# Social Dominance Orientation: Revisiting the Structure and Function of a Variable Predicting Social and Political Attitudes

# Social Dominance Orientation: Revisiting the Structure and Function of a Variable Predicting Social and Political Attitudes

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Word Count: 9,108 (including abstract, text, references, and notes)

Abstract

Social dominance orientation (SDO) is one of the most powerful predictors of intergroup attitudes and behavior. While SDO works well as a unitary construct, some analyses suggest that SDO might consist of two complementary dimensions – SDO-Dominance (SDO-D), or the preference for some groups to dominate others, and SDO-Egalitarianism (SDO-E), a preference for non-egalitarian intergroup relations. Using five samples from the U.S. and Israel, we confirm factor analytic evidence and show predictive validity for both dimensions. In the U.S., SDO-D was theorized and found to be more related to old-fashioned racism, zero-sum competition, and aggressive intergroup phenomena than SDO-E; SDO-E better predicted more subtle legitimizing ideologies, conservatism, and opposition to redistributive social policies. In a contentious hierarchical intergroup context (the Israeli-Palestinian context), SDO-D better predicted both conservatism and aggressive intergroup attitudes. Fundamentally, these analyses begin to establish the existence of complementary psychological orientations underlying the preference for group-based dominance and inequality.

Keywords: SDO, social dominance orientation, group dominance, anti-egalitarianism, hierarchy-enhancing and attenuating social policy.

# Social Dominance Orientation: Revisiting the Structure and Function of a Variable Predicting Social and Political Attitudes

*To "illegal immigrants": "If you commit a crime while you're here, we should hang you and send your body back to where you came from, and your family should pay for it."*

- Joyce Kaufman, Tea Party member and Florida radio show host

As this recently publicized statement from Tea Party member and popular Florida radio host Joyce Kaufman illustrates, aggressive discourse surrounding American intergroup politics remains all too common (Wing, 2010). The recent passage of an immigration law in Arizona allowing the police to stop and detain anyone suspected of being an undocumented immigrant shows that aggressive anti-immigration sentiments are not confined to rhetoric. We argue that such aggressive intergroup attitudes and behaviors are an outgrowth of a distinct psychological orientation, which constitutes one component of *social dominance orientation* (Pratto, Sidanius, Stallworth, & Malle, 1994).

The overt force and punitiveness prescribed by Kaufman contrast with contemporary apologies opposing affirmative action or limiting international reconciliation. In such rhetoric, other priorities, such as "fairness, meritocracy," or "national security" are deployed rather than overt references to the inferiority of outgroups or the rightness of dominance (e.g., Essex, n.d., Heller, 2010). We argue that such intergroup attitudes and behaviors, although not as openly forceful and hostile, rely on a psychology of group separation and opposition to group equality. This psychological orientation is also an aspect of social dominance orientation. In this article, we explore the implications of both dimensions of social dominance orientation (SDO) for intergroup relations, how ideologies justify inequality, and the psychology of group prejudice.

Since its introduction two decades ago (see Sidanius, Pratto, Martin, & Stallworth, 1991, p. 693), SDO has proven to be one of the most versatile and useful constructs for understanding socio-political ideologies, the psychology of prejudice, and intergroup behavior within social psychology. SDO is defined as an individual's preference for group-based hierarchy and inequality, and has been consistently found to undergird an impressive array of intergroup phenomena that serve to either enhance or attenuate group-based hierarchy (Pratto, Stallworth, Sidanius, & Malle, 1994). For example, SDO has been found to be a powerful predictor of generalized prejudice against, and persecution of, a wide array of denigrated groups such as poor people, Latinos, Asians, foreigners, gays, women, Arabs, Muslims, Blacks, Jews, immigrants, and refugees (e.g., Altemeyer, 1996; Esses, Veenvliet, Hodson & Mihic, 2008; McFarland & Adelson, 1996; Sidanius, Pratto & Mitchell, 1994; Thomsen, Green & Sidanius, 2008). Further, SDO is related to the endorsement of a broad spectrum 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 the Protestant work ethic, and other consequential hierarchy-enhancing legitimizing ideologies across a range of cultures (Pratto, Liu, Levin, Sidanius, Shih, Bachrach & Hegarty, 2000; Sidanius & Pratto, 1999). In addition, SDO is related to attitudes towards group-relevant social *policies* 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 (Federico & Sidanius, 2002; Green, Thomsen, Sidanius, Staerkle, & Potanina, 2009; Haley & Sidanius, 2006; Pratto & Glasford, 2008; Pratto, Stallworth, & Conway-Lanz, 1998; Sidanius & Liu, 1992; Sidanius & Pratto, 1999; Sidanius, Mitchell, Haley, & Navarrete, 2006). People's SDO level not only influences endorsement of social policies and ideologies, but also how they live their lives -

for instance, the kinds of jobs they seek and obtain, the kinds of subjects they choose to study, and how well they perform in these areas (Pratto, Stallworth, Sidanius & Siers, 1997, for a review see Haley & Sidanius, 2005).

The generality of SDO is also shown in its ability to predict intergroup attitudes in new situations. For example, in addition to correlating with prejudice toward familiar groups (e.g., ethnic groups), SDO predicts affect towards both minimal groups and novel social policies (e.g., Amiot & Bouris, 2005; Pratto, Sidanius, Stallworth & Malle, 1994; Pratto & Shih, 2000; Reynolds, Turner, Haslam, Ryan, Bizumic, & Siubasic, 2007; Sidanius, Pratto, & Mitchell, 1994). SDO has also been shown to predict people's future intergroup attitudes and behavior across extended periods of time (Kteily, Sidanius, & Levin, 2011; Sibley, Wilson, & Duckitt, 2007; Thomsen, Green, Ho, Levin, van Laar, Sinclair, & Sidanius, 2010). Altogether, empirical evidence from many countries and concerning many different intergroup contexts has shown that the SDO scale is a powerful index of generalized prejudice, group relevant social ideologies, socio-political policy preferences and future career choices (see Pratto, Sidanius, & Levin, 2006 for a review).

**One or Two Dimensions of SDO?**

When the 14-item SDO scale was initially developed, it was found to be uni-dimensional (Pratto et al., 1994, Appendix A, later referred to as the $SDO_5$ scale in Sidanius & Pratto, 1999). Care was taken to ensure that the item set did not produce response acquiescence (Christie & Cook, 1958) by including both pro-trait and con-trait SDO items. In addition, work was done to ensure that the SDO scale captures the full expression of the SDO construct, and demonstrates convergent and discriminant validity (e.g., Loevinger, 1957). However, subsequent factor analytic research and experimental research by a number of scholars suggest that the pro-trait

and con-trait sections of the 16-item $SDO_6$ scale – the most commonly used SDO scale, published in Appendix D of Pratto et al., 1994 - may actually produce two distinct yet strongly related, substantive subdimensions of SDO (e.g., Jost & Thompson, 2000). One may reflect support for group-based dominance hierarchies (SDO-D) and the other opposition to group-based equality (SDO-E; see Table 1).

To date, the question of whether $SDO_6$ consists of one dimension or two related dimensions has not been theoretically or empirically resolved. The proposed dimensions are composed entirely of either pro-trait items (SDO-D) or con-trait items (SDO-E). As such, any factor analytic evidence for two dimensions could simply reflect differences in the direction in which items are worded, rather than differences in substance between the two dimensions. Thus, even though our early unpublished analyses of the $SDO_6$ scale showed that two dimensions often emerged, it was not clear whether these dimensions were substantively distinct.

The present paper reviews evidence that the $SDO_6$ scale consists of two related dimensions and, importantly, empirically tests whether the two dimensions differentially predict outcome variables concerning group based dominance and opposition to equality. If our research finds that two subdimensions empirically differentiate among theoretically-relevant measures, this would demonstrate predictive validity for this distinction and suggest the need for newly balanced measures of each dimension. As $SDO_6$ is so widely in use in both experimental and survey research around the world, the results may prove of great theoretical and practical use in understanding prejudice, discrimination, and intergroup relations more broadly.

**Dominance and Egalitarianism**

Why might support for group dominance and opposition to group equality reflect two distinct psychological orientations? SDO-D is defined as support for group-based dominance

hierarchies in which dominant groups actively oppress subordinate groups. It reflects an early definition of SDO as a *generalized imperial imperative* (Sidanius & Pratto, 1993). These items specifically tap support for overtly hierarchical intergroup relations (e.g., "Inferior groups should stay in their place"). As such, we hypothesize that SDO-D will be related to phenomena such as support for aggressive intergroup behavior, support of overtly negative intergroup attitudes, support for negative allocations to outgroups, and the perception of group-based competition. These attitudes, behaviors, and cognitions all support dominance hierarchies that involve the active subjugation of some groups by other groups. Indeed, since the SDO-D items encompass the approval of groups that "use force" and "step on other groups," we expect SDO-D to be especially related to support for aggressive behavior in intergroup competition (e.g., ethnic persecution). SDO-D also expresses the belief that some groups are "superior" or "more worthy," and thus should be related to overt or old-fashioned prejudice. For example, Sears, Haley, and Henry (2008) have found that SDO-D correlates with overtly negative feelings toward Blacks among Whites, the belief that Blacks are biologically inferior, and the belief that Blacks are trying to take resources away from other groups. Similarly, given that SDO-D reflects a preoccupation with maintaining the relative power difference between groups, we expect SDO-D to be related to perceptions of zero-sum group competition. Importantly, these aspects of SDO-D should also make it predict the legitimization or justification of extremely hierarchical systems of group-based dominance.

SDO-E is defined as opposition to group-based equality. This includes an aversion to the general principle of equality and to reducing the level of hierarchy. Opposition to equality translates psychologically into support for *exclusivity*. People who want groups to be unequal wish to exclude certain groups from access to resources that could elevate their social position.

Therefore, SDO-E should be related to a wide array of subtle, insidious hierarchy-maintaining legitimizing myths, such as symbolic racism or the Protestant work ethic, that imply that it is legitimate for certain groups to be excluded from access to resources. It should further be related to opposition to redistributive social policies because they increase equality, and to policies that would break down group boundaries such as support for affirmative action. Given the nature of SDO-E, it should predict the justification and legitimization of social systems that are socially stratified. However, unlike SDO-D, it should not relate as strongly to support for active domination or extreme subjugation of subordinate groups. Although the two subdimensions should strongly relate to one another, once this overlap is taken into account, they should differentially predict a variety of group-relevant outcomes.

**Existing Evidence for the Predictive Validity of Two Dimensions**

Empirical studies from several research groups have shown that SDO-D and SDO-E differentially correspond with group-relevant variables such as endorsement of prejudicial ideologies and political attitudes, and may respond differently to experimental manipulations aimed at promoting fairness between groups. The SDO-E dimension, or some variant of it, accounts for variance in conservatism, opposition to international diplomacy, anti-Black attitudes (not including old-fashioned racism), just world beliefs, and opposition to redistributive social policies (Cohrs, Moschner, Maes, & Kielmann, 2005; Eagly, Diekman, Johannesen-Schmidt, & Koenig, 2004; Freeman, Aquino, & McFerran, 2009; Jost & Thompson, 2000; Reyna, Henry, Korfmacher, & Tucker, 2006; Kugler, Cooper, & Nosek, 2010; Sears et al., 2008; Wakslak, Jost, Tyler, & Chen, 2007; Yoshimura & Hardin, 2009).

Some studies have shown that SDO-D differentially accounts for other variables. For example, Eagly et al. (2004) found that SDO-D predicted discrimination against women and

homosexuals. Because their index of discrimination combined the belief in traditional gender roles with opposition to gay/lesbian rights, it is not clear exactly which aspects of gender and sexual orientation beliefs corresponded to SDO-D. Peña and Sidanius (2002) examined relationships between the two subdimensions and patriotism, or love for one's nation. Contrary to the notion that U.S. patriotism reflects love for an inclusive, egalitarian society, they found that patriotism was more related to SDO-D than to SDO-E. However, Peña and Sidanius used abbreviated SDO-D and SDO-E scales, and did not partial out the effects of SDO-E when examining the effects of SDO-D. Kugler et al. (2010) found that SDO-D uniquely predicted ingroup bias (explicit and implicit), anti-Black bias, opposition to economic redistribution, belief in a just world and symbolic racism among U.S. Whites. However, due to their use of partial rather than semi-partial correlations, we do not know how each SDO dimension, net of the effect of the other dimension, relates to the total variance of each intergroup attitude of interest.[1] In addition, a few research teams have found that SDO-D appears to have a stronger relationship with RWA than does SDO-E (e.g., Cohrs et al., 2005; Del Prado Silvan-Ferraro & Bustillos, 2007; Kugler et al., 2010). Freeman et al.'s (2009) analysis of the proposed dimensions was particularly compelling. It showed that the effect of SDO-D on donations to a minority organization among dominants was attenuated by invoking examples of good moral behavior, but the effects of SDO-E were unchanged. They attributed this divergent pattern of moderation to their intuition that the attitudes expressed by SDO-D are less acceptable, especially under circumstances in which people have been primed with moral virtues. As such, SDO-D no longer predicts reduced donations to a minority organization among dominants primed to consider moral virtues.

Other studies have found no difference in how the two subdimensions predict intergroup attitudes. For example, Guimond, Dambrun, Michinov, and Duarte (2003) found that SDO-D and SDO-E equally predicted prejudice, though their measure of prejudice was a hybrid of positive views of an outgroup and the desire to actively discriminate against an outgroup. Kugler et al. (2010) also found no significant difference between SDO-D and SDO-E's relationships with implicit and explicit ingroup bias and anti-Black attitudes; both subdimensions of SDO were related to race prejudice among Whites against Blacks and other groups, but the IAT confounds positive ingroup bias and derogatory outgroup bias that may differentially relate to each of the subdimensions of SDO. Finally, others considering the dimensions separately have been primarily interested in the antecedents of SDO (e.g., Foels & Pappas, 2004) or in interpersonal rather than intergroup competition (e.g., Cozzolino & Snyder, 2008).

**Social Structure May Moderate the Differential Effects of SDO-D and SDO-E**

Due to the rather dramatic decline in explicit and old-fashioned racism within American society (e.g., Schuman, Steeh, Bobo & Krysan, 1997), Sears and his colleagues have argued that SDO-D is no longer a relevant dimension in intergroup relations and/or socio-political attitudes (see e.g., Sears et al., 2008, p. 83). Sears, Henry, and Kosterman (2000) found that SDO-D does not predict symbolic racism as well as SDO-E, is weakly related to political orientation and racial policy preferences, and does not relate to legitimizing ideologies such as attributions for poverty, crime and structural explanations for racial disadvantage (see also Sears & Henry, 2005; Sears et al., 2008). However, because most of this research has used highly abbreviated versions of the SDO-D and SDO-E scales, and has not considered the full spectrum of intergroup attitudes and behavior, more research is warranted to test whether SDO-D predicts other intergroup variables in American samples.

Previous research has also failed to consider the extent to which the differential effects of SDO-D and SDO-E are dependent upon the socio-structural context. In contexts such as the contemporary U.S., where equality is the predominant apology, SDO-E may be more potent. That is, in political-cultural contexts in which people actively consider and debate about equality, people are likely to be primed on this general concept and use it to gauge their views on a variety of social and political issues, especially domestic ones. However, in societies where the predominant apology is about group segregation, difference, the necessity of force, and dominance, SDO-D may be more potent, and may be the lens through which people in such societies, regardless of whether they endorse or reject dominance, view many of their social and political issues.

To test the idea that political cultures can vary as to whether SDO-D or SDO-E is more active, we analyze data from both the U.S. and Israel. Although the U.S. has been engaged in many violent international conflicts in recent decades, nearly all of these conflicts have been outside the U.S. and unrelated to domestic conflicts among American groups (e.g., ethnic groups). Furthermore, despite its international dominance, the U.S.'s internal political rhetoric since the modern civil rights era and women's rights era is decidedly egalitarian, as many scholars have noted (e.g., Roth, 1994; Thernstrom & Thernstrom, 1997). Hence, SDO-E may have potency in the U.S., especially when non-overt domestic conflict is under consideration (e.g., ethnic conflict). In contrast, Israel has been and continues to be actively engaged in violent conflict with its Palestinian neighbors. Hence, support for the active and potentially violent subordination of other groups reflected by the SDO-D items may have system-justifying potency in Israel, especially when overt group boundaries and conflict with Palestinians are under consideration. Of course, our theoretical reasoning concerning how social structure may

moderate the differential effects of SDO-D and SDO-E should extend to cultures other than the U.S. and Israel, but as an initial test of this reasoning, we selected these two countries due to the contrast in their predominant political rhetoric. In sum, we expect that in hierarchical intergroup contexts such as the Israeli-Palestinian conflict, SDO-D will be positively related to support for hierarchy-enhancing legitimizing ideologies that both reinforce group-based dominance (e.g., nationalism) and maintain the unequal status quo (e.g., political conservatism).

**The Present Research**

Although previous studies have examined the proposed dimensions of SDO separately, more evidence is needed to establish the unique predictive validity of each dimension, *net of the effects of the other dimension.* Furthermore, the operationalizations of these dimensions have been inconsistent across studies, with some researchers using a shortened scale and others augmenting $SDO_6$ items with novel items, including items that conflate group-based egalitarianism with interpersonal egalitarianism. Finally, previous findings have been inconsistent, partly because of the operationalization of variables presumed to be related to SDO. The present study aims to fill these lacunae. Using data from four American samples and one Israeli sample, we test five hypotheses:

1) In all samples, the $SDO_6$ scale should be composed of two subdimensions, reflecting the preference for group-based dominance hierarchies (SDO-D) and opposition to egalitarian intergroup relations (SDO-E).
2) In all samples, the $SDO_6$ subdimensions should be strongly correlated. Although we hypothesize that each dimension should be uniquely related to a preference for qualitatively different relations between groups, both dimensions support group-based social stratification and as such should overlap considerably.

3) In all samples, SDO-D will be positively related to perceptions that intergroup conflict is zero-sum, aggressive intergroup attitudes and behavior (e.g., immigrant persecution), and overt, or "old-fashioned" prejudice.

4) In contested hierarchical intergroup contexts, such as the Israeli-Palestinian context, SDO-D should be positively related both to support for ideologies that reinforce group dominance (e.g., nationalism) and to support for ideologies that reinforce unequal status relations with subordinate groups (e.g., political conservatism).

5) In less contested hierarchical intergroup contexts, such as the Ashkenazi-Mizrachi Jewish ethnic context in Israel and the ethnic context in the United States, SDO-E should be related to support for insidious hierarchy-enhancing legitimizing ideologies such as system legitimacy beliefs, negative affect toward subordinate groups, and opposition to redistributive social policies.

We test these hypotheses using the full 16-item $SDO_6$ scale in five large surveys administered in the U.S. and Israel. As large surveys do not typically use the full SDO scale, the presence of the full scale in these samples, including one general population survey, represents a rare opportunity to test these hypotheses using large datasets. In the American samples, only the responses of Whites were analyzed, as the responses of non-Whites to some of our criterion variables should relate differentially to SDO. Similarly, in the Israeli sample, only the responses of Ashkenazi Jews, the dominant Jewish ethnic group, were analyzed.

## Method

### Participants

**Four American samples.** In all four samples, we only analyzed data from respondents who indicated that the United States was their native country. Our data for Sample 1 were drawn

from a survey of University of California, Los Angeles (UCLA) undergraduates given in 1993. The sample consisted of 186 White participants (51.6% females; one respondent did not report gender; average age = 21.40, *SD* = 3.76). Respondents were offered the chance to win one of four $50 prizes.

