Differential Effects of Right Wing Authoritarianism and Social Dominance Orientation on Outgroup Attitudes and Their Mediation by Threat From and Competitiveness to Outgroups

John Duckitt
University of Auckland, New Zealand

A dual-process model of individual differences in prejudice proneness proposes that Right Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO) will influence prejudice against particular outgroups through different motivational mechanisms. RWA should cause negative attitudes toward groups seen as threatening social control, order, cohesion, and stability, such as deviant groups, and negativity toward these groups should be mediated through perceived threat from them. SDO should cause negative attitudes toward groups that activate competitiveness over relative dominance and superiority, such as socially subordinate groups low in power and status, and negativity toward these groups should be mediated through competitiveness toward them. Findings from four student samples that assessed attitudes toward seven social groups selected as likely to vary systematically in social threat and social subordination supported these predictions. The findings have implications for reconciling intergroup and individual difference explanations of prejudice and for interventions to reduce prejudice.

Keywords: *Right Wing Authoritarianism; Social Dominance Orientation; intergroup threat; intergroup competition; prejudice; intergroup attitudes*

Two approaches have dominated inquiry into the causes of prejudice and intergroup hostility. One approach sees prejudice as a group phenomenon and explains it in terms of intergroup processes (Sherif, 1967; Tajfel & Turner, 1979). A second, which has been relatively neglected for the past half century, sees prejudice as an attitude held by individuals and explains it in terms of stable individual differences in personality or social attitudes (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950). This second approach is the focus of the present investigation.

Individual Difference Explanations of Prejudice

Empirical support for the individual differences approach to explaining prejudice comes from research showing that persons who are less favorable to one outgroup or minority are less favorable to others as well, seemingly irrespective of the characteristics of these outgroups or their relationship to the ingroup (Adorno et al., 1950; Allport, 1954; Altemeyer, 1988). This "generality of prejudice" has supported theories focusing on relatively stable characteristics of individuals that make them prone to hold prejudiced intergroup attitudes in general.

The two most prominent individual difference theories of prejudice have been the authoritarian personality and social dominance orientation approaches. An authoritarian personality dimension was originally described by Adorno et al. (1950), who measured this construct using their famous but seriously flawed F scale. The construct was later refined by Altemeyer (1981, 1988, 1998), who developed his Right Wing Authoritarianism (RWA) scale from those items of the original F scale that did covary strongly enough to define a uni-

Author's Note: I would like to thank Nickola Overall and Boris Bizumic for their helpful comments on this article. Correspondence concerning this article should be addressed to John Duckitt, Department of Psychology, University of Auckland, Private Bag 92019, Auckland, New Zealand; e-mail: j.duckitt@auckland.ac.nz.

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dimensional construct. Altemeyer (1981) suggested that these items assessed three covarying traits of conventionalism, authoritarian aggression, and authoritarian submission. Social dominance orientation (SDO) was conceptualized and measured by Sidanius and Pratto (1993, 1999) as a "general attitudinal orientation toward intergroup relations, reflecting whether one generally prefers such relations to be equal versus hierarchical" and the "extent to which one desires that one's ingroup dominate and be superior to outgroups" (Pratto, Sidanius, Stallworth, & Malle, 1994, p. 742).

Numerous studies have shown that the RWA and SDO scales powerfully and independently predict a wide range of political, ideological, and intergroup phenomena and are particularly powerful predictors of generalized negativity to minorities and outgroups (Altemeyer, 1988, 1998; McFarland, 1998; McFarland & Adelson, 1996; Sidanius & Pratto, 1999). The issue of what exactly the RWA and SDO scales are measuring has caused debate. Adorno et al. (1950), and more recently Altemeyer (1981, 1998), assumed that the items of their F and RWA scales, although formulated as statements of social attitude, actually measured an underlying dimension of personality that causes a need for prejudice. However, this assumption has never been empirically supported. In addition, research has shown that both the RWA and SDO scales correlate most powerfully with attitude and value measures (Duriez & Van Hiel, 2002; Heaven & Conners, 2001; Saucier, 2000) and are both significantly reactive to situational manipulations (Altemeyer, 1988; Duckitt & Fisher, 2003; Guimond, Dambrun, Michinov, & Duarte, 2003; Sales, 1973; Schmitt, Branscombe, & Kappen, 2003). These findings suggest that the RWA and SDO scales are measuring social attitude dimensions of a broadly ideological nature rather than personality.

This view of RWA and SDO as social attitude dimensions raises two questions that had been obscured by the original personality assumption. First, what are the social and psychological bases of RWA and SDO? Second, how or through what mechanisms do RWA and SDO influence prejudice? A dual-process, cognitive-motivational model of individual differences in prejudice attempts to answer both of these questions (Duckitt, 2001; Duckitt, Wagner, du Plessis, & Birum, 2002), but only research pertaining to the first of these two questions has been reported thus far. The next section briefly describes this model and research testing it before outlining its predictions pertaining to the second question, which is investigated in the research reported here.

A Cognitive-Motivational Model of Personality, Ideology, and Prejudice

The dual-process model proposes that the two social attitude dimensions of RWA and SDO express motivational goals made chronically salient for individuals by their personalities and social worldviews. RWA expresses the value or motivational goal of societal or group security and order (obtained through establishing and maintaining societal or group control, stability, and cohesion) generated by a view of the social world as dangerous and threatening. The predisposing personality dimension is that of social conformity.

In the case of SDO, the model proposes that the underlying personality dimension is that of tough-mindedness, characterized by traits of being hard, tough, ruthless, and unfeeling to others, as opposed to compassionate, generous, caring, and altruistic. Toughminded personalities tend to adopt a view of the world as a ruthlessly competitive jungle in which the strong win and the weak lose. This "social Darwinist" view of the world makes salient the value or motivational goals of group power, dominance, and superiority over others, which is expressed in the social attitudes of high SDO.

These two worldviews (of the social world as dangerous and threatening or as a social Darwinist competitive jungle) should generally be relatively stable reflections of individuals' personalities and socialization but also should be influenced by their real social situations. Thus, social situations that become markedly more dangerous and threatening could shift individuals' worldviews in that direction and increase authoritarianism. Social situations characterized by high levels of inequality and competition over power and status should produce a competitive-jungle or social Darwinist worldview and so increase social dominance. This causal model of personality, social situation, worldview, ideological social attitudes, and prejudice is summarized in Figure 1. As depicted, the influences of personality, the social situation, and individuals' worldviews on intergroup attitudes are indirect and mediated through their impact on the two ideological value-attitude dimensions of RWA and SDO.

