directly affect the measures of conservative beliefs and racism. Neither Decisiveness nor NFSS had a direct effect on either of these measures. Note that to allow for the fact that RWA and SDO may be related beyond the relationship due to their joint dependence on need for closure (cf. Duckitt, 2001; Duckitt et al., 2002) (see above), we allowed the errors of RWA and SDO to correlate. Figure 1 gives a conceptual representation of each model.

Table 2 displays the values of various fit indices that were used to compare the two models. The SRMR and the RMSEA were selected. In addition, the 90% confidence interval for RMSEA and the probability of close fit,  $p(\text{close})$  (Browne & Cudeck, 1993), Akaike’s (1973) Information Criterion (AIC), and chi-square ( $\chi^2$ ) were taken into account. The combined cut-off values of .09

**TABLE 1: Correlations Between the Latent Variables in Samples 1, 2, and 3**

<i>Latent Variable</i>	1	2	3	4	5	6	7	8
1. Decisiveness	1.00							
	1.00							
	1.00							
2. NFSS	.04	1.00						
	-.08	1.00						
	.09	1.00						
3. RWA	.07	.59**	1.00					
	-.07	.55**	1.00					
	.09	.68**	1.00					
4. SDO	.00	.27**	.44**	1.00				
	.14	.17	.37**	1.00				
	.02	.22**	.56**	1.00				
5. Conservatism	—	—	—	—	—			
	—	—	—	—	—			
	.15	.55**	.80**	.70**	1.00			
6. Cultural conservatism	.00	.48**	.72**	.41**	—	1.00		
	-.04	.51**	.84**	.28**	—	1.00		
	—	—	—	—	—	—		
7. Economic conservatism	—	—	—	—	—	—	—	
	-.12	.16	.29**	.49**	—	.24*	1.00	
	—	—	—	—	—	—	—	
8. Racism	.00	.37**	.55**	.63**	—	.60**	—	1.00
	.06	.37**	.57**	.57**	—	.57**	.33**	1.00
	.03	.38**	.70**	.85**	.86**	.86**	—	1.00

NOTE: Standard deviations are included on the diagonal. NFSS = Need for Simple Structure, RWA = Right-Wing Authoritarianism, SDO = Social Dominance Orientation.

\**p* < .01. \*\**p* < .001.

**TABLE 2: Fit Indices of Model 1 and Model 2 in Samples 1, 2, and 3**

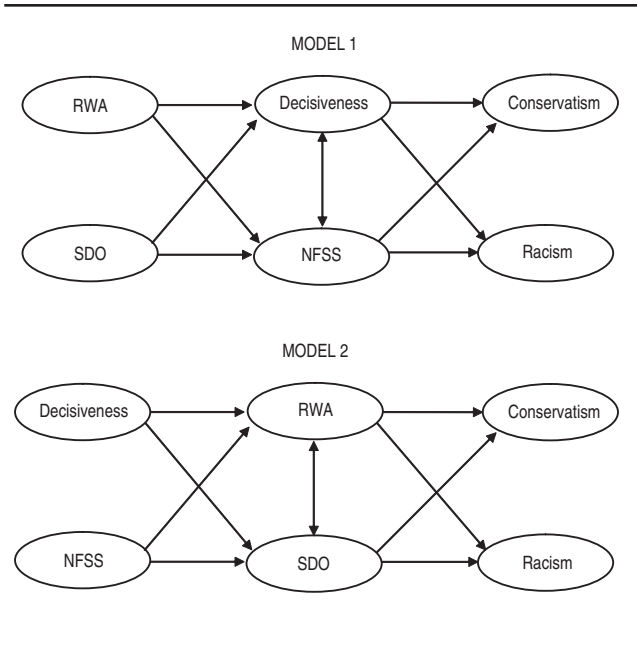
<i>Model</i>	<i>SRMR</i>	<i>RMSEA</i>	<i>90% Interval</i>	<i>p(close)</i>	<i>AIC</i>	<i>SBS χ<sup>2</sup> (df)</i>
Model 1	.0749	.0799	.0724-.0875	<.001	598.61	502.61 (142)
	.0788	.0740	.0667-.0813	<.001	663.51	551.51 (197)
	.0694	.0917	.0830-.1000	<.001	543.24	455.24 (109)
Model 2	.0578	.0536	.0453-.0619	.228	400.56	304.56 (142)
	.0578	.0487	.0403-.0569	.590	462.90	350.90 (197)
	.0446	.0567	.0471-.0664	.121	329.63	241.63 (109)

