

# Journal of Personality and Social Psychology

## **The Nature of Social Dominance Orientation: Theorizing and Measuring Preferences for Intergroup Inequality Using the New SDO7 Scale**

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Online First Publication, October 19, 2015. <http://dx.doi.org/10.1037/pspi0000033>

### CITATION

Ho, A. K., Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Pratto, F., Henkel, K. E., Foels, R., & Stewart, A. L. (2015, October 19). The Nature of Social Dominance Orientation: Theorizing and Measuring Preferences for Intergroup Inequality Using the New SDO7 Scale. *Journal of Personality and Social Psychology*. Advance online publication. <http://dx.doi.org/10.1037/pspi0000033>

# The Nature of Social Dominance Orientation: Theorizing and Measuring Preferences for Intergroup Inequality Using the New SDO<sub>7</sub> Scale

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A new conceptualization and measurement of social dominance orientation—individual differences in the preference for group based hierarchy and inequality—is introduced. In contrast to previous measures of social dominance orientation that were designed to be unidimensional, the new measure (SDO<sub>7</sub>) embeds theoretically grounded subdimensions of SDO—SDO-Dominance (SDO-D) and SDO-Egalitarianism (SDO-E). SDO-D constitutes a preference for systems of group-based dominance in which high status groups forcefully oppress lower status groups. SDO-E constitutes a preference for systems of group-based inequality that are maintained by an interrelated network of subtle *hierarchy-enhancing* ideologies and social policies. Confirmatory factor and criterion validity analyses confirmed that SDO-D and SDO-E are theoretically distinct and dissociate in terms of the intergroup outcomes they best predict. For the first time, distinct personality and individual difference bases of SDO-D and SDO-E are outlined. We clarify the construct validity of SDO by strictly assessing a preference for dominance hierarchies in general, removing a possible confound relating to support for hierarchy benefitting the ingroup. Consistent with this, results show that among members of a disadvantaged ethnic minority group (African Americans), endorsement of SDO<sub>7</sub> is inversely related to ingroup identity. We further demonstrate these effects using nationally representative samples of U.S. Blacks and Whites, documenting the generalizability of these findings. Finally, we introduce and validate a brief 4-item measure of each dimension. This article importantly extends our theoretical understanding of one of the most generative constructs in social psychology, and introduces powerful new tools for its measurement.

**Keywords:** social dominance orientation, SDO<sub>7</sub> scale, SDO-dominance, SDO-egalitarianism, inequality

**Supplemental materials:** <http://dx.doi.org/10.1037/pspi0000033.supp>

Group-based inequality and conflict is as varied as it is ubiquitous. Inequality in power and resources between groups is a feature of all societies with an economic surplus (Sidanius & Pratto,

1999). Furthermore, inequality takes on many forms, as evident in simultaneous controversies over the use of drones in warfare, responses to immigration, sectarian violence in the Middle East,

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The first two authors contributed to this article equally as first authors, and the second two authors contributed to this article equally as second authors. We thank Suzanne Freedberg and Yuching Lin for research assistance.

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and the merits of affirmative action, to list only a few issues currently prominent in American domestic and international affairs. What accounts for the complex and pervasive nature of intergroup conflict? As part of a multilevel theory of intergroup relations, social dominance theory posits that individuals' attitudes about inequality between social groups in general, or their *social dominance orientation*, interacts with societal and institutional forces to produce and reproduce systems of social inequality (Pratto, Sidanius, Stallworth, & Malle, 1994). Individual levels of social dominance orientation have been found to predict such an array of intergroup attitudes and behaviors—over time and across cultures—that the construct occupies a role solidly at the heart of social and political psychology (Lee, Pratto, & Johnson, 2011).

Recently, we found that this overarching orientation breaks down into two specific subdimensions—support for intergroup dominance, and intergroup antiegalitarianism—enabling us to predict intergroup attitudes and behaviors with even more precision (Ho et al., 2012). The dominance dimension is characterized by support for overt oppression and aggressive intergroup behaviors designed to maintain the subordination of one or more groups, whereas the antiegalitarianism dimension entails a preference for intergroup inequalities that are maintained by an interrelated network of subtle hierarchy-enhancing ideologies and social policies. Notwithstanding the advances made in uncovering the subdimensions of social dominance orientation (SDO), they remain heavily understudied. For one, little is known about the different personality bases that undergird each of the subdimensions. Moreover, the nature of previous SDO scales has meant that the conceptual differences between the subdimensions have been confounded with the way in which they were measured, reducing confidence that these dimensions reflect substantive and not methodological differences. In the current article, we unlock the predictive potential of this new bidimensional structure by presenting an empirically validated and reliable scale, with both short and long forms, designed to tap into each dimension separately. This enables us to investigate the unique personality antecedents and downstream attitudinal consequences of each subdimension, while maintaining the overall predictive power of SDO. Furthermore, and critically, the new measure introduced here addresses a longstanding concern over whether SDO constitutes support for ingroup dominance or whether it assesses support for intergroup hierarchy and inequality irrespective of which group is on top (Jost & Thompson, 2000; Kteily, Ho, & Sidanius, 2012; Pratto, Sidanius, & Levin, 2006). In sum, our work improves on previous SDO research by broadening our theoretical understanding of (and confidence in) its distinct components and personality bases, addressing alternative interpretations of its effects, and providing superior tools with which to assess it.

### Social Dominance Orientation

Social dominance orientation (SDO), as a measure of support for inequality between social groups, has been shown to play a central role in a range of intergroup attitudes, behaviors, and policy preferences (for a review, see Sidanius, Cotterill, Sheehy-Skeffington, Kteily, & Carvacho, 2015). It is a potent predictor of generalized prejudice against, and persecution of, a

wide array of denigrated groups, such as poor people, ethnic minorities, foreigners, gay people, women, immigrants, and refugees (e.g., Altemeyer, 1996; Asbrock, Sibley, & Duckitt, 2010; Costello & Hodson, 2011; Kteily, Bruneau, Waytz, & Cotterill, in press; Sidanius & Pratto, 1999; Thomsen, Green & Sidanius, 2008). In addition, SDO is related to the endorsement of a range of group-relevant social *ideologies*, including political conservatism, noblesse oblige, just world beliefs, nationalism, patriotism, militarism, internal attributions for poverty, sexism, rape myths, endorsement of karma, the Protestant Work Ethic, and other consequential hierarchy-enhancing legitimizing beliefs, across a variety of cultures (e.g., Cotterill, Sidanius, Bhadwardj, & Kumar, 2014; Hodson, Rush, & MacInnis, 2010; Pratto et al., 1994; Sidanius & Pratto, 1999). SDO also predicts support for group-relevant social *policies* that uphold the hierarchical status quo, such as support for wars of aggression, punitive criminal justice policies, the death penalty and torture, and opposition to humanitarian practices, social welfare, and affirmative action (e.g., Federico & Sidanius, 2002; Gutierrez & Unzueta, 2013; Pratto & Glasford, 2008; Kteily, Cotterill, Sidanius, Sheehy-Skeffington, & Bergh, 2014; Sidanius & Pratto, 1999; Sidanius, Mitchell, Haley, & Navarrete, 2006). Beyond influencing group-relevant attitudes, SDO can even yield accurate predictions about individuals' life choices—for instance, the kinds of jobs they seek and obtain (i.e., whether such jobs promote intergroup hierarchy or equality), the kinds of subjects they choose to study in college, and how well they perform in these areas (for a review, see Haley & Sidanius, 2005).

As shown by studies in which SDO predicts intergroup attitudes in novel situations, SDO is a generalized orientation not reducible to an individual's socialized attitudes toward specific social groups. Thus, in addition to driving prejudice toward familiar and actual social groups, SDO predicts affective responses to minimal groups, novel social categories, and new social policies (e.g., Amiot & Bourhis, 2005; Ho et al., 2012; Ho, Sidanius, Cuddy, & Banaji, 2013; Krosch, Berntsen, Amodio, Jost, & Van Bavel, 2013; Pratto et al., 1994; Reynolds et al., 2007; Sidanius et al., 1994; see Kteily, Ho, & Sidanius, 2012). Strengthening the case for its causal role, SDO has been shown to exhibit a cross-lagged impact on future personality facets, intergroup attitudes, and behavior across periods of time as great as four years (Kteily, Sidanius, & Levin, 2011; Sidanius et al., 2013; Thomsen et al., 2010).

### Subdimensions of Social Dominance Orientation

Although SDO has clearly been useful for understanding intergroup attitudes and behaviors when treated as a unidimensional construct, recent research has taken seriously the possibility that it is composed of different facets (Ho et al., 2012; Jost & Thompson, 2000; Kugler, Cooper, & Nosek, 2010). Ho et al. (2012) presented evidence that one subdimension of SDO—the dominance subdimension (SDO-D)—represents a preference for group-based dominance hierarchies in which dominant groups actively oppress subordinate groups. In this work, SDO-D better predicted support for aggressive behaviors directed toward subordinate groups (e.g., immigrant persecution), endorsement of beliefs that would justify oppression (e.g., “old-fashioned” racism), and a strong focus on group competi-

tion and threat. Thus, SDO-D constitutes support for the active, even violent, maintenance of oppressive hierarchies in which high status groups dominate and control the prerogatives of low status groups. The second major subdimension of SDO—SDO-Egalitarianism (SDO-E)—was shown to represent opposition to equality between groups, as supported by an interrelated network of subtle hierarchy-enhancing beliefs and social policies. SDO-E better predicted political conservatism in the United States, support for ideologies that would subtly justify inequality (e.g., the Protestant Work Ethic), and opposition to policies that would bring about more intergroup equality (e.g., affirmative action); in short, it manifested itself in an affinity for ideologies and policies that maintain inequality, especially those that have ostensibly different purposes (such as economic efficiency and meritocracy). In contrast to SDO-D, the types of hierarchy-enhancing attitudes and policies predicted by SDO-E typically do not involve violent or overt confrontation; SDO-E is thus more subtle in nature and represents support for differential intergroup access to power and resources that need not involve outright domination and oppression.

This conclusion is consistent with previous findings with respect to what SDO-D and SDO-E best predict (Jost & Thompson, 2000; Kugler et al., 2010). Recent work by Kteily, Bruneau, Waytz, and Cotterill (in press) has further shown that SDO-D is more strongly correlated than SDO-E with *blatant* forms of dehumanization, involving the overt and conscious denial of outgroup humanity, whereas the two subdimensions are equally correlated with more subtle forms of dehumanization (e.g., *infrahumanization*; Leyens et al., 2000). Other work has found that SDO-D is related to a desire for muscularity among men (Swami et al., 2013), torture (Larsson, Björklund, & Bäckström, 2012), and hierarchy-enhancing beliefs about citizenship and assimilation (Hindriks, Verkuyten, & Coenders, 2014), whereas SDO-E is related to negative affect toward migrants (Martinovic & Verkuyten, 2013), hierarchy-attenuating beliefs about citizenship and multiculturalism (Hindriks et al., 2014), and the belief that less democratic forms of government are fair (Ellenbroek, Verkuyten, Thijs, & Poppe, 2014). Thus, there is now ample evidence for the existence of two theoretically meaningful subdimensions of SDO that are related to predictably different types of intergroup phenomena.

Notably, the proposed distinction between SDO-D and SDO-E parallels theorizing in the intergroup relations literature that has differentiated forceful from subtle means of hierarchy maintenance (e.g., Jackman, 1994). That literature suggests that subtle approaches to hierarchy maintenance may be more effective at gaining the compliance of subordinate group members and thus may be *generally preferred* as a (less costly) means of maintaining inequality than physical coercion. The present work, in contrast, argues that whereas some individuals (those high on SDO-E) prioritize subtle means of hierarchy maintenance, other individuals (those high on SDO-D) may be specifically oriented toward the overt domination of some groups by others.

### Confound Between Substantive Theoretical Dimensions and Item Wording

Before the full potential of this new distinction can be realized, however, a key limitation in the most widely used measure

of SDO (the 16-item “SDO<sub>6</sub> scale;” Pratto et al., 1994), on which the studies cited above are based, must be addressed. In the existing scale, the same items that are used to tap into the dominance dimension are also those worded in a pro-trait direction (such that high scores on these items index high SDO); conversely, all of the items used to tap into antiegalitarianism are worded in the con-trait direction (with high scores indexing low SDO; these items are reverse-scored in computing composite SDO and SDO-E subdimension scores). If we are to take evidence for SDO’s bidimensional structure seriously, this would represent a confounding of the scale’s ‘method’ dimensions (i.e., pro-trait and con-trait item wordings) with its substantive dimensions (i.e., dominance and antiegalitarianism).

### Preference for Ingroup Dominance?

The above issue compounds another shortcoming of the SDO<sub>6</sub> scale, which has led to confusion over whether SDO taps into desire for dominance of one’s own group, versus support for hierarchical intergroup organization in general (e.g., Jost & Thompson, 2000; Sibley & Liu, 2010; Kteily, Ho, & Sidanius, 2012). Although early definitions of SDO did in fact refer to a preference for ingroup dominance (e.g., Pratto et al., 1994), social dominance theorists later clarified SDO’s definition as a general orientation toward hierarchy as opposed to a preference for ingroup-dominance, and provided empirical support for this conceptualization (see Kteily et al., 2012; Pratto et al., 2006; Sidanius, Levin, Federico, & Pratto, 2001). In contrast to this more recent conceptualization, Jost and Thompson (2000) presented SDO-D as “group justification”—that is, constituting support for one’s *in-group* irrespective of one’s group position. These authors found empirical support for this distinction in evidence that ingroup identification was positively correlated with SDO-D across several large samples of African Americans, a group with low political and socioeconomic status in the United States. In aiming to improve the construct validity of SDO, the current work addresses this theoretical debate by reexamining its relationship, when measured with our new scale, with ingroup identification among members of the same low status group in the United States.

### Personality Bases of the SDO Subdimensions

Finally, we advance theorizing on SDO’s bidimensional structure by presenting the first evidence of dissociable personality antecedents of each subdimension. This new direction in research on the SDO subdimensions has the potential to yield insights into individual differences that characterize those who desire oppressive dominance hierarchies, versus those that prefer more nuanced efforts toward the promotion and maintenance of group-based inequality, a distinction that has important intergroup consequences (see Jackman, 1994). Researchers have long been interested in personality antecedents of SDO (see Table 1), and thus, in addition to examining how the subdimensions are differentially associated with these antecedents, it is also important to establish that the new measure of SDO, as a whole, relates to personality and individual differences in a similar fashion as previous measures of SDO.