Samples 2 and 3 were also drawn from a university, but in a different region in the United States. These samples consisted of participants from the psychology department participant pool at Harvard University. Participants completed the survey for course credit and/or eligibility for studies in the participant pool. The study pool consisted of university students, staff, and members of the local community. Sample 2 completed the survey in 2007. The sample consisted of 491 Whites (66.7% female). A few participants (0.4% of the sample) indicated they were younger than 18 years old, 45.8% were between 18-21, 15.9% were between 22-25, 12.6% were between 26-30, and the remainder were above 30. Sample 3 completed the survey in 2009. The sample consisted of 1,711 Whites after excluding those who also participated in Sample 2. The sample was 76.6% female. A few participants (0.2% of the sample) were under 18, 24.7% were 18-21 years old, 15.1% were 22-25, 17.1% were 26-30, 12.4% were 31-35, and the remainder were over 36.

Sample 4 was from the 1996 Los Angeles County Social Survey, which is a large, omnibus survey of Los Angeles County residents recruited using a probability sampling procedure. The survey was administered by telephone using a random digit dialing procedure. This sample included 182 Whites (52.7% female), and the average age was 47.12 (*SD* = 15.61).

**Israeli sample.** Our data for Sample 5 were collected from undergraduate students surveyed in 1994 at Hebrew University, Bar-Ilan University, and the Technion. The sample consisted of 220 Ashkenazi Jews, who are the dominant Jewish ethnic group in Israel. Of this

sample, 59.1% were female, and the average age was 23.84 (*SD* = 2.98). The survey was administered in Hebrew. The survey was translated into Hebrew and then back-translated into English to ensure equivalence of meaning across the original and back-translated surveys.

**Measures**

**SDO.** The full 16-item $SDO_6$ scale was used in all five samples (see Table 1 for items). In Samples 1-3, all items were answered on a 7-point scale, with 1 = Strongly disagree/disapprove and 7 = Strongly agree/approve. In Sample 4, a 4-point scale was used, ranging from 1 = Strongly disagree to 4 = Strongly agree. Sample 5 used a 7-point scale, with 1 = Do not agree at all and 7 = Strongly agree. Alpha reliabilities are reported below, after we use factor analyses to show what items constitute the two dimensions.

**Intergroup attitudes hypothesized to be more strongly related to SDO-D.** We expected old-fashioned prejudice, zero-sum competition, and aggressive intergroup attitudes to be more strongly related to SDO-D than to SDO-E (see Appendix 1 for items and scale reliabilities for all samples). "Old-fashioned" prejudice alleges that Blacks and Latinos in the American context and Mizrachi Jews in the Israeli context are intellectually challenged, have a poor work ethic, and are generally "inferior." It was measured in Samples 1, 2, 3, and 5. Zero-sum competition addresses the notion that a gain for certain groups entails a loss for other groups. It was measured in Samples 1, 4, and 5. Various aggressive intergroup attitudes were measured. Nationalism (measured in Samples 1 and 5) represents a particularly aggressive assertion of one's country as superior, reflecting the desire to dominate other countries. Beliefs about immigrant persecution were assessed in Samples 2 and 3 by a variation of Altemeyer's Posse Scale, an instrument measuring one's willingness to participate in persecution of and violence against immigrants (Altemeyer, 1996; Thomsen et al., 2008). Sample 5 included some

variables that pertained directly to the longstanding Israeli-Palestinian conflict, including the denial of Palestinians' right to land, belief in the Jewish right over all of Israel, and the belief that ceding land to Palestinians is a threat to security. Sample 5 also contained a variable indexing support for war as a means of maintaining superiority. Importantly, sample 5 uniquely allows us to test whether variables that we hypothesize are more related to SDO-E than SDO-D in the U.S. and similar societies (i.e., outgroup affect, political conservatism) might be strongly related to SDO-D in the relatively hierarchical Israeli-Palestinian context. Such variables included affect toward Palestinians and right-wing political identification.

**Intergroup attitudes hypothesized to be more strongly related to SDO-E.** We expected political conservatism (in the U.S.), system justification/legitimacy beliefs, opposition to affirmative action, the Protestant work ethic, the belief that college admissions are fair, opposition to various redistributive racial/social policies, symbolic racism, and affect toward the Mizrachim (in Israel) to be more strongly related to SDO-E than to SDO-D (see Appendix 1 for items and reliability statistics). Conservatism was measured through political party affiliation and self-placement on social and economic conservatism scales. It was assessed in Samples 1, 2, 3, and 4. System justification/legitimacy beliefs, measured in Samples 1, 2, and 5, represent the idea that one gets what one deserves, and the social system is fair and just. Opposition to affirmative action was measured in Samples 1, 2, and 4. Similar to system legitimacy beliefs, the Protestant work ethic reflects the view that one will be rewarded for what one works for. It was measured in Samples 1 and 4. Samples 2 and 3 also asked about the legitimacy of admissions to an elite university (Harvard), which can be interpreted as a system legitimacy belief. Opposition to various redistributive racial/social policies was measured in Samples 1, 2, 3, and 5. Sample 4 was unique in assessing support for symbolic racism, which contrasts with the "old-fashioned"

racism believed to be related to SDO-D. Finally, we believed affect toward Mizrachi Jews (the lower status Jewish ethnic group) would be more strongly related to SDO-E. Negative affect is a core component of symbolic racism, which we generally believe to be more strongly related to SDO-E. Note, however, that this prediction stands in contrast to our prediction that SDO-D will relate more strongly to affect toward Palestinians. Given the long-standing and continuing Israeli hostility towards Palestinians, we reasoned that affect toward Palestinians would be predicted substantially more by support for active group dominance than by opposition to group equality.

## Results

Our first goal was to test whether in fact a two-factor model of the 16 $SDO_6$ items fits the data better than a one-factor model. We conducted confirmatory factor analyses with two correlated latent dimensions representing SDO-D and SDO-E. Each dimension was represented by three parcels, which included the eight items expected to represent the dimension (see Table 1). Parcel 1 consisted of the mean of items 1-3 under SDO-D in Table 1, Parcel 2 consisted of the mean of items 4-6 under SDO-D, and Parcel 3 was the mean of items 7-8 under SDO-D. Parcels 4, 5, and 6 were the means of items 1-3, 4-6, and 7-8 under SDO-E, respectively. The use of item parcels rather than individual items has been shown to reduce the random error of manifest indicators. That is, the reliability of our indicators is improved because forming composites (parcels) will take into account the random error associated with any one item. In Sample 1, the two-factor model yielded an excellent fit with just two modifications ($\chi^2$/df ratio = 1.00, RMSEA = .00, CFI = 1.00), whereas the one-factor model yielded a relatively poor fit even after two modifications ($\chi^2$/df ratio = 5.88, RMSEA = .17, CFI = .95).[2] The chi-square difference

test showed a significant deterioration of model fit in the one-factor model ($\chi^2_{diff} = 35.15$, df = 1, $p < .001$). Identical analyses in Samples 2-5 yielded similar results (see Table 2).[3]

Having replicated previous findings demonstrating that a two-factor model fits the data better than a unidimensional model, we computed the reliabilities for the two SDO subscales. The SDO-D dimension was found to be highly reliable in all five samples: Sample 1, α = .89; Sample 2, α = .91; Sample 3, α =.92; Sample 4, α = .82; Sample 5, α = .81. The SDO-E dimension was reliable as well: Sample 1, α = .88; Sample 2, α = .90; Sample 3, α =.91; Sample 4, α = .80; Sample 5, α = .79. These dimensions are used in all subsequent analyses.

To test Hypothesis 2, concerning the relationship between SDO-D and SDO-E, we computed the Pearson correlation coefficients for the relationship between the two dimensions. In Sample 1, the correlation between the two dimensions was .53 ($p < .001$). In Sample 2, the correlation was .49 ($p < .001$). In Sample 3, the correlation was .44 ($p < .001$). In Sample 4, the correlation was .36 ($p < .001$). Finally, in sample 5, the correlation was .49 ($p < .001$).

Hypothesis 3 predicted that SDO-D would correlate more strongly with endorsing intergroup aggression, subordinate group inferiority, zero-sum competition between groups, and overt domination than would SDO-E. To test this hypothesis, we regressed each of the intergroup attitudes thought to be related to this dimension on SDO-D and SDO-E in a multiple regression analysis, and obtained semi-partial correlations. If our hypothesis is confirmed, the semi-partial correlation between SDO-D and each criterion should be stronger than each criterion's relationship to SDO-E. To test this, we used Malgady's test for comparing two dependent semi-partial correlations (Hittner, Finger, Mancuso, & Silver, 1995). We used one-tailed tests given our a priori predictions concerning which dimension should more strongly relate to the criterion

variables we examine. Given the large number of analyses involved, we refer the reader to Table 3 rather than present all statistics in the text, where we describe the findings.[4]

Old-fashioned prejudice was measured in Samples 1, 2, 3, and 5, and predicted significantly by SDO-D in all four samples (see Table 3). Furthermore, it was significantly more strongly related to SDO-D than to SDO-E in Samples 2 and 3, marginally significantly more related to SDO-D than to SDO-E in Sample 1, and more strongly related to SDO-D, though not significantly so, in Sample 5.

Perceptions of zero-sum competition vis-à-vis a subordinate ethnic group was assessed in Samples 1, 4, and 5, and as expected, was significantly predicted by SDO-D in all three samples and significantly more strongly predicted by SDO-D than by SDO-E in all samples.

We also assessed attitudes toward aggressive intergroup behavior (i.e., nationalism and immigrant persecution). Nationalism was related to SDO-D in the way we expected in Sample 5 – i.e., significantly related to SDO-D and significantly more related to SDO-D than SDO-E – but was only marginally significantly related to SDO-D in Sample 1. Interestingly, nationalism was also significantly positively related to SDO-E in Sample 1, and significantly negatively related to SDO-E in Sample 5. In both Samples 2 and 3, beliefs about immigrant persecution were significantly related to SDO-D and more strongly related to this dimension than to SDO-E.

Finally, Sample 5 provided the greatest number of unique variables to test the differential predictive power of SDO-D. The semi-partial correlations indicated that SDO-D significantly predicted the denial of a Palestinian right to land, the belief that Jews have a right to all of Israel, the belief that ceding land to Palestinians threatens Israeli security, and support for war to maintain national superiority. SDO-D predicted all of these variables significantly better than SDO-E did.

In support of Hypothesis 4 - the prediction that SDO-D would be related to outcomes that justify the existing hierarchy in contexts where the hierarchy is severe and highly contested - SDO-D also significantly predicted affect toward Palestinians and right-wing political identification in Israel, and these variables were better predicted by SDO-D than by SDO-E. Whereas we hypothesized that outgroup affect and political conservatism would be more related to SDO-E in a less hierarchical context, it appears that support for right-wing political establishments and negative affect toward subordinate groups are strongly related to SDO-D when power relations are more contested and hierarchical.

Our next test, Hypothesis 5, predicted that SDO-E would correlate more strongly with endorsement of subtle legitimizing myths (e.g., symbolic racism), support for the status quo (e.g., system legitimacy beliefs), and opposition to redistributive social policies. We also predicted that SDO-E would relate more strongly to political conservatism in the United States. We followed the same regression procedure used to test Hypothesis 3, regressing each of these variables on SDO–D and SDO-E, and again examined whether the semi-partial correlations were significantly different (through one-tailed tests; See Table 4).

We measured political conservatism in all four American samples (Samples 1-4), and in every case, found that it was significantly predicted by SDO-E and significantly more strongly related to SDO-E than SDO-D.

System justification/legitimacy beliefs were assessed in the first two American samples (Sample 1 and 2), and in both cases, it was predicted significantly by SDO-E and more strongly by SDO-E than SDO-D. We also measured system justification in the Israeli context. As this measure assessed beliefs in justice for the Jewish ethnic groups in Israel (a less contested hierarchical context similar to race relations in the US), we expected SDO-E to be related to

system justification. Again, SDO-E was indeed related to system justification in the Israeli context, but not more strongly than it was related to SDO-D. Consistent with our expectations, we found that perceptions of equal opportunity for the Jewish ethnic groups in Israel were predicted significantly by SDO-E in Sample 5, and were more positively related to this dimension than to SDO-D.

Turning to affirmative action in the US, as we expected, opposition to this policy was predicted significantly by SDO-E in all three samples in which it was measured (Samples 1, 2, and 4), and significantly more related to this dimension than to SDO-D. The Protestant work ethic in the US was similarly significantly related to SDO-E in Samples 1 and 4, and significantly more related to this dimension than SDO-D in Sample 1.

We also expected that the belief that the admissions process to Harvard University is fair would be positively related to SDO-E and more positively related to SDO-E than to D, and found in Samples 2 and 3 that this was indeed the case.

Opposition to various redistributive social policies – i.e., opposition to legally enforced racial policy and opposition to social welfare in Sample 1, opposition to redistributive social policy and opposition to civil rights activism in Samples 2 and 3, and opposition to income redistribution (between Jewish ethnic groups in Israel) in Sample 5 – was found to be significantly predicted by SDO-E in all seven of these cases and was significantly more related to SDO-E than to SDO-D in all cases except with respect to civil rights activism in Sample 2, where the magnitude of the relationship with SDO-E was still stronger.

Symbolic racism was measured in Sample 4, and as expected, it was significantly related to SDO-E and marginally significantly more strongly related to SDO-E than to SDO-D.

Finally, in Sample 5, we found that affect toward the Mizrachi Jews was significantly predicted by SDO-E but not significantly more strongly predicted by SDO-E than by SDO-D. Relationships with affect toward Palestinians were different. Although negative affect is a component of symbolic racism, and thus generally expected to be better predicted by SDO-E, when an outgroup that is engaged in a bitter conflict with the dominant group (Palestinians vis-à-vis the dominant Jewish group in Israel) is considered, it is better predicted by SDO-D than by SDO-E.

## Discussion

The present research examined whether the $SDO_6$ scale consists of two distinct, substantive subdimensions - support for group-based domination and opposition to group-based equality. We tested both the factor analytic structure of the SDO items and whether each subdimension of SDO differentially predicts criterion variables in five samples. Results supported all of our hypotheses. Specifically, in all five samples, a two-factor solution accounted for the intercorrelations among the 16 $SDO_6$ items better than a one-factor solution, confirming Hypothesis 1 that SDO is composed of two subdimensions. Notably, and confirming Hypothesis 2, SDO-E and SDO-D were both very strongly correlated in every sample. Our substantive hypotheses examined the kinds of intergroup attitudes that should be more strongly related to SDO-D or to SDO-E. Confirming Hypothesis 3 - that SDO-D especially relates to the active and forceful subjugation of outgroups - endorsing immigrant persecution, old-fashioned racism, perceived zero-sum competition, and support for war were all significantly predicted by SDO-D beyond the effects of SDO-E in the U.S. and in Israel. Furthermore, consistent with the hypothesis that SDO-D would also predict system legitimizing/justifying ideologies (e.g., conservatism) in extremely hierarchical and highly conflictual intergroup contexts, we found that

in the context of the Israeli-Palestinian conflict, high status Israelis exhibited a relationship between SDO-D on the one hand, and political conservatism and negative affect toward Palestinians on the other hand. Hypothesis 5 proposed that SDO-E especially relates to less confrontational hierarchy-enhancing ideologies that legitimize relatively egalitarian but still socially stratified systems. Confirming this, we found that for the variables we thought would be predicted by SDO-E, namely, subtle hierarchy-enhancing legitimizing ideologies and hierarchy-attenuating social policies, most were predicted significantly by SDO-E, controlling for the effects of SDO-D, and were more strongly predicted by SDO-E than by SDO-D.

Given these findings, it appears safe to conclude that there are two related but distinct aspects of SDO, and these aspects predict qualitatively different intergroup phenomena. The point of greatest convergence between us and two other research teams who have been examining the structure of SDO, namely Jost and Thompson (2000) and Kugler et al. (2010) lies in our collective views on what SDO-E should relate to. That is, all three research teams argue for and find support for the relationship between SDO-E and hierarchy-attenuating social policies (e.g., affirmative action opposition) and political conservatism in the United States. The replication of these findings by independent research teams using different operationalizations of criterion measures provides confidence that SDO-E corresponds to non-inclusive and non-egalitarian preferences regarding intergroup relations.

Despite this similarity in our mutual understanding of SDO-E, our interpretation differs somewhat from the system-justification approach of Jost and Thompson (2000) and Kugler et al. (2010) in two important ways. First, we do not believe that the concept of system-justification necessarily always invokes sentiments expressed by SDO-E. For example, in Sample 5, support for right-wing political beliefs, a typical measure of endorsement of the status quo, was more

strongly related to SDO-D than to SDO-E. We argue that in hierarchical societies engaged in violent intergroup conflicts, legitimizing the existing social structure may be more strongly related to SDO-D than to SDO-E. In other words, the relational orientations that motivate system justification hinge crucially upon the kinds of relationships the system entails. When the system entails contested dominance relations, such as the Israeli-Palestinian conflict, support for the hierarchical status quo may be motivated more by support for group-based dominance than by opposition to group-based equality.

A second way in which our perspective differs from that of others is that in contrast to Kugler et al. (2010), we do not see SDO-D as the prejudice dimension. Rather, we believe that different types of prejudice are related to the two SDO dimensions. What is often called old-fashioned prejudice, that is, the belief in outgroup inferiority, should serve to legitimize group-based dominance and thus should be related to SDO-D. However, prejudice that is not dressed up in notions of outgroup inferiority, but in reference to other values that nonetheless have the consequence of demeaning outgroups, like symbolic racism, should be more related to SDO-E. This is because symbolic racism is based upon the belief that minority group members violate traditional values (i.e., the Protestant work ethic), which constitutes a legitimizing ideology that supports inequality, but not necessarily outright dominance (e.g., Reyna et al., 2009). Our data confirm the conceptual distinction between "old-fashioned" and "modern" prejudice and show that modern prejudice is still motivated by support for group inequality. Furthermore, we emphasize that SDO-E is about *group*-based inequality. While it should share variance with prior operationalizations of anti-egalitarianism (e.g., Katz & Hass, 1988), group-based anti-egalitarianism should be distinguished from beliefs about interpersonal equality.

Contrary to the conclusions of Sears et al. (2008), the present evidence shows that the SDO-D dimension is far from being socio-politically inert, even in the U.S. Rather, we found that it is substantially related to a number of socio-political phenomena such as perception of zero-sum group competition, nationalism, old-fashioned racism, and the willingness to participate in the persecution of immigrants. In the Israeli sample, SDO-D was further related to support for war, affect toward Palestinians, and various forms of opposition to making concessions to Palestinians. Indeed, we found that SDO-D was a better predictor than SDO-E was for aggressive intergroup behaviors, perceptions of zero-sum intergroup competition, and old-fashioned racism. While SDO-D may not predict more subtle acts of intergroup bias, like support for less extreme hierarchy-enhancing ideologies, or opposition to hierarchy-attenuating social policies, we have demonstrated that it is useful in understanding more extraordinary, potentially costly intergroup conflicts.

Throughout our analysis of the four American datasets, we were able to find more variables we thought would be related to SDO-E than SDO-D. We do not believe this was by chance. Many theorists in the field of intergroup relations have argued that persuasion, or ideological control, is the preferred means of social control, compared to the use of naked force, in maintaining group-based hierarchies (e.g., Jackman, 1994; Sidanius & Pratto, 1999; Tyler, 2006). As such, the relatively mundane aspects of intergroup conflict that are best predicted by SDO-E should be more common than the relatively extreme intergroup behaviors and beliefs that emerge from SDO-D.