A series of studies using structural equation modeling with latent variables showed excellent overall fit for the causal relationships proposed among the two personality dimensions, two worldview dimensions, two ideological attitude dimensions, and intergroup attitudes for large samples in New Zealand, South Africa, and the United States (Duckitt, 2001; Duckitt et al., 2002). An experiment also showed that manipulating societal threat (using future scenarios) increased RWA, but not SDO, with the effect being entirely mediated through an increased perception of the social world as dangerous and threatening (Duckitt & Fisher, 2003).

However, the second half of this model, which proposes an explanation for how RWA and SDO influence intergroup attitudes, has not yet been systematically

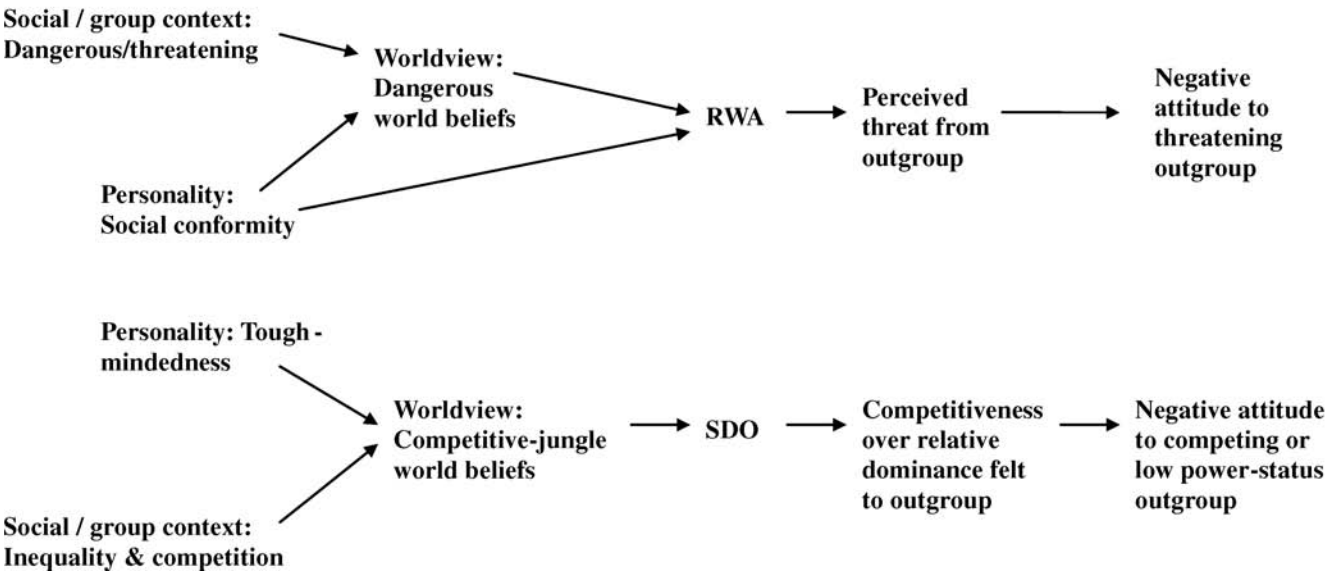

Figure 1 **A causal model of the impact of personality, social situation, and worldview on the two ideological attitude-value dimensions of Right Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO) and their impact on outgroup attitudes mediated through perceived threat from the outgroup or competitiveness toward the outgroup.**

tested (see right half of Figure 1). This portion of the model is the focus of the present research.

Explaining the Effect of RWA and SDO on Intergroup Attitudes

The model suggests that RWA and SDO should predict negative attitudes toward different outgroups. RWA expresses threat-driven motivation to establish and maintain social or group security in the form of social control, order, cohesion, and stability. Consequently, persons high in RWA should dislike groups that seem to threaten societal or group security. SDO, on the other hand, expresses competitively driven motivation to maintain or establish group dominance and superiority so that persons high in SDO would dislike and devalue outgroups that aroused their competitiveness over intergroup status or power differentials. These could be directly competing outgroups, which would activate competitive desires to establish dominance, or subordinate outgroups, which would activate competitive desires to justify and maintain relative dominance (see Figure 1).

In practice, RWA and SDO will not always predict prejudice against different groups because the same groups often may be seen as both socially threatening and socially subordinate so that both RWA and SDO will predict negative attitudes to them, although for different reasons. This is typically the case for ethnic minority groups because they are invariably low in power and status and also often deviate from majority group values and norms. Directly competing outgroups (enemy or rival groups) also should elicit both RWA and SDO motivated prejudice because direct intergroup competition should activate both competitive desires to establish dominance and threat perceptions.

Attitudes to these two kinds of outgroups have been most studied in research on prejudice. This is not surprising because it is precisely these groups that would experience most prejudice and discrimination. As a result, most research on prejudice has supported the widely held conclusion that both RWA and SDO predict outgroup prejudice (Altemeyer, 1998, Duriez & Van Hiel, 2002; McFarland, 1998; McFarland & Adelson, 1996; Pratto et al., 1994). The current model, however, suggests that outgroups that elicit either perceived threat or competitiveness over relative superiority, and not both, will reveal theoretically meaningful exceptions to this pattern by showing differential effects for RWA and SDO on outgroup prejudice.

The model also implies a differential mediation hypothesis. The effect of RWA on negative outgroup attitudes should be mediated by perceived threat from outgroups, whereas the effect of SDO should be mediated by competitiveness over relative dominance and superiority. Again, there has been little relevant research, although several studies have reported findings that seem consistent with this hypothesis. Esses, Haddock, and Zanna (1993) found that the effect of RWA on antigay prejudice was mediated by perceived threat, and research by Esses, Jackson, and Armstrong (1998) found that the effect of SDO on negative attitudes to a bogus

TABLE 1: Ratings of Likelihood of Target Groups Being Seen as "Socially Threatening/Deviant" and "Socially Subordinate" in the Pilot Study ($N = 22$) and Research Hypotheses

	Ratings of				*Research Hypotheses for Groups*	
	Threat		*Subordination*			
Target Groups	M	SD	M	SD	*Group Negativity Predicted by:*	*Effect Mediated by:*
Socially deviant/threatening, but not subordinate, groups					RWA	Perceived threat
Rock stars	6.36[a]	1.68	2.96[b]	1.84		
Drug dealers	7.23[a]	1.66	3.50[b]	1.97		
Socially subordinate, but not deviant/threatening, groups					SDO	Competitiveness
Physically disabled	2.09[b]	1.82	7.27[a]	1.78		
Housewives	2.64[b]	2.01	7.18[a]	1.50		
Unemployed	3.86[b]	2.46	7.36[a]	1.59		
Both socially subordinate and deviant/threatening group					RWA & SDO	Threat & competitiveness
Feminists	6.45[a]	2.58	6.64[a]	2.08		
Neither subordinate nor deviant/threatening groups					No effect	No effect
Business leaders	2.68[b]	1.99	2.27[b]	1.70		
Medical specialists	2.72[b]	1.70	2.86[b]	1.67		

NOTE: RWA = Right Wing Authoritarianism; SDO = Social Dominance Orientation.
a. Denotes mean was significantly above rating scale midpoint.
b. Denotes mean was significantly below rating scale midpoint.

immigrant group was mediated by perceived economic competition from that group (see also Esses, Dovidio, Jackson, & Armstrong, 2001; Jackson & Esses, 2000). However, because these studies examined either RWA and threat or SDO and competitiveness separately, they could not show if perceived intergroup threat and competitiveness mediated the effects of RWA and SDO differentially.