NOTE: SRMR = Standardized Root Mean Squared Residual, RMSEA = Root Mean Squared Error of Approximation, AIC = Akaike’s Information Criterion, SBS = Satorra-Bentler chi-square.

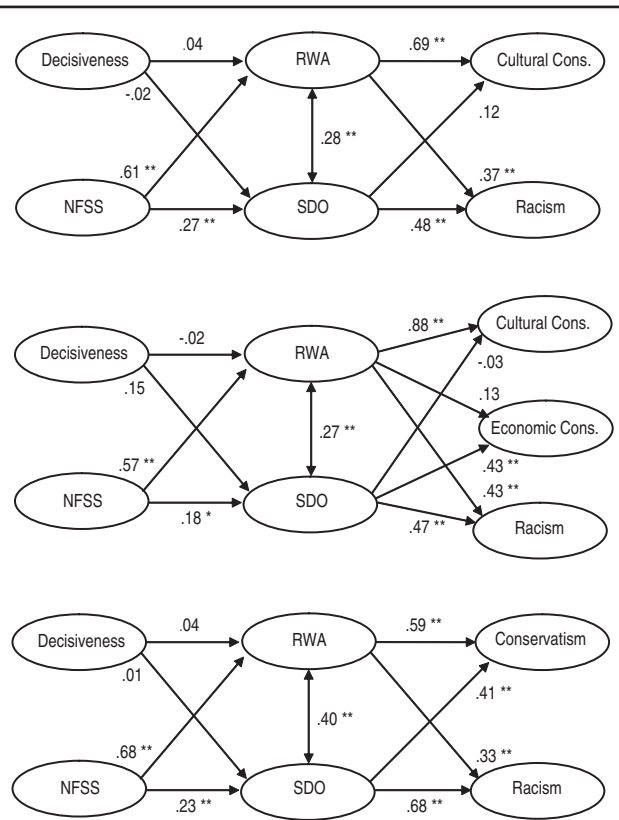
for SRMR and .06 for RMSEA indicate a good model fit (Hu & Bentler, 1999). The probability of close fit associated with RMSEA should be greater than .05. In addition, models with lower AIC should be preferred to models with higher AIC. Furthermore, according to Kline (1998), the ratio of chi-square to the degrees of freedom should be less than 3. However, because, in spite of the parceling procedure (see above), data screening of the parcels using Prelis 2.54 (Jöreskog & Sörbom, 1996b) indicated nonnormality of the data both at the univariate and the multivariate level, the Satorra-Bentler chi-square (SBS  $\chi^2$ ; Satorra & Bentler, 1994) was used instead of the standard chi-square. The Satorra-Bentler chi-square takes the nonnormality of the data into

account. In Table 2, the Satorra-Bentler chi-square is reported, followed by the degrees of freedom for each model in each sample.

Model 1 (see Figure 1) was rejected by almost every fit index (see Table 2). Although the SRMR indicated good fit (SRMR < .09 in all samples), the RMSEA indicated poor model fit (RMSEA > .06 in all samples). This also was reflected in the probability of close fit associated with the RMSEA, *p*(close) < .001 in all samples. In addition, the ratio of the Satorra-Bentler chi-square to the degrees of freedom also indicated a relatively poor model fit (SBS  $\chi^2$  / *df* = 3.50, 2.79, and 4.13 in Samples 1, 2, and 3, respectively). In contrast, Model 2 (see Figure 1) fit the data adequately (see Table 2). Both the SRMR (SRMR <



**Figure 1** Conceptual representation of Model 1 and Model 2.  
 NOTE: NFSS = Need for Simple Structure, RWA = Right-Wing Authoritarianism, SDO = Social Dominance Orientation. The specific conservatism and racism constructs vary from sample to sample.