Table 1  
*Previous Studies Showing a Relationship Between SDO and Personality and Individual Differences*

Personality and individual differences	Previous studies
Big 5 (specifically, agreeableness and openness to experience)	Hodson, Hogg, & MacInnis, 2009; Sibley & Duckitt, 2008 (meta-analysis)
HEXACO (specifically, honesty-humility, emotionality, agreeableness, and openness to experience)	Lee, Ashton, Ogunfowora, Bourdage, & Shin, 2010; Sibley, Harding, Perry, Asbrock, & Duckitt, 2010
Dark triad (Machiavellianism*, narcissism*, and psychopathy*)	Hodson et al., 2009
Empathic concern (part of the Interpersonal Reactivity Index; Davis, 1983)	Sidanius et al., 2013
Dual-process model (specifically, tough-mindedness*, competitive worldview*)	Duckitt, Wagner, du Plessis, & Birum, 2002; Perry, Sibley, & Duckitt, 2013
Need for closure (specifically, closed-mindedness*)	Roets & Van Hiel, 2011; Van Hiel, Pandelaere, & Duriez, 2004
Moral foundations (specifically, harm and fairness)	Federico, Weber, Ergun, & Hunt, 2013; Graham, Nosek, Haidt, Iyer, Koleva, & Ditto, 2011; Kugler, Jost, & Noorbaloochi, 2014; Milojev et al., 2014

*Note.* SDO = social dominance orientation. Except where noted with an asterisk (\*) all traits mentioned have a negative correlation with SDO.

**The Present Research**

In embarking on this project, we had seven major goals, from which our hypotheses follow. Our first goal was to develop a new measure of social dominance orientation that taps into each subdimension in a balanced manner, with the same number of pro-trait items as con-trait items. As SDO was previously assumed to be unidimensional, previous versions of the SDO scale (e.g., 14-item SDO<sub>5</sub> Scale; see Pratto et al., 1994) did not address this issue. Because *both* differences in substance and wording direction should influence how participants respond (Bishop, Tuchfarber, & Oldendick, 1978), we expected to find support for a four-factor model representing SDO-D, SDO-E, pro-trait items, and con-trait items, with each item loading on one substantive (SDO-D or SDO-E) *and* one method (pro-trait or con-trait) dimension (see Figure 1). In particular, we predicted this four-factor model would fit the data well in a confirmatory factor analysis, and exhibit better fit than a two-factor model that did not take into account substantive (dominance and antiegalitarianism) dimensions, a two-factor model that did not take into account wording direction, and a one-factor model that ignored both wording direction and substantive dimensions (H1).

Our second goal was to test the predictive validity of our new measures of SDO-D and SDO-E. Consistent with previous examinations of the different substantive dimensions of SDO (Ho et al., 2012), we hypothesized that SDO-D would be a stronger predictor (than SDO-E) of intergroup attitudes and behaviors contributing to the overt domination and subjugation of low status groups, such as support for aggression against subordinate groups (e.g., immigrant persecution), support for beliefs legitimizing group dominance and oppression (e.g., old fashioned racism), and heightened attention to group competition (e.g., beliefs about the zero-sum nature of intergroup conflict; H2A). To complement and extend previous findings with respect to H2A, we also predicted SDO-D would strongly relate to support for torture and military intervention in the Middle East (e.g., Iran and Syria). Compared with SDO-D, SDO-E was hypothesized to be more related to beliefs that would justify inequality without necessarily entailing the forceful domination of some groups over others: for example, political conservatism in the United States, opposition to an equal distribution of resources, and opposition to government policies (e.g., social welfare) that promote greater equality (H2B). Again, we extended previous examinations of SDO-E's predic-

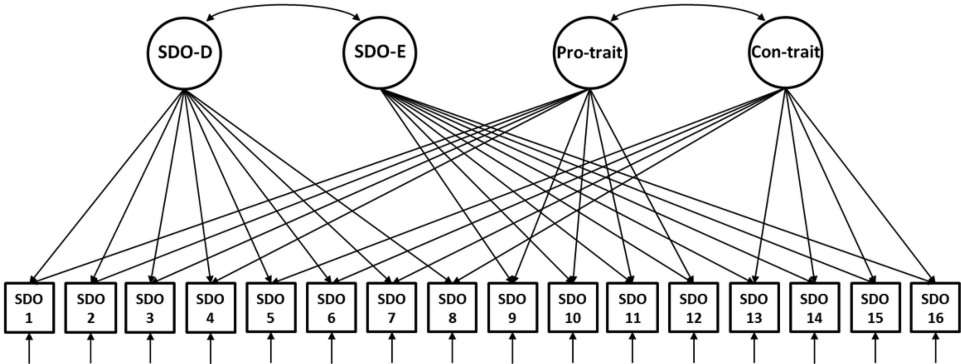


Figure 1. Four-factor confirmatory factor analysis model with each item loading on one substantive (SDO-D or SDO-E) and one method dimension (pro-trait or con-trait).



tive validity by also adding attitudes toward wealth redistribution and societal (as opposed to governmental) obligations to ensure equality as key outcomes of theoretical interest.

Third, since the new measure for each subdimension is modeled on the dimensions discovered using the SDO<sub>6</sub> scale, we aimed to test whether this new measure is strongly related to the SDO<sub>6</sub> scale, and exhibits similar relationships with criterion variables when compared with the SDO<sub>6</sub> measure's relationship with the same criteria (H3). Given the well documented predictive power of the SDO<sub>6</sub> scale, we wanted to ensure that the SDO<sub>7</sub> scale, taken as a whole, would be equally predictive of theoretically relevant outcome variables. Moreover, documenting that the SDO<sub>6</sub> and SDO<sub>7</sub> scales behave similarly despite the clarifications and improvements embedded into the new scale would mitigate any fears about the validity of conclusions from the large body of research findings using the older version.<sup>1</sup>

Fourth, we aimed to improve the construct validity of the SDO-D subdimension, by eliminating any items that could suggest the desire for *ingroup* dominance. We hypothesized that the SDO<sub>7</sub> dominance subdimension—without the use of “ingroup” items—should be more negatively related to ingroup identity among ethnic minority respondents than the SDO<sub>6</sub> dominance subdimension (H4). If SDO-D indexes support for intergroup hierarchy in general (rather than simply reflecting support for ingroup dominance), then we should in fact find that ingroup identification is negatively correlated with SDO-D in low status groups such as ethnic minorities—as the organization of groups along a dominance hierarchy clearly disadvantages low status groups.

Fifth, we aimed to introduce a short measure for each subdimension, consisting of four items (two pro-trait and two con-trait) per dimension. All else being equal, longer scales tend to have higher alpha reliabilities than shorter scales, and as such, the reliability of the short measure is expected to be somewhat lower (Ghiselli, Campbell, & Zedeck, 1981). Nevertheless, we expected this new short measure to exhibit properties similar to the full measure as described in the hypotheses above (H5), and recognize that this shorter scale may be of use to researchers interested in assessing both dimensions of SDO but facing space constraints in their research.

Our sixth goal was to test the relationship of our new scale, and its constituent subscales, with personality traits and individual differences. We conducted these tests in a large convenience sample as well as in a nationally representative sample of U.S. Blacks and Whites. First, based on past research using previous versions of the SDO scale (see Table 1), we expected the SDO<sub>7</sub> scale, as a whole, to be significantly correlated with a number of personality and individual differences (H6).

Second, we conducted the first exploration of whether SDO-D and SDO-E might have dissociable personality and individual difference antecedents, as a further way of testing whether their psychological substrates differ.

Based on SDO-D's hypothesized relationship with intergroup aggression, blatant dehumanization, and perceptions of intergroup competition, we hypothesized it would be more strongly related to (lower) HEXACO Honesty-Humility, “Dark Triad” traits (Machiavellianism, narcissism, and psychopathy), and the holding of a competitive jungle worldview than SDO-E (H7). These individual differences have previously been shown to relate to overt hostility and heightened attention to competition

(Ashton, Lee, & de Vries, 2014; Jones & Paulhus, 2010; Sibley, Harding, Perry, Asbrock, & Duckitt, 2010; see Table 1). Beyond this prediction, we did not have a priori hypotheses concerning the dissociation of the subdimensions in terms of personality and individual differences, but rather conducted these studies to inform subsequent research.

Our final goal was to examine how the new scale works among a nationally representative sample of U.S. Blacks and Whites. Previous work in political psychology (e.g., Federico & Sidanius, 2002; Henry, 2008) has shown that correlations between sociopolitical constructs are stronger in educated (e.g., university) samples than in general population samples. As such, the inclusion of a nationally representative sample should provide some assurance that these findings generalize to the broader population. Finally, these data allow us to directly compare the levels of SDO among Blacks and Whites, to see if previous findings demonstrating differences in SDO among social groups as a function of group status—with higher status groups exhibiting higher levels of SDO because group-based hierarchy confers an advantage to them (Lee et al., 2011; Sidanius & Pratto, 1999)—hold here.

We tested the above hypotheses in seven large American samples drawn from different sources. In addition to five White American samples, we also obtained data from two large samples of Black Americans, enabling us to test H4 concerning the relationship between ethnic identity and SDO-D. The African American samples also allow us to examine if the new measures exhibit similar properties within a minority group with lower social status than those groups usually tested (DeNavas-Walt, Proctor, & Smith, 2011; Kahn, Ho, Sidanius, & Pratto, 2009). With the exception of Sample 1, designed to select items for the new scale, and Sample 6, focusing on personality, all surveys were omnibus surveys of social and political attitudes including measures used for other research.

## Method

### Participants

In all seven samples, we only analyzed data from participants native to the United States. We analyzed responses only of White participants in Samples 1–3 and Sample 6 because we did not have enough ethnic minority respondents from any one group with which to conduct meaningful analyses. Sample 1 was drawn from Amazon MTurk and consisted of 528 White participants (60.6% female;  $M_{\text{age}} = 34.4$ ,  $SD = 12.51$ ). 11.6% of participants had completed high school or less, 34.3% had completed some college, 28.6% had completed a bachelor's degree, and 25.6% had partially completed or completed a graduate or professional degree. Political affiliation for Samples 1–5b is reported in Table 2B and in a supplemental appendix.

Sample 2 was drawn from participants recruited through SocialSci (www.socialsci.com), an Internet-based social science re-

<sup>1</sup> Although not a primary goal of the current work, we also test the “invariance hypothesis” that men will have higher levels of SDO than women, because of evolutionary pressures on human males to compete for resources on a coalitional, group basis. This has been thoroughly documented with SDO<sub>6</sub> (Lee et al., 2011; Sidanius & Pratto, 1999), and thus we assess whether it holds with SDO<sub>7</sub>.

Table 2

*SDO-D Criterion Variables Included in Samples 1–5b (Table 2a)*

Variables	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5a	Sample 5b
Old-fashioned racism (adapted from Sidanius, Levin, van Laar, Sears, 2008)	$\alpha = .95$ $m = 1.85$ $SD = 1.32$	$\alpha = .95$ $m = 1.59$ $SD = 1.14$	$\alpha = .95$ $m = 1.54$ $SD = 1.07$	$\alpha = .93$ $m = 2.27$ $SD = 1.69$	$\alpha = .93$ $m = 2.15$ $SD = 1.47$	$\alpha = .87$ $m = 2.15$ $SD = 1.36$
Zero-sum competition (Bobo & Hutchings, 1996)	$\alpha = .89$ $m = 2.85$ $SD = 1.59$	$\alpha = .88$ $m = 2.65$ $SD = 1.49$	$\alpha = .94$ $m = 2.57$ $SD = 1.60$	$\alpha = .92$ $m = 3.44$ $SD = 1.85$	$\alpha = .89$ $m = 2.79$ $SD = 1.47$	$\alpha = .91$ $m = 3.22$ $SD = 1.63$
Nationalism (Kosterman & Feshbach, 1989)	$\alpha = .89$ $m = 3.14$ $SD = 1.42$	$\alpha = .88$ $m = 2.43$ $SD = 1.33$	— $m = 1.81$ $SD = 1.34$	$\alpha = .83$ $m = 3.60$ $SD = 1.58$	—	—
Support for immigrant persecution (Thomsen, Green, & Sidanius, 2008)	$\alpha = .93$ $m = 2.08$ $SD = 1.42$	$\alpha = .94$ $m = 1.81$ $SD = 1.34$	$\alpha = .90$ $m = 1.91$ $SD = 1.36$	$\alpha = .93$ $m = 2.81$ $SD = 1.77$	—	—
War support (Ho et al., 2012)	$\alpha = .89$ $m = 3.01$ $SD = 1.40$	$\alpha = .78$ $m = 2.34$ $SD = 1.20$	—	—	—	—
War legitimacy beliefs (Ho et al., 2012)	$\alpha = .78$ $m = 3.18$ $SD = 1.22$	—	—	—	—	—
Death penalty support (Sidanius, Mitchell, Haley, & Navarrete, 2006)	$\alpha = .97$ $m = 4.27$ $SD = 1.98$	$\alpha = .90$ $m = 3.67$ $SD = 1.90$	$\alpha = .81$ $m = 4.49$ $SD = 1.92$	$\alpha = .81$ $m = 4.36$ $SD = 1.69$	—	—
Punitiveness (Sidanius, Mitchell, Haley, & Navarrete, 2006)	$\alpha = .85$ $m = 3.14$ $SD = 1.57$	$\alpha = .88$ $m = 2.36$ $SD = 1.54$	$\alpha = .88$ $m = 3.13$ $SD = 1.69$	—	$\alpha = .74$ $m = 3.46$ $SD = 1.42$	$\alpha = .61$ $m = 3.18$ $SD = 1.33$
Hierarchy-enhancing jobs* (Sidanius, Pratto, Sinclair, & van Laar, 1996)	$\alpha = .90$ $m = 3.63$ $SD = 1.68$	$\alpha = .76$ $m = 3.02$ $SD = 1.23$	$\alpha = .81$ $m = 3.24$ $SD = 1.35$	—	—	—
Militarism* (adapted from Hurwitz & Peffley, 1987)	—	$\alpha = .82$ $m = 2.45$ $SD = .82$	$\alpha = .82$ $m = 3.15$ $SD = 1.28$	—	—	—
Fight Iran	—	—	$\alpha = .89$ $m = 4.12$ $SD = 1.53$	—	—	—
Syria intervention	—	—	$\alpha = \text{n/a}$ $m = 3.00$ $SD = 1.56$	—	—	—
Torture	—	—	—	—	$\alpha = .67$ $m = 3.05$ $SD = 1.49$	$\alpha = .55$ $m = 3.05$ $SD = 1.49$

*SDO-E Criterion Variables Included in Samples 1–5b (Table 2b)*

Variables	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5a	Sample 5b
Political conservatism* (Sidanius et al., 2008)	$\alpha = .87$ $m = 3.62$ $SD = 1.61$	$\alpha = .67$ $m = 2.77$ $SD = 1.37$	$\alpha = .88$ $m = 3.37$ $SD = 1.63$	$\alpha = .72$ $m = 3.35$ $SD = 1.38$	$\alpha = .88$ $m = 4.46$ $SD = 1.70$	$\alpha = .52$ $m = 3.38$ $SD = 1.17$
System justification (Kay & Jost, 2003)	$\alpha = .81$ $m = 3.67$ $SD = 1.11$	$\alpha = .82$ $m = 2.92$ $SD = 1.09$	$\alpha = .83$ $m = 3.54$ $SD = 1.15$	$\alpha = .84$ $m = 3.77$ $SD = 1.52$	$\alpha = .76$ $m = 3.48$ $SD = 1.15$	$\alpha = .75$ $m = 3.25$ $SD = 1.15$
Opposition to affirmative action* (Haley & Sidanius, 2005)	$\alpha = .83$ $m = 4.82$ $SD = 1.32$	$\alpha = .85$ $m = 3.29$ $SD = 1.29$	—	—	—	—
Opposition to racial policy (adapted from Ho et al., 2012)	$\alpha = .83$ $m = 3.38$ $SD = 1.36$	—	—	$\alpha = .71$ $m = 2.37$ $SD = 1.28$	$\alpha = .84$ $m = 3.48$ $SD = 1.53$	$\alpha = .75$ $m = 2.49$ $SD = 1.25$
Opposition to welfare (Ho et al., 2012)	$\alpha = .79$ $m = 2.91$ $SD = 1.44$	$\alpha = .80$ $m = 2.66$ $SD = 1.40$	$\alpha = .79$ $m = 3.03$ $SD = 1.40$	—	—	—
Symbolic racism* (Henry & Sears, 2002)	$\alpha = .84$ $m = 2.32$ $SD = .58$	$\alpha = .86$ $m = 2.12$ $SD = .65$	$\alpha = .89$ $m = 3.17$ $SD = 1.10$	$\alpha = .41$ $m = 2.21$ $SD = .57$	—	—