Importantly, we note that in many instances, it may still be best to use the full SDO scale. Many forms of bias might naturally mix elements of both dimensions of SDO. For example, perceiving mixed-race individuals as belonging more to their subordinate parent group (i.e.,

according to a rule of *hypodescent*) might entail the belief that the subordinate parent group is inferior, but at the same time constitute a relatively subtle means of maintaining status boundaries (Ho, Sidanius, Levin, & Banaji, 2011). In such cases, separating the SDO scale will not prove more useful than using the full scale. We recommend that future tests of the separate dimensions be guided by the theoretical distinction we make between the underlying psychological processes of support for group-based dominance and unequal group relations. For example, social dominance theory argues that the SDO scale is a good measuring stick for testing the function of legitimizing myths, in particular whether they are hierarchy-enhancing or hierarchy-attenuating. Along these lines, examining whether a legitimizing myth is more related to SDO-D or SDO-E may help ascertain whether the myth is intended to support dominance and oppression involving the use of force, or intended to uphold inequality in less overt ways. For example, the finding that old-fashioned racism is more related to SDO-D and symbolic racism is more related to SDO-E suggests that old-fashioned racism might justify forceful forms of group oppression such as slavery or apartheid, whereas symbolic racism might lead one to oppose equality for all groups, but not support the use of force to dominate subordinate groups.

We view both dimensions of SDO as primarily supporting generalized group-based hierarchy rather than *ingroup* dominance (Pratto et al., 2006), even if there are qualitative differences in the character of the hierarchy the two dimensions support. However, at present, a few items in the SDO-D dimension (e.g., “In getting what your group wants, it is sometimes necessary to use force against other groups”) may be interpreted as support for ingroup dominance. Future measures of SDO should remove this potential confound.

Social dominance theorists have long argued and demonstrated that individual differences in the desire for group-based hierarchy have serious consequences for the ways in which

individuals engage in intergroup relations. The new analyses presented in this study demonstrate that depending on the outcome and the socio-structural context, one component of SDO might be more consequential than the other. These findings should help us understand more precisely the underpinnings of intergroup conflict, whether it occurs on the battlefield or in the voting booth. We hope that continued analysis of SDO's structure and function, and the further development of its measurement, will shed more light on what motivates various manifestations of intergroup conflict.

## References

Altemeyer, B. (1996). *The authoritarian specter*. Cambridge, MA US: Harvard University Press.

Amiot, C., & Bourhis, R. (2005). Ideological beliefs as determinants of discrimination in positive and negative outcome distributions. *European Journal of Social Psychology*, *35*, 581-598.

Christie, R. & Cook, P. (1958). A guide to published literature relating to the authoritarian personality through 1956. *Journal of Psychology*, *45*, 1717-1799.

Cohrs, Moschner, Maes, & Kielmann (2005). The motivational bases of right-wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001. *Personality and Social Psychology Bulletin*, *31*, 1425-1434.

Cozzolino, P., & Snyder, M. (2008). Good times, bad times: How personal disadvantage moderates the relationship between social dominance and efforts to win. *Personality and Social Psychology Bulletin*, *34*, 1420-1433.

Del Prado Silván-Ferrero, M., & Bustillos, A. (2007). Adaptación de la escala de orientación a la dominancia social al castellano: Validación de la dominancia grupal y la oposición a la igualdad como factores subyacentes. *Revista de Psicología Social*, *22*, 3-15.

Eagly, A. H., Diekman, A. B., Johannesen-Schmidt, M. C., & Koenig, A. G. (2004). Gender Gaps in Sociopolitical Attitudes: A Social Psychological Analysis. *Journal of Personality and Social Psychology*, *87*, 796-816.

Esses, V., Evenly, S., Hudson, G., & Mimic, L. (2008). Justice, morality, and the dehumanization of refugees. *Social Justice Research*, *21*, 4-25.

Essex, T. R. (n.d.) Real reasons to oppose affirmative action. National Leadership Network of Conservative African-Americans. Retrieved Jan 4, 2011 from http://www.nationalcenter.org/P21NVEssexAAction104.html

Federico, C. M., & Sidanius, J. (2002). Racism, ideology, and affirmative action, revisited: The antecedents and consequences of 'principled objections' to affirmative action. *Journal of Personality and Social Psychology 82*, 488-502.

Foels, R., & Pappas, C. (2004). Learning and unlearning the myths we are taught: Gender and social dominance orientation. *Sex Roles*, *50*, 743-757.

Freeman, D., Aquino, K., & McFerran, B. (2009). Overcoming beneficiary race as an impediment to charitable donations: Social dominance orientation, the experience of moral elevation, and donation behavior. *Personality and Social Psychology Bulletin, 35*, 72-84.

Green, E., Thomsen, L., Sidanius, J., Staerkle, C., & Potanina, P. (2009). Reactions to crime as a hierarchy regulating strategy: The moderating role of social dominance orientation. *Social Justice Research, 22*, 416-436.

Guimond, S., Dambrun, M., Michinov, N., & Duarte, S. (2003). Does social dominance generate prejudice? Integrating individual and contextual determinants of intergroup cognitions. *Journal of Personality and Social Psychology, 84*, 697-721.

Haley, H., & Sidanius, J.(2005). Person-organization congruence and the maintenance of group-based social hierarchy: A social dominance perspective *Group processes & intergroup relations, 8*, 187-203.

(2006). The positive and negative framing of affirmative action: A group dominance perspective. *Personality and Social Psychology Bulletin*, *32*, 656-668.

Heller, J. (2010, Nov. 11). Clinton offers Netanyahu security pledge on peace talks. Retrieved Jan. 4, 2011 from http://www.reuters.com/article/idUSTRE6AA57F20101111

Hittner, J.B., Finger, M.S., Mancuso, J.P., & Silver, N.C. (1995). AMicrosoft FORTRAN 77 program for contrasting part correlations and related statistics. *Educational and Psychological Measurement, 55*, 777-784.

Ho, A. K., Sidanius, J., Levin, D. T., & Banaji, M. R. (2011). Evidence for hypodescent and racial hierarchy in the categorization and perception of biracial individuals. *Journal of Personality and Social Psychology.*

Jackman, M. (1994). *The velvet glove: paternalism and conflict in gender, class, and race relations*. Berkeley, CA: University of California Press.

Jost, J.T., & Thompson, E.P. (2000). Group-based dominance and opposition to equality as independent predictors of self-esteem, ethnocentrism, and social policy attitudes among African Americans and European Americans. Journal of Experimental Social Psychology, 36, 209-232.

Katz, I., & Hass, R. (1988). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology*, *55*(6), 893-905.

Kteily, N., Sidanius, J. & Levin, S, (2011). Social dominance orientation: Cause or 'mere effect'? Evidence for SDO as a causal predictor of prejudice and discrimination against ethnic and racial outgroups. *Journal of Experimental Social Psychology.*

Kugler, M. B., Cooper, J., & Nosek, B. A. (2010). Group-based dominance and opposition to equality correspond to different psychological motives. *Social Justice Research, 23*, 117-155.

Loevinger, J. (1957). Objective tests as instrument of psychological theory. *Psychological Reports,* Monograph Supplement 9.

McFarland, S. & Adelson, S. (1996, July). An Omnibus Study of Personality and Prejudice. Paper presented at the meeting of the International Society of Political Psychology, Vancouver, Canada.

Peña, Y., & Sidanius, J. (2002). U.S. patriotism and ideologies of group dominance: A tale of asymmetry. *The Journal of Social Psychology*, *142*, 782-790.

Pratto, F., & Glasford, D. (2008). Ethnocentrism and the value of a human life. *Journal of Personality and Social Psychology*, *95*, 1411-1428.

Pratto, F., Liu, J. H., Levin, S., Sidanius, J., Shih, M., Bachrach, H. & Hegarty, P. (2000). Social dominance orientation and the legitimization of inequality across cultures. *Journal of Cross-Cultural Psychology, 31*, 369-409.

Pratto, F., & Shih, M. (2000). Social dominance orientation and group context in implicit group prejudice. *Psychological Science*, 11(6), 515-518.

Pratto, F., Sidanius, J., & Levin, S. (2006). Social dominance theory and the dynamics of intergroup relations: Taking stock and looking forward. *European Review of Social Psychology*, 17, 271-320.

Pratto, F., Sidanius, J., Stallworth, L.M., & Malle, B.F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. Journal of Personality and Social Psychology, 67, 741-763.

Pratto, F., Stallworth, L., & Conway-Lanz, S. (1998). Social dominance orientation and the ideological legitimization of social policy. *Journal of Applied Social Psychology*, *28*, 1853-1875.

Reynolds, K., Turner, J., Haslam, S., Ryan, M., Bizumic, B., & Subasic, E. (2007). Does personality explain in-group identification and discrimination? Evidence from the minimal group paradigm. *British Journal of Social Psychology, 46*, 517-539.

Reyna, C., Henry, P., Korfmacher, W., & Tucker, A. (2006). Examining the principles in principled conservatism: The role of responsibility stereotypes as cues for deservingness in racial policy decisions. *Journal of Personality and Social Psychology, 90*, 109-128.

Roth, B. M. (1994). *Prescription for failure: Race relations in the age of social science.* New Brunswick, NJ: Transaction Publishers.

Schuman, H., Steeh, C., Bobo, L., & Krysan, M. (1997). *Racial attitudes in America: Trends and interpretations (rev. ed.).* Cambridge, MA US: Harvard University Press.

Sears, D. O., Haley, H., & Henry, P. J. (2008). Cultural diversity and sociopolitical attitudes at college entry. In J. Sidanius, S. Levin, C. van Laar, & D. O. Sears (Eds.), The Diversity Challenge (pp. 65-99). New York: Russell Sage Foundation.

Sears, D., & Henry, P. (2005). Over thirty years later: A contemporary look at symbolic racism. *Advances in experimental social psychology*, Vol. 37 (pp. 95-150). San Diego, CA US: Elsevier Academic Press.

Sears, D. O., Henry, P. J., & Kosterman, R. (2000). Egalitarian values and contemporary racial politics. In D. O. Sears, J. Sidanius, & L. D. Bobo (Eds.), *Racialized Politics*. Chicago: University of Chicago Press.

Sibley, C., Wilson, M., & Duckitt, J. (2007). Effects of dangerous and competitive worldviews on Right-Wing Authoritarianism and Social Dominance Orientation over a five-month period. *Political Psychology, 28*, 357-371.

Sidanius, J., Levin, S., & Pratto, F. (1996). Consensual social dominance orientation and

its correlates within the hierarchical structure of American society. *International Journal of Intercultural Relations,* 20, 385 – 408.

Sidanius, J. & Liu, J. (1992). Racism, Support for the Persian Gulf War, and the Police Beating of Rodney King: A Social Dominance Perspective. *Journal of Social Psychology, 132,* 685-700.

Sidanius, J., Mitchell, M., Haley, H., & Navarrete, C. D. (2006). Support for harsh criminal sanctions and criminal justice beliefs: A social dominance perspective. *Social Justice Research, 19,* 433-449.

Sidanius, J. & Pratto, F. (1993). The inevitability of oppression and the dynamics of social dominance. In P. Sniderman & P. Tetlock (Eds.), *Prejudice, Politics, and the American Dilemma*. Stanford University Press, pp. 173-211.

Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York: Cambridge University Press.

Sidanius, J., Pratto, F., Martin, M., & Stallworth, L. (1991). Consensual racism and career track: Some implications of social dominance theory. *Political Psychology, 12,* 691-721.

Sidanius, J., Pratto, F. & Mitchell, M. (1994). Ingroup identification, social dominance orientation, and differential intergroup social allocation. *Journal of Social Psychology, 134,* 151-167.

Thernstrom, S., & Thernstrom, A. (1997). *America in Black and White: One nation, indivisible.* New York: Simon and Shuster.

Thomsen, L., Green, E. G. T., & Sidanius, J. (2008). We will hunt them down: How SDO and RWA fuels ethnic persecution of immigrants in fundamentally different ways. *Journal of Experimental Social Psychology, 44,* 1455-1464.

Thomsen, L., Green, E. G. T., Ho, A. K., Sidanius, J., Levin, S., van Laar, C., & Sinclair, S. (2010). Wolves in sheep's clothing: SDO asymmetrically predicts perceived ethnic victimization among White and Latino students across three years. *Personality and Social Psychology Bulletin*, *36*, 225-238.

Tyler, T. R. (2006). Psychological perspectives on legitimacy and legitimation. *Annual Review of Psychology, 57,* 375-400.

Wing, N. (2010, November 9). Joyce Kaufman, Allen West's Chief of Staff, advocated hanging illegal immigrants who commit crimes. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/2010/11/09/joyce-kaufman-allen-west-chief-of-staff_n_781178.html

Wakslak, C., Jost, J., Tyler, T., & Chen, E. (2007). Moral outrage mediates the dampening effect of system justification on support for redistributive social policies. *Psychological Science, 18,* 267-274.

Yoshimura & Hardin (2009). Cognitive salience of subjugation and the ideological justification of U.S. geopolitical dominance in Japan. *Social Justice Research, 22,* 298-311.

## Footnotes

[1] 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 semi-partial, or part correlation examines the correlation between an IV and DV controlling for the effects of a third variable on the IV only.

[2] Based on the modification indices, we correlated the residuals of parcels 5 and 6 and parcels 5 and 1 in the two-factor model, and the residuals of parcels 5 and 6 and parcels 5 and 4 in the one-factor model.

[3] Based on the modification indices, we added one modification to the two models in Sample 4: We correlated the residuals of parcels 2 and 4 in the two-factor model, and the residuals of parcels 5 and 6 in the one-factor model.

[4] The *p*-values for the semi-partial correlations are based on significance tests of the B-coefficients produced in the regression analyses, which in principle provide the same information.

Table 1.

*Items Proposed to Form the SDO-D and SDO-E Dimensions (Jost & Thompson, 2000)*

| SDO – Dominance (SDO-D) | SDO – Egalitarianism (SDO-E) |
|---|---|
| 1. Some groups of people are just more worthy than others<br>2. In getting what your group wants, it is sometimes necessary to use force against other groups.<br>3. Superior groups should dominate inferior groups<br>4. To get ahead in life, it is sometimes necessary to step on other groups.<br>5. If certain groups of people stayed in their place, we would have fewer problems.<br>6. It's probably a good thing that certain groups are at the top and other groups are at the bottom.<br>7. Inferior groups should stay in their place.<br>8. Sometimes other groups must be kept in their place. | 1. It would be good if all groups could be equal.<br>2. Group equality should be our ideal.<br>3. All groups should be given an equal chance in life.<br>4. We should do what we can to equalize conditions for different groups.<br>5. Increased social equality.<br>6. We would have fewer problems if we treated different groups more equally.<br>7. We should strive to make incomes more equal.<br>8. No one group should dominate in society. |

Table 2.

Fit Statistics for Confirmatory Factor Analyses for Two- and One-Factor SDO Models and Chi-Square Difference Test Comparing the Two Models

| | $\chi^2$/df | RMSEA | CFI | $\chi^2_{\text{difference}}$ test |
|---|---|---|---|---|
| **Sample 1** | | | | |
| Two-factor model | 1.00 | 0.00 | 1.00 | $\chi^2_{\text{diff}} = 35.15$, df = 1, $p < .001$ |
| One-factor model | 5.88 | 0.17 | 0.95 | |
| **Sample 2** | | | | |
| Two-factor model | 2.47 | 0.06 | 0.99 | $\chi^2_{\text{diff}} = 479.94$, df = 1, $p < .001$ |
| One-factor model | 55.52 | 0.34 | 0.78 | |
| **Sample 3** | | | | |
| Two-factor model | 7.50 | 0.06 | 0.99 | $\chi^2_{\text{diff}} = 1998.52$, df = 1, $p < .001$ |
| One-factor model | 228.73 | 0.37 | 0.71 | |
| **Sample 4** | | | | |
| Two-factor model | 1.13 | 0.03 | 1.00 | $\chi^2_{\text{diff}} = 39.75$, df = 1, $p < .001$ |
| One-factor model | 5.95 | 0.17 | 0.85 | |
| **Sample 5** | | | | |
| Two-factor model | 0.58 | 0.00 | 1.00 | $\chi^2_{\text{diff}} = 112.90$, df = 1, $p < .001$ |
| One-factor model | 13.06 | 0.19 | 0.89 | |

Table 3.

*Semi-Partial (Part) Correlations Between SDO-E, SDO-D, and Criterion Variables Hypothesized to be Related to SDO-D*

| Criterion Variable | SDO-E Part R | SDO-D Part R | Difference test |
|---|---|---|---|
| **Sample 1 - UCLA 1993** | | | |
| Old racism | .18** | .33*** | t = -1.36, p = .09 |
| Zero-sum competition | .09 | .31*** | t = -1.84, p = .04 |
| Nationalism | .27*** | .12+ | t = 1.25, p = .11 |
| **Sample 2 - Harvard 2007** | | | |
| Old racism | .18*** | .37*** | t = -2.98, p = .00 |
| Beliefs about immigrant persecution | .05 | .42*** | t = -5.33, p = .00 |
| **Sample 3 - Harvard 2009** | | | |
| Old racism | .10*** | .44*** | t = -9.67, p = .00 |
| Beliefs about immigrant persecution | .06** | .46*** | t = -11.29, p = .00 |
| **Sample 4 - LACSS 1996** | | | |
| Zero-sum competition | .07 | .34*** | t = -2.36, p = .00 |
| **Sample 5 – Israeli universities 1994** | | | |
| Old-fashioned prejudice toward Mizrachi Jews | .15** | .28*** | t = 1.19, p = .12 |
| Zero-sum competition (with Mizrachi Jews) | .02 | .36*** | t = 3.21, p = .00 |
| Nationalism | -.16* | .22** | t = 3.25, p = .00 |
| Denial of Palestinian right to land | -.04 | .44*** | t = 4.56, p = .00 |
| Jewish right over all of Israel | -.10 | .39*** | t = 4.45, p = .00 |
| Giving Palestinian land threatens security | -.06 | .36*** | t = 3.74, p = .00 |
| War support | -.06 | .28*** | t = 2.96, p = .00 |
| Affect towards Palestinians | -.07 | -.30*** | t = -2.11, p = .02 |
| Right-wing political identification | .00 | .32*** | t = 2.73, p = .00 |

Note. +$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$; difference tests are one-tailed. The *p*-values of the semi-partial correlations are based on significance tests of the B-coefficients obtained from the same regression analyses as the semi-partial correlations.