Objectives of the Research

This research set out to investigate the differential effect and differential mediation hypotheses for RWA and SDO on outgroup attitudes. To test these hypotheses, it was necessary to assess attitudes to social groups that were likely to vary systematically in the degree to which they would be seen as socially deviant (i.e., threatening conventional norms, values, and traditions) and as socially subordinate (i.e., low in social status and power).

A list of social groups was prepared drawing largely from the groups used by Fiske, Cuddy, Glick, and Xu (2002) in their study of social stereotype content. Two small ad hoc groups of postgraduate social psychology students (total $N = 22$) were used as expert judges to rate the extent to which these social groups or categories were likely to be seen by the average person in New Zealand as (a) "likely to threaten, disrupt, or violate mainstream New Zealand society's conventional norms, values, and traditions" and (b) as "being, or representing, social groups or categories of persons likely to be generally viewed as socially disadvantaged, subordinate, low in power, influence, and prestige in New Zealand society."

Ratings were on a 9-point scale with 1 denoting *definitely not*, the midpoint 5 denoting *unsure or intermediate,* and 9 denoting *definitely yes*. The intention was to obtain at least one and ideally two groups that were rated high on both dimensions (taken as group mean ratings that were statistically significantly higher than the midpoint of 5 on the rating scale), low on both dimensions (taken as group mean ratings that were statistically significantly lower than the midpoint of 5 on the rating scale), high on deviance and low on subordination, and low on deviance and high on subordination. Eight of the social groups that had been rated in this pilot study fell clearly into these four categories and were selected as target groups for the research. Their mean ratings are shown in the first five columns of Table 1.

These mean ratings suggested that two groups were likely to be seen as socially threatening but not socially subordinate: rock stars and drug dealers; three were likely to be seen as socially subordinate but as not as so-

cially threatening: housewives, physically disabled persons, and unemployment beneficiaries; one group seemed likely to be seen as both socially subordinate and threatening: feminists; and two groups were seen as neither high in social threat nor as socially subordinate: business leaders and medical specialists. One of these target groups—medical specialists—was ultimately not used in the research because there was too little time for the section of the questionnaire dealing with it to be completed. These seven groups, however, seemed to provide an adequate sampling of social groups varying in social threat and social subordination to test the hypotheses for this research. These hypotheses are summarized in the last two columns of Table 1.

METHOD

Samples and Questionnaires

Four questionnaires were administered at the end of laboratory classes to four samples of undergraduate students at Auckland University during 2001 and 2002. The questionnaires used the same items, with each questionnaire assessing RWA and SDO, and then perceived threat from, competitiveness toward, and attitudes toward two of the target groups. Four different questionnaires were needed because pilot testing had shown that questionnaires with more than two target groups were too long to be to be completed in the time available for the research. The target groups and samples for the four questionnaires were as follows:

1. Attitudes toward housewives and drug dealers administered to 98 students with a mean age of 21.7 years (SD = 6.1), of whom 65.3% were female.
2. Attitudes toward business leaders and rock stars administered to 129 students with a mean age of 20.6 years (SD = 5.5), of whom 66.7% were female.
3. Attitudes toward feminists administered to 117 students with a mean age of 20.6 years (SD = 5.1), of whom 67.4% were female.
4. Attitudes toward unemployment beneficiaries and physically disabled persons administered to 134 students with a mean age of 19.8 years (SD = 4.3), of whom 67.2% were female.

Measures of RWA and SDO

The short-balanced RWA scale consisted of 12 items randomly sampled from Altemeyer's (1996) RWA scale so that there were equal numbers of positively and negatively worded items. The alpha coefficients in the four samples ranged from .76 to .86.

The short-balanced SDO scale consisted of 10 items randomly sampled from Pratto et al.'s (1994) SDO scale, again with equal numbers of positively and negatively worded items. The alpha coefficients in the four samples ranged from .75 to .83.

Measures of Perceived Outgroup Threat and Outgroup Competitiveness

Two measures were developed to assess perceived social threat from and competitiveness toward outgroups. Both measures had eight Likert items with equal numbers of positively and negatively worded items.

Perceived social threat. The perceived social threat items were selected or written to assess the perception of threat from any group or category of persons with the target group designated in the instructions and a heading. High threat items described the target group as undermining important social values, norms, and traditions and threatening security and stability in society (e.g., "They seem to want to destroy or harm what is good in our society"), whereas low threat items described the target group as strengthening important social norms, values, and traditions and therefore making society safer, stronger, and more united (e.g., "They strengthen values, norms, and traditions that are important to people like me"). Initial item pools were written according to this construct definition with items adapted mainly from the symbolic and realistic threat scales used by Stephan, Ybarra, Martinez, Schwarzwald, and Tur-kaspa (1998) but formulated at a higher level of generality. These item pools were then content validated by two independent judges for fidelity to the construct definition, and those content-validated items finally were tested on small student samples to select those with the highest item reliabilities for inclusion in the final balanced eight-item perceived social threat scale. These eight items are shown in the appendix. The alpha coefficients for perceived threat from the seven target groups ranged from .67 to .90, indicating adequate internal consistency reliabilities for a measure of this length.

Group competitiveness. The group competitiveness items were selected or written to assess competitiveness toward any social group or category of persons, with the target group designated in the instructions and a heading. High competitiveness items were written to express a zero-sum competitive orientation toward the target group (e.g., "If they make economic gains, people like me will be worse off") and low competitiveness items to express a cooperative, altruistic orientation to the target group (e.g., "It would be to our advantage for them to get more resources"). These definitions were used to write items or guide selection from existing measures of intergroup zero-sum competitive orientation, particularly those used by Esses et al. (1998) and Fiske et al. (2002). These items were then content validated and empirically tested on small student samples to obtain a balanced and reliable eight-item scale and are shown in the appendix. The alpha coefficients for competitiveness to each of the

seven target groups ranged from .75 to .89, indicating adequate internal consistency reliabilities.