(table continues)

Table 2 (continued)

Variables	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5a	Sample 5b
Unequal distribution of university resources (Ho et al., 2012)	$\alpha = .77$ $m = 3.68$ $SD = 1.31$	$\alpha = .78$ $m = 3.57$ $SD = 1.26$	$\alpha = .87$ $m = 3.53$ $SD = 1.49$	$\alpha = .38$ $m = 3.50$ $SD = 1.08$	—	—
Hierarchy-attenuating jobs* (Sidanius et al., 1996)	$\alpha = .87$ $m = 3.80$ $SD = 1.53$	$\alpha = .87$ $m = 3.68$ $SD = 1.54$	$\alpha = .85$ $m = 3.88$ $SD = 1.40$	—	—	—
Affirmative action-race* (adapted from Haley & Sidanius, 2005)	—	—	$\alpha = .81$ $m = 5.35$ $SD = 1.28$	—	—	—
Affirmative action-gender* (adapted from Haley & Sidanius, 2005)	—	—	$\alpha = .82$ $m = 5.25$ $SD = 1.37$	—	—	—
Antidiscrimination measures	—	—	$\alpha = .77$ $m = 2.72$ $SD = 1.24$	—	—	—
Redistribution of wealth	—	—	$\alpha = .91$ $m = 3.47$ $SD = 1.78$	—	—	—
Anti-Black affect* (adapted from Ho et al., 2012)	—	—	—	—	$\alpha = \text{n/a}$ $m = 4.94$ $SD = 1.30$	—

*Note.* In Sample 3, race- and gender-based affirmative action were measured separately, as reflected in the Supplemental Appendix. Cells with “—” (em dashes) indicate that a variable was not included for the sample. Otherwise, the cells include values for Cronbach’s  $\alpha$  (when applicable), mean, and  $SD$ . Variables with an asterisk did not use a 1 (*strongly disagree/disapprove*) to 7 (*strongly agree/approve*) scale. Scales for these variables can be found in the Supplemental Appendix containing the full text of all items.

search platform, and included 483 White participants (50.7% female,  $M_{\text{age}} = 26.8$ ,  $SD = 9.70$ ).<sup>2</sup> 15.7% had completed high school or less, 33.7% had completed some college, 28.6% had completed a bachelor’s degree, and 21.3% had partially completed or completed a graduate or professional degree.

Sample 3 was drawn from Amazon MTurk, and consisted of 458 White participants (57.9% female;  $M_{\text{age}} = 35.4$ ,  $SD = 11.86$ ). 12.1% had completed high school or less, 37.6% had completed some college, 27.5% had completed a bachelor’s degree, and 22.1% had partially completed or completed a graduate or professional degree. Due to the length of the survey completed by this sample, it was split into two parts. There was some attrition between Parts 1 and 2, and thus for some criterion variables, the sample size was 355 (see supplemental appendix).

Sample 4 consisted of 762 African American participants recruited through Qualtrics Panels, a survey service that enables the targeting of specific demographic groups. The sample was 40.8% female and the average age was 43.4 ( $SD = 14.28$ ). Degree of education was unavailable for this sample.

Samples 5a and 5b consisted of a stratified random sample of 214 White Americans (50% female,  $M_{\text{age}} = 51.79$ ,  $SD = 16.47$ ) and 210 African Americans (54.3% female,  $M_{\text{age}} = 47.85$ ,  $SD = 16.09$ ), respectively, and were drawn from a nationally representative panel operated by GFK Knowledge Panel (formerly Knowledge Networks). Among the White sample, 4.7% had completed less than high school, 26.6% had completed high school, 31.8% had completed some college, and 36.9% had completed a bachelor’s degree or higher. Among the Black sample, 14.3% had completed less than high school, 30.0% had completed high school, 31.0% had completed some college, and 24.8% had completed a bachelor’s degree or higher.

Sample 6, recruited exclusively to examine SDO’s relationship with personality traits, consisted of 452 White Americans (64.7%

female,  $M_{\text{age}} = 37.82$ ,  $SD = 13.05$ ) recruited through Amazon MTurk. 14.0% had completed high school or less, 35.2% had completed some college, 30.1% had completed a bachelor’s degree, and 20.6% had partially completed or completed a graduate or professional degree.

## Measures

**Social dominance orientation.** We included the 16-item SDO<sub>6</sub> scale (Samples 1–4; Pratto et al., 1994) to test whether the new SDO<sub>7</sub> scale matched the SDO<sub>6</sub> scale in the direction and magnitude of its relationship with our criterion variables.

To create the SDO<sub>7</sub> scale, we wrote 70 new items representing the dominance and antiegalitarianism subdimensions, balancing

<sup>2</sup> Another sample of both White and Black respondents were collected for us by SocialSci. However, we observed some unusual race and sex based patterns in this data and therefore chose to not include it in the present set of studies. A representative from SocialSci informed us that their protocol for vetting participant responses to demographic questions was not in place at the time the data from the omitted sample were collected, though they were at the time Sample 2 was collected. Specifically, in contrast to previous research showing that African Americans have lower levels of SDO and racism than Whites (e.g., Sidanius & Pratto, 1999; van Laar, Levin, Sinclair, & Sidanius, 2005), the sample of African Americans in the omitted study had marginally significantly *higher* SDO<sub>6</sub> scores and significantly *higher* scores on anti-Black and Latino racism, than the sample of Whites. In addition, whereas a sex difference in SDO, with men having higher levels of SDO on average than women, was found in every other sample, it was not observed in the omitted sample. Nevertheless, the results from the omitted study were largely consistent with findings in the other six samples in terms of predictive validity reported here. Importantly, the factor structure of SDO in this sample was completely consistent with the rest of the samples, and the set of items chosen for the short scale were first selected based on results from the omitted sample and later validated in the other samples, reported here.



each of these dimensions with pro-trait and con-trait items. We combined these items with items from the SDO<sub>6</sub> scale and other new items assessing inclusiveness in group relations and the belief that group inequality is “natural.” We subjected 99 potential SDO items to a principle axis factor analysis (tested on Sample 1).<sup>3</sup> The scree plot from this analysis revealed a four-dimensional solution. A second principle axis factor analysis was conducted with restriction to four factors, and this yielded two substantive factors representing dominance and antiegalitarianism. The eight highest loading items were selected from each of these two factors to create the new scale, taking into account wording direction (pro-trait and con-trait) and redundancy (see Appendix A). As can be seen in Appendix A, this scale has an equal number of pro-trait and con-trait items in the dominance and antiegalitarianism subdimensions. One of the items that loaded highly on the dominance subdimension was from the SDO<sub>6</sub> scale, and suggests the desire for ingroup dominance (“Sometimes *other* groups must be kept in their place;” italics added for emphasis), which is not consistent with the current conceptualization of SDO as a general orientation toward group inequality irrespective of one’s ingroup position (Ho et al., 2012; Kteily et al., 2012; Pratto et al., 2006; Sidanius et al., 2001). Thus, in Samples 2–6 we replaced the first part of this item (“Sometimes other groups”) with “Some groups of people” to form the item used in the final SDO<sub>7</sub> scale (“Some groups of people must be kept in their place”).

**Intergroup attitudes hypothesized to be more strongly related to SDO-D.** To measure variables predicted to be more related to SDO-D than to SDO-E, we included scales covering “old-fashioned racism,” perceptions of zero-sum competition, and support for various forms of aggression. Table 2a lists all of the measures predicted to be more related to SDO-D, provides descriptive statistics and scale reliabilities (Cronbach’s alpha), and indicates the samples in which they appear. The supplemental appendix contains the items and information about the scales used.<sup>4</sup>

**Intergroup attitudes hypothesized to be more strongly related to SDO-E.** To measure variables expected to be more related to SDO-E than SDO-D, we assessed attitudes toward policies and legitimizing ideologies and practices that have the result of maintaining inequality, even if they have another ostensible agenda. Thus, our measures included political conservatism and system legitimacy beliefs in the U.S., as well as support for the unequal distribution of resources, opposition to social policies that would increase intergroup equality, and symbolic racism (see Table 2b and Supplemental Appendix; see Supplemental Tables 1–5 for bivariate correlations between all criterion variables and SDO).

**Ethnic identity.** This was assessed using four items in Samples 4 and 5b ( $\alpha = .86$ ; 7-point scale;  $M = 5.55$ ,  $SD = 1.32$  in Sample 4;  $\alpha = .81$ ,  $M = 5.29$ ,  $SD = 1.36$  in Sample 5b; Sidanius, Levin, van Laar, & Sears, 2008). The items were: (a) How strongly do you identify with other members of your ethnic group? (b) How important is your ethnicity to your identity? (c) How often do you think of yourself as a member of your ethnic group? (d) How close do you feel to other members of your ethnic group?

**Personality and individual differences.** In Sample 6, we assessed a number of personality traits that have been previously shown to relate to the overall SDO construct, but have not yet been examined with respect to their differential associations with

SDO-D and SDO-E (see Table 1 for references to previous studies examining the relationship between SDO and personality and individual differences, Table 9 for descriptive statistics, and Supplemental Table 6 for bivariate correlations between all personality and individual difference variables and SDO). This included the Big 5 dimensions of personality (DeYoung, Quilty, & Peterson, 2007), the HEXACO Personality Inventory (Lee & Ashton, 2004), the “Dark Triad” (Machiavellianism, narcissism, and psychopathy; Paulhus & Williams, 2002), empathic concern (Davis, 1983), need for closure (Webster & Kruglanski, 1994), and traits and “world-views” from Duckitt and Sibley’s dual-process model (i.e., social conformity, tough-mindedness, dangerous world view, and competitive jungle world view; Duckitt, Wagner, du Plessis, & Birum, 2002). Machiavellianism and empathic concern were also measured in Samples 5a and 5b. In Sample 6, for exploratory purposes, we also assessed participant concern with key areas of morality as discussed by the Moral Foundations framework (harm/care, fairness/reciprocity, ingroup/loyalty, authority/respect, and purity/sanctity; Graham, Haidt, & Nosek, 2008; see Table 9 and Supplemental Appendix). The Moral Foundations Questionnaire (MFQ, Graham et al., 2008) measures the extent to which one thinks that a transgression that occurs in a particular realm constitutes a moral violation (e.g., from the fairness dimension, “Whether or not some people were treated differently than others;” 0 = *not at all relevant (this consideration has nothing to do with my judgments of right and wrong)* to 5 = *extremely relevant (this is one of the most important factors when I judge right and wrong)*). The MFQ also assesses agreement with a set of moral values (e.g., from the authority dimension, “Respect for authority is something all children need to learn;” 0 = *strongly disagree* to 5 = *strongly agree*). Thus, scores on any one moral foundation are computed as an average of one’s agreement with the moral values in that domain, and a high rating of the moral relevance of transgressions falling within it (Graham et al., 2008).

## Results

### Factor Structure of SDO<sub>7</sub>

Our first goal was to establish that a four-factor model, taking into account both substantive differences between the SDO-D and SDO-E dimensions as well as differences in wording direction (i.e., pro-trait or con-trait; see Figure 1) would fit the data well, and indeed better than a one-factor model, or two-factor models that account for substantive dimensions or wording direction alone. As revealed in Table 3, and consistent with H1, in each of the seven samples, we found that a four-factor model fit the data well, and indeed better than any of the two- and one-factor models. For example, in Sample 1, the four-factor model yielded a good fit

<sup>3</sup> This dataset was analyzed in Ho et al. (2012; Sample 7), where the same factor analytic procedure is described. However, in Ho et al. (2012), we used the item “Having some groups on top really benefits everybody,” which we’ve replaced with “Sometimes other groups must be kept in their place” in the current analyses (Sample 1). These two items both loaded similarly highly on the same dimension in the analysis described in-text.

<sup>4</sup> For African American respondents (Sample 4 and 5b), we adapted criterion variables as needed (e.g., creating a measure of anti-Latino prejudice because existing ethnic prejudice measures typically reference African Americans).

( $\chi^2/df$  ratio = 2.43, RMSEA = .06, CFI = .97) and fit better than the two-factor wording-direction (method) model ( $\chi^2/df$  ratio = 5.32, RMSEA = .10, CFI = .90), the two-factor substantive (D, E) model ( $\chi^2/df$  ratio = 4.08, RMSEA = .08, CFI = .98), and the single-factor model ( $\chi^2/df$  ratio = 6.46, RMSEA = .11, CFI = .97; see Table 3 for fit statistics for all seven samples). Furthermore, in all seven samples, a chi-square difference test between the four-factor model and each of the other three models revealed that the four-factor model was a significantly better fit in every comparison (see Table 3).

### Predictive Validity of SDO-D and SDO-E

Having established that the factor structure of our new measure consists of SDO-D and SDO-E subdimensions as well as pro- and con-trait (method) categories, we proceeded to test the predictive validity of the SDO-D and SDO-E subdimensions. To do so, we regressed a number of criterion variables on SDO-D and SDO-E in a series of simultaneous regression analyses, and then compared the magnitude of the semipartial (part) correlations between SDO-D and a given criterion variable and SDO-E and the same criterion variable.<sup>5</sup> This allowed us to test whether the relationship between SDO-D and a given criterion variable is stronger than the relationship between SDO-E and the same criterion variable, after the overlap between SDO-D and SDO-E has been taken into account. We performed this analysis using Malgady's test for comparing two dependent semipartial correlations (Hittner, Finger, Mancuso, & Silver, 1995; Ho et al., 2012). For Sample 5a and 5b, we used SPSS Complex Samples, which allowed us to use statistical weights to adjust for the sample design (i.e., unequal probability of selection due to stratified sampling) and survey nonresponse.<sup>6</sup> Taylor series linearization, implemented in SPSS Complex Samples, was used to calculate variance estimates. Given the large number of analyses, we refer readers to Tables 4 and 5 for semipartial correlation and difference statistics, and summarize the results in the text.