**Figure 2** Best-fitting model with standardized estimates for Samples 1, 2, and 3, respectively.  
 NOTE: NFSS = Need for Simple Structure, RWA = Right-Wing Authoritarianism, SDO = Social Dominance Orientation.  
 \* $p < .01$ . \*\* $p < .001$ .

.09 in all samples) and the RMSEA (RMSEA < .06 in all samples) were low, indicating a close fit,  $p(\text{close}) > .05$ . In addition, the ratio of the Satorra-Bentler chi-square to the degrees of freedom also indicated good fit (SBS  $\chi^2/df = 2.14, 1.78, \text{ and } 2.22$  in Samples 1, 2, and 3, respectively). Finally, in all samples, the Akaike Information Criterion indicated that Model 2 fitted the data better than Model 1, and the upper bound of the 90% RMSEA confidence interval for Model 2 was lower than the lower bound of this interval for Model 1. The best-fitting model (Model 2) and its standardized path coefficients is presented in Figure 2 for Samples 1, 2, and 3, respectively.

In the introduction, it was argued that RWA and SDO measure different aspects of authoritarianism. Correspondingly, one would expect that RWA and SDO relate differentially to at least some of the measures of conservatism and racism. To examine this, the equivalence of the path coefficients from RWA and the corresponding path coefficients from SDO to each of these variables was tested by fitting modified structural equation models. The paths from RWA and SDO can be said to be equivalent when the resulting change in the Satorra-Bentler chi-square is nonsignificant. These analyses revealed that RWA was not significantly stronger related to general conservatism than SDO,  $\Delta \text{SBS } \chi^2(1) = 3.20$ , in Sample 3. However, in line with previous research (e.g.,

Duriez et al., 2003), these analyses revealed that whereas RWA was more strongly related to cultural conservatism,  $\Delta \text{SBS } \chi^2(1) = 25.50, p < .001$ , in Sample 1, and  $\Delta \text{SBS } \chi^2(1) = 49.15, p < .001$ , in Sample 2, SDO was more strongly related to economic conservatism,  $\Delta \text{SBS } \chi^2(1) = 9.68, p < .01$ , in Sample 2. Also in line with previous research (e.g., Duriez et al., 2003), these analyses revealed that SDO was not significantly stronger related to racism in Sample 1,  $\Delta \text{SBS } \chi^2(1) = 4.58$ , and Sample 2,  $\Delta \text{SBS } \chi^2(1) = 1.74$ . However, SDO was more strongly related to racism in Sample 3,  $\Delta \text{SBS } \chi^2(1) = 24.23, p < .001$ . Similarly, it was tested if RWA and SDO were affected to the same extent by Decisiveness and NFSS. It appeared that RWA was more strongly affected by NFSS than SDO,  $\Delta \text{SBS } \chi^2(1) = 18.07, p < .001$ , in Sample 1,  $\Delta \text{SBS } \chi^2(1) = 30.02, p < .001$ , in Sample 2, and  $\Delta \text{SBS } \chi^2(1) = 89.33, p < .001$ , in Sample 3. However, the effect of Decisiveness on RWA was not significantly different from its effect on SDO,  $\Delta \text{SBS } \chi^2(1) = 3.60$ , in Sample 1,  $\Delta \text{SBS } \chi^2(1) = 1.03$ , in Sample 2, and  $\Delta \text{SBS } \chi^2(1) = 0.25$ , in Sample 3.



**TABLE 3: Total, Indirect, and Direct Effects of NFSS Via RWA and SDO on the Dependent Variables**

<i>Dependent Variable</i>	<i>Sample</i>	<i>Total Effect</i>	<i>Indirect Effect</i>	<i>Direct Effect</i>
Conservatism	1	—	—	—
	2	—	—	—
	3	.55**	.41**	.14
Cultural conservatism	1	.49**	.42**	.07
	2	.51**	.45**	.06
	3	—	—	—
Economic conservatism	1	—	—	—
	2	.17	.15*	.03
	3	—	—	—
Racism	1	.37**	.32**	.05
	2	.38**	.29**	.09
	3	.39**	.34**	.05

NOTE: NFSS = Need for Simple Structure, RWA = Right-Wing Authoritarianism, SDO = Social Dominance Orientation.  
 \**p* < .01. \*\**p* < .001.