Measure of Group Attitude

Sixteen Likert items were used to assess group evaluation or attitude, with equal numbers of items expressing positive and negative evaluation. This set of items was initially intended to try and assess two aspects of group evaluation, with a balanced set of eight items to assess respecting versus disrespecting and another balanced set of eight items to assess liking versus disliking, with the two sets of items conceptualized as the attitudinal equivalents of the two stereotype dimensions of competence and warmth described by Fiske, Xu, Cuddy, and Glick (1999).

For respect versus disrespect, positively worded items expressed respect and admiration for the possession of abilities related to social success and achievement (e.g., "I admire them for their real strength and personal power") and negatively worded items expressed disrespect and disdain for characteristics associated with failure, weakness, and incompetence (e.g., "They don't seem to have much initiative and energy"). For liking versus disliking, positively worded items expressed liking and the attribution of positive moral and interpersonal qualities (e.g., "I like them for their honesty and generosity"), whereas negatively worded items expressed dislike based on the attribution of negatively valued moral and interpersonal qualities (e.g., "I believe they are often bad people").

These two item pools were content validated by two independent judges and tested on small student samples. This testing indicated that the two sets of items were highly correlated and scaled as a single group attitude dimension. These items were therefore used as a single measure of group attitude, with alpha coefficients for the seven target groups ranging from .84 to .92.

RESULTS

Expectation maximization (Schafer, 1997) was used to replace isolated missing values in the four data sets (less than 1% in each data set) so that the full samples were used for all the analyses.

Correlational Analyses

The correlations between the five measures for the seven target groups are shown in Tables 2 through 5. Before considering the hypothesized effects of RWA and SDO on attitudes to each group, two other sets of variable intercorrelations merit comment; first, the correlations of perceived threat from and competitiveness toward each group with attitudes toward the group and, second, the intercorrelations between perceived threat and competitiveness for each of the target groups.

TABLE 2: Intercorrelations of RWA, SDO, Threat From, Competitiveness to, and Attitude to Housewives (below the diagonal) and Drug Dealers (above the diagonal) for Sample 1 (n = 98)

Measures	*1*	*2*	*3*	*4*	*5*
RWA	—	.32**	.53**	.41**	–.49**
SDO	.32**	—	.06	.22**	–.11
Threat	.10	.18	—	.45**	–.67**
Competitiveness	.18	.62**	.26*	—	–.40**
Group attitude	–.06	–.47**	–.37**	–.64**	—

NOTE: RWA = Right Wing Authoritarianism; SDO = Social Dominance Orientation.
*p < .05. **p < .01.

TABLE 3: Intercorrelations of RWA, SDO, Threat From, Competitiveness to, and Attitude to Business Leaders (below the diagonal) and Rock Stars (above the diagonal) for Sample 2 (n = 129)

Measures	*1*	*2*	*3*	*4*	*5*
RWA	—	.09	.51**	.18*	–.31**
SDO	.09	—	–.17	.13	.04
Threat	–.04	–.14	—	.42**	–.61**
Competitiveness	–.11	–.02	.66**	—	–.55**
Group attitude	–.07	.08	–.73**	–.68**	—

NOTE: RWA = Right Wing Authoritarianism; SDO = Social Dominance Orientation.
*p < .05. **p < .01.

TABLE 4: Intercorrelations of RWA, SDO, Threat From, Competitiveness to, and Attitude to Unemployment Beneficiaries (below the diagonal) and Physically Disabled Persons (above the diagonal) for Sample 3 (n = 134)

Measures	*1*	*2*	*3*	*4*	*5*
RWA	—	.15	.16	.19*	–.07
SDO	.15	—	.24**	.43**	–.35**
Threat	.11	.06	—	.58**	–.69**
Competitiveness	.19*	.27**	.43**	—	–.68**
Group attitude	.01	–.27**	–.57**	–.54**	—

NOTE: RWA = Right Wing Authoritarianism; SDO = Social Dominance Orientation.
*p < .05. **p < .01.

TABLE 5: Intercorrelations of RWA, SDO, Threat From, Competitiveness to, and Attitude to Feminists for Sample 4 (n = 117)

Measures	*1*	*2*	*3*	*4*	*5*
RWA	—				
SDO	.10	—			
Threat	.36**	.38**	—		
Competitiveness	.22*	.38**	.81**	—	
Group attitude	–.36**	–.34**	–.71**	–.73**	—

NOTE: RWA = Right Wing Authoritarianism; SDO = Social Dominance Orientation.
*p < .05. **p < .01.

Correlations of perceived threat and competitiveness with group attitudes. Theoretically perceived threat from and competitiveness to outgroups should be negatively correlated with attitudes to those groups (i.e., associated with more negative attitudes). The findings supported this for each target group with these correlations varying from moderate (–.37 for perceived threat with attitudes to housewives) to strong (–.73 for competitiveness with attitudes to feminists).

Correlations between perceived threat and competitiveness. Perceived threat from and competitiveness to each group should be positively correlated because perceiving threat from an outgroup also should generate competitive feelings to that outgroup, and feeling competitive to an outgroup also should generate perceptions of threat from that outgroup. The findings supported this, with all seven correlations positive and significant. However, the magnitude of these effects (cf. Cohen, 1988) varied, being weak for housewives (.26); moderate for rock stars (.42), unemployed persons (.43), and drug dealers (.45); strong for physically disabled persons (.58); and very strong for business leaders (.66) and feminists (.81).

The magnitude of these correlations when corrected for attenuation due to unreliability (Lord & Novick, 1968) suggested that these two measures were clearly tapping different dimensions for all target groups except for the two groups, business leaders and feminists, that had been rated as likely to be seen high or low on both dimensions. In these two instances, the correlations corrected for attenuation suggested that these two measures either approached unidimensionality (business leaders, $r = .80$) or were effectively unidimensional (feminists, $r = .90$). This was confirmed for the two measures for feminists using confirmatory factor analysis, with the χ^2 difference (3.32, $df = 1$, $p > .05$) indicating no significant difference between a more parsimonious one-factor, item-level solution ($\chi^2 = 204.4$, $df = 87$) and a two-factor, item-level solution ($\chi^2 = 202.1$, $df = 86$). For this reason, the measures of perceived threat from and competitiveness to feminists were summed to give a composite threat-competitiveness measure to be used for the mediational analyses for that group. No mediational analysis was conducted for business leaders because neither RWA nor SDO correlated significantly with attitudes to this group, indicating that there could be no mediated effect (Baron & Kenny, 1986).