**SDO-D criterion variables.** We hypothesized (H2A) that SDO-D would be a better predictor of old fashioned racism, perceptions of zero-sum competition, and support for aggression against subordinate groups, than SDO-E. Indeed, we found that across the six samples in which this was analyzed, SDO-D was a stronger predictor of variables corresponding to these criteria in 28 cases, predicted equally strongly with SDO-E in 11 cases, and was a weaker predictor in just one case.<sup>7</sup> To more directly assess the relative strength of SDO-D and -E in predicting these criteria across all 40 criterion variables, we ran a mixed-effects model that tested whether the average contrast in the standardized coefficients for SDO-D and -E—taken from the regression analyses across all criterion variables in all studies—was significantly different from zero in the predicted direction (e.g., for old fashioned racism, the  $\beta$  for SDO-D was .57 and  $\beta$  for SDO-E was -.06. Thus, the contrast was .63.). The standard error for each contrast was estimated from the data (i.e., assumed to be known; e.g.,  $SE = .11$  for old-fashioned racism). This procedure took into account dependence between contrasts *within* study by estimating random effects *between* studies.<sup>8</sup> The analysis for the 40 SDO-D criteria revealed that on average, SDO-D was a significantly stronger predictor of these criteria than SDO-E (contrast estimate = .24,  $SE = .07$ ,  $t = 3.60$ ,  $p = .02$ ).

Additionally, for 39 of 40 SDO-D criterion variables, SDO-D was significantly related, after accounting for SDO-E. This finding held when we applied the Benjamini-Hochberg method to control for the false discovery rate (i.e., to account for the possibility of Type I errors due to multiple comparisons in each study; Benjamini & Hochberg, 1995; Benjamini & Yekutieli, 2001). Taken together, these results were strongly supportive of the theoretical expectations presented in H2A.

For example, for old-fashioned racism, SDO-D was a significant predictor in all six samples in which it was measured and a significantly stronger predictor than SDO-E in four of six samples (see Table 4). For perceptions of zero-sum competition, SDO-D was a significant predictor in all samples, and was a significantly or marginally stronger predictor than SDO-E in five samples. With respect to support for immigrant persecution, SDO-D was a significant predictor in all four samples, and a stronger predictor than SDO-E in Samples 1–3. Interestingly, in Sample 4, SDO-D significantly predicted this criterion, but marginally more weakly than SDO-E. Overall, results for death penalty support, nationalism, punitiveness, militarism, support for war, belief in war's legitimacy, support for military action in Iran and intervention in Syria, torture, and attractiveness of hierarchy-enhancing careers (particularly in law enforcement) revealed a pattern in line with our hypothesis (see Table 4).

<sup>5</sup> Whereas a partial correlation examines the correlation between an independent variable (IV) and dependent variable (DV) after controlling for the effects of a third variable on *both* the IV and DV, a semipartial or part correlation examines the correlation between an IV and DV controlling for the effects of a third variable on the IV *only*. We focused our analyses on semipartial correlations, which in principle are the same as multiple regression coefficients, because we wanted to assess the relative strength of SDO-D and SDO-E in relation to *all* of the variance in the criterion variables, and not just the residual variance after partialing out the shared variance with one of the SDO subdimensions.

<sup>6</sup> The statistical weight incorporated the following demographic variables:

- Age
  - White/Non-Hispanic: (18–44, 45–59, and 60+)
  - Black/Non-Hispanic: (18–29, 30–44, 45–59, and 60+)
- Gender (male/female)
- Education (less than high school/high school, some college, bachelors and higher)
- Household income
  - White/Non-Hispanic: (under \$50K, \$50K to <\$75K, \$75K+)
  - Black/Non-Hispanic: (under \$25K, \$25K to <\$50K, \$50K to <\$75K, \$75K+)
- Internet access (yes, no)
- Census region (northeast, midwest, south, west)
- Metropolitan area (yes, no)

<sup>7</sup> For Samples 5a and 5b, participants either received the SDO measure first, or following survey questions concerning racial categorization. To check for order effects, we tested whether order moderated the effects of SDO-D and SDO-E, and found that it did not in any case, except for old-fashioned racism and opposition to racial policy in Sample 5b. Specifically, with old-fashioned racism as the criterion, the B-coefficient for SDO-E was .49 lower among respondents who received the SDO scale first than those who received it second (Order  $\times$  SDO-E interaction  $t = 2.38$ ,  $p = .02$ ). With opposition to racial policy, the B-coefficient with SDO-E was .34 higher among respondents who received SDO first than those who received it second (interaction  $t = 2.08$ ,  $p = .04$ ). In both cases, the change would be consistent with our hypotheses.

<sup>8</sup> This procedure was developed for this project in consultation with Kathy Welch of the Center for Statistical Consultation and Research at the University of Michigan.

Table 3

*Model Fit for Four-Factor, Two Substantive Factor, Two Method Factor, and One-Factor Models of 16-Item SDO<sub>7</sub> Scale*

Sample	Model	RMSEA	$\chi^2/df$	CFI	$\chi^2_{\text{difference}}$ test		
					$\chi^2_{\text{difference}}$	<i>df</i>	<i>p</i> <
Sample 1	One-factor	.11	6.46	.97	446.36	18	.001
	Two substantive factors	.08	4.08	.98	223.40	17	.001
	Two method factors	.10	5.32	.90	339.12	17	.001
	Four-factor	.06	2.43	.97	—	—	—
Sample 2	One-factor	.15	11.29	.77	880.00	18	.001
	Two substantive factors	.12	7.22	.88	470.37	17	.001
	Two method factors	.13	8.86	.85	620.47	17	.001
	Four-factor	.07	3.85	.96	—	—	—
Sample 3	One-factor	.15	10.93	.81	841.48	18	.001
	Two substantive factors	.12	7.43	.88	475.96	17	.001
	Two method factors	.13	8.89	.85	620.47	17	.001
	Four-factor	.07	3.43	.96	—	—	—
Sample 4	One-factor	.19	27.57	.55	2,661.93	18	.001
	Two substantive factors	.16	20.81	.67	1,938.47	17	.001
	Two method factors	.10	8.78	.87	698.92	17	.001
	Four-factor	.04	2.39	.98	—	—	—
Sample 5a	One-factor	.18	7.30	.63	558.18	18	.001
	Two substantive factors	.14	4.87	.78	301.01	17	.001
	Two method factors	.15	5.39	.75	353.73	17	.001
	Four-factor	.08	2.34	.94	—	—	—
Sample 5b	One-factor	.18	7.54	.61	597.25	18	.001
	Two substantive factors	.15	5.60	.73	389.84	17	.001
	Two method factors	.13	4.13	.81	238.32	17	.001
	Four-factor	.08	2.18	.94	—	—	—
Sample 6	One-factor	.16	11.57	.77	1,005.56	18	.001
	Two substantive factors	.10	5.71	.90	390.09	17	.001
	Two method factors	.14	9.57	.82	787.60	17	.001
	Four-factor	.06	2.30	.98	—	—	—

Note. RMSEA = root mean square error of approximation; CFI = Comparative Fit Index.

**SDO-E criterion variables.** The data were also highly consistent with H2B. Compared with SDO-D, SDO-E was a better predictor of the ideologies and beliefs that are hierarchy-enhancing but ostensibly have other legitimate rationales. Specifically, it was a better predictor than SDO-D of system legitimacy beliefs, political conservatism in the U.S., as well as support for the unequal intergroup distribution of resources and opposition to hierarchy attenuating social policies (see Table 5). We found that SDO-E was a stronger predictor than SDO-D of relevant criteria in 24 cases, had the same predictive strength as SDO-D in 12 cases, and was a weaker predictor in just one case. Following the same procedure as above, we tested the overall strength of SDO-E relative to SDO-D in predicting SDO-E criteria, and found that across all 37 SDO-E criterion variables, SDO-E was a significantly stronger predictor than SDO-D (contrast estimate = .24, *SE* = .03, *t* = 8.91, *p* < .001). Furthermore, 33 of 37 SDO-E criterion variables were significantly related to SDO-E, after controlling for SDO-D. As with SDO-D criterion variables, controlling for the false discovery rate using the Benjamini-Hochberg procedure referenced above did not change this result. These results were strongly consistent with H2B.

For example, for political conservatism, which was assessed in Samples 1–5b, SDO-E was a significant predictor in five of six cases and a significantly better predictor in each of those five cases. System legitimacy beliefs were predicted significantly by SDO-E in Samples 3–5a, and were predicted significantly or marginally significantly more strongly by SDO-E in two samples. Unexpectedly, system legitimacy was predicted by SDO-D but not by SDO-E in Sample 1.

With respect to equality in the distribution of resources between groups in a novel setting (an imaginary new campus of the University of Massachusetts), SDO-E was a significant predictor in all four samples in which it was measured and a significantly stronger predictor in three samples. Support for redistribution of wealth in society, opposition to affirmative action and other policies aimed at racial equality, opposition to social welfare, and an aversion to hierarchy-attenuating careers were similarly more strongly predicted by SDO-E than SDO-D (see Table 5).

### Relationship Between SDO<sub>7</sub> and SDO<sub>6</sub>

Because the new measure was intended to clarify and advance the SDO<sub>6</sub> measure, we expected it to be highly correlated with SDO<sub>6</sub>, and to be correlated with criterion measures with about equal magnitude as for SDO<sub>6</sub> (H3). Indeed, the SDO-D subdimension of the SDO<sub>7</sub> scale shares one item with the SDO<sub>6</sub> dominance subdimension (Item 2, Appendix A), and the SDO-E subdimension of the two scales share two items (Items 10 and 12, Appendix A). The last two columns in Tables 4 and 5 show that as expected, the correlations between SDO<sub>7</sub> and each of the criterion variables were significant, and were almost identical in magnitude to the correlations between SDO<sub>6</sub> and these criterion variables. The correlations between SDO<sub>6</sub> and SDO<sub>7</sub> were .95, .92, .94, and .88, in Samples 1 to 4, respectively. Thus, taking the important step of unconfounding substantive and wording direction differences to reveal new theoretical avenues nevertheless maintains the SDO measure's well-established validity.

Table 4

Correlations Between SDO-D, SDO-E, SDO<sub>7</sub>, SDO<sub>6</sub>, and Criterion Variables Hypothesized to Primarily Relate to SDO-D

SDO-D criteria	SDO-D Part r	SDO-E Part r	Part r difference		Correlations with SDO <sub>7</sub>	Correlations with SDO <sub>6</sub>
			<i>t</i>	<i>p</i>		
<hr/>						
					R <sub>sdo6-sdo7</sub> = .95***	
<hr/>						
Sample 1						
Old-fashioned racism	.38***	−.04	6.02	.00	.48***	.53***
Zero-sum competition	.21***	.11**	1.31	.10	.46***	.49***
Nationalism	.28***	.04	3.29	.00	.45***	.46***
Support for immigrant persecution	.28***	.05	3.25	.00	.47***	.51***
War support	.15***	.12*	.49	.32	.37***	.38***
War legitimacy beliefs	.28***	−.00	3.78	.00	.39***	.41***
Death penalty support	.18***	.04	1.78	.04	.31***	.30***
Punitiveness	.23***	.06	2.17	.02	.41***	.39***
Hierarchy-enhancing jobs	.20***	−.11**	3.90	.00	.12***	.12***
					R <sub>sdo6−sdo7</sub> = .92***	
<hr/>						
Sample 2						
Old-fashioned racism	.28***	.12**	2.17	.02	.53***	.57***
Zero-sum competition	.28***	.12**	2.36	.01	.54***	.56***
Nationalism	.28***	.08 <sup>+</sup>	2.67	.01	.48***	.50***
Support for immigrant persecution	.26***	.11**	2.03	.02	.51***	.52***
War support	.22***	.07	1.89	.03	.38***	.40***
Militarism	.17***	.20***	−.44	.67	.50***	.51***
Death penalty support	.24***	.07 <sup>+</sup>	2.22	.02	.42***	.42***
Punitiveness	.22***	.12**	1.24	.11	.45***	.45***
Hierarchy-enhancing jobs	.16***	.05	1.33	.09	.29***	.30***
					R <sub>sdo6−sdo7</sub> = .94	
<hr/>						
Sample 3						
Old-fashioned racism	.31***	.03	3.22	.00	.53***	.59***
Zero-sum competition	.24***	.01	2.50	.01	.39***	.46***
Support for immigrant persecution	.30***	.00	3.88	.00	.44***	.48***
Militarism	.28***	.05	2.60	.01	.52***	.53***
Death penalty support	.14**	.09 <sup>+</sup>	.56	.29	.36***	.37***
Punitiveness	.23***	.02	2.25	.02	.39***	.41***
Hierarchy-enhancing jobs	.16**	−.00	1.67	.05	.25***	.28***
Fight Iran	.21***	−.02	2.38	.01	.30***	.29***
Syria intervention	.22***	−.11*	3.39	.00	.17**	.19***
					R <sub>sdo6−sdo7</sub> = .88***	
<hr/>						
Sample 4						
Old-fashioned racism	.21***	.28***	−1.22	.89	.58***	.63***
Zero-sum competition	.16***	.21***	−.80	.79	.45***	.46***
Nationalism	.19***	.18***	.04	.49	.45***	.46***
Support for immigrant persecution	.19***	.27***	−1.32	.91	.55***	.59***
Death penalty support	.06 <sup>+</sup>	.02	.66	.26	.09*	.07 <sup>+</sup>
	<u>SDO-D <i>B</i></u>	<u>SDO-E <i>B</i></u>	<u>Wald <i>F</i></u>			
<hr/>						
Sample 5a						
Old-fashioned racism	.66***	−.00	13.93	.00	.48***	—
Zero-sum competition	.62***	.09	10.07	.00	.53***	—
Punitiveness	.32**	.20*	.31	.29	.41***	—
Torture	.41***	.26**	.41	.26	.51***	—
	<u>SDO-D <i>B</i></u>	<u>SDO-E <i>B</i></u>	<u>Wald <i>F</i></u>			
<hr/>						
Sample 5b						
Old-fashioned racism	.36**	.21 <sup>+</sup>	.51	.24	.43***	—
Zero-sum competition	.38**	−.00	2.11	.07	.24**	—
Punitiveness	.48***	−.12	10.72	.00	.28**	—
Torture	.40***	.06	2.87	.05	.36***	—

*Note.* The *p* values for the Part r difference *t*-test are one-tailed, because of the apriori directional hypothesis concerning the relative predictive strength of SDO-D and -E. To obtain the probability of finding an effect in the opposite direction (i.e., opposite tail of the distribution) given a hypothesized directional effect, we divide the obtained *p* value by 2, and subtract that from 1 (i.e., [1 - (p/2)]). Complex samples procedures were used for Samples 5a and 5b due to the effects of statistical weighting and stratified sampling by race (Black/White) on variance estimates. *B*-coefficients rather than Part r are used for these two samples because the Part r is not available in the SPSS Complex Samples GLM procedure; the two are interchangeable in principle. In addition, a Wald *F* test is used to compute the part correlation difference in the complex samples general linear model framework.

<sup>+</sup> *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.