Table 4

*Semi-Partial (Part) Correlations Between SDO-E, SDO-D, and Criterion Variables Hypothesized to be Related to SDO-E*

| Criterion Variable | SDO-E Part R | SDO-D Part R | Difference test |
|---|---|---|---|
| **Sample 1 – UCLA 1993** | | | |
| Political conservatism | .48*** | -.05 | t = 4.80, p = .00 |
| System legitimacy beliefs | .45*** | -.02 | t = 4.17, p = .00 |
| Opposition to affirmative action | .34*** | -.02 | t = 2.90, p = .00 |
| Protestant work ethic | .39*** | -.03 | t = 3.56, p = .00 |
| Opposition to legally enforced racial policy | .52*** | .06 | t = 4.56, p = .00 |
| Opposition to social welfare | .46*** | .03 | t = 3.96, p = .00 |
| **Sample 2 – Harvard 2007** | | | |
| Political conservatism | .30*** | .11** | t = 2.63, p = .00 |
| System justification | .36*** | .15*** | t = 3.12, p = .00 |
| Opposition to affirmative action quotas | .22*** | -.04 | t = 3.36, p = .00 |
| Opposition to redistributive social policy | .47*** | .12** | t = 5.65, p = .00 |
| Opposition to civil rights activist | .27*** | .19*** | t = 1.21, p = .11 |
| Belief that Harvard admissions is fair | .40*** | -.07+ | t = 6.51, p = .00 |
| **Sample 3 – Harvard 2009** | | | |
| Political conservatism | .37*** | .04+ | t = 8.86, p = .00 |
| Opposition to redistributive social policy | .55*** | .04+ | t = 15.88, p = .00 |
| Opposition to civil rights activist | .34*** | .13*** | t = 5.63, p = .00 |
| Belief that Harvard admissions is fair | .31*** | -.05* | t = 8.90, p = .00 |
| **Sample 4 – LACSS 1996** | | | |
| Political conservatism | .28*** | .07 | t = 1.73, p = .04 |
| Affirmative action opposition | .31*** | .03 | t = 2.33, p = .01 |
| Protestant work ethic | .22** | .09 | t = 1.11, p = .14 |
| Symbolic racism | .29*** | .14+ | t = 1.29, p = .10 |
| **Sample 5 - Israeli universities 1994** | | | |
| System justification | .24*** | .25*** | t = -.09, p = .41 |
| Opposition to income redistribution | .39*** | -.14* | t = -4.77, p = .00 |
| Affect towards Mizrachi Jews | -.20*** | -.11+ | t = .83, p = .20 |
| Equal opportunity | .22** | -.17* | t = -3.38 p = .00 |

Note. +$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$; difference tests are one-tailed. The *p*-values of the semi-partial correlations are based on significance tests of the B-coefficients obtained from the same regression analyses as the semi-partial correlations.

## Appendix 1

All measures used a 1 (Strongly disagree/disapprove) to 7 (Strongly agree/approve) scale unless otherwise indicated.

**Sample 1**

SDO-D Criterion Variables

*Old-fashioned racism* (α = .89)

1. Blacks are inherently inferior.
2. Chicanos/Latinos are inherently inferior.
3. African Americans are less intellectually able than other groups.
4. African Americans are lazier than other groups.
5. Latinos are less intellectually able than other groups.
6. Latinos are lazier than other groups.

*Zero-sum competition* (α = .67)

1. Better jobs for African Americans means fewer good jobs for Whites.
2. The economic advancement of certain groups threatens the advancement of other ethnic groups.

*Nationalism* (α = .60)

1. For the most part, America is no more superior than any other industrialized country in the world.
2. To maintain our country's economic superiority, aggressive economic policies are sometimes necessary.
3. The USA should not dominate other countries.
4. There are many other cultures in the world that are superior to ours.

SDO-E Criterion Variables

*Political conservatism* (α = .88)

1. How would you describe your political party preference?
   1 = ”Strong Democrat” to 7 = ”Strong Republican”
2. In terms of economic issues, how would you describe your political attitudes and beliefs?
   1 = “Very liberal” to 7 = “Very conservative”
3. In terms of social issues, how would you describe your political attitudes and beliefs?
   1 = “Very liberal” to 7 = “Very conservative”

*System legitimacy beliefs* (α = .78)

1. America is a just society where differences in status between ethnic groups reflect actual group differences.

2. Differences in status between ethnic groups are fair.
3. Minority groups are given the same treatment as other ethnic groups in the criminal justice system.
4. American society treats all ethnic groups equally.
5. Although there was discrimination in the past, today members of all ethnic groups have equal opportunity.

*Opposition to affirmative action* (α = N/A)

1. Affirmative action.

*Protestant work ethic* (α = .81)

1. America is a just society where differences in status between ethnic groups reflect actual group differences.
2. If people work hard they almost always get what they want.
3. Most people who don't get ahead should not blame the system; they really have only themselves to blame.
4. In America, getting ahead doesn't always depend on hard work.
5. Even if people work hard, they don't always get ahead.

*Opposition to legally enforced racial policy* (α = .87)

1. Government should see to it that minorities get fair treatment in jobs.
2. Government should not pass laws concerning the hiring of ethnic minorities.
3. Government should ensure that Whites and minorities go to the same school
4. Government has no business trying to ensure racial integration in schools
5. Government should do what it can to improve the economic condition of poor ethnic minorities.
6. Government has no business trying to improve the economic condition of poor ethnic minorities.

*Opposition to social welfare* (α = .83)

1. Greater assistance to the poor
2. Reduced public support for the homeless
3. Reduced benefits for the unemployed

**Sample 2**

SDO-D Criterion Variables

*Old-fashioned racism* (α = .75)

1. Racial integration
2. White superiority
3. Blacks are inherently inferior

*Willingness to participate in immigrant persecution* (α = .93)

Now, suppose that the American government some time in the future passed a law outlawing immigrant organizations in the US. Government officials then stated that the law would only be effective if it were vigorously enforced at the local level and appealed to every American to aid in the fight against these organizations.

*Please indicate how much you agree or disagree with the following statements:*

1. I would tell my friends and neighbors that it was a good law.
2. I would tell the police about any immigrant organizations that I knew.
3. If asked by the police, I would help hunt down and arrest members of immigrant organizations.
4. I would participate in attacks on the immigrant headquarters organized by the proper authorities.
5. I would support physical force to make member of immigrant organizations reveal the identity of other members.
6. I would support the execution of leaders of immigrant organizations if the government insisted it was necessary to protect the United States.

SDO-E Criterion Variables

*Political conservatism* ($\alpha = .81$)

1. How would you describe your political party preference?
___ Strong Republican ___ Weak Republican ___ Independent Republican
___ Independent ___ Independent Democrat ___ Weak Democrat
___ Strong Democrat
Other (please specify)_____

2. In terms of *economic issues*, how would you describe your political attitudes and beliefs?
___ Very Conservative ___ Conservative ___ Slightly Conservative
___ Middle-of-the-road ___ Slightly Liberal ___ Liberal
___ Very Liberal
Other (please specify)_____

3. In terms of *social issues*, how would you describe your political attitude and beliefs?
___ Very Conservative ___ Conservative ___ Slightly Conservative
___ Middle-of-the-road ___ Slightly Liberal ___ Liberal
___ Very Liberal
Other (please specify)_____

*System justification* ($\alpha = .68$)

Please use the following scale to rate the extent to which each of the following statements is true for you. There are no right or wrong answers for any question. The best answer is what you think is true for yourself.

1. Our society is an open society where all individuals can achieve higher status.
2. Advancement in our society is possible for all individuals.
3. Differences in status between groups in society are fair.

4. Differences in status between groups in society are the result of injustice.

*Affirmative action quotas* (α = N/A)

Please indicate how you personally feel about different kinds of affirmative action. For the following policy, please indicate if you strongly support, somewhat support, somewhat oppose, or strongly oppose the policy.

1. Quotas, that is, setting aside places for certain groups.

1 = strongly oppose, 2 = somewhat oppose, 3 = somewhat support, 4 = strongly support

*Opposition to redistributive social policy* (α = .73)

1. Government sponsored healthcare for everybody
2. Low income housing
3. Reduced benefits for the unemployed
4. Increased taxation of the rich

*Civil rights activist* (α = N/A)

1. Civil-rights activists

*Harvard admissions fair* (α = .85)

1. Societal injustice makes it impossible for some Blacks to get the acceptance to Harvard that they truly deserve.
2. Societal injustice makes some Whites get an acceptance to Harvard that they don't actually deserve.
3. Societal injustice makes some White persons get the spot at Harvard that should have been given to another, Black, person if things were fair.

**Sample 3**

SDO-D Criterion Variables

*Old-fashioned racism* (α = .75)

1. Racial integration
2. White superiority
3. Blacks are inherently inferior

*Beliefs about immigrant persecution* (α = .91)

Now, suppose that the American government some time in the future passed a law outlawing immigrant organizations in the US. Government officials then stated that the law would only be effective if it were vigorously enforced at the local level and appealed to every American to aid in the fight against these organizations.

*Please indicate how much you agree or disagree with the following statements:*

1. I would tell my friends and neighbors that it was a good law.
2. I would tell the police about any immigrant organizations that I knew.
3. If asked by the police, I would help hunt down and arrest members of immigrant organizations.
4. I would participate in attacks on the immigrant headquarters organized by the proper authorities.
5. I would support physical force to make member of immigrant organizations reveal the identity of other members.
6. I would support the execution of leaders of immigrant organizations if the government insisted it was necessary to protect the United States.

SDO-E Criterion Variables

*Political conservatism* (α = .89)

1) How would you describe your political party preference?
___ Strong Republican ___ Weak Republican ___ Independent Republican
___ Independent ___ Independent Democrat ___ Weak Democrat
___ Strong Democrat
Other (please specify)_____

2) In terms of *economic issues*, how would you describe your political attitudes and beliefs?
___ Very Conservative ___ Conservative ___ Slightly Conservative
___ Middle-of-the-road ___ Slightly Liberal ___ Liberal
___ Very Liberal
Other (please specify)_____

3) In terms of *social issues*, how would you describe your political attitude and beliefs?
___ Very Conservative ___ Conservative ___ Slightly Conservative
___ Middle-of-the-road ___ Slightly Liberal ___ Liberal
___ Very Liberal
Other (please specify)_____

*Opposition to redistributive social policy* (α = .73)

1. Government sponsored healthcare for everybody
2. Low income housing
3. Reduced benefits for the unemployed
4. Increased taxation of the rich

*Civil rights activist* (α = N/A)

1. Civil-rights activists

*Harvard admissions fair* (α = .88)

1. Societal injustice makes it impossible for some Blacks to get the acceptance to Harvard that they truly deserve.

2. Societal injustice makes some Whites get an acceptance to Harvard that they don't actually deserve.
3. Societal injustice makes some White persons get the spot at Harvard that should have been given to another, Black, person if things were fair.

**Sample 4**

SDO-D Criterion Variables

*Zero-sum competition* (α = .77)

Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the statement?

1. More good jobs for Blacks means fewer good jobs for members of other groups.
2. The more influence Blacks have in local politics the less influence members of other groups will have in local politics.
3. The more good housing and neighborhoods go to Blacks, the fewer good houses and neighborhoods there will be for members of other groups.
4. Many Blacks have been trying to get ahead economically at the expense of members of other groups.

SDO-E Criterion Variables

*Political conservatism* (α = .67)

1. Generally speaking, and regardless of how you are registered, do you usually think of yourself as a democrat, a republican, neither a democrat nor a republican, an independent, or what?
    a. Do you think of yourself as a strong ___ or not so strong ___?
2. Would you describe your political views in general as very conservative, somewhat conservative, neither conservative nor liberal, somewhat liberal, or very liberal?

Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the statement?
3. The government should guarantee that basic health care is available for all Americans.
4. The government should lower taxes.
5. The government has taken over too many things that should be handled by individuals, families, and private businesses.

*Affirmative action opposition* (α = N/A)

Please tell me if you strongly support, somewhat support, somewhat oppose, strongly oppose, or have you never heard of affirmative action?

1. In general, do you support or oppose affirmative action?

1 = strongly support to 4 = strongly oppose

*Protestant work ethic* (α = .70)

Please tell me whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with these statements:

1. Although there was discrimination in the past, today members of all groups have an equal opportunity to succeed.
2. Success, or one's achievement, in American society depends primarily on individual merit.

*Symbolic racism* (α = .67)

Please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the following statements:

1. If blacks work hard they almost always get what they want.
2. Hard work offers little guarantee of success for blacks.
3. Blacks are getting too demanding in their push for equal rights.
4. The Irish, Italians, Jews and many other minorities overcame prejudice and worked their way up. Blacks should do the same without any special favors.

**Sample 5**

SDO-D Criterion Variables

*Old-fashioned prejudice toward Mizrachi Jews* (α = .58)

On average, Mizrachim have lower income and less political power than Ashkenazim. Several explanations have been suggested for this. Using the scale below, indicate the degree to which you agree or disagree with each of these explanations:

1. Mizrachim are less intellectually able than Ashkenazim.
2. Mizrachim have lower motivation to succeed than Ashkenazim.

Do not agree at all 1 2 3 4 5 6 7 Strongly agree

*Zero-sum competition with Mizrachi Jews* (α = .70)

Below are a series of statements with which you may either agree or disagree. For each statement, please indicate the degree of your agreement or disagreement by circling the appropriate number from '1' to '7'. Please remember that there are no right or wrong answers, and that your first responses are usually the most accurate.

1. Better jobs for Mizrachim means fewer good jobs for Ashkenazim.
2. The economic advancement of the Mizrachim threatens the advancement of the Ashkenazim.

Do not agree at all 1 2 3 4 5 6 7 Strongly agree

*Nationalism* (α = .47)

1. Since Israel is far from perfect, the country has many things to learn from other countries.
2. For the most part, Israel is no more superior than any other industrialized country in the world.
3. For me, there is no culture in the world that is superior to ours.

*Denial of Palestinian right to land* (α = .89)

1. What are you willing to give up in the West Bank in order to reach a peace agreement with the Palestinians?

    1. Everything
    2. The majority
    3. A certain part
    4. A small part
    5. Nothing at all

Different solutions have been put forth for the future of the territories so that Israel will achieve peace and security. To what extent do you support or oppose each of the following solutions:

2. Do you support or oppose Israel's forcing the Arabs to leave the territories in exchange for compensation, as stated by the transfer plan?
3. Do you support or oppose annexation of the territories without giving equal rights to the Palestinians?
4. Do you support or oppose the establishment of a Palestinian state?

Strongly oppose 1 2 3 4 5 6 7 Strongly support

*Jewish right over all of Israel* (α = .77)

1. I believe in the right of the Jewish people over all the Land of Israel.
2. The Palestinians have no right to demand territories from the Land of Israel.

*Giving Palestinian land threatens security* (α = .92)

1. Giving land to the Palestinians threatens the security of Israel.
2. The Palestinians have no right to demand territories from the Land of Israel.
3. A Palestinian state threatens the security of Israel.

*War support* (α = N/A)

1. To maintain Israel's superiority, war is sometimes necessary.

*Affect toward Palestinians (α = N/A)*

Using the scales provided, please indicate how positively or negatively you feel towards the following groups:

1. Palestinians

Very Negatively 1 2 3 4 5 6 7 Very Positively

*Right-wing political identification* (α = N/A)

On the following scale, '7' represents identification with the political right and 'I' represents identification with the political left. Where do place yourself on this scale?

Left 1 2 3 4 5 6 7 Right

SDO-E Criterion Variables

*System justification* (α = .56)

1. Israel is a just society where differences in status between ethnic groups reflect actual group differences.
2. Differences in status between ethnic groups are fair.
3. Differences in status between ethnic groups are the result of injustice.

*Opposition to income redistribution* (α = .51)

Below are a series of statements with which you may either agree or disagree. For each statement, please indicate the degree of your agreement or disagreement by circling the appropriate number from '1' to '7'. Please remember that there are no right or wrong answers, and that your first responses are usually the most accurate.

1. We must give greater assistance to the poor.
2. We must increase taxation of the rich.

Do not agree at all 1 2 3 4 5 6 7 Strongly agree

*Affect toward Mizrachi Jews* (α = N/A)

Using the scales provided, please indicate how positively or negatively you feel towards the following groups:

1. Mizrachim

Very Negatively 1 2 3 4 5 6 7 Very Positively

*Equal opportunity* (α = .82)

1. Israel is an open society where individuals of any ethnicity can achieve higher status.
2. Advancement in Israeli society is possible for individuals of all ethnic groups.
3. Individual members of a low status ethnic groups find it difficult to achieve higher status.
4. Mizrachim usually don't get fair treatment (in the labor market, education, and politics).

5. Ashkenazim and Mizrachim have the same chances of finding jobs that match their skills.
6. Ashkenazim and Mizrachim with the same qualifications have the same chances of getting into college.
7. People often discriminate against Mizrachim.
8. Although there was discrimination in the past, today members of all ethnic groups have equal opportunities.

# Dimensions of Social Dominance: Their Personality and Socio-political Correlates within a New Zealand Probability Sample

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Social Dominance Orientation (SDO) was introduced as a unidimensional construct predicting numerous socio-political attitudes. However, recent findings suggest that SDO is composed of two sub-dimensions: dominance (SDO-D) and anti-egalitarianism (SDO-E). Despite converging evidence concerning their empirical differentiability, there is little consensus on how to best define them. Thus, we examined the correlates of SDO-D and SDO-E using a broad array of personality, political, ethnic and gender issue variables within a New Zealand national probability sample ($N$ = 5,741) with European and Māori participants. SDO-D primarily related to the personality trait of honesty-humility, hostile and benevolent sexism. SDO-E primarily related to political conservatism and pro-Māori policies. In many cases, the predictive power differed between SDO-D and SDO-E, and across ethnic groups.

*Keywords:* Social Dominance Orientation, sub-dimensions, predictive validity, HEXACO personality, group attitudes

## Introduction

Social dominance orientation (SDO) is widely recognized as one of the most powerful individual difference predictors of intergroup attitudes and prejudice (McFarland & Adelson, 1996; Sibley & Duckitt, 2008). SDO was introduced as a unidimensional construct (Pratto, Sidanius, Stallworth, & Malle, 1994; Sidanius & Pratto, 1999) but there is increasing agreement in the literature that SDO is composed of two related sub-dimensions (e.g., Ho et al., 2012; Jost & Thompson, 2000). Following Ho and associates (2012), we refer to the two sub-dimensions as SDO-Dominance (SDO-D) and SDO-Egalitarianism (SDO-E).

Although there is now an emerging consensus about existence of two sub-dimensions, there is less agreement on how to best define them. For example, Jost and Thompson (2000) emphasized a difference between an ethnocentric orientation (i.e., wanting one's *own* group to dominate, SDO-D) and a non-ethnocentric, general "preference for unequal social relations" (p. 211, SDO-E). Empirically, however, their distinction was premised on the difference between *promoting* inequality between groups versus *opposing* equality. Of note, three of the SDO-D items in the SDO6 scale, on which they built most of their work, refer to dominating *other* groups, but the remaining five tap attitudes about group hierarchies in general (e.g., "some groups of people are simply inferior to other groups").

Recently, Ho et al. (2012) replicated the two-dimensional structure of SDO in seven samples. Nonetheless, their interpretation of these findings differed from that of Jost and Thompson (2000). Ho et al. suggested that the key difference between SDO-D and SDO-E concerns how blatant or aggressive they are (SDO-E being more subtle). In other words, the distinction made by Ho and associates basically mirrors the one between "old-fashioned" and "modern" prejudice (see e.g., McConahay, 1986).

The main aim of this study was to conduct an exploratory analysis based on a broader set of criterion variables than used in previous studies to shed further light on what differentiates SDO-D and SDO-E. The rationale here was simple: Improved knowledge of the correlates of SDO-D and SDO-E should be informative about how best to define the two dimensions. Our 15 criterion variables centered on personality, political ideological beliefs as well as more specific social attitudes about gender and ethnic issues. Extending previous research we compared relations of SDO-D and SDO-E with the criterion variables within two groups of different social status. Jost and Thompson (2000) contrasted high and low status ethnic groups (White versus Black Americans) when examining the relationships of SDO-D and SDO-E with two outcomes (self-esteem and ethnocentrism). In comparison, we examined such contrasts for as many as 15 criterion variables in a national probability sample with European (Pākehā) and Māori New Zealanders (of which the first group enjoys higher status, see Sibley et al., 2011a).

Our comparison of Pākehā and Māori would also speak to the generalizability of Jost and Thompson's (2000) findings regarding high and low status groups, and the different effects of SDO-D and SDO-E. They found that SDO-D was positively related to ingroup bias among both White and Black Americans, while SDO-E was positively correlated with ingroup bias among White participants, and negatively among Black participants. Analogous findings for Pākehā and Māori New Zealanders would suggest that this applies to high and low status groups in general, and not Black and White Americans in particular. Further

hypotheses about outcomes that were expected to vary across ethnic groups are presented in the closing paragraphs of the introduction.