**TABLE 4: Total, Indirect and Direct Effects of NFSS Via RWA on the Dependent Variables**

<i>Dependent Variable</i>	<i>Sample</i>	<i>Total Effect</i>	<i>Indirect Effect</i>	<i>Direct Effect</i>
Conservatism	1	—	—	—
	2	—	—	—
	3	.53**	.61**	-.08
Cultural conservatism	1	.48**	.42**	.06
	2	.51**	.46**	.05
	3	—	—	—
Economic conservatism	1	—	—	—
	2	.16	.18*	-.02
	3	—	—	—
Racism	1	.36**	.33**	.04
	2	.33**	.31**	.05
	3	.37**	.61**	-.24*

NOTE: NFSS = Need for Simple Structure, RWA = Right-Wing Authoritarianism.  
 \**p* < .01. \*\**p* < .001.

*Mediational Analyses*

Model 2 (see Figure 1) suggests that the effects of need for closure (and in particular NFSS) on the measures of conservative beliefs and racism are mediated by authoritarianism. To determine whether RWA and SDO really mediate the effects of NFSS, tests of mediation were conducted by allowing paths from NFSS to the dependent variables. Sobel (1982) tests indicated that there was a significant indirect effect of NFSS on all of the dependent variables (see Table 3). When RWA and SDO were taken into account, NFSS no longer had a significant direct effect on either of these variables (see Table 3). Hence, these Sobel tests indicated that the effects of NFSS on the dependent variables are fully mediated by RWA and SDO. For Decisiveness, no tests of mediation were conducted because the basic requirements for mediation were not fulfilled. Decisiveness was unrelated to both RWA and SDO and the dependent variables.

Because the tests of equivalence showed that the paths from RWA and the corresponding paths from SDO to the independent and the dependent variables were not always equivalent (see above), Sobel tests were conducted for RWA and SDO separately by fitting modified structural equation models. These tests indicated that the effects of NFSS are fully mediated by RWA (see Table 4). There was a significant indirect effect of NFSS via RWA on all of the dependent variables. In addition, when RWA was taken into account, NFSS no longer had a significant direct effect on either of these variables. However, the effects of NFSS are only partly mediated by SDO (see Table 5). Although there was a significant indirect effect of NFSS via SDO on the dependent variables (with exception of economic conservatism and, in Sample 2 only, cultural conservatism) when SDO was taken into account, NFSS still had a significant direct effect on either of these variables. These results provide evidence for differential mediation of the effects of NFSS by RWA and SDO.

**TABLE 5: Total, Indirect, and Direct Effects of NFSS Via SDO on the Dependent Variables**

<i>Dependent Variable</i>	<i>Sample</i>	<i>Total Effect</i>	<i>Indirect Effect</i>	<i>Direct Effect</i>
Conservatism	1	—	—	—
	2	—	—	—
	3	.58**	.14*	.44**
Cultural conservatism	1	.49**	.09**	.40**
	2	.53**	.05	.48**
	3	—	—	—
Economic conservatism	1	—	—	—
	2	.19	.09	.10
	3	—	—	—
Racism	1	.39**	.16**	.23**
	2	.41**	.11*	.30**
	3	.42**	.17*	.25**

NOTE: NFSS = Need for Simple Structure, SDO = Social Dominance Orientation.

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

DISCUSSION

The present study yields two important results. First, it was shown that a structural equation model in which authoritarianism was hypothesized to mediate the effects of need for closure on conservative beliefs and racism (Model 2) fit our data better than a model in which need for closure was hypothesized to mediate the effects of authoritarianism (Model 1). Second, analyses show that the effects of NFSS on conservative beliefs and racism are fully mediated by authoritarian submission (Right-Wing Authoritarianism, or RWA) but only partly by authoritarian dominance (Social Dominance Orientation, or SDO). These results replicate and extend the findings of Chirumbolo (2002), who has shown that RWA mediates the effects of need for closure on conservative beliefs and racism. In addition, these results suggest a differential genesis of RWA and SDO.