Table 5

Correlations Between SDO-D, SDO-E, SDO<sub>7</sub>, SDO<sub>6</sub>, and Criterion Variables Hypothesized to Primarily Relate to SDO-E

SDO-E criteria	SDO-D Part r	SDO-E Part r	Part r difference		Correlations with SDO <sub>7</sub>	Correlations with SDO <sub>6</sub>
			<i>t</i>	<i>p</i>		
Sample 1						
Political conservatism	.01	.25***	−3.10	.00	.37***	.33***
System justification	.14**	.03	1.36	.92	.23***	.23***
Opposition to affirmative action	−.03	.21***	−2.96	.00	.26***	.23***
Opposition to racial policy	.05	.40***	−5.64	.00	.63***	.61***
Opposition to welfare	.14***	.28***	−2.31	.01	.60***	.60***
Symbolic racism	.18***	.18***	−.08	.47	.51***	.51***
Unequal distribution of university resources	.12***	.19***	−.93	.18	.43***	.43***
Hierarchy-attenuating jobs	.07 <sup>+</sup>	.24***	−2.30	.01	.43***	.42***
Sample 2						
Political conservatism	.06	.24***	−1.98	.01	.40***	.39***
System justification	.07 <sup>+</sup>	.20***	−1.59	.06	.37***	.39***
Opposition to affirmative action	−.01	.21***	−2.69	.01	.28***	.23***
Opposition to welfare	.13***	.30***	−2.53	.01	.59***	.57***
Symbolic racism	.22***	.25***	−.15	.33	.63***	.62***
Unequal distribution of university resources	.05*	.29***	−3.17	.00	.45***	.44***
Hierarchy-attenuating jobs	.08 <sup>+</sup>	.17***	−1.10	.14	.34***	.33***
Sample 3						
Political conservatism	.06 <sup>+</sup>	.30***	−3.29	.00	.55***	.51***
System justification	.10*	.13**	−.33	.37	.34***	.30***
Affirmative action–race	.06	.14**	−.89	.19	.31***	.30***
Affirmative action–gender	.00	.19***	−2.01	.02	.31***	.27***
Opposition to welfare	.11**	.35***	−3.75	.00	.69***	.64***
Symbolic racism	.21***	.18***	.45	.67	.62***	.61***
Unequal distribution of university resources	.03	.25***	−2.50	.01	.44***	.40***
Hierarchy-attenuating jobs	.13*	.12*	.10	.54	.38***	.37***
Antidiscrimination measures	.06	.39***	−4.82	.00	.71***	.67***
Redistribution of wealth	.04	.41***	−5.73	.00	.67***	.61***
Sample 4						
Political conservatism	.05	.22***	−2.69	.00	.31***	.31***
System justification	.09*	.20***	−1.80	.04	.33***	.35***
Symbolic racism	.13***	.21***	−1.42	.08	.40***	.37***
Opposition to racial policy	.08**	.46***	−7.64	.00	.64***	.67***
Unequal distribution of university resources	.10**	.19***	−1.56	.06	.35***	.33***
	SDO-D <i>B</i>	SDO-E <i>B</i>	Wald <i>F</i>			
Sample 5a						
Political conservatism	.01	.52***	7.72	.00	.37***	—
System justification	.13	.24**	.79	.19	.37***	—
Opposition to racial policy	.26**	.66***	11.87	.00	.71***	—
Anti-Black affect	.20*	.16 <sup>+</sup>	1.19	.86	.31***	—
	SDO-D <i>B</i>	SDO-E <i>B</i>	Wald <i>F</i>			
Sample 5b						
Political conservatism	.23*	.08	.73	.80	.26***	—
System justification	.07	.06	.001	.51	.12	—
Opposition to racial policy	.28**	.52***	2.18	.07	.66***	—

*Note.* The *p*-values for the Part r difference *t*-test are one-tailed, because of the apriori directional hypothesis concerning the relative predictive strength of SDO-D and -E. In order to obtain the probability of finding an effect in the opposite direction (i.e., opposite tail of the distribution) given a hypothesized directional effect, we divide the obtained *p*-value by 2, and subtract that from 1 (i.e., [1 - (*p*/2)]). Complex samples procedures were used for Samples 5a and 5b due to the effects of statistical weighting and stratified sampling by race (Black/White) on variance estimates. *B*-coefficients rather than Part r are used for these two samples because the Part r is not available in the SPSS Complex Samples GLM procedure; the two are interchangeable in principle. In addition, a Wald *F* test is used to compute the part correlation difference in the complex samples general linear model framework.

<sup>+</sup> *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

### SDO<sub>7</sub>-D: Preference for Ingroup Dominance or Intergroup Hierarchy?

Next we explored whether the new SDO<sub>7</sub>-D subscale, which lacks items implying a desire for ingroup dominance, would be negatively correlated with ethnic identity among minority group

members, as predicted by social dominance theory. Moreover, we examined whether this would be true to a greater extent than the SDO<sub>6</sub>-D's dominance subscale, which includes the potential ingroup dominance confound. We tested this with Samples 4 and 5b, which consisted only of African American respondents, and found the SDO<sub>7</sub> dominance subscale had a correlation of -.21 (*p* <



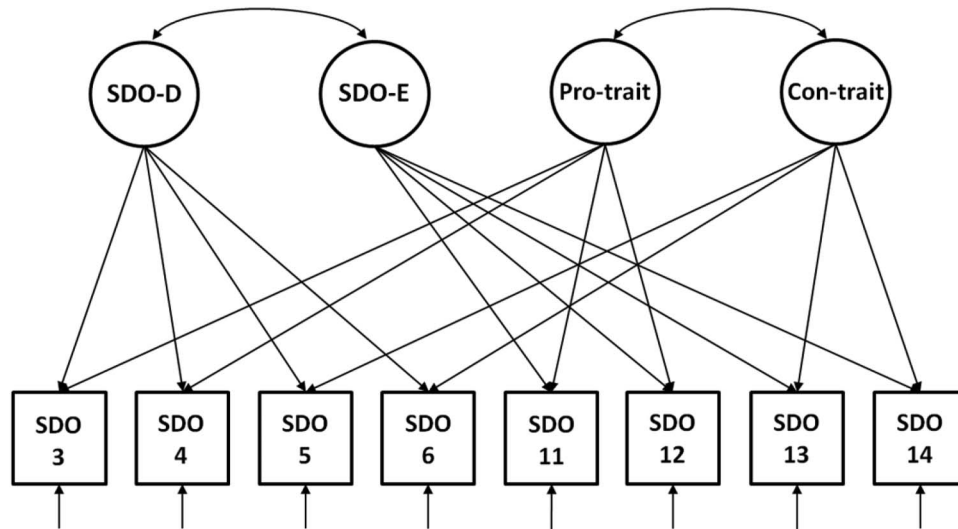


Figure 2. Four-factor confirmatory factor analysis model with each item loading on one substantive (SDO-D or SDO-E) and one method dimension (pro-trait or con-trait). Note: Item numbers are taken from the full SDO7 scale.

.001) with ethnic identity in Sample 4. The SDO<sub>6</sub> dominance subscale had a correlation of  $-.12$  ( $p < .01$ ) with ethnic identity in the same sample.<sup>9</sup> Using Williams' T2 statistic to test the difference between dependent correlations (Steiger, 1980), we found, consistent with H4, that the correlation between ethnic identity and the SDO<sub>7</sub> dominance subscale was significantly more negative than the correlation with the SDO<sub>6</sub> dominance subscale,  $t = -3.35$ ,  $p < .001$ . In Sample 5b, a nationally representative sample of African Americans, the correlation between SDO-D and ethnic identity was  $-.28$  ( $p < .001$ ; SDO<sub>6</sub> was not measured in this case). These results show that the new SDO<sub>7</sub>-D scale is unlikely to be a measure of desire for dominance of one's own group, because the more one identifies with a low status group identity, the *lower* one is in SDO. Moreover, our analyses suggest that the new SDO<sub>7</sub>-D is even more reflective of group dominance in general (rather than ingroup dominance) than the SDO<sub>6</sub> scale, an important advance in its construct validity.

### Short Scale

Having established the factor structure and predictive validity of a new 16-item SDO<sub>7</sub> measure assessing both dominance and antiegalitarianism subdimensions, we moved on to test the factor structure and validity of a shorter version that could be used when space constraints do not allow for the use of the full scale. The eight items for the short scale, which we label SDO<sub>7(s)</sub>, were selected based on the results of factor analyses and regressions of the 16 items in the SDO<sub>7</sub> scale in a separate sample not included in the current article (see Footnote 2). Items were selected that possessed the combined properties of loading highly on their respective substantive dimensions, strongly predicting their respective criteria, and resulting in equal numbers of items representing the substantive and method dimensions (see Appendix B). We tested the factor structure and predictive validity of the short scale following the same procedures used to test the full scale.

First, we tested whether a four-factor model that takes into account both substantive (dominance and antiegalitarianism) and wording (pro-trait and con-trait) dimensions (see Figure 2) would fit better than a model that took into account substantive dimensions or wording direction alone or a one-factor model. The fit statistics for each model suggested that this was the case (see Table 6). For example, in Sample 1, the four-factor model demonstrated a good fit to the data ( $\chi^2/df$  ratio = 1.43, RMSEA = .03, CFI = 1.00), whereas the models with two method factors ( $\chi^2/df$  ratio = 5.96, RMSEA = .10, CFI = .94), two substantive factors ( $\chi^2/df$  ratio = 3.60, RMSEA = .07, CFI = .97), and one-factor ( $\chi^2/df$  ratio = 6.32, RMSEA = .11, CFI = .93) fit less well. Indeed, in all seven samples, a chi-square difference test between the four-factor model and each of the other three models revealed that the four-factor model was a significantly better fit in every comparison (see Table 6).

Turning to the predictive validity analyses, we found that for criterion variables that are theoretically aligned with the dominance dimension, SDO-D<sub>(s)</sub> predicted more strongly than SDO-E<sub>(s)</sub> in 22 cases, predicted with equal strength as SDO-E<sub>(s)</sub> in 17 cases, and predicted less strongly than SDO-E<sub>(s)</sub> in just one case (see Table 7). We ran the same mixed effects model, which revealed that for the 40 SDO-D criteria, SDO-D was a significantly stronger predictor of these criteria than SDO-E (contrast estimate = .22,  $SE = .07$ ,  $t = 3.19$ ,  $p = .02$ ). Thus, these results of validity analyses with this shorter scale were strongly supportive of theoretical expectations.

For criterion variables theoretically related to SDO-E, SDO-E<sub>(s)</sub> was found to be a better predictor in 22 cases, predicted with equal

<sup>9</sup> The correlation of ethnic identity with the SDO7 and SDO6 antiegalitarianism subscales were  $-.27$  ( $p < .001$ ) and  $-.31$  ( $p < .001$ ), respectively. In Sample 5B, the correlation of ethnic identity with SDO-E was  $-.33$  ( $p < .001$ ).

Table 6

*Model Fit for Four-Factor, Two Substantive Factor, Two Method Factor, and One-Factor Models of 8-Item SDO<sub>7</sub> Short Scale*

Sample	Model	RMSEA	$\chi^2/df$	CFI	$\chi^2_{\text{difference}}$ test		
					$\chi^2_{\text{difference}}$	<i>df</i>	<i>p</i> <
Sample 1	One-factor	.11	6.32	.93	112.05	10	.001
	Two substantive factors	.07	3.60	.97	54.11	9	.001
	Two method factors	.10	5.96	.94	98.96	9	.001
	Four-factor	.03	1.43	1.00	—	—	—
Sample 2	One-factor	.16	11.62	.87	220.37	10	.001
	Two substantive factors	.15	11.34	.88	203.35	9	.001
	Two method factors	.13	7.90	.91	138.01	9	.001
	Four-factor	.02	1.21	1.00	—	—	—
Sample 3	One-factor	.14	9.81	.91	189.82	10	.001
	Two substantive factors	.13	8.69	.93	158.87	9	.001
	Two method factors	.12	7.50	.94	136.28	9	.001
	Four-factor	.00	.00	1.00	—	—	—
Sample 4	One-factor	.24	41.50	.61	818.50	10	.001
	Two substantive factors	.24	41.36	.63	774.20	9	.001
	Two method factors	.11	9.85	.92	175.64	9	.001
	Four-factor	.02	1.16	1.00	—	—	—
Sample 5a	One-factor	.19	8.21	.77	148.35	10	.001
	Two substantive factors	.18	7.14	.82	119.77	9	.001
	Two method factors	.17	6.77	.83	112.90	9	.001
	Four-factor	.05	1.58	.99	—	—	—
Sample 5b	One-factor	.24	12.43	.64	238.65	10	.001
	Two substantive factors	.22	10.56	.71	190.69	9	.001
	Two method factors	.17	6.77	.83	118.55	9	.001
	Four-factor	.00	1.03	1.00	—	—	—
Sample 6	One-factor	.16	12.05	.87	230.06	10	.001
	Two substantive factors	.11	6.39	.94	110.43	9	.001
	Two method factors	.16	11.64	.88	210.24	9	.001
	Four-factor	.02	1.10	1.00	—	—	—

Note. RMSEA = root mean square error of approximation; CFI = Comparative Fit Index.

strength in 14 cases, and was a weaker predictor in one case (see Table 8). On average, across all 37 criteria, SDO-E was a significantly stronger predictor of these criteria than SDO-D (contrast estimate = .18, *SE* = .03, *t* = 5.66, *p* < .01). Correcting for multiple comparisons (false discoveries) following the Benjamini-Hochberg procedure described above did not change results for semipartial correlations between the short SDO-D scale and its hypothesized criterion variables, or the short SDO-E scale, and its criterion variables.

Furthermore, just as with the full scale, the short scale was strongly correlated with SDO<sub>6</sub> (*r* = .92, .90, .92, and .87 in Samples 1–4, respectively), and correlated with all of the criterion variables to a similar magnitude to that of the full scale, and of the SDO<sub>6</sub> scale (see Tables 7 and 8). In sum, and consistent with theoretical expectations, the results with the short scale were highly consistent with what was found with the full scale (H5).

### Personality and Individual Differences

Samples 1–5b represented theoretical advances to our understanding of SDO in that the data clearly revealed how the two dimensions dissociate in terms of the intergroup outcomes they relate to most strongly (with an improved measure), and how SDO-D represents support for group-based dominance in general, irrespective of whether one's ingroup is dominant. In Sample 6 we turned to an examination of the relationships between SDO<sub>7</sub> and personality and individual differences. These data enabled us to

test whether our new SDO<sub>7</sub> measure corresponds with various dimensions of personality as did previous SDO measures. Additionally, this allowed us to conduct the first test of the personality and trait bases of SDO-D and SDO-E separately. Due to the large number of findings, we focus here on the personality and individual differences to which we hypothesized SDO-D and -E would differentially relate, and summarize relatively strong semipartial correlations between SDO-D or -E, on the one hand, and personality and individual differences, on the other.

First, based on previous findings with older versions of the SDO scale (see Table 1), we predicted that as a whole, SDO<sub>7</sub> should be significantly related to a number of well-established personality constructs (H6). Consistent with previous findings using older versions of the SDO scale, the SDO<sub>7</sub> scale was significantly correlated with all of these personality traits and individual differences (see Table 9).