Correlations of RWA and SDO with group attitudes. The correlations of RWA and SDO with group attitudes (Tables 2-5) were consistent with the differential effect hypothesis. RWA was significantly correlated with negativity to the socially threatening or deviant groups, drug dealers and rock stars, whereas SDO was not. SDO was significantly correlated with negativity to the socially subordinate groups, housewives, physically disabled persons, and unemployment beneficiaries, whereas RWA was not. Both RWA and SDO were significantly associated with negativity to feminists (socially threatening and socially subordinate), whereas neither RWA nor SDO were significantly associated with negativity to business leaders (neither socially threatening nor socially subordinate).

Mediational Analyses Using Structural Equation Modeling (SEM)

A series of maximum likelihood SEM analyses were used to test (a) if the significant effects obtained for RWA on attitudes to drug dealers and rock stars were mediated by perceived threat and not competitiveness; (b) if the significant effects for SDO on attitudes to housewives, physically disabled persons, and unemployment beneficiaries were mediated through competitiveness and not perceived threat; and (c) if the significant effects of both RWA and SDO on attitudes to feminists were mediated through the composite perceived threat-competitiveness measure. The path coefficients and fit indices for these six models are shown in Figures 2 through 7. Because a significant relationship between predictor and criterion variables is an essential precondition for mediation (Baron & Kenny, 1986), only the significant predictor variable or variables (i.e., RWA, SDO, or both) were included in these SEM analyses testing for mediation.[1]

Item parceling was used to create manifest indicators for the analyses. Item parceling provides more reliable indicators than individual items, enables the use of balanced indicators that control direction of wording effects, and requires the estimation of fewer parameters, making it more suitable for the relatively small samples used here (Little, Cunningham, Shahar, & Wdamen, 2002). The use of at least three manifest indicators per latent variable has been recommended to avoid problems with identification, nonconvergence, and negative variance estimates (Bollen, 1989). Consequently, the items for each of the scales were randomly assigned to one of three manifest indicators with equal numbers of positively and negatively worded items in each indicator. The manifest indicators for each scale were allowed to relate only to their one latent variable in the analyses. Model fit was assessed using Hu and Bentler's (1999) recommendations that good fit would be indicated by values close to or better than .06 for root mean square error of approximation (RMSEA), .08 for standardized root mean square residual (SRMR), .95 for Comparative Fit Index (CFI), and Bollen and Long's (1993) suggestion that the χ^2/df ratio should be close to or less than 2.

To test for mediation, each model included both direct paths from RWA/SDO to group attitudes and indi-

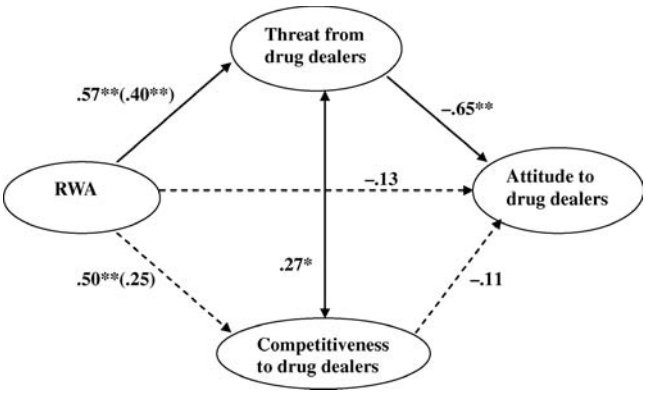

Figure 2 Standardized maximum likelihood coefficients for the structural equation model of direct and mediated (through competitiveness and perceived threat) effects of Right Wing Authoritarianism (RWA) on attitudes to drug dealers (n = 98).

NOTE: To simplify, manifest variables and the paths from latent to manifest variables are not shown. The model has a correlated error between threat and competitiveness (basic model). The beta in parentheses from RWA to perceived threat was computed for the same model substituting a direct path from competitiveness to threat for the correlated error (controlling for the effect of competitiveness on threat), whereas the beta in parentheses from RWA to competitiveness was computed for the same model substituting a direct path from threat to competitiveness for the correlated error (controlling for the effect of threat on competitiveness). The fit indices for the basic model were χ^2 = 67.8, df = 48, χ^2/df = 1.41, root mean square error of approximation (RMSEA) = .065, standardized root mean square residual (SRMR) = .059, Comparative Fit Index (CFI) = .98. Nonsignificant paths are shown as broken arrows.

*p < .05. **p < .01.

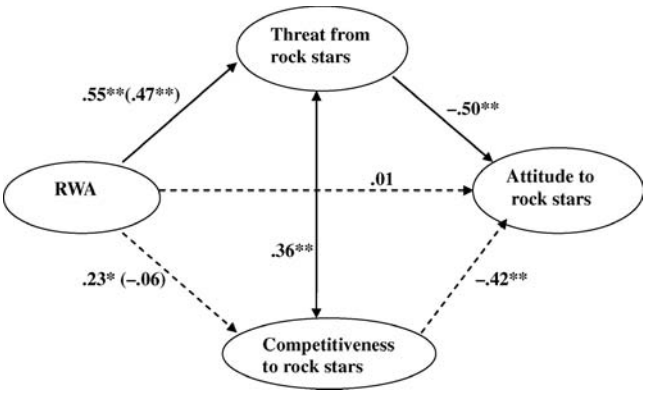

Figure 3 Standardized maximum likelihood coefficients for the structural equation model of direct and mediated (through competitiveness and perceived threat) effects of Right Wing Authoritarianism (RWA) on attitudes to rock stars (n = 129).

NOTE: To simplify, manifest variables and the paths from latent to manifest variables are not shown. The model has a correlated error between threat and competitiveness (basic model). The beta in parentheses from RWA to perceived threat was computed for the same model substituting a direct path from competitiveness to threat for the correlated error (controlling for the effect of competitiveness on threat), whereas the beta in parentheses from RWA to competitiveness was computed for the same model substituting a direct path from threat to competitiveness for the correlated error (controlling for the effect of threat on competitiveness). The fit indices for the basic model were χ^2 = 67.8, df = 48, χ^2/df = 1.41, root mean square error of approximation (RMSEA) = .065, standardized root mean square residual (SRMR) = .055, Comparative Fit Index (CFI) = .98. Nonsignificant paths are shown as broken arrows.

*p < .05. **p < .01.

rect paths through both perceived threat and competitiveness. Ideally, the model should have included reciprocal causal impacts of perceived threat and competitiveness on each other because this would then control for the effects of each of these variables on each other, eliminating spuriously significant mediational effects. For example, if RWA had a significant path to perceived threat, the positive relationship between perceived threat and competitiveness could produce a spurious effect of RWA on competitiveness that might attain significance.