While seeking to replicate findings regarding some political and ethnic attitudes in relation to SDO-D and SDO-E, a second aim was to move beyond such attitudes and also examine blatant or aggressive versus subtle gender attitudes. In this domain, Eagly, Diekman, Johannesen-Schmidt, and Koenig (2004) hypothesized that group-based dominance (cf. SDO-D) would predict attitudes specifically related to "issues that directly threaten men's higher social status" (p. 806) whereas group-based equality (cf. SDO-E) should account for inequality attitudes more broadly. Here we tested another perspective concerning what SDO-D and SDO-E predict in terms of gender attitudes. Specifically, we tested the possibility that SDO-D predicts hostile sexism whereas SDO-E predicts benevolent sexism (Glick & Fiske, 2001) as well as gender based system justification (Kay & Jost, 2003). Such a notion would be in line with the defining features of SDO-D and SDO-E as proposed by Ho et al. (2012).

A unique contribution of this study compared to previous studies is that we also mapped SDO-D and SDO-E in relation to basic personality traits. Importantly, much research has focused on SDO as a broad ideological belief system that predicts a variety of more specific attitudes and beliefs (see e.g. Pratto, Sidanius, & Levin, 2006). As such, SDO has sometimes been portrayed as a personality variable, and this is indeed how it was first introduced (see Pratto et al., 1994). However, there are few scholars who take this position today. SDO is rather considered to be a general ideological orientation belonging in the attitudinal domain (see e.g., Sibley & Duckitt, 2008; Sibley & Liu, 2010). This is also the position that we take in this paper. Likewise, in more recent publications, social dominance theorists discuss SDO as "as a *partial* reflection of personality" (Pratto et al., 2006, p. 293; emphasis added). Others have described SDO as surface traits, or characteristic adaptations, as opposed to core traits (see e.g., Ekehammar & Akrami, 2007).

The aforementioned perspectives all converge on the position that SDO is not a core personality trait in itself, but it should be related to such variables nonetheless. In line with this perspective, it is well documented that SDO is related to tough-minded, or non-agreeable, personality characteristics (e.g., Akrami & Ekehammar, 2006; Sibley & Duckitt, 2008). However, when it comes to the suggestion that SDO actually taps two sub-dimensions, there is no research at all on how they might relate differently to personality. Thus, in this study we provide the first mapping of SDO-D and SDO-E onto basic personality traits in terms of the Big-Five and HEXACO models (see Ashton & Lee, 2008; Donnellan, Frederick, Oswald & Lucas, 2006).

In terms of political attitudes, the study examined SDO-D and SDO-E in relation to two other ideological orientations. These were political identification (liberal – conservative) and right-wing authoritarianism (RWA; e.g., Altemeyer, 1996). Although much research has focused on the overall relation between RWA and SDO (e.g., Roccato & Ricolfi, 2005), no studies to our knowledge have examined the specific links to SDO-D and SDO-E. Yet, as RWA includes tendencies for aggression/hostility (Altemeyer, 1981; presumably a SDO-D domain) but also adherence to conservative ideology (Jost, Glaser, Kruglanski, & Sulloway, 2003; presumably a SDO-E domain), we expected relations with both sub-dimensions. Nonetheless, exploring potential differences in the strength of the associations could lead to more fine-grained theorizing when and how authoritarian and dominance-based ideologies converge or not.

Political identification has previously been found to be more closely related to SDO-E (see Ho et al., 2012; Jost & Thompson, 2000; Sidanius, Levin, van Laar & Sears, 2008). Here, we examined whether this finding replicates in a third geographic region (besides the United States and Israel). More to the point, if conservative ideology reflect motivated cognition (Jost et al., 2003) and a subtle form of dominance (Ho et al., 2012), then the relation with SDO-E could be expected to be reliable across countries (at least as long as conservative or right-wing ideology has a reasonably similar meaning across the geographic contexts).

Also, in terms of political attitudes, we aimed to examine issues specific to the New Zealand context. We were interested in support for policies favoring Māori, being either resource-based (e.g., Māori ownership to land as historically agreed upon) or symbolic (e.g., teaching Māori language in primary schools). Taken together, these attitudes address social inequalities between the two major ethnic groups in New Zealand. As such, they should relate to the sub-dimensions of SDO, and possibly stronger with SDO-E due to their political nature.

As for attitudes centering on ethnicity, this inquiry was also concerned with ethnic identification and ingroup bias. SDO has been found to be positively related to group identification in high status groups, but less so (or reversely related) in low status groups (e.g., Levin, Sidanius, Rabinowitz, & Federico, 1998). Likewise, SDO has been found to relate differently to in- and outgroup negativity and among high and low status groups (Levin & Sidanius, 1999; Levin, Pratto, Matthews, Sidanius, & Kteily, 2013). Still, Jost and Thompson (2000) showed that the direction and strength of such relations may vary for SDO-D and SDO-E. Specifically, they found SDO-D to be positively related to ingroup bias in both high and low status groups, but negatively related to SDO-E in a low status group. In this study we examined if Jost and Thompson's (2000) findings would replicate in another context.

In principle the study was exploratory and we did not derive specific predictions for all criterion variables about the differences between SDO-D and SDO-E or between the ethnic groups. Noteworthy, the number of contrasts examined would make a strictly hypothesis-driven approach both untenable with any space limitation of the manuscript, and also appear to be a large-scale guessing game. Thus, while conducting a largely explorative study, with the overarching aim of shedding more light on what differentiates SDO-D and SDO-E, we sought to safe-guard against type I errors in our inferences by

employing a very large sample.

While not having specific predictions about every single contrast examined, the study was premised on a few broad-spanning predictions. The first was that to the extent that SDO taps core personality tendencies, the relations should not vary across ethnic groups. Neither did we did expect the relations with attitudes concerning gender to vary across ethnic groups. In contrast, we expected the two groups to differ in terms of the relations of SDO-D and SDO-E with attitudes centering on ethnicity. That is, we expected relations to vary across groups when the criteria matched the dimension along which the groups differed (ethnicity; see also Reynolds & Turner, 2006).

Beyond ethnic differences, and following Ho et al. (2012), we considered the possibility that SDO-D would correlate most strongly with statements for which there is normative pressure concerning the "right" way to answer. The rationale here is that people high on SDO-D simply do not care much about holding back their thoughts and feelings about themselves and others. In contrast, we expected SDO-E to be more predictive than SDO-D concerning more socially accepted expressions of anti-egalitarian attitudes (i.e. "modern" expressions of social dominance). In other words, SDO-E should be expressed when it is safe to do so. Thus, we considered honesty humility and hostile sexism to be plausible marker criteria of SDO-D. In contrast, conservatism, benevolent sexism, ethnic identification, and opposition to pro- Māori policies were expected to be SDO-E domains (see also Ho et al., 2012).

## Method

### *Sampling Procedure and Participants*

We analyzed data from the 2009 New Zealand Attitudes and Values Study (NZAVS). The Time 1 (2009) NZAVS contained responses from 6,518 participants sampled from the 2009 New Zealand electoral roll. The electoral roll is publicly available for scientific research and in 2009 contained 2,986,546 registered voters. This represented all citizens over 18 years of age who were eligible to vote regardless of whether they chose to vote, barring people who had their contact details removed due to specific case-by-case concerns about privacy. The sample frame was spilt into three parts. Sample Frame 1 constituted a random sample of 25,000 people from the electoral roll (4,060 respondents). Sample Frame 2 constituted a second random sample of a further 10,000 people from the electoral roll (1,609 respondents).

Sample Frame 3 constituted a booster sample of 5,500 people randomly selected from meshblock area units of the country with a high proportion of Māori, Pacific Nations and Asian peoples (671 respondents). Statistics New Zealand (2014) define the meshblock as "the smallest geographic unit for which statistical data is collected and processed by Statistics New Zealand. A meshblock is a defined geographic area, varying in size from part of a city block to large areas of rural land. Each meshblock abuts against another to form a network covering all of New Zealand including coasts and inlets, and extending out to the two hundred mile economic zone. Meshblocks are added together to 'build up' larger geographic areas such as area units and urban areas. They are also the principal unit used to draw-up and define electoral district and local authority boundaries." Meshblocks were selected using ethnic group proportions based on 2006 national census data. A further 178 people responded but did not provide contact details and so could not be matched to a sample frame (see also Sibley, 2014).

In sum, postal questionnaires were sent to 40,500 registered voters or roughly 1.36% of all registered voters in New Zealand. The overall response rate (adjusting for the address accuracy of the electoral roll and including anonymous responses) was 16.6%. We limited the analyses to the 5741 (3435 women) participants who were either Pākehā ($n$ = 4,629) or Māori ($n$ = 1,112). The mean age was 48.62 years ($SD$ = 15.83).

There are three things to note concerning the sample characteristics for Pākehā and Māori. First, the respondents in this sample did not differ in terms of employment, $\chi^2(1) = 1.91$, $p = .17$. Second, there was a higher proportion with a degree or certificate from high school among Pākehā (50%) compared to Māori (34%), $\chi^2(1) = 91.88$, $p < .001$. Importantly, however, these descriptive statistics are fairly close to the percentages in the general population (55 and 38% for Pākehā and Māori respectively for adults 25-34 years old; see Statistics New Zealand, 2013). Finally, the gender distribution was somewhat skewed with 40% men and 60% women, $\chi^2(1) = 217.33$, $p < .001$. To adjust for this, we used sample weights for gender in all analyses concerning relations with the criterion variables. For extensive details about sample characteristics, see Sibley, McPhee, & Greaves, (2014).

### *Questionnaire measures*

SDO was assessed using 6-items from the SDO-6 scale (see Pratto et al., 1994). The items assessing SDO-D were "it is OK if some groups have more of a chance in life than others", "inferior groups should stay in their place", and "to get ahead in life, it is sometimes okay to step on other groups". The SDO-E items included "we should have increased social equality", "it would be good if groups could be equal", and "we should do what we can to equalize conditions for different groups". Response alternatives ranged from 1 (strongly disagree) to 7 (strongly agree), and SDO-E items were reversed coded to assess anti-egalitarianism. The response format above was used for all scales unless otherwise specified. For means, standard deviations, and internal consistency reliabilities for all variables, see Table 1.

Table 1. Means, Standard Deviations and Internal Consistency Reliabilities for Study Variables.

| Instrument | *M* | *SD* | *α* |
|---|---|---|---|
| Social Dominance Orientation D | 2.38 | 1.12 | .52 |
| Social Dominance Orientation E | 2.79 | 1.21 | .76 |
| Agreeableness | 5.27 | 0.99 | .67 |
| Conscientiousness | 5.10 | 1.07 | .66 |
| Extraversion | 4.05 | 1.16 | .72 |
| Neuroticism | 3.43 | 1.10 | .65 |
| Openness to Experience | 4.76 | 1.13 | .68 |
| Honesty-Humility | 5.11 | 1.33 | .78 |
| Right-Wing Authoritarianism | 3.56 | 1.16 | .69 |
| Political Identity (Conservatism) | 3.76 | 1.23 | - |
| Māori Resource Policy | 5.25 | 1.55 | .83 |
| Māori Symbolic Policy | 3.07 | 1.43 | .78 |
| Ethnic Identity | 3.66 | 1.66 | .83 |
| Ingroup bias | 0.70 | 1.41 | - |
| Gender System Justification | 4.80 | 1.27 | .59 |
| Benevolent Sexism | 4.11 | 1.17 | .72 |
| Hostile Sexism | 3.36 | 1.27 | .81 |

The Big-Five dimensions were measured using the Mini-IPIP scale developed by Donnellan et al. (2006). The honesty-humility scale used marker items from Ashton and Lee (2008). All scales were validated for use in New Zealand by Sibley et al. (2011b). Each personality scale included 4 items, including statements such as "I don't talk a lot" (reverse-scored extraversion), "I sympathize with others' feelings" (agreeableness), "I like order" (conscientiousness), "I get upset easily" (emotionality), "I have a vivid imagination" (openness to experience), and "I deserve more things in life" (reverse-scored honesty-humility).

To assess RWA, a balanced 6-item scale was adopted from Altemeyer (1996; e.g., "it would be best for everyone if the proper authorities censored magazines so that people could not get their hands on trashy and disgusting material"). Political orientation was assessed with the item "Please rate how politically conservative versus liberal you see yourself as being", with 1 representing extremely liberal and 7 representing extremely conservative. Attitudes toward resource-specific and symbolic Māori policies were assessed with four items each. These were selected from Liu and Sibley (2006; e.g., I support… "Maori ownership of the seabed and foreshore" [resource-specific], and "teaching Maori language in New Zealand primary schools" [symbolic]). Gender-specific system justification was measured with two items selected from Jost and Kay (2005), one of these two was "in general, relations between men and women in New Zealand are fair". Benevolent and hostile sexism were represented by five items each from Glick and Fiske (1996). Items included "women should be cherished and protected by men" (benevolent sexism) and "women exaggerate problems they have at work" (hostile sexism).

Three items from Leach et al. (2008) measuring identity centrality were used to index ethnic identity, with an example being "I often think about the fact that I am a member of my ethnic group". Affective thermometer ratings toward Pākehā, and Māori were used to create an index for ethnic ingroup bias by subtracting the outgroup rating from the ingroup one. Both groups showed an ingroup bias in terms of a mean difference between the ingroup and outgroup ratings, yet it was more pronounced for Pākehā than Māori participants, $t(4512) = 38.58$, $p < .001$, $d = .57$, and , $t(1090) = 5.59$, $p < .001$, $d = .17$ respectively.

## Results

### *Preliminary analyses*

Using both Pākehā and Māori participants, we first ran a confirmatory factor analysis to examine the suggested factor structure with two SDO sub-dimensions (with three indicators per construct, factors correlated). We used a robust maximum likelihood (referred to as $T_2$* by Yuan & Bentler, 2000) estimator as we suspected somewhat non-normally distributed data. The proposed factor model had a good fit to the data, scaled $\chi^2(8) = 121.54$, $p < .001$, $CFI = .98$, $RMSEA = .05$, 90% CI [.04, .06]. The correlation between the factors was .56, $p < .001$.

Next, we ran a multi-group confirmatory factor analysis to examine if the relationships between the two factors varied across ethnic groups. Notably, previous research suggests that the relation between the two dimensions is stronger in groups with higher status (see Jost & Thompson, 2000). Indeed, we found support for this prediction in a New Zealand probability sample as well. Good fit was achieved when allowing the correlation to vary across ethnic groups while keeping loadings and intercepts equal, $\chi^2(26) = 182.21$, $p < .001$, $CFI = .96$, $RMSEA = .05$, 90% CI [.04, .05]. For Pākehā, the correlation was .61, $p < .001$, and for Māori it was .39, $p < .001$. Also, assuming the correlation between SDO-D and SDO-E to be equal among Pākehā and Māori resulted in a significantly worse fit, scaled $\Delta\chi^2(1) = 17.72$, $p < .001$.

### *Comparison of SDO-D and SDO-E Criteria Relations among Pākehā and Māori*

To examine the relations of SDO-D and SDO-E with our 15 outcomes, we ran multi-group (Pākehā versus Māori) regression analyses (i.e. SDO-D and SDO-E manifest) with each criterion as a dependent variable. More specifically, we ran five models for each criterion. First, we ran a baseline model (0 *df*) in which both coefficients in each ethnic group were free to vary. We then tested the difference of the SDO-D and SDO-E coefficients among Pākehā by running a model with the unstandardized relations constrained to be equal (1

*df*). Consequently, the $X^2$ statistic for this model would give the significance level for the hypothesis that the two paths are different. By the same logic, we then tested the difference between the SDO-D and SDO-E coefficients in the Māori group. Subsequently, we constrained the SDO-D paths to be equal for Pākehā and Māori to test the difference across ethnic groups for this predictor. Finally, in a fifth model, we constrained the SDO-E paths to be equal across ethnic groups. The results of these analyses are presented in Table 2.

The results showed that both SDO-D and SDO-E predicted most variables, and many effects were highly significant, as could be expected in a sample of this size. Still, most of these effects were relatively weak. As for the contrasts between SDO-D and SDO-E within each ethnicity, we found that 18 out of 30 were significant at $p <$ .001. Because of the sample size and number of tests, we do not put much emphasis on effects that were not significant at this level. Nonetheless, many of the contrasts held up in both ethnic groups (see Table 2). While some of these were relatively small in an absolute sense, a couple of variables appeared to be marker criterion for SDO-D. Honesty-humility and hostile sexism both revealed moderately strong relations with SDO-D, but only marginal relations with SDO-E. Benevolent sexism revealed the same pattern overall, but also a weak negative relation with SDO-E among Māori. In contrast, political identification was most clearly related to SDO-E.

There were also differences across ethnic groups for many variables in relation to either SDO-D or SDO-E. Both SDO-D and SDO-E displayed variation in relation to some of the other ideological and attitudinal variables, dependent on membership in a group of either high or low social status. More specifically, of the 30 contrasts tested, we found 7 to be significant at p <.001. Again, we did not pay much attention to effects that failed to reach significance at this level in such a big sample as this one. Not surprising, the more pronounced differences between the ethnic groups were often associated with ethnicity-specific attitudes. In contrast, it is noteworthy that there was little variation across ethnic groups in relation to personality (except conscientiousness – SDO-E), political orientation and hostile sexism (for details, see Table 2).