Next, we found in line with H7, that SDO-D was more related to (lower) HEXACO honesty-humility, "Dark Triad" traits, and a "competitive jungle" worldview than was SDO-E (see Sample 6, Table 9). For both samples of Whites (5a and 6), SDO-D was significantly or marginally more related to Machiavellianism than SDO-E. Unexpectedly, in the national sample of Blacks (5b), Machiavellianism was related to SDO-E but not SDO-D. Psychopathy was also shown to relate significantly more to SDO-D than SDO-E in Sample 6. These results are consistent with previous findings showing that SDO<sub>6</sub> is related to the Dark Triad (Hod-

Table 7

*Correlations Between Short Forms of SDO-D, SDO-E, SDO<sub>7</sub>, and Criterion Variables Hypothesized to Primarily Relate to SDO-D*

SDO-D criteria	SDO-D Part r	SDO-E Part r	Part r difference		Correlations with SDO <sub>7(s)</sub>
			<i>t</i>	<i>p</i>	
R <sub>SDO6-SDO7(s)</sub> = .92***					
Sample 1					
Old-fashioned racism	.38***	−.02	5.62	.00	.45***
Zero-sum competition	.19***	.15***	.57	.29	.43***
Nationalism	.30***	.04	3.52	.00	.42***
Support for immigrant persecution	.27***	.08*	2.63	.01	.44***
War support	.16***	.13**	.34	.37	.37***
War legitimacy beliefs	.30***	.02	3.92	.00	.39***
Death penalty support	.18***	.06	1.67	.05	.30***
Punitiveness	.23***	.09*	1.77	.04	.39***
Hierarchy-enhancing jobs	.17***	−.08 <sup>+</sup>	3.20	.00	.11*
R <sub>SDO6-SDO7(s)</sub> = .90***					
Sample 2					
Old-fashioned racism	.27***	.11**	2.20	.01	.52***
Zero-sum competition	.26***	.13**	1.84	.04	.53***
Nationalism	.28***	.08 <sup>+</sup>	2.68	.00	.47***
Support for immigrant persecution	.22***	.15***	.93	.18	.50***
War support	.19***	.09*	1.22	.11	.38***
Militarism	.17***	.19***	−.26	.60	.49***
Death penalty support	.20***	.10*	1.26	.10	.39***
Punitiveness	.17***	.17***	.00	.50	.44***
Hierarchy-enhancing jobs	.15**	.07	.91	.18	.29***
R <sub>SDO6-SDO7(s)</sub> = .92***					
Sample 3					
Old-fashioned racism	.32***	.01	3.68	.00	.50***
Zero-sum competition	.26***	−.02	3.03	.00	.37***
Support for immigrant persecution	.29***	.00	3.71	.00	.43***
Militarism	.28***	.06	2.62	.01	.51***
Death penalty support	.11*	.12*	−.12	.54	.36***
Punitiveness	.22***	.03	2.12	.02	.38***
Hierarchy-enhancing jobs	.14**	.01	1.28	.10	.23***
Fight Iran	.19***	−.00	1.96	.03	.27***
Syria intervention	.20***	−.11*	3.06	.00	.14**
R <sub>SDO6-SDO7(s)</sub> = .87***					
Sample 4					
Old-fashioned racism	.22***	.29***	−1.16	.87	.57***
Zero-sum competition	.16***	.22***	−1.05	.85	.43***
Nationalism	.20***	.20***	.00	.50	.44***
Support for immigrant persecution	.20***	.28***	−1.48	.93	.54***
Death penalty support	.07*	.01	1.05	.15	.09**
	SDO-D <i>B</i>	SDO-E <i>B</i>	Wald <i>F</i>		
Sample 5a					
Old-fashioned racism	.63***	−.07	27.38	.00	.46***
Zero-sum competition	.60***	.02	14.27	.00	.51***
Punitiveness	.24*	.23*	.00	.48	.40***
Torture	.42***	.19 <sup>+</sup>	1.25	.13	.49***
	SDO-D <i>B</i>	SDO-E <i>B</i>	Wald <i>F</i>		
Sample 5b					
Old-fashioned racism	.37***	.17	1.10	.15	.42***
Zero-sum competition	.24 <sup>+</sup>	.03	.71	.20	.18**
Punitiveness	.37**	−.03	5.12	.01	.26**
Torture	.33**	.14	.94	.17	.38***

*Note.* The *p* values for the Part r difference *t*-test are one-tailed, because of the apriori directional hypothesis concerning the relative predictive strength of SDO-D and -E. To obtain the probability of finding an effect in the opposite direction (i.e., opposite tail of the distribution) given a hypothesized directional effect, we divide the obtained *p* value by 2, and subtract that from 1 (i.e., [1 - (p/2)]). Complex samples procedures were used for Samples 5a and 5b due to the effects of statistical weighting and stratified sampling by race (Black/White) on variance estimates. *B*-coefficients rather than Part r are used for these two samples because the Part r is not available in the SPSS Complex Samples GLM procedure; the two are interchangeable in principle. In addition, a Wald *F* test is used to compute the part correlation difference in the complex samples general linear model framework.

<sup>+</sup> *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

Table 8

*Correlations Between Short Forms of SDO-D, SDO-E, SDO<sub>7</sub>, and Criterion Variables Hypothesized to Primarily Relate to SDO-E*

SDO-E criteria	SDO-D Part r	SDO-E Part r	Part r difference		Correlations with SDO <sub>7(S)</sub>
			<i>t</i>	<i>p</i>	
Sample 1					
Political conservatism	.07 <sup>+</sup>	.21 <sup>***</sup>	−1.92	.03	.35 <sup>***</sup>
System justification	.18 <sup>***</sup>	.00 <sup>+</sup>	2.31	.99	.23 <sup>***</sup>
Opposition to affirmative action	−.01	.21 <sup>***</sup>	−2.74	.01	.25 <sup>***</sup>
Opposition to racial policy	.14 <sup>***</sup>	.36 <sup>***</sup>	−3.61	.00	.61 <sup>***</sup>
Opposition to welfare	.21 <sup>***</sup>	.26 <sup>***</sup>	−.77	.22	.59 <sup>***</sup>
Symbolic racism	.22 <sup>***</sup>	.18 <sup>***</sup>	.59	.72	.49 <sup>***</sup>
Unequal distribution of university resources	.15 <sup>***</sup>	.19 <sup>***</sup>	−.41	.34	.42 <sup>***</sup>
Hierarchy-attenuating jobs	.12 <sup>**</sup>	.23 <sup>***</sup>	−1.73	.04	.43 <sup>***</sup>
Sample 2					
Political conservatism	.06	.23 <sup>***</sup>	−2.22	.01	.40 <sup>***</sup>
System justification	.08 <sup>+</sup>	.19 <sup>***</sup>	−1.46	.07	.36 <sup>***</sup>
Opposition to affirmative action	.01	.19 <sup>***</sup>	−2.14	.02	.27 <sup>***</sup>
Opposition to welfare	.16 <sup>***</sup>	.27 <sup>***</sup>	−1.52	.06	.57 <sup>***</sup>
Symbolic racism	.21 <sup>***</sup>	.25 <sup>***</sup>	−.62	.27	.62 <sup>***</sup>
Unequal distribution of university resources	.05	.28 <sup>***</sup>	−3.02	.00	.43 <sup>***</sup>
Hierarchy-attenuating jobs	.12 <sup>**</sup>	.13 <sup>**</sup>	−.18	.43	.33 <sup>***</sup>
Sample 3					
Political conservatism	.07 <sup>+</sup>	.29 <sup>***</sup>	−2.99	.00	.54 <sup>***</sup>
System justification	.11 <sup>*</sup>	.12 <sup>**</sup>	−.13	.45	.34 <sup>***</sup>
Affirmative action–race	.07	.14 <sup>***</sup>	−.78	.22	.32 <sup>***</sup>
Affirmative action–gender	.03	.18 <sup>***</sup>	−1.62	.05	.32 <sup>***</sup>
Opposition to welfare	.12 <sup>***</sup>	.35 <sup>***</sup>	−3.56	.00	.69 <sup>***</sup>
Symbolic racism	.20 <sup>***</sup>	.19 <sup>***</sup>	.11	.54	.60 <sup>***</sup>
Unequal distribution of university resources	.05	.25 <sup>***</sup>	−2.26	.01	.45 <sup>***</sup>
Hierarchy-attenuating jobs	.14 <sup>**</sup>	.11 <sup>*</sup>	.30	.62	.37 <sup>***</sup>
Antidiscrimination measures	.10 <sup>**</sup>	.36 <sup>***</sup>	−3.65	.00	.70 <sup>***</sup>
Redistribution of wealth	.07 <sup>*</sup>	.39 <sup>***</sup>	−5.01	.00	.67 <sup>***</sup>
Sample 4					
Political conservatism	.08 <sup>*</sup>	.21 <sup>***</sup>	−2.05	.02	.32 <sup>***</sup>
System justification	.12 <sup>***</sup>	.20 <sup>***</sup>	−1.34	.09	.35 <sup>***</sup>
Symbolic racism	.16 <sup>***</sup>	.20 <sup>***</sup>	−.56	.29	.40 <sup>***</sup>
Opposition to racial policy	.15 <sup>***</sup>	.42 <sup>***</sup>	−5.52	.00	.64 <sup>***</sup>
Unequal distribution of university resources	.11 <sup>**</sup>	.20 <sup>***</sup>	−1.43	.08	.35 <sup>***</sup>
	SDO-D <i>B</i>	SDO-E <i>B r</i>	Wald <i>F</i>		
Sample 5a					
Political conservatism	−.08	.59 <sup>***</sup>	12.77	.00	.37 <sup>***</sup>
System justification	.17 <sup>*</sup>	.17 <sup>*</sup>	.01	.47	.36 <sup>***</sup>
Opposition to racial policy	.22 <sup>*</sup>	.67 <sup>***</sup>	8.87	.00	.72 <sup>***</sup>
Anti-Black affect	.27 <sup>**</sup>	.08	1.19	.86	.33 <sup>***</sup>
	SDO-D <i>B</i>	SDO-E <i>B</i>	Wald <i>F</i>		
Sample 5b					
Political conservatism	.12	.14	.01	.47	.23 <sup>**</sup>
System justification	.10	.06	.09	.61	.15 <sup>+</sup>
Opposition to racial policy	.25 <sup>**</sup>	.51 <sup>***</sup>	2.78	.049	.64 <sup>***</sup>

*Note.* The *p*-values for the Part r difference *t*-test are one-tailed, because of the apriori directional hypothesis concerning the relative predictive strength of SDO-D and -E. In order to obtain the probability of finding an effect in the opposite direction (i.e., opposite tail of the distribution) given a hypothesized directional effect, we divide the obtained *p*-value by 2, and subtract that from 1 (i.e., [1 - (p/2)]). Complex samples procedures were used for Samples 5a and 5b due to the effects of statistical weighting and stratified sampling by race (Black/White) on variance estimates. *B*-coefficients rather than Part r are used for these two samples because the Part r is not available in the SPSS Complex Samples GLM procedure; the two are interchangeable in principle. In addition, a Wald *F* test is used to compute the part correlation difference in the complex samples general linear model framework.

<sup>+</sup> *p* < .10. <sup>\*</sup> *p* < .05. <sup>\*\*</sup> *p* < .01. <sup>\*\*\*</sup> *p* < .001.

son et al., 2010), but importantly extend this prior work by showing that it is the SDO-D subdimension in particular that may be the primary driver of this relationship. Furthermore, consistent with the finding that SDO-D is strongly related to perceptions of zero-sum competition (see above), having a competitive jungle worldview was significantly more related to SDO-D than SDO-E.

Turning to our exploratory analyses, we observed that there were also several semipartial correlations that either replicated across samples, or were significant and had an absolute values greater than *r* = .20 (i.e., beyond a "small" effect of *r* = .10; Cohen, 1988). These semipartial correlations, which reflect the relationship between one dimension of SDO and personality and individual differences, while controlling for the other dimension of SDO, allow us to examine the

Table 9  
Correlations Between SDO and Personality and Individual Differences

	R <sub>SDO7-Criterion</sub>			Part r difference		α	Mean	SD
		SDO-D <i>B</i>	SDO-E <i>B</i>	Wald <i>F</i>	<i>p</i>			
Sample 5								
Sample 5a: Whites								
Machiavellianism	.34***	.51***	−.13	17.03	.00	.66	2.84	1.13
Empathic concern	−.40***	−.16 <sup>+</sup>	−.22**	.35	.56	.85	4.24	1.08
Moral Foundations: Purity	.18*	.22*	−.00	1.55	.21	.83	3.90	1.20
Sample 5b: Blacks								
Machiavellianism	.40***	.13	.40**	1.63	.90	.75	2.96	1.40
Empathic concern	−.38***	−.07	−.33***	3.28	.07	.83	4.61	1.11
Moral Foundations: purity	.14 <sup>+</sup>	−.05	−.10	.08	.78	.74	4.09	1.06
		SDO-D Part-r	SDO-E Part-r	<i>t</i>	<i>p</i>			
Sample 6								
Big 5								
Neuroticism	.02	.10*	−.08 <sup>+</sup>	1.99	.05	.93	2.71	.79
Agreeableness	−.38***	−.14**	−.14**	−.06	.95	.89	3.91	.58
Conscientiousness	−.10*	−.06	−.02	−.37	.71	.87	3.69	.50
Extraversion	−.04	.03	−.05	.88	.38	.91	3.31	.67
Openness/intellect	−.31***	−.16**	−.08 <sup>+</sup>	−.96	.34	.88	3.84	.59
HEXACO								
Honesty-humility	−.31***	−.25***	.02	−3.32	.00	.87	4.82	1.06
Emotionality	−.18***	.00	−.14**	1.59	.11	.84	4.41	.96
Extraversion	.01	.00	.01	−.11	.91	.89	4.21	1.09
Agreeableness	−.11*	.04	−.12*	1.77	.08	.87	4.07	.98
Conscientiousness	−.09*	−.06	−.01	−.60	.55	.85	5.01	.89
Openness to experience	−.29***	−.14**	−.07	−.89	.37	.88	4.91	1.10
Altruism	−.38***	−.16***	−.13**	−.43	.67	.72	5.47	1.16
Dark triad								
Machiavellianism	.30***	.18***	.04	1.73	.08	.85	3.78	1.14
Narcissism	.27***	.14**	.07	.80	.43	.78	3.26	1.07
Psychopathy	.27***	.23***	−.02	2.95	.00	.81	2.50	1.09
Empathic concern	−.35***	−.12**	−.14**	.27	.80	.90	3.94	.86
Dual-process model								
Social conformity	.17***	−.02	.14**	−1.91	.06	.89	4.30	1.08
Tough-mindedness	.31***	.11*	.14**	−.48	.63	.95	2.49	1.09
Dangerous world view	.26***	.15**	.04	−1.32	.19	.89	3.83	1.25
Competitive jungle world view	.48***	.26***	.10*	2.05	.04	.93	2.51	1.01
Need for closure								
Order	.12*	.02	.07	−.49	.63	.89	4.42	.68
Predictability	.08	.07	−.01	.94	.35	.87	4.80	1.13
Decisiveness	.07	.01	.05	−.48	.63	.85	4.62	1.16
Ambiguity	−.04	−.10*	.07	−1.88	.06	.83	4.48	1.20
Close-mindedness	.06	.03	.02	.08	.93	.79	4.64	.97
Moral foundations								
Harm	.23***	.06	.12*	−.73	.47	.69	3.46	.87
Harm	−.43***	−.03	−.29***	3.38	.00	.69	5.67	1.18
Fairness	−.52***	−.05	−.34***	3.86	.00	.66	5.48	1.07
Ingroup	.17***	.09*	.03	.75	.45	.73	4.28	1.26
Authority	.21***	.11*	.05	.75	.45	.74	4.48	1.29
Purity	.26***	.07	.13**	−.76	.44	.85	4.00	1.71

*Note.* The *p*-values for the part-r difference *t*-test for Honesty-Humility, Machiavellianism, Narcissism, Psychopathy, and a "Competitive jungle world view" are one-tailed, because of the apriori directional hypothesis that SDO-D will be more strongly related to these variables than SDO-E. In order to obtain the probability of finding an effect in the opposite direction (i.e., opposite tail of the distribution) given a hypothesized directional effect, we divide the obtained *p*-value by 2, and subtract that from 1 (i.e.,  $[1 - (p/2)]$ ). Complex samples procedures were used for Samples 5a and 5b due to the effects of statistical weighting and stratified sampling by race (Black/White) on variance estimates. *B*-coefficients rather than part *r* are used for these two samples because the part *r* is not available in the SPSS Complex Samples GLM procedure; the two are interchangeable in principle. In addition, a Wald *F* test is used to compute the part correlation difference in the complex samples general linear model framework.