Unfortunately, modeling reciprocal causal paths between perceived threat and competitiveness made the models overly complex, resulting in nonidentification and/or failures to converge. Because of this, a correlated error was modeled between perceived threat and competitiveness in the basic model. This would not control for the effects of threat and competitiveness on each other because it merely correlated the residuals so that spurious mediational effects would be possible. To assess whether mediational effects might be spurious, each analysis was repeated twice, substituting unidirectional causal paths between threat and competitiveness for the correlated error. Modeling a unidirectional causal path from competitiveness to threat would therefore compute the path coefficients from SDO/RWA to threat with the effects of competitiveness on threat controlled, whereas modeling a unidirectional causal path from threat to competitiveness would compute the path coefficients from SDO/RWA to competitiveness with threat controlled.

Figures 2 through 7 show the path coefficients obtained for the basic model (i.e., with the correlated error between threat and competitiveness) and also show in parentheses the path coefficients from SDO or RWA to threat with competitiveness controlled and from SDO or RWA to competitiveness with threat controlled. Significant path coefficients from SDO or RWA to threat or competitiveness for the basic model (with the correlated error) would suggest mediational effects that might or might not be spurious. If the corresponding coefficients in parentheses were not significant, this would suggest that the effect had indeed been spurious and due to the effects of threat or competitiveness on each other.

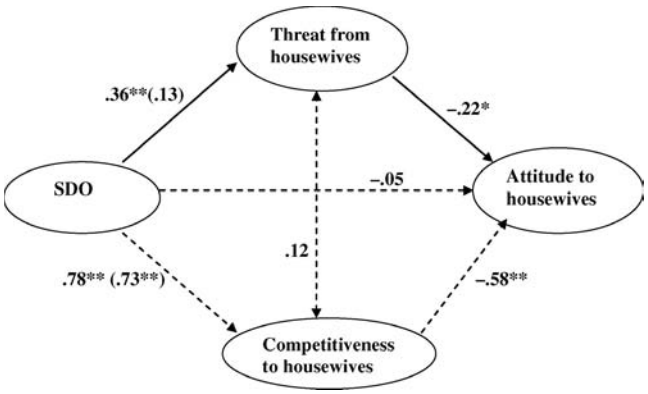

Figure 4 Standardized maximum likelihood coefficients for the structural equation model of direct and mediated (through competitiveness and perceived threat) effects of Social Dominance Orientation (SDO) on attitudes to housewives (n = 98).

NOTE: To simplify, manifest variables and the paths from latent to manifest variables are not shown. The model has a correlated error between threat and competitiveness (basic model). The beta in parentheses from SDO to perceived threat was computed for the same model substituting a direct path from competitiveness to threat for the correlated error (controlling for the effect of competitiveness on threat), whereas the beta in parentheses from SDO to competitiveness was computed for the same model substituting a direct path from threat to competitiveness for the correlated error (controlling for the effect of threat on competitiveness). The fit indices for the basic model were χ^2 = 67.8, df = 48, χ^2/df = 1.41, root mean square error of approximation (RMSEA) = .065, standardized root mean square residual (SRMR) = .057, Comparative Fit Index (CFI) = .98. Nonsignificant paths are shown as broken arrows.

*p < .05. **p < .01.

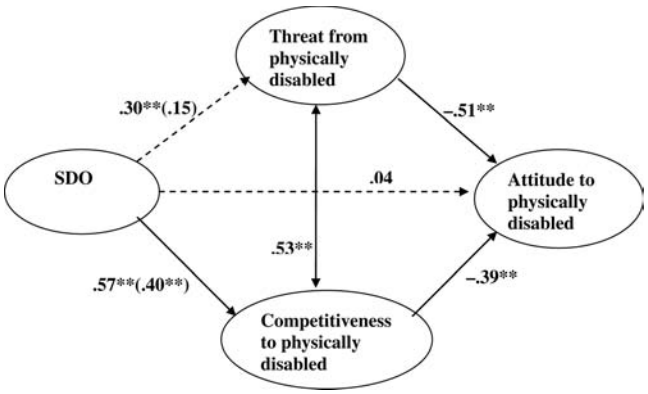

Figure 5 Standardized maximum likelihood coefficients for the structural equation model of direct and mediated (through competitiveness and perceived threat) effects of Social Dominance Orientation (SDO) on attitudes to physically disabled persons (n = 134).

NOTE: To simplify, manifest variables and the paths from latent to manifest variables are not shown. The model has a correlated error between threat and competitiveness (basic model). The beta in parentheses from SDO to perceived threat was computed for the same model substituting a direct path from competitiveness to threat for the correlated error (controlling for the effect of competitiveness on threat), whereas the beta in parentheses from SDO to competitiveness was computed for the same model substituting a direct path from threat to competitiveness for the correlated error (controlling for the effect of threat on competitiveness). The fit indices for the basic model were χ^2 = 67.8, df = 48, χ^2/df = 1.41, root mean square error of approximation (RMSEA) = .065, standardized root mean square residual (SRMR) = .045, Comparative Fit Index (CFI) = .99. Nonsignificant paths are shown as broken arrows.

**p < .01.

The fit indices for the six models (shown in the captions to Figures 2 through 7) indicated good or acceptable fit. Figures 2 through 7 show that none of the direct paths from RWA or SDO to group attitudes were significant. Thus, consistent with expectation, the effects of RWA or SDO on group attitudes were fully mediated through threat or competitiveness in every case, or in the case of attitudes to feminists through the composite threat-competitiveness measure (see Figure 7).

The next issue to be examined was whether the significant associations between RWA and group attitudes would be mediated through threat only, and whether the significant associations of SDO with group attitudes would be mediated through competitiveness only. The results supported this in every case. Thus, the analyses for the two target groups for which RWA had predicted group attitudes (drug dealers in Figure 2, rock stars in Figure 3) showed strong significant paths from RWA to threat and from threat to group attitudes that remained significant when competitiveness was controlled. There also were weaker significant paths from RWA to competitiveness for both basic models (with the correlated error between threat and competitiveness), but the betas in parentheses were reduced to nonsignificance when threat was controlled. The indirect effects from the SEM analysis for RWA on group attitudes through perceived threat were significant for both attitudes to drug dealers (–.43, t = –4.37, p < .001) and attitudes to rock stars (β = –.37, t = –4.03, p < .001).