Finally, in addition to the regression analyses, we also examined the zero-order relations of SDO-D, SDO-E, and the full SDO scale with all criterion variables. For a majority of the criterion variables the full SDO revealed correlations in between the estimates for SDO-D and SDO-E, but in some cases the full SDO scale rather matched or slightly outperformed both of the component measures. For example, the relation with agreeableness shows a small difference between SDO-D and SDO-E to start with, and neither of the components showed an advantage over the full SDO scale. On the other hand, for many criterion variables we found more substantial differences between SDO-D and SDO-E in the regression analyses, and these were

Table 2. Relations for SDO-D and SDO-E with Criterion Variables.

| | | Pākehā (European New Zealanders) | | | Māori | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | *B* | *β* | *p* | *B* | *β* | *p* | $X^2$ | *p* |
| Agreeableness | D | -0.19 | -0.21 | <.001 | -0.13 | -0.16 | <.001 | 3.15 | .08 |
| | E | -0.12 | -0.15 | <.001 | -0.14 | -0.17 | <.001 | 0.37 | .55 |
| | $X^2$ | 6.98 | | .01 | 0.05 | | .82 | | |
| Conscientiousness | D | -0.06 | -0.06 | <.001 | 0.01 | 0.01 | .68 | 4.11 | .04 |
| | E | 0.05 | 0.06 | .001 | -0.08 | -0.09 | .01 | 13.13 | <.001 |
| | $X^2$ | 17.02 | | <.001 | 3.59 | | .06 | | |
| Extraversion | D | 0.02 | 0.02 | .29 | 0.03 | 0.03 | .31 | 0.12 | .73 |
| | E | 0.00 | 0.00 | .95 | -0.04 | -0.04 | .15 | 1.65 | .20 |
| | $X^2$ | 0.38 | | .54 | 2.52 | | .11 | | |
| Neuroticism | D | 0.03 | 0.03 | .06 | 0.07 | 0.08 | .01 | 1.73 | .19 |
| | E | -0.06 | -0.07 | <.001 | -0.03 | -0.03 | .33 | 1.06 | .30 |
| | $X^2$ | 11.79 | | <.001 | 5.36 | | .02 | | |
| Openness to Experience | D | -0.13 | -0.13 | <.001 | -0.18 | -0.19 | <.001 | 1.99 | .16 |
| | E | -0.04 | -0.05 | .01 | -0.08 | -0.09 | .01 | 1.28 | .26 |
| | $X^2$ | 8.22 | | <.001 | 4.00 | | .05 | | |
| Honesty-Humility | D | -0.33 | -0.28 | <.001 | -0.31 | -0.26 | <.001 | 0.29 | .59 |
| | E | 0.02 | 0.02 | .20 | 0.05 | 0.04 | .17 | 0.45 | .50 |
| | $X^2$ | 111.38 | | <.001 | 35.43 | | <.001 | | |
| Right-Wing Authoritarianism | D | 0.10 | 0.09 | <.001 | 0.19 | 0.20 | <.001 | 7.48 | .01 |
| | E | 0.14 | 0.14 | <.001 | 0.06 | 0.07 | .04 | 4.74 | .03 |
| | $X^2$ | 1.88 | | .17 | 7.32 | | .01 | | |
| Political identification | D | 0.06 | 0.05 | .003 | -0.04 | -0.04 | .34 | 4.77 | .03 |
| | E | 0.24 | 0.24 | <.001 | 0.19 | 0.18 | <.001 | 1.46 | .23 |
| | $X^2$ | 32.77 | | <.001 | 14.68 | | <.001 | | |
| Māori resource policy | D | 0.07 | 0.06 | <.001 | -0.18 | -0.12 | <.001 | 25.21 | <.001 |
| | E | 0.20 | 0.20 | <.001 | 0.26 | 0.18 | <.001 | 1.18 | .28 |
| | $X^2$ | 22.47 | | <.001 | 34.71 | | <.001 | | |
| Māori symbolic policy | D | 0.17 | 0.14 | <.001 | -0.03 | -0.03 | 0.31 | 31.67 | <.001 |
| | E | 0.28 | 0.24 | <.001 | 0.20 | 0.21 | <.001 | 3.85 | .05 |
| | $X^2$ | 9.44 | | <.001 | 21.67 | | <.001 | | |
| Ethnic identity | D | 0.21 | 0.15 | <.001 | 0.16 | 0.12 | <.001 | 0.93 | .34 |
| | E | -0.12 | -0.10 | <.001 | -0.38 | -0.28 | <.001 | 27.86 | <.001 |
| | $X^2$ | 78.05 | | <.001 | 71.79 | | <.001 | | |
| Ingroup bias | D | 0.21 | 0.16 | <.001 | 0.01 | 0.01 | .85 | 25.00 | <.001 |
| | E | 0.14 | 0.11 | <.001 | -0.09 | -0.09 | .01 | 34.10 | <.001 |
| | $X^2$ | 4.21 | | .04 | 3.31 | | .07 | | |
| Gender system justification | D | 0.15 | 0.13 | <.001 | 0.19 | 0.17 | <.001 | 1.12 | .29 |
| | E | 0.08 | 0.08 | <.001 | -0.04 | -0.04 | .26 | 7.89 | .01 |
| | $X^2$ | 6.16 | | .01 | 15.56 | | <.001 | | |
| Benevolent sexism | D | 0.27 | 0.26 | <.001 | 0.25 | 0.25 | <.001 | 0.30 | .58 |
| | E | -0.02 | -0.02 | .28 | -0.14 | -0.15 | <.001 | 9.95 | <.001 |
| | $X^2$ | 98.20 | | <.001 | 46.30 | | <.001 | | |
| Hostile sexism | D | 0.32 | 0.28 | <.001 | 0.27 | 0.24 | <.001 | 2.04 | .15 |
| | E | 0.08 | 0.07 | <.001 | 0.00 | 0.00 | .90 | 3.05 | .08 |
| | $X^2$ | 60.26 | | <.001 | 20.24 | | <.001 | | |

*Note*. D = SDO-D, E = SDO-E. All coefficients are based on robust maximum likelihood estimation (see Muthén & Muthén, 2012) and weighted for gender. The $X^2$ values are mean-adjusted and equivalent to Yuan and Bentler's (2000) $T_2$*. For political orientation, high scores represent conservative (as opposed to liberal) identification. Pākehā *n* varies between 4340 and 4593 Māori *n* varies between 1019 and 1102.

largely consistent with differences at the zero-order level as well. Again, most effects were relatively weak, few correlations were above or approaching .30. The contrasts between the two ethnic groups were also consistent in the regression and correlational analyses. To avoid redundancy the results from the correlational analyses, along with details on how we tested these contrasts, are presented in Appendix A.

## Discussion

We explored the relations for two sub-dimensions of the SDO scale with a number of criterion variables in a national probability sample in New Zealand. The main rationale was that a study on the relations of SDO-D and SDO-E with a broad range of personality and socio-political variables would help clarify the distinctions between these two dimensions. Clearly, the full SDO scale still provides a useful tool in many settings, and parsimony speaks for it being preferable to using its components in some cases (e.g., in relation to Agreeableness). Nonetheless, there were also many cases where SDO-D and SDO-E revealed somewhat different relations with our criterion variables.

Overall the results revealed some clear patterns, but also a couple of surprises. Consistent with the findings of Ho and colleagues (2012), and in contrast to the argument of Sears, Haley, and Henry (2008), there seemed to be more of a story to tell about SDO-D than SDO-E. Compared to SDO-E, SDO-D displayed both stronger and more diverse relationships across the range of personality and socio-political variables. This finding is noteworthy considering that SDO-E was markedly more reliable than SDO-D. Put differently, while some might consider the reliabilities of our SDO instruments to be problematic it should be recognized that psychometrics tells us that the contrasts where SDO-D outperforms SDO-E would be *stronger,* if anything, if we had better instruments. Also, in this study we used more variables than Ho et al. (2012) that were likely to represent subtle expressions of dominance (e.g., agreeableness and benevolent sexism). Nonetheless, even with these additional "SDO-E candidates", SDO-D often came out on top.

An exception to the tendency for SDO-D to outperform SDO-E was found with regards to political identification (see also Sears, et al., 2008). Noteworthy, it is well known that conservatism maps onto a broad range of attitudes (e.g., Jost et al., 2003). However, the current study indicates that the binding factor that holds it all together may not be conservative ideology in itself, but rather the D dimension of SDO. More specifically, conservatism in itself seemed to be an SDO-E domain, whereas most social attitudes are more closely related to SDO-D. This suggests that SDO-D bridges the relation between conservatism (as well as SDO-E) and various social attitudes.

The second clearest example of an SDO-E domain of attitudes dealt with pro-Māori policies. SDO-E was more strongly associated with an opposition toward both resource and symbolic policies favoring Māori, and this was true within both ethnic groups. This finding is intriguing when considering the link between SDO-E and conservative identity. Reasonably, support for giving positive attention to disadvantaged groups is a key ingredient in both conservatism-liberalism and SDO-E, and it seems to overrun in-group interests (see Jost & Thompson, 2000).

In terms of mapping SDO-D and SDO-E onto basic personality, the strongest relations were found between honesty-humility and SDO-D. Thus, the current focus on agreeableness as the primary (core) personality correlate SDO (see Sibley & Duckitt, 2008), needs to be supplemented with more research on honesty-humility. Obviously, we cannot draw any causal inferences from these analyses, but the fact that honesty-humility was practically unrelated to SDO-E also suggests that the personality roots of SDO-D and SDO-E may differ. Interestingly, a similar pattern was also found for openness to experience, and to some extent, agreeableness. Conscientiousness, extraversion and neuroticism showed only trivial relations with the two SDO dimensions.

Consistent with our predictions, the relations with the personality variables showed only minor variation across the two ethnic groups. The observed difference for SDO-E in relation to conscientiousness seems uninformative when considering how weak the relations were in both groups, but of opposite signs. In principle, it seems to be the same kind of individuals, in terms of basic personality, who are drawn to social dominance (especially SDO-D) in high and low status groups. This also suggests that when the relations between SDO and prejudice fluctuate across groups (e.g., Levin & Sidanius, 1993) it is not because different group identities shift peoples' sense of personality (as proposed in self-categorization theory, e.g., Reynolds & Turner, 2006).

With regards to somewhat puzzling and unexpected results, the coefficients found here were generally low compared to the results of other studies. For example, the relations for the SDO dimensions with RWA were lower than what has been previously found for the full scale (see e.g., Roccato & Ricolfi, 2005). However, this could in part be due to the lower reliabilities of the instruments used here, which would attenuate our effect size estimates as we necessarily used short-form scales. Also, another reason for some of the weak effects could be the cultural context of the study (see Mirisola, Sibley, Boca, & Duckitt, 2007). For example, the bicultural national identity in New Zealand (e.g., Liu & Sibley, 2009) might explain the counter-intuitive weak and negative relationship between SDO-E and ethnic identity among Pākehā. More specifically, a bicultural or even multicultural national identity may imply a more egalitarian stand compared to a mono-cultural identity, and hence lower or reverse the typical positive relationship between SDO and high status group identification.

Another surprising result concerned benevolent sexism. More specifically, we expected benevolent sexism to be in the SDO-E domain, as this dimension has been portrayed as dealing with more subtle expressions of dominance. However, benevolent sexism had a moderately strong relation with SDO-D while being unrelated to SDO-E among Pākehā and only weakly (negatively) related among Māori. The negative relation among Māori is noteworthy for the theorizing about ambivalent sexism. Glick and Fiske (2001) suggested that prejudice is about social inequality, and

noted that people express benevolent sexism as a means to keep women "in their place". However, it is possible that this effect is weaker in groups that are disadvantaged, especially among individuals supporting group equality (as indexed by low SDO-E scores). Specifically, what appears to be benevolent sexism among such individuals might be an expression of genuine benevolence, rather than a mild, or disguised form of sexism.

These results also speak to a debate as to whether SDO-E is the system justifying aspect of SDO (see Jost & Thompson, 2000). In contrast to this idea, SDO-D was more strongly related to gender-specific system justification and this was true for both Pākehā and Māori. Also, many of the other criterion variables here could be described as hierarchy-enhancing ideologies (see Sidanius & Pratto, 1999) operating to maintain the status quo of group inequalities. Among several of these variables, such as benevolent and hostile sexism SDO-D was the stronger predictor. On the other hand, the data for the Māori policies were much in line with the system-justification perspective as proposed by Jost and Thompson (2000). Overall then, the arguments about system justifying tendencies in SDO seems to depend on the attitude domain that it is mapped onto (e.g. gender versus ethnic issues).

In evaluating the strengths and weaknesses of this study it is an obvious limitation that we did not have balanced scales for SDO-D and SDO-E (as opposed to e.g., Ho et al., 2012). This was due to the fact that we used data embedded in a large questionnaire, and only had a few SDO items available. On the other hand, the broad range of criterion variables (including all Big-Five factors) represents a clear strength compared to previous studies. More important still, the findings were based on national probability sample, and include a large number of respondents from an ethnic minority group (Māori). Thus, in terms of the breadth of criterion variables and statistical power the current study provided the most extensive examination SDO-D and SDO-E to date. Based on the current results we would argue that the distinction between these two sub-dimensions is more complex than a drive to dominate outgroups versus general anti-egalitarianism. Beside the conceptual problem that most SDO-D items do not specifically refer to in- and outgroups, there are some findings here that are difficult to reconcile with such a conceptualization. Neither does it seem correct that the distinction is all about blatant and aggressive versus subtle expressions of dominance (see Ho et al., 2012). Instead, the closest thing to defining features of the two dimensions in these data appears to be the following: SDO-D is a demeaning attitude promoting hierarchies between groups whereas SDO-E is about opposing the recognition of groups as disadvantaged.

## References


Akrami, N., & Ekehammar, B. (2006). Right-wing authoritarianism and social dominance orientation: Their roots in Big-Five personality factors and facets. *Journal of Individual Differences, 27*, 117-126.

Altemeyer, B. (1996). *The authoritarian specter*. London: Harvard University Press.

Ashton, M. C., & Lee, K. (2008). The prediction of honesty-humility-related criteria by the HEXACO and Five-Factor models of personality. *Journal of Research in Personality, 42,* 1216-1228.

Donnellan, M.B., Frederick, L., Oswald, B.M.B, & Lucas, R.E. (2006). The Mini-IPIP scales: Tiny-yet effective measures of the Big Five factors of personality. *Psychological Assessment, 18,* 192-203.

Eagly, A. H., Diekman, A. B., Johannesen-Schmidt, M. C., & Koenig, A. M. (2004). Gender gaps in socio-political attitudes: A social psychological analysis. *Journal of Personality and Social Psychology, 87*, 796 -816.

Ekehammar, B., & Akrami, N. (2007). Personality and prejudice. From big five personality factors to facets. *Journal of Personality, 75*, 899-925.

Glick, P., & Fiske, S. T. (1996). The Ambivalent Sexism Inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70,* 491-512.

Glick, P., & Fiske, S. T. (2001). An ambivalent alliance: Hostile and benevolent sexism as complementary justifications for gender inequality. *American Psychologist, 56,* 109-118.

Ho, A. K., Sidanius, J., Pratto, F., Levin, S., Thomsen, L., Kteily, N. S., & Sheehy-Skeffington, J. (2012). Social dominance orientation: Revisiting the structure and function of a variable predicting social and political attitudes. *Personality and Social Psychology Bulletin, 38*, 583-606.

Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129,* 339-375.

Jost, J. T., & Kay, A. C. (2005). Exposure to benevolent sexism and complementary gender stereotypes: Consequences for specific and diffuse forms of system justification. *Journal of Personality and Social Psychology, 88*, 498–509.

Jost, J. T., & Thompson, E. P. (2000). Group-based dominance and opposition to equality as independent predictors of self-esteem, ethnocentrism, and social policy attitudes among African Americans and European Americans. *Journal of Experimental Social Psychology, 36*, 209–232.

Leach, C.W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B.,... Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of ingroup identification. *Journal of Personality and Social Psychology, 95,* 144-165.

Levin, S., Pratto, F., Matthews, M., Sidanius, J., & Kteily, N. (2013). A dual process approach to understanding prejudice toward Americans in Lebanon: An extension of intergroup threat perceptions and emotions. *Group Processes and Intergroup Relations, 16, 139-158.*

Levin, S., & Sidanius, J.(1999). Social dominance and social identity in the United States and Israel: Ingroup favoritism or outgroup derogation? *Political Psychology, 20*, 99-126.

Levin, S., Sidanius, J., Rabinowitz, J. L., & Federico, C. (1998). Ethnic identity, legitimizing ideologies and social status: A matter of ideological asymmetry. *Political Psychology, 19,* 373-404.

Liu, J. H., & Sibley, C. G. (2006). Differential effects of societal anchoring and personal importance in determining support or opposition to (bi)cultural diversity in New Zealand. *Papers on Social Representations, 15,* 1-15.

McConahay, J. B. (1986). Modern racism, ambivalence, and the Modern Racism Scale. In J. F. Dovidio, & S. L. Gaertner (Eds.), *Prejudice, discrimination and racism* (pp. 91–126). New York: Academic.

McFarland, S., & Adelson, S. (1996). *An omnibus study of personality, values, and*

*prejudice*. Paper presented at the annual meeting of the International Society of Political Psychology, Vancouver, Canada.

Mirisola, A., Sibley, C. G., Boca, S., & Duckitt, J. (2007). On the ideological consistency between Right-Wing Authoritarianism and Social Dominance Orientation. *Personality and Individual Differences, 43,* 1851-1862.

Pratto, F., Sidanius, J., & Levin, S. (2006). Social dominance theory and the dynamics of intergroup relations: Taking stock and looking forward. *European Review of Social Psychology, 17*, 271-320.

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology, 67,* 741-763.

Reynolds, K. J., & Turner, J. C. (2006). Individuality and the prejudiced personality. *European Review of Social Psychology, 17*, 233-270.

Roccato, M., & Ricolfi, L. (2005). On the correlation between right-wing authoritarianism and social dominance orientation. *Basic and Applied Social Psychology, 27*, 187-200.

Sears, D. O., Haley, H., & Henry, P. J. (2008). Cultural diversity and sociopolitical attitudes at college entry. In J. Sidanius, S. Levin, C. van Laar, & D. O. Sears (Eds.), *The diversity challenge* (pp. 65-99). New York, NY: Russell Sage.

Sibley, C. G. (2014) Sampling procedure and sample details for the New Zealand Attitudes and Values Study. *NZAVS Technical Documents, e01*.

Sibley, C. G., & Duckitt, J. (2008). Personality and prejudice: A meta-analysis and theoretical review. *Personality and Social Psychology Review, 12*, 248–279.

Sibley, C. G., Harding, J. F., Perry, R., Asbrock, F., & Duckitt, J. (2010). Personality and prejudice: Extension to the HEXACO personality model. *European Journal of Personality, 24*, 515-534.

Sibley, C. G., & Liu, J. H. (2010). Social Dominance Orientation: Testing a global individual difference perspective. *Political Psychology, 31,* 175-207.

Sibley, C. G., McPhee, E., & Greaves, L., M. (2014). Appendix of consecutive NZAVS sample frequencies and New Zealand census data. *NZAVS Technical Documents, e04.*

Sibley, C. G., Luyten, N., Purnomo, M., Moberly, A., Wootton, L. W., Hammond, M.,… & Robertson, A. (2011b). The Mini-IPIP6: Validation and extension of a short measure of the Big-Six factors of personality in New Zealand. *New Zealand Journal of Psychology, 40*, 142-159.

Sibley, C. G., Stewart, K., Houkamau, C., Manuela, S., Perry, R., Wootton, L., ... & Asbrock, F. (2011a). Ethnic group stereotypes in New Zealand. *New Zealand Journal of Psychology, 40,* 25-36.

Sidanius, J., Levin, S., van Laar, C., & Sears, D. O. (2008). "*The Diversity Challenge: Social Identity and Intergroup Relations on the College Campus*." New York: The Russell Sage Foundation.

Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression.* New York, NY: Cambridge University Press.

Statistics New Zealand (2013). *Educational attainment of adults aged 25 to 34 years*. Retrieved from: http://www.stats.govt.nz/browse_for_stats/snapshots-of-nz/nz-social-indicators/Home/Education/ed-attainment-adults.aspx

Statistics New Zealand (2014). *Glossary and references*. Retrieved from: http://www.stats.govt.nz/methods/classifications-and-standards/classification-related-stats-standards/usual-residence-n-years-ago/glossary-and-references.aspx

Yuan, K. H. & Bentler, P. M. (2000). Three likelihood-based methods for mean and covariance structure analysis with non-normal missing data. In M.E. Sobel & M.P. Becker (eds.), *Sociological Methodology 2000* (pp. 165-200). Washington D.C.: ASA.

### *Authors Note:*

The NZAVS is supported by a Templeton World Charity Foundation Grant (ID: 0077). The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. Mplus syntax for the analyses reported in this paper is available on the NZAVS website: www.psych.auckland.ac.nz/uoa/NZAVS.

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## Appendix A

Pearson correlations for SDO-D and SDO-E with the criterion variables were analyzed within each ethnic group in our sample. We then examined contrasts within (SDO-D versus SDO-E) and across groups (Pākehā versus Māori). We used Steiger's (1980) formula to compare dependent correlations (i.e. within groups) and Fisher's z-transformation for the independent correlations (i.e. between groups). All contrasts were tested at http://www.quantpsy.org/

corrtest/corrtest.htm, and http://www.quantpsy.org/corrtest/corrtest2.htm ). The results of these analyses are summarized in Table A1.