<sup>+</sup> *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

traits that are related to the *unique* aspect of each dimension of SDO (i.e., not including overlapping variance with the other dimension of SDO). First, we observed that SDO-D was negatively related to empathic concern in both Samples 5a and 6, after controlling for SDO-E. After controlling for SDO-D, the unique portion of SDO-E

was significantly negatively related to empathic concern in Samples 5a, 5b, and 6. SDO-E was also significantly negatively related to the harm and fairness dimensions of the moral foundations framework (i.e., increasing levels of SDO-E is associated with less concern about harm and fairness).



## Social Dominance Orientation in the U.S. General Population

Many studies in social and political psychology (including some samples in the current study) make use of convenience samples (e.g., student or crowd-sourcing samples), which differ demographically from general population samples (e.g., in terms of age, education, and socioeconomic-status; Henrich, Heine, & Norenzayan, 2010). These convenience samples, particularly those with college students, may have less crystallized and possibly more liberal sociopolitical attitudes than those from other sociodemographic groups (Henry, 2008; Sears, 1986). Thus, in addition to establishing the consistency of our factor analytic and predictive validity findings in a national sample, and thereby giving us

greater confidence in our overall findings, Samples 5a and 5b, representative samples of U.S. Whites and Blacks, provide a rare glimpse into levels of social dominance orientation in the general population (see Table 10 and Table 11). Notably, the means for the overall scale and each dimension among White respondents (for both full and short versions) appear higher than in each of the other samples (see Table 10 and Table 11; see Supplemental Table 7 for SDO skew statistics). Consistent with the other samples, higher status groups (men and Whites) had significantly higher levels of SDO than lower status groups (women and Blacks, respectively; Lee, Pratto, & Johnson, 2011; Sidanius & Pratto, 1999; Table 10 and 11). Furthermore, the relatively larger difference between men and women (.43 point difference) as compared with the race

Table 10  
*SDO Descriptive Statistics, Reliability, and Gender Difference*

	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i> <sub>Male</sub>	<i>SD</i> <sub>Male</sub>	<i>M</i> <sub>Female</sub>	<i>SD</i> <sub>Female</sub>	Sex difference ( <i>t</i> and <i>p</i> )	
Sample 1									
Full SDO <sub>7</sub>	2.88	1.19	.93	3.19	1.23	2.67	1.11	4.97	.00
SDO-D	2.83	1.24	.88	3.17	1.29	2.60	1.15	5.17	.00
SDO-E	2.94	1.30	.90	3.21	1.34	2.75	1.24	4.00	.00
SDO <sub>7-Short</sub>	2.90	1.22	.87	3.22	1.27	2.69	1.13	4.99	.00
SDO-D <sub>Short</sub>	2.83	1.36	.80	3.20	1.46	2.58	1.23	5.00	.00
SDO-E <sub>Short</sub>	2.98	1.30	.80	3.25	1.36	2.79	1.23	3.97	.00
Sample 2									
Full SDO <sub>7</sub>	2.55	1.19	.94	2.73	1.21	2.39	1.15	3.10	.00
SDO-D	2.48	1.24	.89	2.65	1.26	2.32	1.20	2.93	.00
SDO-E	2.63	1.32	.91	2.80	1.33	2.46	1.29	2.83	.00
SDO <sub>7-Short</sub>	2.60	1.23	.88	2.78	1.27	2.43	1.17	3.15	.00
SDO-D <sub>Short</sub>	2.53	1.35	.79	2.74	1.40	2.34	1.27	3.29	.00
SDO-E <sub>Short</sub>	2.66	1.31	.80	2.81	1.32	2.51	1.27	2.53	.01
Sample 3									
Full SDO <sub>7</sub>	2.56	1.28	.95	2.75	1.32	2.43	1.24	2.61	.00
SDO-D	2.49	1.30	.90	2.68	1.32	2.36	1.26	2.53	.01
SDO-E	2.63	1.43	.93	2.82	1.45	2.49	1.41	2.37	.01
SDO <sub>7-Short</sub>	2.59	1.32	.90	2.78	1.36	2.45	1.29	2.59	.01
SDO-D <sub>Short</sub>	2.54	1.36	.80	2.74	1.36	2.41	1.34	2.59	.01
SDO-E <sub>Short</sub>	2.63	1.46	.86	2.81	1.49	2.50	1.43	2.24	.01
Sample 4									
Full SDO <sub>7</sub>	2.46	1.09	.89	2.56	1.10	2.32	1.06	3.09	.00
SDO-D	2.52	1.18	.83	2.63	1.18	2.38	1.18	3.05	.00
SDO-E	2.38	1.21	.82	2.47	1.25	2.25	1.15	2.64	.00
SDO <sub>7-Short</sub>	2.40	1.12	.78	2.50	1.15	2.26	1.08	3.05	.00
SDO-D <sub>Short</sub>	2.42	1.24	.59	2.54	1.24	2.26	1.22	3.12	.00
SDO-E <sub>Short</sub>	2.37	1.27	.68	2.46	1.31	2.24	1.21	2.40	.01
Sample 5									
Full SDO <sub>7</sub>	2.95	1.17	.89	3.17	1.17	2.74	1.14	2.59	.01
SDO-D	2.74	1.23	.82	2.96	1.22	2.53	1.22	2.04	.04
SDO-E	3.16	1.35	.86	3.38	1.37	2.95	1.30	2.56	.01
SDO <sub>7-Short</sub>	2.91	1.23	.81	3.12	1.24	2.72	1.21	2.60	.01
SDO-D <sub>Short</sub>	2.67	1.31	.72	2.90	1.30	2.45	1.29	2.52	.01
SDO-E <sub>Short</sub>	3.15	1.40	.75	3.33	1.43	3.00	1.36	2.13	.03
Sample 6									
Full SDO <sub>7</sub>	2.51	1.24	.94	2.79	1.30	2.34	1.17	3.63	.00
SDO-D	2.42	1.25	.88	2.66	1.29	2.29	1.20	3.08	.00
SDO-E	2.59	1.42	.92	2.92	1.52	2.40	1.33	3.66	.00
SDO <sub>7-Short</sub>	2.46	1.25	.88	2.69	1.30	2.32	1.19	2.98	.00
SDO-D <sub>Short</sub>	2.35	1.28	.76	2.54	1.33	2.24	1.24	2.38	.01
SDO-E <sub>Short</sub>	2.56	1.45	.86	2.85	1.55	2.40	1.36	3.07	.00

*Note.* Test of gender difference is one-tailed due to apriori hypothesis that men have higher levels of SDO than women (i.e., the “invariance hypothesis;” Lee et al., 2011; Sidanius and Pratto, 1999). The descriptive statistics reported for Sample 5 as a whole are from the half of the sample that completed the SDO<sub>7</sub> measure before any other measure. This sample consists of both Blacks and Whites, whereas Samples 1–3 and 6 are composed of Whites alone, and Sample 4 has Blacks alone. Table 11 breaks Sample 5 down by Blacks and Whites to enable comparisons with the other homogenous samples.

Table 11  
Descriptive Statistics by Race in Sample 5

	$M_{\text{White}}$	$SD_{\text{White}}$	$\alpha_{\text{White}}$	$M_{\text{Black}}$	$SD_{\text{Black}}$	$\alpha_{\text{Black}}$	Race difference
Full SDO <sub>7</sub>	2.98	1.19	.91	2.74	1.00	.88	$t = -1.67$ $p = .05$
SDO-D	2.71	1.25	.86	2.89	1.10	.80	$t = .89$ $p = .82$
SDO-E	3.25	1.35	.87	2.56	1.19	.85	$t = -3.88$ $p = .00$
SDO <sub>7</sub> -Short	2.97	1.25	.86	2.56	1.04	.79	$t = -2.39$ $p = .01$
SDO-D <sub>Short</sub>	2.67	1.34	.82	2.64	1.11	.67	$t = -.19$ $p = .43$
SDO-E <sub>Short</sub>	3.26	1.40	.76	2.45	1.24	.75	$t = -4.17$ $p = .00$

*Note.* Test of race difference is one-tailed due to apriori hypothesis that members of higher status groups (Whites here) have higher levels of SDO than members of lower status groups (Blacks here; Sidanius and Pratto, 1999).

difference (.24 point difference) is also consistent with previous research (Lee et al., 2011).

### Discussion

Since the introduction of the construct two decades ago, social dominance orientation scales have been among the most widely used and generative measures in social and political psychology, providing insight into what drives the myriad forces that contribute to intergroup conflict and inequality. Naturally, questions and debates about the nature of SDO have surfaced during this time, with some researchers arguing that SDO should be conceptualized as having two dimensions (dominance and antiegalitarianism; Jost & Thompson, 2000; Ho et al., 2012; Kugler et al., 2010), some questioning the relevance of dominance in contemporary intergroup relations (e.g., Sears, Haley, & Henry, 2008), and others questioning whether SDO concerns a general orientation toward group-based hierarchy, or merely a preference for one's own group being on top of the hierarchy (e.g., Jost & Thompson, 2000; see Kteily et al., 2012). In the current research, we addressed each of these theoretical issues with the introduction of a new scale—the SDO<sub>7</sub> scale—yielding our greatest potential yet to enhance social scientific knowledge on the diverse and persistent nature of intergroup conflict, discrimination and social stratification.

In seven large U.S. adult samples, we tested the factor structure of a new measure, SDO<sub>7</sub>, consisting of pro- and con-trait indices of SDO-D and SDO-E. In six of these samples, we tested the predictive validity of each dimension, and in a seventh sample, we examined SDO<sub>7</sub>'s relationship with personality traits. Consistent with our hypotheses, we found that a four-factor model that takes into account both substantive differences (dominance and antiegalitarianism) as well as wording differences (pro-trait and con-trait) between items fits the data well, and provides a better fit than two-factor models that only account for substantive differences or wording differences, or a one-factor model.

Furthermore, these balanced measures of SDO-D and SDO-E displayed predictive validity that was similar to what we found with SDO-D and SDO-E scales from the SDO<sub>6</sub> measure (Ho et al., 2012). That is, across the six samples, SDO-D was a strong

predictor of old-fashioned racism—a belief that legitimizes intergroup dominance—attention to group competition, and support for various forms of aggression and violence toward low status groups. SDO-E, on the other hand, was a stronger predictor of political conservatism and system legitimacy beliefs in the U.S., support for the unequal distribution of resources, opposition to policies that would bring about equality, and relatively subtle prejudice. Our findings thus provide a solid foundation for the emerging field of study on the theoretically important distinction between the SDO-D dimension, that reflects active and aggressive subordination of groups, and the SDO-E dimension, that reflects a more subtle opposition to equality (see also Ellenbroek et al., 2014; Hindriks et al., 2014; Jost & Thompson, 2000; Kteily et al., in press; Kugler et al., 2010; Larsson et al., 2012; Martinovic & Verkuyten, 2013; Swami et al., 2013).

Importantly, our new measure of SDO, taken as a whole, correlated highly with the SDO<sub>6</sub> scale, and had similar correlations with criterion measures and with personality variables as the SDO<sub>6</sub> scale. Thus, we can be assured that we have improved upon and theoretically solidified the SDO<sub>6</sub> scale while preserving the properties that have made it such a powerful tool for understanding intergroup relations.

### Support for Intergroup Dominance Hierarchies or Ingroup Dominance?

In addition to this substantive and methodologically rigorous contribution, this article advances theory by allowing us to define the concept of SDO-D in a manner that better taps into SDO as it is currently understood—as an orientation toward group based dominance and inequality, irrespective of the position of one's ingroup in that hierarchy (Kteily et al., 2012; Pratto et al., 2006; Sidanius et al., 2001). Crucially, our finding that regard for or identification with one's ethnic group is inversely related with the new measure of SDO-D among a low-status ethnic group (African Americans in Samples 4 and 5b) demonstrates that we have been successful in developing a measure that reflects a *general* orientation toward group based inequality, rather than a desire for ingroup dominance or dominance relations of a particular type

(e.g., race-based inequality; see also Kteily et al., 2011, 2012).<sup>10</sup> Notably, results with our new measure differ from those found by Jost and Thompson (2000) using the SDO<sub>6</sub> scale's dominance subdimension, which revealed a positive relationship between ethnic identity and SDO-D among African American college students.<sup>11</sup> Thus, the present work advances and solidifies, both theoretically and methodologically, what SDO represents.

## Personality and Individual Differences

In addition to the factor structure and predictive power of the new SDO scale, we also began to examine how personality traits and individual differences relate both to the construct as a whole, and to SDO-D and -E uniquely. First, SDO<sub>7</sub> was found to be related to the personality traits previously associated with SDO. Importantly extending this prior work, we observed that "Dark Triad" traits such as Machiavellianism and psychopathy were more related to SDO-D than -E. This was also true for honesty/humility and a "competitive jungle" world view, which may explain SDO-D's robust relationship with perceptions of zero-sum competition. The honesty/humility dimension of HEXACO indexes whether one is willing to "get ahead" by dishonest means, which explains why it may resonate with those high on SDO-D, who pay no heed to the social costs of measures used to achieve or maintain group-based dominance hierarchies; this is also consistent with the relationship between SDO-D and Machiavellianism.

The stronger relationship between social conformity and SDO-E (relative to -D) is also consistent with SDO-E's relationship with system justification in societies where the hierarchy is supported more by subtle legitimizing ideologies rather than by the outright oppression of some groups by others. Thus, those high in SDO-E may conform to a norm of inequality, but not one of overt domination. We hasten to add, however, that SDO-E represents more than system justification, status quo bias, or norm conformity alone; this is demonstrated empirically by its relation to preferences for proactively establishing new (albeit subtle) forms of hierarchy (as in the imaginary university context we assessed), and by its relation to advocating *decreased* social welfare.

Interestingly, although the five dimensions of morality specified by moral foundations theory were all related to SDO<sub>7</sub>, only the harm/care and fairness/reciprocity dimensions were more related (and negatively so) to one dimension of SDO than the other, with both more related to SDO-E. It is possible that these two moral domains undergird the inclusiveness and equitable treatment demanded by individuals low on SDO-E. By comparison, individuals low on SDO-D may oppose aggressive domination, but may not be as demanding of fairness and equality. Future work should continue examining personality and individual difference correlates of SDO-D and SDO-E, or reciprocal effects of these dimensions of SDO with other individual differences or personality factors (see Sidanius et al., 2013).