In the remainder of this section, we will discuss three issues; that is, first, we will discuss the differential relationships of RWA and SDO with conservative beliefs and racism (i.e., the dependent variables). Second, we will discuss the differential relationships of RWA and SDO with need for closure (i.e., the independent variable). Third, we will pay attention to the theoretical and practical implications of the superior fit of the model in which RWA and SDO were entered as mediator variables.

*Differential Relations of RWA and SDO With Conservatism and Racism*

With respect to the relationship of RWA and SDO with conservative beliefs and racism, the present results show that RWA is a much better predictor of cultural conservatism, whereas SDO is a better predictor of economic conservatism. This result corroborates previous research and theorizing on values and sociopolitical attitudes. In

the domain of both values and sociopolitical attitudes, research revealed two approximately orthogonal dimensions (e.g., Saucier, 2000; Schwartz, 1992). According to Duckitt (2001; Duckitt et al., 2002), the value dimension Openness to Change versus Conservation and the sociopolitical attitude dimension Social or Cultural Conservatism broadly correspond to RWA, whereas the value dimension Self-Enhancement versus Self-Transcendence and the sociopolitical attitude dimension Economic Conservatism relate to SDO.

In addition, the present results show that whereas RWA and SDO are equally good predictors of racism in the student samples (Samples 1 and 2), SDO is a slightly better predictor of racism in the adult sample (Sample 3). Contrary to the latter finding, Duriez et al. (2003) and Van Hiel and Mervielde (2003) have reported relations of comparable strength for RWA and SDO with racism in both student and adult samples. Hence, the present result that RWA and SDO are more strongly related to racism in the adult sample should probably be attributed to sample fluctuations.

*Differential Relations of RWA and SDO With Need for Closure*

In the current study, need for closure (and in particular NFSS) was found to influence both RWA and (although to a lesser extent) SDO, as well as conservative beliefs and racism. On the basis of their psychometric analyses, Neuberg, Judice, et al. (1997) advanced the hypothesis that the two quasi-orthogonal factors of the Need for Closure scale might map the seizing and freezing processes underlying the need for closure. The seizing process, characterized by an urgent desire to gain a quick, nonspecific solution, manifests itself as a preference for Decisiveness. The freezing process, in turn, characterized by a desire to maintain with some degree

of permanence the specific solution seized on, has a dispositional analogue in the NFSS. From this point of view, the present results show that the freezing process bears a significant relation with RWA and SDO as well as with conservative beliefs and racism, whereas the seizing process does not show such a relation. This result corroborates previous research (Kossowska & Van Hiel, 2003), in which conservatism was shown to be unrelated to Decisiveness but to relate to all the other need for closure dimensions.

In the current study, the effects of NFSS on conservative beliefs and racism were fully mediated by RWA but only partly by SDO. The result that the relationship between NFSS and conservative beliefs and racism is fully mediated by RWA is not surprising. Both RWA and need for closure have been shown to relate to cognitive simplification. Individuals high on RWA have been shown to exert little effort in information processing, leading to overly simplified judgments (see above). Moreover, the need for closure has been associated with, for example, low levels of cognitive complexity, a greater proneness to use cognitive heuristics, and a less extensive search for information (see above). In sum, both the present and past findings suggest that cognitive closure is a “cognitive miser” option and that cognitive misers are prone to RWA-based conservatism and prejudice. The present results suggest that quantitative differences in information processing lead to high RWA levels, which, in turn, lead to conservative beliefs and racism. Although the present results did not delineate such clear cognitive correlates of SDO-based prejudice, it is possible that high SDO scorers might evince qualitative differences in information processing. For example, individuals high in SDO might be oriented to focus heavily on pro-attitudinal information and to ignore, discredit, or reinterpret counterattitudinal information (e.g., Davies, 1998), or they might be particularly unmotivated to correct for discordant information (e.g., Skitka, Mullen, Griffin, Hutchinson, & Chamberlin, 2002). The search for cognitive style variables that underlie SDO-based prejudice is clearly an interesting avenue for future research.