Table A1. Zero-order relations of SDO (full scale), SDO-D and SDO-E with criterion variables and z-contrasts.

| | | Pākehā (European New Zealanders) | | Māori | | | |
|---|---|---|---|---|---|---|---|
| **Criterion Variable** | | ***r*** | ***p*** | ***r*** | ***p*** | ***z*** | ***p*** |
| Agreeableness | SDO | -.30 | <.001 | -.27 | <.001 | -1.04 | .30 |
| | D | -.27 | <.001 | -.21 | <.001 | -1.92 | .06 |
| | E | -.24 | <.001 | -.21 | <.001 | -0.81 | .42 |
| | *z** | -1.93 | .05 | 0.15 | .88 | | |
| Conscientiousness | SDO | .00 | .83 | -.05 | .10 | 1.40 | .16 |
| | D | -.04 | .01 | .00 | .97 | -1.14 | .25 |
| | E | .03 | .05 | -.08 | .01 | 3.21 | <.001 |
| | *z** | -4.15 | <.001 | 2.14 | .03 | | |
| Extraversion | SDO | .01 | .41 | -.02 | .57 | .86 | .39 |
| | D | .02 | .19 | .02 | .59 | 0.09 | .93 |
| | E | .00 | .94 | -.04 | .14 | 1.35 | .18 |
| | *z** | 1.15 | .25 | 1.62 | .10 | | |
| Neuroticism | SDO | -.03 | .03 | .03 | .33 | .95 | .34 |
| | D | .00 | .86 | .06 | .04 | -1.97 | .05 |
| | E | -.05 | <.001 | -.02 | .55 | -1.03 | .30 |
| | *z** | 3.13 | <.001 | 2.18 | .03 | | |
| Openness to Experience | SDO | -.15 | <.001 | -.23 | <.001 | 2.50 | .01 |
| | D | -.15 | <.001 | -.22 | <.001 | 2.29 | .02 |
| | E | -.11 | <.001 | -.14 | <.001 | 0.93 | .35 |
| | *z** | -2.55 | .01 | -2.30 | .02 | | |
| Honesty-Humility | SDO | -.22 | <.001 | -.18 | <.001 | -1.24 | .22 |
| | D | -.27 | <.001 | -.25 | <.001 | -0.54 | .59 |
| | E | -.10 | <.001 | -.02 | .42 | -2.17 | .03 |
| | *z** | -11.15 | <.001 | -6.25 | <.001 | | |
| Right-Wing Authoritarianism | SDO | .20 | <.001 | .22 | <.001 | -0.72 | .48 |
| | D | .15 | <.001 | .23 | <.001 | -2.30 | .02 |
| | E | .19 | <.001 | .12 | <.001 | 2.04 | .04 |
| | *z** | -2.25 | .03 | 2.90 | .00 | | |
| Political identification | SDO | .24 | <.001 | .13 | <.001 | 3.27 | .001 |
| | D | .14 | <.001 | .02 | .54 | 3.60 | <.001 |
| | E | .26 | <.001 | .18 | <.001 | 2.25 | .02 |
| | *z** | -7.02 | <.001 | -4.21 | <.001 | | |
| Māori resource policy | SDO | .22 | <.001 | .04 | .18 | 5.37 | <.001 |
| | D | .14 | <.001 | -.08 | .01 | 6.66 | <.001 |
| | E | .22 | <.001 | .15 | <.001 | 2.27 | .02 |
| | *z** | -5.29 | <.001 | -6.25 | <.001 | | |
| Māori symbolic policy | SDO | .32 | <.001 | .14 | <.001 | 5.87 | <.001 |
| | D | .24 | <.001 | .02 | .56 | 6.68 | <.001 |
| | E | .31 | <.001 | .20 | <.001 | 3.44 | .001 |
| | *z** | -4.52 | <.001 | -4.88 | <.001 | | |
| Ethnic identity | SDO | .04 | .01 | -.12 | <.001 | -2.46 | .01 |
| | D | .11 | <.001 | .05 | .08 | 1.55 | .12 |
| | E | -.04 | .02 | -.24 | <.001 | 6.29 | <.001 |
| | *z** | 8.89 | <.001 | 8.08 | <.001 | | |

| | | Pākehā (European New Zealanders) | | Māori | | | |
|---|---|---|---|---|---|---|---|
| **Criterion Variable** | | ***r*** | ***p*** | ***r*** | ***p*** | ***z*** | ***p*** |
| Ethnic ingroup bias | SDO | .23 | <.001 | -.06 | .04 | 5.02 | <.001 |
| | D | .21 | <.001 | -.01 | .70 | 6.48 | <.001 |
| | E | .18 | <.001 | -.09 | <.001 | 7.92 | <.001 |
| | *z** | 1.62 | .10 | 2.00 | .05 | | |
| Gender system justification | SDO | .18 | <.001 | .11 | <.001 | 2.07 | .04 |
| | D | .17 | <.001 | .16 | <.001 | 0.10 | .92 |
| | E | .13 | <.001 | .00 | .90 | 3.81 | <.001 |
| | *z** | 2.20 | .03 | 4.28 | <.001 | | |
| Benevolent sexism | SDO | .20 | <.001 | .10 | <.001 | 3.12 | .001 |
| | D | .25 | <.001 | .23 | <.001 | 0.79 | .43 |
| | E | .10 | <.001 | -.08 | .01 | 5.29 | <.001 |
| | *z** | 1.20 | <.001 | 8.48 | <.001 | | |
| Hostile sexism | SDO | .29 | <.001 | .20 | <.001 | 2.95 | .003 |
| | D | .31 | <.001 | .25 | <.001 | 2.03 | .04 |
| | E | .19 | <.001 | .07 | .02 | 3.72 | <.001 |
| | *z** | 7.60 | <.001 | 4.81 | <.001 | | |

*Note*. D = SDO-D. E = SDO-E. z* refers to the contrast between SDO-D and SDO-E, calculations of these were based on Steiger's (1980) formula. High scores on political orientation represent conservative (as opposed to liberal) identification. Pākehā *n* varies between 4340 and 4595 Māori *n* varies between 1019 and 1103.

Journal of Personality and Social Psychology
2001, Vol. 81, No. 5, 815–827


0022-3514/01/$5.00 DOI: 10.1037//0022-3514.81.5.815

# Spontaneous Prejudice in Context: Variability in Automatically Activated Attitudes

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The goal of the research reported in this article was to examine whether automatic group attitudes and stereotypes, commonly thought to be fixed responses to a social category cue, are sensitive to changes in the situational context. Two experiments demonstrated such variability of automatic responses due to changes in the stimulus context. In Study 1 White participants' implicit attitudes toward Blacks varied as a result of exposure to either a positive (a family barbecue) or a negative (a gang incident) stereotypic situation. Study 2 demonstrated similar context effects under clearly automatic processing conditions. Here, the use of different background pictures (church interior vs. street corner) for Black and White face primes affected participants' racial attitudes as measured by a sequential priming task. Implications for the concept of automaticity in social cognition are discussed.



Only a decade ago, the first empirical investigations emerged on the possibility that group attitudes and stereotypes may influence people's social perceptions and behaviors in an automatic fashion, outside of the individual's control (Devine, 1989; Gaertner & McLaughlin, 1983). Since then, however, a substantial number of studies have documented that such effects can occur (Banaji & Greenwald, 1995; Banaji & Hardin, 1996; Bargh, Chen, & Burrows, 1996; Blair & Banaji, 1996; Chen & Bargh, 1997; Devine, Monteith, Zuwerink, & Elliot, 1991; Dovidio, Evans, & Tyler, 1986; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, Jackson, Dunton, & Williams, 1995; Gilbert & Hixon, 1991; Greenwald et al., 1998; Hense, Penner, & Nelson, 1995; Kawakami, Dion, & Dovidio, 1998; Lepore & Brown, 1997; Locke, MacLeod, & Walker, 1994; Macrae, Bodenhausen, Milne, Thorn, & Castelli, 1997; Macrae, Milne, & Bodenhausen, 1994; Macrae, Stangor, & Milne, 1994; Moskowitz, Gollwitzer, Wasel, & Schaal, 1999; Perdue & Gurtman, 1990; Spencer, Fein, Wolfe, Fong, & Dunn, 1998; Wittenbrink, Judd, & Park, 1997). Distinguishing automatic activation from a controlled and intentional search for memory contents (Shiffrin & Schneider, 1977), this work leaves little doubt that stereotypes and group attitudes may indeed be activated spontaneously from memory, without the perceiver's intent, merely triggered by exposure to a relevant stimulus cue in the environment. Such automatic activation occurs quickly, within a few hundred milliseconds after stimulus exposure. It requires only very limited cognitive resources and is not controllable by the perceiver. In fact, the perceiver often remains unaware of the activation and its subsequent influences on judgment and behavior.

It is this latter quality of automatic stereotyping and prejudice that, in all likelihood, is responsible for much of the attention that the topic has received in the past few years. Perhaps researchers continue to be fascinated by the sources of people's behaviors that remain unknown to them, as has been true of psychological inquiry since its inception. However, it is more likely that the pragmatic implications of such "unconscious" stereotyping and prejudice have motivated this research. These pragmatic implications are indeed significant. For example, unconscious activation of negative cultural stereotypes has the potential to lead well-intentioned perceivers to walk away with a prejudiced impression of their interaction partners (Devine, 1989). Worse yet, this activation could lead to behaviors on the part of the perceiver that are likely to be reciprocated in a stereotype-confirming manner, thus resulting in an automatic self-fulfilling prophecy (Chen & Bargh, 1997). Moreover, to the extent that one can assess an individual's tendency to show automatic prejudice, researchers have at their disposal a genuine "bona fide pipeline" to people's group attitudes and beliefs, a measurement instrument that is not marred by social demand characteristics, as are standard self-report questionnaire measures (Fazio et al., 1995). After all, if respondents remain unaware of their prejudiced responses, they have little opportunity to tailor these responses to comply with perceived social standards.

## The Obligatory Nature of Automatic Responses

Given the significant implications for both research and applied settings, it is hardly surprising that the issue of automaticity has become one of the central topics in the literature on group attitudes and stereotyping (see Blair, 2001). In this work, one particular characteristic that is often attributed to automatic activation of

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This research was supported by the William S. Fishman Faculty Research Fund at the University of Chicago, Graduate School of Business, and by National Institute of Mental Health Grant R01 MH45049. We thank Reid Hastie for his many helpful comments on an earlier version of this article.

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attitudes and group-related beliefs is that they are more or less fixed and stable responses to a group-relevant stimulus cue. That is, given the passive nature of automatic activation, the fact that it is triggered by an external stimulus cue, and that it is not under the perceiver's volitional control, activation of certain memory contents is thought to be obligatory: It always and unconditionally follows exposure to the particular stimulus cue (see Bargh, 1999). Consequently, attitude activation has been described as a "reflexive" response following exposure to a relevant stimulus in the environment (Bargh, 1997, p. 3). Likewise, stereotypes have been thought to "be activated reflexively upon the mere presence" (Chen & Bargh, 1997, p. 546) of features that are diagnostic of a given social group (e.g., skin color, gender features; Bargh, 1994, 1999; Brewer, 1988). Thus, although one's overt responses may actually vary across different situations, seeing, for example, a Black person's face will always trigger memory activation of attributes that are stereotypically associated with Blacks (e.g., cheerful, poor).

There is, however, some evidence to suggest that spontaneous activation of group attitudes and stereotypes is not quite as reflexive as it has been assumed to be and that, in fact, such activation is not an obligatory response to a particular category cue. Most notably, Gilbert and Hixon (1991) showed that stereotype activation does not inevitably, in a reflexive manner, follow exposure to a stereotype target but that it depends on the availability of cognitive resources. Whereas Gilbert and Hixon's study used Asian targets, similar effects have also been reported by Spencer and his colleagues (Spencer et al., 1998) for the stereotyping of Blacks. Moreover, Blair and Banaji (1996) observed in a common sequential priming paradigm that spontaneous stereotype activation is dependent on participants' expectations about the relationship between prime and target stimuli. When participants expected the primes to be followed systematically by a counterstereotypic target, results no longer showed evidence of automatic activation of stereotypic associations. Finally, Macrae and his colleagues (Macrae et al., 1997) demonstrated that spontaneous stereotype activation in such priming experiments depends on the task under which participants encounter the priming stimuli. Processing the primes simply for their (conceptually irrelevant) surface features eliminated the occurrence of spontaneous stereotype activation.

Although these studies have not been without criticism (e.g., Bargh, 1999), to us the argument that exposure to a category cue does not always lead to (automatic) activation of the attitude or stereotype seems fairly plausible. In fact, our proposition in this article goes even further. We suggest that variations in the stimulus context affect not only whether a stimulus cue triggers activation of group-related memory contents but also what particular aspects of those contents it spontaneously activates. After all, what does it really mean to activate one's attitude toward, for example, Germans? What exactly is that attitude? Is it the negative attitude associated with German Nazis, the positive attitude associated with products made in Germany, or one's evaluation of those somewhat esoteric German psychologists? The notion that attitudes reflect a unified, solitary construct is, to say the least, highly disputed. Instead, attitudes are frequently conceptualized as multifaceted representations in memory (Schwarz & Strack, 1991; Tesser, 1978; Tourangeau & Rasinski, 1988; Wilson & Hodges, 1992; Wilson, Lindsey, & Schooler, 2000; Zanna & Rempel, 1988). Similarly, stereotypes also are likely to include a multitude of often contradictory attributes (e.g., Devine & Baker, 1991).

With regard to explicitly expressed attitudes, there is ample evidence that depending on what aspects of such a multifaceted representation become salient, different "attitudes" will emerge (Salancik & Conway, 1975). For example, questions regarding one's attitudes toward affirmative action are likely to yield different responses when they are framed by issues related to racial prejudice than when they are placed within the context of equal opportunity (cf. Kinder & Sanders, 1990). Likewise, to the extent that social contexts make salient different stereotypic attributes, one will observe different consequences of stereotype application (e.g., Bodenhausen, Schwarz, Bless, & Wänke, 1995).

We believe that it is rather likely that such context effects not only affect activation under controlled processing conditions but also affect activation that is not under the perceiver's voluntary control. For example, sitting among the crowd at the United Center in Chicago and being flashed with references to the group of Blacks, even the self-declared bigot might be more likely to spontaneously activate memory contents such as "Michael Jordan," "cheerful," and "athletic," rather than "Willie Horton," "lazy," or "poor." We suspect that the same bigot would show largely the opposite pattern of spontaneous activation were he or she ever to set foot in a primarily Black, poverty-stricken neighborhood on Chicago's Southside on a dark night. In both examples, category cues would yield activation of stereotypic memory contents, but, obviously, they would activate rather different aspects of the Black stereotype.

The argument that situational context may influence the outcome of cognitive processes that occur automatically also finds support in cognitive research. Here, evidence suggests that even basic perceptual processes are not as unconditionally linked to a specific stimulus input as was initially thought and that they are indeed quite malleable—albeit resource efficient and generally unconscious and uncontrollable (Kahneman, & Treisman, 1984).

For example, the processes by which we understand uttered sounds as speech meet all common criteria for automaticity. Readers will agree that, under most circumstances, they listen to their counterparts without constantly trying to figure out whether the person just uttered a *d* or a *t*. Identification of auditory input as a given speech pattern is indeed effortless and resource efficient and can occur involuntarily, without the perceiver's active control (Shiffrin, Pisoni, & Castaneda-Mendez, 1974). Yet, despite the fact that people carry out these identification processes without their control, there is nevertheless good evidence that these processes are not triggered in an unconditional fashion by a specified auditory stimulus. Instead, the execution of these identification processes is dependent on allocation of attentional resources (Nusbaum & Schwab, 1986) and the perceiver's expectations about the nature of the encountered stimulus: The same auditory stimulus may be heard as a portion of uttered speech or as birds chirping, depending on the perceivers' prior expectations (Remez, Rubin, Pisoni, & Carrell, 1981).

Similarly, looking at the pattern depicted in Figure 1, we immediately "see" the two words *THE CAT*. That is, although the shape depicting the middle letter in each word is identical, it may be seen as an *H* in one context and an *A* in another (Selfridge, 1955). Again, perception of the target stimulus is in both cases spontaneous, fast, and resource efficient. But the exact outcome of

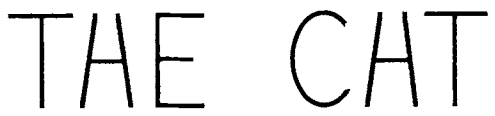


*Figure 1.* Context dependency in visual perception. The same shape may be "seen" as an *H* in one context and as an *A* in another. Reprinted from "Pattern Recognition and Modern Computers," by O. G. Selfridge, 1955, in *Proceedings of the 1955 Western Joint Computer Conference: Published by the Institute of Radio Engineers* (pp. 91–93), Los Angeles: Institute of Radio Engineers. Copyright 1955 by the Institute of Radio Engineers (now IEEE). Reprinted with permission.

this (by most definitions) automatic process depends on the context in which the target is encountered. In this latter example, variation in context does not consist of variation in the perceiver's expectations but of variation in the stimuli in which the target is embedded (i.e., *T* and *E* vs. *C* and *T*).

We believe that similar principles should also apply to the processing of social stimuli. Automatic attitudes and stereotypes should not be linked in an all-or-none fashion to a given category cue but should depend on the context in which the perceiver encounters that cue.

In this article, we report two experiments that illustrate such context effects on the memory contents activated spontaneously by a social category cue. These experiments varied the nature of additional stimuli in which the category cues were embedded. Activation of group attitudes and stereotypes then was assessed using two different procedures that have been commonly used in work on automatic attitudes and stereotyping, the Implicit Association Test (IAT; Greenwald et al., 1998) and the sequential priming paradigm (e.g., Dovidio & Gaertner, 1986; Fazio et al., 1995; Wittenbrink et al., 1997).

## Study 1

Earlier, we speculated that category references to Blacks may trigger different memory contents depending on whether those references are encountered in a positive stereotypic context (e.g., a basketball arena) or a negative one (e.g., a poor urban neighborhood). Study 1 was intended to test exactly this conjecture. Half of the participants were shown a movie clip that depicted Black targets in a positive stereotypic situation, a family barbecue, whereas the remaining participants saw a movie clip with negative stereotypic context, a gang-related incident. We were interested in how this manipulation would affect the activation triggered by group references as measured by the IAT (Greenwald et al., 1998).

### *Method*

#### *Participants*

Ninety-nine participants (18 Asian Americans, 10 African Americans, and 71 White Americans) were recruited on campus at the University of Chicago for paid participation ($10) in a 1.5 hr psychology experiment. They ranged in age from 17 to 37 years (*Mdn* = 20) and were predominantly undergraduate or graduate students. Participants who identified themselves as African American and 2 other participants who failed to follow instructions during the reaction time procedure were excluded from the data analyses, leaving a total of 87 participants (47 female, 40 male).

#### *Procedures*

The study was introduced to participants as an experiment on "how people tell stories" and, more specifically, on the role memory plays in the construction of story narratives. As part of these instructions, the experimenter explained that participants would watch a short movie excerpt and that it would be their task to write a story based on this excerpt. It was further explained that, later in the experiment and following a distraction task, participants would be asked questions about their stories and about the movie episode. The distraction task, in actuality the IAT, was introduced as a test of a person's ability to remain vigilant over a longer period of time. Participants were told that because individuals vary in how much cognitive energy they require to complete this test, the experiment would start out with a baseline assessment for the vigilance test. At the conclusion of these general instructions, the experimenter then mentioned in passing that in the event that they were to finish the experiment early, participants would be asked to complete a questionnaire for an unrelated study.