## Understanding the Facets of SDO

Our research on the powerful and various intergroup effects of the SDO subdimensions, as well as our introductory examination into personality antecedents of these dimensions, begins to offer a clearer picture of what SDO-D and -E entail. People high on SDO-D versus SDO-E prefer different types of inequality and

different processes to achieve and maintain inequality: Whereas individuals high on SDO-D prefer dominance hierarchies where high power groups oppress and subjugate low power groups, and are willing to achieve this form of inequality by use of very aggressive measures, individuals high on SDO-E prefer hierarchies where resources are inequitably distributed, and which can be defended by antiegalitarian ideologies. In this sense, SDO-D may appear to be more "severe" than SDO-E.

However, our data suggest that the bidimensional structure is not just a matter of more extreme versus less extreme endorsement of intergroup hierarchy along *any dimension*. First, social theory has long pointed to the qualitative difference between hierarchy-enhancing mechanisms that are aggressive and oppressive and mechanisms that are subtle and ideological (see, e.g., Althusser, 1984). Second, on the empirical level, in many cases (e.g., political conservatism and opposition to racial policies in several samples) SDO-D did not have much explanatory power once SDO-E was taken into consideration. Thus, SDO-D and SDO-E uniquely predict *different types* of intergroup beliefs.

It bears mentioning that although violent forms of conflict and oppression are attention-grabbing, inequality is often more cheaply, sustainably, and thus perhaps more perniciously maintained by more subtle means, involving complex and often consensual ideological resources (Jackman, 1994). Indeed, as the role of coercive force in maintaining inequality is arguably decreasing on a global scale (Pinker, 2011), subtle justifications of inequality may rise to take its place, thereby increasing the role to be played by SDO-E in the future, and making the role of hierarchical motivations in society harder to track. However, it warrants noting that evidence presented here and in related work (e.g., Kteily et al., in press) shows that the type of intergroup conflict associated with SDO-D certainly remains a prevalent and consequential feature of contemporary intergroup relations, and thus warrants continued attention.

One interesting direction for future research would be to examine whether individuals high in SDO-E may be more politically sophisticated than those high in SDO-D, and perhaps also more likely to support sophisticated hierarchy-maintenance strategies (e.g., making small concessions to gain the compliance of members of lower status groups; e.g., Chow, Lowery, & Hogan, 2013). Another interesting possibility is that at least some individuals high on SDO-D also favor relatively subtle methods for hierarchy maintenance, but have different ultimate goals in mind—whereas those relatively high on SDO-E might use sophisticated methods to

<sup>10</sup> It is also worth noting that the magnitude of the negative relationship may have been tempered by the generality of SDO (Kteily et al., 2012). That is, it's possible that some highly identified Blacks may support other forms of hierarchy, such as gender or religion-based hierarchies.

<sup>11</sup> Because a few items in the SDO<sub>6</sub>-D subscale may reflect a preference for ingroup dominance—in particular, "In getting what your group wants, it is sometimes necessary to use force against other groups" and "To get ahead in life, it is sometimes necessary to step on other groups"—we would expect that sometimes, there may be a *positive* correlation between SDO<sub>6</sub>-D and ingroup identity among members of low status groups. However, because other items in the SDO<sub>6</sub>-D scale do not reference ingroup advancement per se, we would not expect this result to be obtained consistently. That may explain why we do not find a positive relationship between SDO<sub>6</sub>-D and ingroup identity among African Americans in Sample 4, whereas Jost and Thompson (2000) did.

support the unequal distribution of resources, those high on SDO-D might use sophisticated methods (censorship, propaganda, and the manipulation of information) to maintain *dominance* hierarchies (e.g., see Guriev & Treisman, 2015), involving not only inequality but the active oppression of some groups by others. SDO-D's relationship with (relatively low) honesty and Machiavellianism would support this latter possibility.

### Using the SDO<sub>7</sub> Scale

Given the improvements in the measurement of SDO demanded by recent discoveries, and the critical finding that the new measure is related to all of our criterion variables in the same way as the older SDO<sub>6</sub> measure is, we recommend that this new SDO<sub>7</sub> scale measure be used in place of SDO<sub>6</sub>. To capture the construct as a whole, and in instances where researchers do not have a specific focus on intergroup phenomena that relate more to one dimension of SDO versus the other, it would be desirable to use the whole SDO<sub>7</sub> scale. Additionally, in cases where the intent of a group relevant ideology or policy is ambiguous or otherwise contested (i.e., it is unclear whether it subserves dominance per se, opposition to equality per se, or neither) using the entire scale and then examining the relationship between the ideology or policy on the one hand, and each subdimension of SDO, on the other, may help provide clarity about the underlying motivations. For example, the imprisonment of young Black men in the U.S. has drawn increasing scrutiny in recent years, interpreted by some as the result of fair legal process (e.g., Ferguson, 2015), and by others as comparable with oppressive Jim Crow laws from the first half of the 20th century (e.g., Alexander, 2010). To clarify the intent of support for current incarceration policies, one could examine the relationships of such policy support with each dimension of SDO. If the claim that current rates of incarceration represent efforts at dominance per se is accurate, then not only should support for incarceration policies (e.g., California's "Three Strikes Law") be related to SDO in general, it should be related to SDO-D in particular. Thus, using the whole SDO<sub>7</sub> scale, while remaining mindful of its bidimensional structure, can help researchers interpret the precise form of inequality a particular policy or ideology is intended to subserve.

On the other hand, our demonstration of differential predictive validity allows researchers to study solely that aspect of SDO (dominance or antiegalitarianism) which most closely corresponds to intergroup phenomena in which they are interested. For example, researchers focused on conflicts marked by a high degree of oppression or extreme attitudes can now focus on the SDO-D measure, whereas researchers focused on social policies related to resource redistribution or relatively subtle legitimizing ideologies may focus on SDO-E. Thus, the new scale allows researchers to be more precise in their research involving specific dynamics of intergroup hierarchy (and thereby increase efficiency in situations where participant time is costly). One caveat, however, is that if one is interested in examining the *unique* part of SDO-D or -E that is related to intergroup outcomes, then one would still need to measure both dimensions and include each as a covariate for the other.

In addition, by demonstrating that a shorter form of the new measure—the SDO<sub>7(s)</sub> scale—has similar properties to the full form, we provide researchers with a measure of both dimensions to

use in cases where space constraints are a pressing issue. This, too, represents an important contribution of the present research.

### Social and Contextual Moderators

**SDO among African Americans.** Interestingly, in Samples 5a and 5b, nationally representative samples of White and Black Americans, respectively, we observed that whereas Whites exhibited higher levels of SDO-E than Blacks, the two groups did not differ on SDO-D. One possible explanation is that whereas the American racial hierarchy was previously maintained in overtly oppressive ways (ranging from slavery to Jim Crow laws), it now manifests in terms of vastly different socioeconomic opportunities for Blacks and Whites (Oliver & Shapiro, 2006). As such, any racial differences in SDO and attitudes toward hierarchy in the U.S. at this point in time might be more reflective of concern for maintaining inequality—SDO-E—than concern for maintaining dominance. This possibility warrants further investigation in future research.

Future research would also do well to identify moderators of the relationship between SDO-D and -E on the one hand, and intergroup beliefs and behaviors, on the other, among African Americans and other ethnic minority groups. Although our data with Black participants was consistent with theoretical expectations for the most part, the dissociation between SDO-D and SDO-E in terms of their relationship with criterion variables was somewhat less consistent among Blacks, suggesting that there may be moderators of the way dominance and antiegalitarianism relate to intergroup phenomena. This may be attributable to the way different groups' particular life experiences influence how they construe various intergroup ideologies and behaviors, and how these then relate to SDO. For example, given Blacks' historical (and contemporary) experiences in the U.S., they may be more likely to construe political liberalism as a form of active opposition to dominance and oppression. If this were the case, it would follow that political liberalism/conservatism would be more related to (low) SDO-D than SDO-E. Future work could examine this by experimentally priming the history of slavery in the U.S., and examining whether that increases the relationship between liberalism/conservatism and SDO-D (vs. -E) among Black Americans. Another possibility for what underlies the greater variability in the dissociation of the subdimensions' predictive power across criterion variables for African Americans is the phenomenon of ideological asymmetry (Levin, Sidanius, Rabinowitz, & Federico, 1998; Sidanius & Pratto, 1999). That is, due to the inevitable domination of the ideological realm by high-status groups, low-status group members have a harder time identifying those attitudes and policy preferences that match their underlying (egalitarian or antiegalitarian) motivations, resulting in lower apparent structuring of their political attitudes, or 'ideological constraint' (Campbell, Converse, Miller, & Stokes, 1960).

**SDO in other political contexts.** Although this article makes important strides in providing empirical support for the dimensional structure, predictive power, and potential antecedents of SDO in representative samples, future work should examine the workings of this new measure in other national and sociopolitical contexts. Based on the findings of Ho et al. (2012), for example, we would expect political conservatism to be more related to the SDO-D dimension rather than the SDO-E dimension in sociopo-



litical contexts in which the rhetoric and behavior of political elites support overt group-based dominance in addition to less oppressive forms of inequality.

### Additional Considerations

**SDO-E and ingroup collective norms?** Another potential consideration worth commenting on surrounds the possibility that SDO-E is more likely than SDO-D to activate collective norms. Indeed, seven of the eight items in the SDO-E scale use a plural personal pronoun, such as “we” or “our.” This was unintentional—these items were derived from a factor analysis we performed on Sample 1, described above. However, one concern is that the plural personal pronoun may make ingroup collective norms more salient, and thereby strengthen the relationship between SDO-E and collective ideologies, such as the Protestant Work Ethic. Alternatively, it is possible that rather than activating collective ingroup norms, “we” may simply represent a generic term referring to all people as opposed to a specific group. Several of our findings would support this latter interpretation. First, SDO-E is strongly related to variables like the distribution of university resources across all of the samples, suggesting that it is related to a preference for inequality in situations not relevant to any specific group identity. Second, some of the SDO-D criteria relate to collective ideologies (e.g., nationalism), whereas some SDO-E criteria, such as interest in hierarchy attenuating jobs or distribution of university resources, do not. Nevertheless, the relative relationship between SDO-E and -D, on the one hand, and these criteria, on the other, is consistent with the theoretical distinction we have made between the dimensions of SDO. Third, and importantly, given the American norm of equality (e.g., Katz & Hass, 1988), one might expect that priming ingroup collective norms would lead to support for *equality*, rather than inequality, as we find.

Nevertheless, we sought to directly test whether the use of a plural personal pronoun influences the relationship between SDO-E and its criterion variables, and to examine our assumption that “we” generically refers to “people.” Thus, we conducted an experiment on Amazon MTurk with American respondents in which we randomly assigned participants to receive either the SDO-E subscale (as presented in Appendix A), or a modified scale with “people” replacing “we” (e.g., “People should not push for group equality”). This study revealed that the wording did not make a difference (i.e., the version of the SDO-E scale did not moderate its relationships with any criterion variables, and this set of relationships matched those reported in this paper (study reported in full in supplemental materials). As such, it does not seem that the unique relationship we have outlined between SDO-E and outcome measures can be accounted for by the activation of collective norms.

**Other aspects of SDO.** Finally, it is worth noting that the current findings, as with previous work on subdimensions of SDO, do not preclude the possibility that there are other aspects of social dominance orientation not captured in the current measure or by the SDO<sub>6</sub> scale (e.g., it may be possible to adapt the concept of communal sharing from relational models theory; Fiske, 1992) to intergroup relations, and to conceptualize opposition to it as an aspect of social dominance orientation (Thomsen, 2009). Indeed, opposition to implementing communal sharing between groups relates to a variety of intergroup variables, from political ideology

to support for ethnic persecution in multiple samples across different cultures (Thomsen, Kunst, Sheehy-Skeffington, Fiske, & Sidanius, 2015). In separate, complementary work, we are currently validating a very short measure of SDO that features inclusiveness as a central element (Pratto et al., 2015). This short measure, underscoring the importance of inclusiveness, has already been shown to relate to attitudes toward women, minorities, and poor people in a variety of countries (Pratto et al., 2013).

### Conclusion

In closing, the current article continues social dominance theory’s tradition of drawing attention to the multitude of forces that underpin social stratification. Specifically, it highlights and empirically undergirds a layer of granularity in the pattern of individual differences in orientation toward intergroup hierarchy, showing that this matters for a range of intergroup processes. In doing so, it provides further evidence for the utility and theoretical groundedness of treating social dominance orientation as a two-dimensional construct. This article presents a validated, psychometrically sound measure of SDO-D and SDO-E, with no compromises to the general predictive validity of SDO. It also further clarifies the current understanding of SDO as a general orientation toward hierarchy rather than a preference for ingroup dominance. We hope that the SDO<sub>7</sub> measure is used to advance understanding of the motives undergirding a wide range of intergroup attitudes and behaviors, from opposition to social policies that would promote equality to genocidal violence against minority groups.

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(Appendices continue)

## Appendix A

### SDO<sub>7</sub> Scale

#### Instructions

Show how much you favor or oppose each idea below by selecting a number from 1 to 7 on the scale below. You can work quickly; your first feeling is generally best.

1	2	3	4	5	6	7
Strongly Oppose	Somewhat Oppose	Slightly Oppose	Neutral	Slightly Favor	Somewhat Favor	Strongly Favor

#### Pro-trait dominance:

1. Some groups of people must be kept in their place.
2. It's probably a good thing that certain groups are at the top and other groups are at the bottom.
3. An ideal society requires some groups to be on top and others to be on the bottom.
4. Some groups of people are simply inferior to other groups.

#### Con-trait dominance:

5. Groups at the bottom are just as deserving as groups at the top.

6. No one group should dominate in society.
7. Groups at the bottom should not have to stay in their place.
8. Group dominance is a poor principle.

#### Pro-trait antiegalitarianism:

9. We should not push for group equality.
10. We shouldn't try to guarantee that every group has the same quality of life.
11. It is unjust to try to make groups equal.
12. Group equality should not be our primary goal.

#### Con-trait antiegalitarianism:

13. We should work to give all groups an equal chance to succeed.
14. We should do what we can to equalize conditions for different groups.
15. No matter how much effort it takes, we ought to strive to ensure that all groups have the same chance in life.
16. Group equality should be our ideal.

## Appendix B

### SDO<sub>7(s)</sub> Scale

#### Instructions

Show how much you favor or oppose each idea below by selecting a number from 1 to 7 on the scale below. You can work quickly; your first feeling is generally best.

1	2	3	4	5	6	7
Strongly Oppose	Somewhat Oppose	Slightly Oppose	Neutral	Slightly Favor	Somewhat Favor	Strongly Favor

#### Pro-trait dominance:

1. An ideal society requires some groups to be on top and others to be on the bottom.
2. Some groups of people are simply inferior to other groups.

#### Con-trait dominance:

3. No one group should dominate in society.

4. Groups at the bottom are just as deserving as groups at the top.

#### Pro-trait antiegalitarianism:

5. Group equality should not be our primary goal.
6. It is unjust to try to make groups equal.

#### Con-trait antiegalitarianism:

7. We should do what we can to equalize conditions for different groups.
8. We should work to give all groups an equal chance to succeed.

Received October 13, 2014

Revision received August 6, 2015

Accepted August 9, 2015 ■