The analyses for the three target groups for which SDO had predicted group attitudes (housewives in Figure 4, physically disabled in Figure 5, and unemployed in Figure 6) showed strong significant paths from SDO to competitiveness and from competitiveness to group attitudes that remained clearly significant with threat controlled. The paths from SDO to threat were consistently weaker and were nonsignificant (as shown in parentheses) when competitiveness was controlled. The indirect effects from the SEM analyses for SDO on group attitudes through competitiveness were significant for attitudes to housewives (–.53, t = –3.72, p < .001), physically disabled persons (–.43, t = –4.37, p < .001), and unemployment beneficiaries (–.08, t = –2.00, p < .05). Finally, Figure 7 indicates that the effects of RWA and

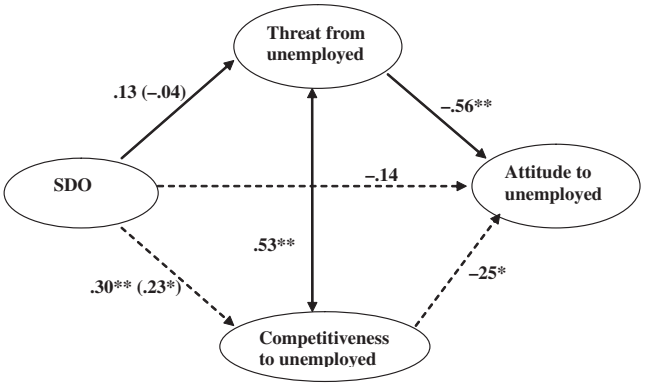

Figure 6 Standardized maximum likelihood coefficients for the structural equation model of direct and mediated (through competitiveness and perceived threat) effects of Social Dominance Orientation (SDO) on attitudes to unemployment beneficiaries ($n = 134$).

NOTE: To simplify, manifest variables and the paths from latent to manifest variables are not shown. The model has a correlated error between threat and competitiveness (basic model). The beta in parentheses from SDO to perceived threat was computed for the same model substituting a direct path from competitiveness to threat for the correlated error (controlling for the effect of competitiveness on threat), whereas the beta in parentheses from SDO to competitiveness was computed for the same model substituting a direct path from threat to competitiveness for the correlated error (controlling for the effect of threat on competitiveness). The fit indices for the basic model were $\chi^2 = 67.8$, $df = 48$, $\chi^2/df = 1.41$, root mean square error of approximation (RMSEA) = .065, standardized root mean square residual (SRMR) = .054, Comparative Fit Index (CFI) = .97. Nonsignificant paths are shown as broken arrows.

*$p < .05$. **$p < .01$.

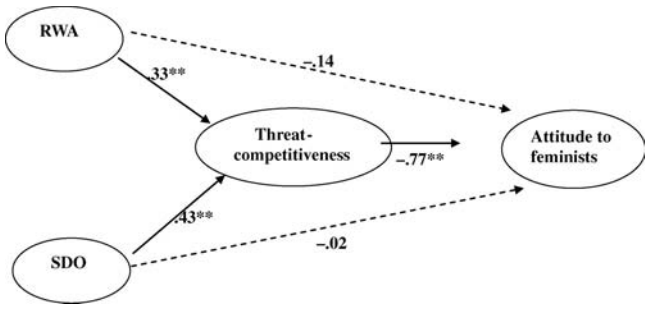

Figure 7 Standardized maximum likelihood coefficients for the structural equation model of direct and mediated (through composite threat-competitiveness) effects of Right Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO) on attitudes to feminists ($n = 117$).

NOTE: To simplify, manifest variables and the paths from latent to manifest variables are not shown. The fit indices for the model were $\chi^2 = 78.4$, $df = 48$, $\chi^2/df = 1.63$, root mean square error of approximation (RMSEA) = .074, standardized root mean square residual (SRMR) = .044, Comparative Fit Index (CFI) = .98. Nonsignificant paths are shown as broken arrows.

**$p < .01$.

SDO on negativity to feminists were fully mediated through the composite perceived threat-competitiveness measure with these indirect effects significant for both RWA (–.29, $t = –3.78$, $p < .001$) and SDO (–.36, $t = –4.43$, $p < .001$).

To sum up, the SEM analyses indicated that the effects of RWA and SDO on group attitudes were entirely indirect for all six target groups. In addition, as hypothesized, the effects of RWA on attitudes to the two socially threatening or deviant groups, drug dealers and rock stars, were mediated through perceived threat from these groups and not competitiveness toward them. The effects of SDO on the three socially subordinate or low power-status groups, housewives, unemployed persons, and physically disabled persons, were mediated through competitiveness toward these groups and not perceived threat from them.

DISCUSSION

This research derived from the proposition that RWA- and SDO-based prejudice are differentially motivated. High RWAs value group or societal security and are motivated to defend social control, order, stability, and cohesion. They should therefore dislike social groups that they perceive as threatening this, such as deviant social groups, which they would see as potentially undermining and threatening conventional values and norms. High SDOs value group power, dominance, and superiority and are motivated by competitiveness over relative group dominance, status, and power. They therefore tend to justify existing intergroup power and status differentials by disliking and devaluing groups that are low in status and power. This reasoning suggested two hypotheses. First, the differential effect hypothesis proposed that RWA and SDO would predict prejudice against quite different groups, with RWA likely to predict prejudice against deviant groups and SDO against socially subordinate groups. Second, the differential mediation hypothesis proposed that the effects of RWA on prejudice should be mediated by perceived threat and the effect of SDO on prejudice be mediated by competitiveness over relative superiority and dominance.

The findings supported both hypotheses. Differential effects were shown as, first, RWA was a significant predictor of negative attitudes toward two social groups selected as likely to be perceived as deviant, drug dealers and rock stars, whereas SDO was not; second, SDO was a significant predictor of negative attitudes toward three social groups selected as likely to be perceived as socially subordinate, such as housewives, physically disabled persons, and unemployment beneficiaries, whereas RWA

was not; third, both RWA and SDO predicted negative attitudes toward feminists, a group selected as likely to be perceived as both deviant and subordinate; and fourth, neither RWA nor SDO predicted attitudes to business leaders, a group selected as likely to be perceived as neither deviant nor subordinate. In addition, a SEM analysis supported the differential mediation hypothesis by showing that the significant relationships of RWA and SDO with group attitudes were indirect, with the effects for RWA mediated through perceived outgroup threat and the effects for SDO mediated through competitiveness toward the outgroups.

Most prior research on individual difference predictors of prejudice, such as RWA and SDO, has not enabled a test of the differential effect hypothesis because these studies investigated attitudes to minority groups or outgroups involved in direct competition or conflict with the ingroup. Such groups would elicit both RWA-based dislike motivated by outgroup threat and SDO-based dislike motivated by competitiveness over relative group dominance and superiority. Not surprisingly, therefore, this research has typically found that both RWA and SDO predicted negative outgroup attitudes (e.g., Altemeyer, 1998; McFarland, 1998). By selecting target groups that would be seen as socially threatening but not subordinate, or socially subordinate but not threatening, the present research demonstrated clearly differential effects for RWA and SDO on outgroup attitudes.