#### *Theoretical and Practical Implications*

The present results show that a structural equation model in which authoritarianism was hypothesized to mediate the effects of need for closure on conservative beliefs and racism (Model 2) was found to fit our data better than a structural equation model in which need for closure was hypothesized to mediate the effects of authoritarianism (Model 1). This result corroborates a conceptualization of authoritarian submission and authoritarian dominance in terms of enduring beliefs rather than in terms of personality characteristics. The

present results contribute to the recent literature on the status of authoritarianism. In this respect, Guimond, Dambrun, Michinov, and Duarte (2003) distinguished between a personality, a moderator, and a mediator model of authoritarian-based prejudice. The personality model posits that authoritarianism is a personality characteristic that can explain prejudice independent of immediate social contextual factors (see Guimond et al., 2003). However, Reynolds, Turner, Haslam, and Ryan (2001) and Verkuyten and Hagendoorn (1998) have shown that the impact of situational variables on the expression of authoritarianism should not be overlooked. Guimond et al. (2003) refer to this position as the Person  $\times$  Situation model or the moderator model. In this model, the effect of authoritarianism on prejudice depends on situational variables, with authoritarianism predicting prejudice in some situations but not in others. In the third model—the mediator model—situational variables are considered independent variables that have an effect on both authoritarianism (i.e., the mediator) and prejudice (i.e., the dependent variable). In this model, the effect of the situational variables on prejudice is thought to disappear when authoritarianism is taken into account (see Guimond et al., 2003). Hence, both in the personality model and the moderator model, authoritarianism can be considered as a stable, enduring personality disposition, whereas in the mediator model, authoritarianism is a prejudice disposition that is influenced by situational variables. In line with our results, Guimond et al. (2003) showed a better fit of the mediator model, although they only included authoritarian dominance (or SDO) in their mediation model. In sum, both the present results and the results of Guimond et al. (2003) are incompatible with the perspective that authoritarianism is a deeply ingrained prejudice disposition. Instead, RWA and SDO should be considered dynamic variables, or social attitudes and beliefs of a broadly ideological nature (Duckitt, 2001; Duckitt et al., 2002).

Besides the theoretical implications of the present model of need for closure, authoritarianism, and conservative beliefs and racism, this model also has important practical implications; that is, educational programs aimed at reducing people’s need for closure (and in particular people’s need for simple structure) might be effective in tackling the societal problems of racism. In particular, these results suggest that such programs might be fruitful because they reduce the authoritarianism level. In turn, this can be expected to reduce the level of racism. Moreover, because authoritarianism has been reported to instigate prejudice against all sorts of outgroups and minorities such as psychiatric patients, women, and gay people, it can be hypothesized that this sort of intervention is applicable to the reduc-

tion of many instances of prejudice, stereotyping, and discrimination.

However, the present results also show that SDO only partly mediates the effects of NFSS on conservative beliefs and racism. This suggests a differential genesis of RWA and SDO. This finding also has important practical implications. It suggests that a high NFSS is mainly typical of the submissive type of authoritarians. On the basis of these results, educational programs aimed at reducing people's need for closure can be expected to have a substantial reductive effect on people's level of RWA, but at the same time, these educational programs can be expected to be a lot less effective in reducing people's level of SDO. Hence, whereas these educational programs can be expected to substantially reduce the level of racism among the submissive type of authoritarians, their impact on the dominant type of authoritarians can be expected to be more limited. To be able to successfully develop educational programs targeted at reducing SDO, more insight in the genesis of SDO is required.

#### NOTES

1. In this section, the summary results of several exploratory factor analyses are reported. An addendum with more detailed results can be obtained from the authors upon mere request.

2. In all subsequent models, the covariance matrix among the parcels was used as input. For reasons of parsimony, the covariance matrices are not reported. However, they can be obtained from the authors on request.

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