The findings supporting differential mediation for the effects of RWA and SDO on outgroup attitudes are consistent with previous findings by Esses and her colleagues. They found that the effect of RWA on antigay prejudice was mediated by perceived threat in one study (Esses et al., 1993) and that the effect of SDO on negative attitudes to a bogus immigrant group was mediated by perceived economic competition from that group in a second study (Esses et al., 1998; see also Jackson & Esses, 2000). However, these prior findings did not show whether the mediational effects of threat and competitiveness were specific to RWA and SDO, respectively. Because perceived threat and competitiveness tend to be positively correlated and, as the present findings indicated, can sometimes be very strongly correlated, these prior findings left open the possibility that the effects of RWA and SDO on outgroup attitudes were mediated by both threat and competitiveness. The present study extended these earlier findings by demonstrating that these mediational effects were indeed specific.

The correlations between the perceived outgroup threat and competitiveness scales merit comment. As expected, they were consistently positive but varied widely in magnitude from weak to very strong. Most were in the weak to moderate range of effect size, which confirmed the conceptual and empirical differentiation of these two constructs. The two outgroups for which the correlations of perceived threat and competitiveness were very strong were business leaders and feminists, with scores on the two scales effectively merging to form a single dimension in the latter case. These groups had been rated likely to be seen as either both socially threatening/deviant and socially subordinate or as neither threatening/deviant nor socially subordinate. These similarities may have caused their very high positive correlations on the perceived threat and competitiveness measures.

The present findings have a number of important implications. One implication is for the idea of the generality of prejudice. This empirical generalization has been widely accepted since Allport (1954) summarized research findings showing that individuals who were more prejudiced against one outgroup also tended to be less favorable to other disliked or stigmatized outgroups. The current findings suggest an important qualification to this. Instead of one dimension of generalized prejudice, there should be several different such dimensions. One generality of prejudice dimension should involve prejudice against outgroups seen as threatening, and generalized negativity to these groups should correlate with RWA. A second generality should involve outgroups seen as socially subordinate, and negativity to these groups should correlate with SDO. Thus, a factor analysis of attitudes to a large number of disliked or stigmatized outgroups should produce at least these two dimensions of outgroup prejudice, and possibly a third as well, comprising outgroups seen as both threatening and socially subordinate, with negativity to these groups correlating with both RWA and SDO.

A second implication is for interventions to reduce prejudice. If there are different motives for prejudice, then different interventions may be required to reduce prejudice for different individuals and against different outgroups. For example, conflict resolution and threat reduction would be effective prejudice reduction strategies for prejudice against outgroups seen as threatening and for high RWA persons but would be less effective for prejudice against outgroups seen as socially subordinate and for high SDO persons. On the other hand, prejudice reduction interventions that successfully eliminated intergroup inequalities and created equal status intergroup contacts should be effective for high SDO but not for high RWA persons. However, the implementation of interventions to reduce intergroup inequality should provoke more resistance from high SDO than high RWA persons.

A third implication of these findings is that intergroup processes and individual differences may operate together in complementary fashion to influence prejudice rather than being separate and distinct influences

as has often been assumed. Several intergroup theories of prejudice, such as realistic conflict theory (Sherif, 1967), social identity theory (Tajfel & Turner, 1979), and terror management theory (Solomon, Greenberg, & Pyszczynski, 1991), view intergroup relations of threat, competition, and inequality as the most important group-level causes of prejudice. The present findings suggest that the individual difference variables of RWA and SDO also influence prejudice through perceived threat and competitiveness over relative dominance, respectively. Thus, intergroup and individual difference determinants of prejudice may operate in complementary and interactive fashion, with individual difference factors such as RWA and SDO determining individuals' reactivity to intergroup or contextual dynamics of threat, inequality, and competition.

Finally, an important assumption of the theoretical model shown in Figure 1, which was not tested in this research, was that of causality. The model assumes that intergroup relations of threat and competition causally influence outgroup attitudes and that RWA and SDO will determine how reactive individuals are to these intergroup processes. The current research used correlational data and therefore could not test these causal assumptions directly. There is, however, evidence from both field and laboratory experimentation that intergroup threat and competition do cause negative outgroup attitudes (e.g., Bettencourt, Dorr, Charlton, & Hume, 2001; Blake & Mouton, 1979; Brown, 2000; Sherif, 1967). There is also experimental evidence showing that persons high in RWA are more reactive to threatening stimuli (Lavane et al., 1999). Nevertheless, it would be useful for future research to experimentally manipulate perceived threat from outgroups and competitiveness over relative dominance to outgroups and show that individuals' levels of RWA and SDO will influence how strongly they respond to these manipulations with greater outgroup negativity.

In conclusion, the unique contribution of this research was to show that RWA and SDO can predict prejudice differentially to different outgroups and that the relationship between RWA and outgroup prejudice was mediated by perceived threat from outgroups, whereas the relationship of SDO to outgroup prejudice was mediated through competitiveness over relative status and dominance. This is consistent with the dual-process hypothesis that although RWA and SDO often predict prejudice against the same groups, they do so for different reasons.

APPENDIX

Items of the Intergroup Threat Scale

1. They seem to reject moral values that are important to me.
2. They strengthen values, norms, and traditions that are important to people like me.
3. They are a danger to everything I feel is good, normal, moral, and decent in society.
4. I am afraid that they make our society more dangerous for ordinary people.
5. They seem to want to destroy or harm what is good in our society.
6. They help to make our society stronger and more united.
7. They do NOT threaten to harm us or society in any way at all.
8. They help to make our society safer and less dangerous.

Items of the Intergroup Competitiveness Scale

1. It would be to our advantage for them to get more resources.
2. If they make economic gains, people like me will be worse off.
3. They are NOT getting enough resources.
4. They should have more influence in our society.
5. Resources that go to members of this group are likely to take away resources from people like me.
6. Giving them special breaks is likely to make things more difficult for people like me.
7. If they get more influence, it will be to our disadvantage.
8. They should be given help and support.

Items of the Outgroup Attitude Scale

1. I like them for their honesty and generosity.
2. They often seem to be quite unpleasant people.
3. I like their basic goodness as people.
4. I just don't like them as people.
5. I believe they are often bad people.
6. Generally they are often NOT nice people.
7. I like them for being good, solid, decent people.
8. Generally they are just very nice and well-meaning people.
9. Their ability and successes entitle them to the respect of others.
10. They are extremely intelligent, smart, and resourceful people.
11. I admire them for their real strength and personal power.
12. I despise their basic weakness and softness.
13. I admire their toughness, drive, and ambition.
14. They have not accomplished enough to deserve real respect from others.
15. I despise them for not having the "guts" to really do things.
16. They don't seem to have much initiative and energy.

NOTE

1. To check the consistency of the results using a more general structural equation model, the analyses also were done with both Right Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO) as predictors. These analyses produced the same findings as those reported here.

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