Following the introduction, participants were seated in front of a computer and told that the experimenter would now assess their baseline for the distraction task. Instructions for the IAT appeared on the computer screen. Participants read these instructions at their own pace and then proceeded with the baseline IAT. Half of the participants completed this baseline IAT with consistent response categories first, followed by the inconsistent response categories. For the remaining participants, this IAT order was reversed. During the experimental administration of this task, participants were seated at a distance of approximately 50 cm from the computer screen with their two index fingers positioned over the two response keys. Further details of the IAT trials are described below.

Once participants completed the first reaction time task, they were led to another room in the laboratory, where they were greeted by another experimenter and seated in front of a TV/VCR set. A shelf below the TV set and in clear sight of the participants held seven video tapes, labeled A through G. The experimenter explained that participants would now get to watch a short clip from one of the movies available. The experimenter then placed in the VCR one of the seven tapes, which for half of the participants contained a clip with a positive stereotype context and for the remaining participants contained a negative stereotype clip. After the short movie clip, participants had approximately 20 min to write an essay about the events depicted in the movie.

Following this story segment, participants returned to the computer room to participate in the alleged computer distraction task. It was explained that for them to better remember the movie episode while performing the computer task, they would from time to time see brief reminders of the movie clip. Participants then completed the experimental IAT. The actual clips that appeared at random intervals during these experimental IAT trials were matched with the movie excerpt participants had seen previously.

Immediately after they completed the experimental IAT, participants returned to the "video room" and filled out a questionnaire that included a series of questions relating to details of the movie episode (e.g., "List all protagonists that appeared in the movie. For each protagonist, give their name, describe their physical appearance etc."). Although the majority of these questions were included only for the sake of maintaining the experiment's cover story, the questionnaire included two items relevant to the actual purpose of the study. First, participants were asked to identify, among other features, the protagonists' race. We intended to use responses to this query as a manipulation check, assuring that participants correctly identified the movie targets' ethnicity. In addition, another question was included to determine whether participants were, as intended, unfamiliar with the movie from which the clip was taken. This question asked whether the participant knew the movie and, if so, to identify it.

Once participants had completed this questionnaire, the experimenter explained that there was still plenty of time left and that therefore they should please help out a friend of the experimenter's who was collecting data on an unrelated study. Participants then received a questionnaire containing six different explicit measures of racial attitudes. Specifically,

the questionnaire included an explicit measure commonly used to assess feelings toward social groups, the Feeling Thermometer rating scale, as well as a set of five belief-based attitude measures: the Modern Racism Scale by McConahay, Hardee, and Batts (1981), the Pro-Black and Anti-Black Scales of Katz and Hass (1988), and the Diversity and Discrimination Scales (both taken from Wittenbrink et al., 1997). To strengthen the reliability of the Thermometer scale, ratings for the two target groups (i.e., Blacks, Whites) were embedded in a series of filler target groups (e.g., Republicans, Democrats).

At the end of the experimental session, participants were debriefed about the actual purpose of the study, the nature of the IAT, and the potential influence that the movie clips were hypothesized to have on participants' IAT performance. They were then paid and dismissed.

### Materials

*Movie clips.* Two movie excerpts were used to expose participants to either positive or negative stereotypic depictions of Blacks. Specifically, a 2-min segment from a feature movie entitled *Black & White & Red All Over* (Davis, McCoy, & Streeter, 1997) was used for the negative stereotype exposure condition. This segment depicted a gang-related incident in which a group of Black targets was seen arguing with each other, picking up a gun, and leaving the scene—apparently to confront an adversary. For the positive stereotype exposure condition, we used a 2-min segment of another feature movie, *Poetic Justice* (Singleton, 1993). The particular scene included in this segment showed a Black family in harmony together at an outdoor barbecue. Both movie segments included only relatively unknown actors and, on the basis of pretesting, were effective in eliciting narratives from participants that focused primarily on either positive or negative aspects of the stereotype.

*IAT.* Presentation of experimental stimuli and data collection was controlled by the PSYSCOPE software package (Version 1.2.4; Cohen, MacWhinney, Flatt, & Provost, 1993) on Apple Macintosh 7200/120 computers that were equipped with dedicated PSYSCOPE button boxes and 35-cm Apple color monitors. Stimuli were presented on a white background in black Geneva Macintosh font, 18 point, bold.

The procedure followed closely the original IAT described by Greenwald and his colleagues (Greenwald et al., 1998). In this task, participants are asked to categorize target words into one of two categories on the basis of a particular dimension of judgment (e.g., cancer—good vs. bad). The particular trials of interest are those that combine two types of judgments. For example, a series of trials may randomly present target words that consist of first names that are stereotypic of Blacks or Whites (e.g., Rasaan, Andrew) as well as nouns with either strong positive or strong negative evaluative connotation (e.g., love, cancer). The procedure's critical feature is that both category judgments (e.g., Black vs. White for names and good vs. bad for nouns) are made using only two response key (e.g., Black/good vs. White/bad). The time it takes to respond to target words in these critical trials, therefore, is thought to be influenced by the extent to which the two categories paired on a single key are associatively related in semantic memory. Faster responses should be observed for category combinations that are associatively related, whereas responses should slow down if the category combinations are inconsistent with the respondent's associations. Thus, in the case of combining social groups with evaluative categories, a spontaneous prejudice bias would be reflected in relatively faster responses on trials in which the out-group is paired with a negative category, relative to trials in which it is paired with a positive category. Conceptually, this prejudice bias is equivalent to what we have referred to as an indicator of "generalized prejudice" (Wittenbrink et al., 1997; Wittenbrink, Judd, & Park, 2001). It captures an individual's tendency to show a general negativity bias in associations with the out-group, independent of what the specific contents of these associations are.

Accordingly, the IAT that was of theoretical interest to us in the current study involved Black versus White judgments and good versus bad judgments. The target words consisted of 20 Black and 20 White first names and of 20 positive words and 20 negative words. The particular items used as targets were taken from Greenwald et al. (1998, Experiment 3).

In addition to the IAT trials of theoretical interest here, we also included a set of filler IAT trials to further disguise the actual purpose of the IAT procedure. For these filler IAT trials, participants had to categorize flowers and insects (e.g., daffodil—flower vs. insect), using 20 filler items that were also obtained from Greenwald et al. (1998, Experiment 1).

We organized the administration of IAT trials in blocks, varying judgments and key assignments between blocks. Each block presented participants in random order with the full set of target stimuli that were relevant to the block's judgment task. Specifically, the baseline IAT consisted of a sequence of five IAT blocks that make up the original Greenwald et al. (1998) procedure: (Blocks 1 and 2) separate practice trials for each individual judgment dimension, (Block 3) critical trials combining the two judgment dimensions, (Block 4) practice trials for the reverse evaluative judgments, and (Block 5) critical trials for the reverse combined judgments. These trials were followed by an additional block of filler IAT trials. The experimental IAT, administered after the movie manipulation, then repeated the critical IAT trial blocks for combined judgments, each of which were preceded by a block practicing the key assignment for the required evaluative judgments. In addition, because evidence from previous research suggests that the IAT effect can be affected by whether the consistent or the inconsistent trial blocks are presented first (Greenwald et al., 1998, Experiment 1), we counterbalanced this order across participants.

The complete baseline IAT consisted of a total of 360 trials (8 blocks per 40 trials). Of these, 80 trials were critical trials that were used for the assessment of the baseline IAT effect. The experimental IAT included another 240 trials, of which, again, 80 trials were critical for the subsequent data analyses.

As already mentioned, the experimental IAT also included displays of brief reminders of the movie clips that were used for the context manipulation. For this, we prepared five different 20-s excerpts from each of the original clips. The excerpts were then digitized so that they could be presented on the computer screen as part of the experimental IAT trials. Each of the five 20-s clips was displayed once during each of the two critical IAT blocks, interrupting the IAT procedure at a randomly chosen trial.

### Results and Discussion

As expected, participants were unfamiliar with the movie clips used for the stereotype exposure manipulation. When asked about the movie title and actor names, all participants responded that they did not know the movie nor the actors. Also, all participants identified the movie protagonists correctly as African American.

### IAT Response Latency Measure

Our primary objective in this study was to demonstrate that exposure to different aspects of a group stereotype affects spontaneous activation of group attitudes, as measured by the IAT. Thus, in reporting the results, we first focus on the analyses for the IAT response latency measure. For these analyses, we conducted a mixed model analysis of variance (ANOVA) that included two within-subject factors—assessment (baseline/experimental) and response assignment (consistent/inconsistent)—and two factors that varied between subjects—stereotype exposure (positive/negative) and order of IAT blocks (inconsistent first/consistent first).[1]

[1] Preliminary examination of the data revealed no significant effects involving participant gender. Consequently, this factor was not included in the final analyses.

Distributions for the response latency data show the common positive skew and a small number of outliers in which responses either were started prior to the actual target stimulus or were delayed because of temporary inattention (see Ratcliff, 1993). To address these problems in the present IAT data, we excluded response latencies faster than 300 ms and slower than 3,000 ms from the statistical analyses and then applied a log-transformation to the latencies.[2]

As explained earlier, in the IAT, relatively faster responses to consistent trials than inconsistent trials indicate a spontaneous prejudice bias, the "IAT effect." Figure 2 presents the average IAT effects observed at baseline and after the movie manipulation, separately for the two stereotype exposure conditions and retransformed into the millisecond metric.

Considering first the results for the baseline IAT, we find that the response latencies reveal an overall strong spontaneous prejudice bias ($M$ = 136.70), $F(1, 86) = 136.80$, $p < .0001$. It seems, however, that participants in the positive and negative stereotype exposure conditions differed in the extent to which they displayed a spontaneous prejudice bias. Participants in the positive exposure condition showed a somewhat larger IAT effect than did those in the negative condition ($M$s = 119.31 vs. 152.93). This difference, however, is not statistically significant, $F(1, 86) = 2.29$, $p = .134$, as it should not be because participants were assigned randomly to condition and the experimental procedure did not vary for the two conditions until after the time of the baseline assessment.[3]

The postmovie IAT assessment also yielded a sizable overall IAT effect ($M$ = 62.60), $F(1, 86) = 68.44$, $p < .0001$. However, compared with the baseline assessment, this spontaneous prejudice bias was now reduced to less than half its original size. This overall reduction from Time 1 to Time 2 is statistically significant, $F(1, 86) = 25.34$, $p < .0001$, and most certainly reflects, in part, a practice effect on participants' ability to respond quickly to the target items and to do so in particular on the inconsistent trials.

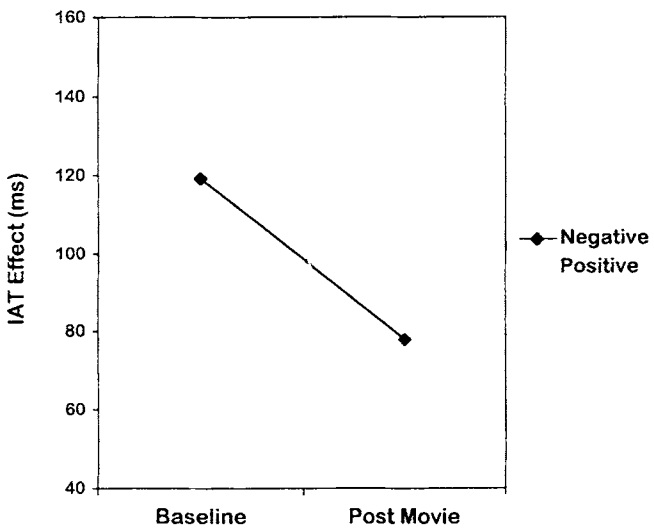


*Figure 2.* Implicit Association Test effect by stereotype condition and assessment (Study 2). Response time difference is in milliseconds between inconsistent and consistent judgment trials collapsed across both order conditions.

However, our main prediction for this study was that this change from Time 1 to Time 2 would be moderated by the stereotype exposure manipulation. In fact, comparison of the two exposure conditions shows that participants who were exposed to the positive group stereotype showed a significantly larger decrease in their IAT effect than did participants in the negative exposure condition ($M$s = 104.53 vs. 41.50). This mean difference corresponds to the Assessment × Response Assignment × Stereotype Exposure three-way interaction, which proves to be significant, $F(1, 86) = 8.08$, $p = .006$. As suggested by the means, the three-way interaction effect emerges primarily because of the change in the IAT effect observed in the positive exposure condition: Whereas the change in the IAT effect from Time 1 to Time 2 is highly significant for participants in the positive exposure condition, $F(1, 86) = 30.79$, $p < .0001$, it is not significant for participants in the negative condition, $F(1, 86) = 2.43$, $p = .127$. In fact, participants in the positive exposure condition, who at baseline were the participant group with the larger spontaneous prejudice bias, actually showed a smaller IAT effect following the experimental manipulation than did participants in the negative exposure condition ($M$s = 48.41 vs. 77.81). Even when we did not control for the baseline differences between the participant groups, this now-reversed postmovie difference in IAT effect was marginally significant, $F(1, 86) = 3.31$, $p = .072$.

Finally, the present latency data also show significant effects due to the order of the IAT blocks. Specifically, the overall IAT effect was reduced reliably when participants started with the inconsistent IAT trials rather than the consistent trials, $F(1, 86) = 10.06$, $p = .002$. A reverse order of IAT blocks also yielded an overall smaller change in the IAT effect from baseline to the postmovie assessment, $F(1, 86) = 4.84$, $p = .031$, and it did so more in the negative stereotype exposure condition than in the positive condition, $F(1, 86) = 5.55$, $p = .021$. Although these order effects are of limited theoretical interest here, the present data are further indication that counterbalancing the trial order seems essential for the IAT measure not to be confounded with this procedural variable.

### *Explicit Attitude Measures*

In addition to the IAT measure, Study 1 also included the six explicit measures of racial attitudes. From responses to the belief-based attitude scales, we calculated for each scale participants' prejudice scores by recoding responses to reversed items and then averaging across all items of the scale. For the Feeling Thermometer measure, ratings for Blacks were subtracted from those for Whites. On all measures, higher scores indicate higher levels of out-group prejudice.

All five belief-based attitude scales had high internal consistency. As is common for a college student sample, they yielded what are, on average, relatively positive attitudes toward the target

[2] The same latency boundaries and data transformation were used by Greenwald et al. (1998), who, in addition, also recoded outlier responses using the boundary values. In the current data, the reported results are not affected in any substantive way by such data substitution.

[3] The experimenter responsible for this part of the experimental procedure (the IAT assessment) was unaware of participants' condition assignment.

Table 1
*Intercorrelations Among Measures of Racial Prejudice (Study 1)*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 | α | *M* |
|---|---|---|---|---|---|---|---|---|
| Explicit attitudes | | | | | | | | |
| 1. Modern Racism Scale | — | | | | | | .82 | 1.71 |
| 2. Pro-Black Scale | .64*** | — | | | | | .79 | 3.58 |
| 3. Anti-Black Scale | .58*** | .32** | — | | | | .79 | 2.73 |
| 4. Diversity Scale | .60*** | .57*** | .51*** | — | | | .54 | 2.29 |
| 5. Discrimination Scale | .81*** | .68*** | .64*** | .71*** | — | | .85 | 2.12 |
| 6. Feeling Thermometer | .43*** | .40*** | .29** | .36** | .34** | — | | |
| Implicit Association Test | | | | | | | | |
| Baseline effect | .18 | .21* | .17 | .21* | .21* | .31** | | |
| Postmovie effect | −.03 | .06 | −.06 | .09 | .07 | .21* | | |
| Negative condition | .34* | .18 | .08 | .19 | .36* | .17 | | |
| Positive condition | −.19 | −.03 | −.14 | .01 | −.03 | .21 | | |

*Note.* $N = 87$.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .0001$.

out-group. The correlations among these five scales show high coefficients and are in the expected direction. The Feeling Thermometer measure was also reliably correlated with the other explicit measures; however, as in other studies in which we assessed both belief-based attitudes and the Feeling Thermometer scale (Wittenbrink et al., 2001), it is so to a lesser extent. The top portion of Table 1 summarizes the internal consistency indices, scale means, and correlation coefficients for these measures.[4]

Our primary interest in collecting the explicit measures was to assess their relationship with participants' spontaneous group attitudes and, in particular, to determine how these relationships were affected by the context manipulation. To this end, we correlated the measures of participants' spontaneous prejudice bias, their IAT effects at baseline and postmovie, with their responses to the six attitude measures from the questionnaire (see bottom portion of Table 1).

Beginning with the correlations observed prior to the experimental manipulation, it is noticeable that the relationships between the explicit and automatic measures remain fairly weak ($rs \leq .21$, $n = 87$, $ps \geq .05$). The one exception is the Feeling Thermometer measure. On this measure, respondents state "how they feel" about the target group rather than indicate their agreement or disagreement with certain beliefs pertaining to the group. Likewise, the IAT is based on the strength with which evaluative labels (good, bad) rather than stereotypic attributes are associated with the target groups. The present correlation coefficients suggest that the Feeling Thermometer measure indeed taps into something similar to what is captured by this particular response time measure. Specifically, it shows a moderate but reliable relationship with the IAT effect ($r = .31$, $n = 87$, $p = .004$). Participants who indicated relatively more negative feelings toward the out-group on the Feeling Thermometer task also documented a stronger valence bias in the response time procedure. Their responses were also relatively faster in the condition in which out-group labels were paired with the label *bad* (see also Wittenbrink et al., 2001).

The second noteworthy point about the correlations between the explicit measures and the IAT effect is that they are clearly weakened by the experimental manipulation; this is primarily due to the effects of the positive stereotype exposure condition. That is, following the movie manipulation that exposed participants to the positive out-group stereotype, correlations between the IAT effect and the explicit measures were no longer systematic. Indeed, four correlation coefficients were in the direction opposite to what we expected. In contrast, for participants exposed to the negative stereotype, the relationship between the IAT measure and the explicit measure remained systematic, but the nature of this relationship was changed. In particular, two belief-based attitude measures, the Modern Racism Scale ($r = .34$, $n = 87$, $p = .03$) and the Discrimination Scale ($r = .36$, $n = 87$, $p = .018$), rather than the Feeling Thermometer measure ($r = .17$, $n = 87$, $p = .3$), showed moderately strong correlations with participants' postmovie spontaneous prejudice bias. Exposure to the negative out-group stereotype increased overlap on these measures and the IAT, whereas the relationship with the Feeling Thermometer measure was weakened. Participants who held more negative beliefs about the out-group were also more likely to show a spontaneous prejudice bias on the IAT.

The first experiment, therefore, provides good evidence that automatically activated group attitudes may vary with situational context. In this experiment, placement of the category cues into either a stereotypically positive or a stereotypically negative stimulus context reliably changed participants' responses on the IAT. When participants watched a video clip with a positive stereotypic context (i.e., a family barbecue), their responses showed a significantly larger decrease in spontaneous prejudice bias relative to the baseline assessment than when they saw a video with a negative stereotype context (i.e., a gang-related incident).

One important question raised by these findings concerns the role that intentional elaboration on the part of the perceiver plays in this variation of automatic attitudes. Study 1 included several reminders of the two alternative stereotype contexts during the attitude assessment (i.e., the experimental IAT blocks). However, prior to this assessment, participants first watched the video clips and then had the opportunity to elaborate on the different stereotype contexts. Thus, one interpretation of the current results is that

[4] All explicit attitude measures remained unaffected by the stereotype exposure manipulation, Pro-Black Attitudes, $F(1, 86) = 1.23$, $p = .271$; all others, $Fs \leq 0.34$, $ps \geq .36$.

the change in attitude activation was a result of participants' rumination about different aspects of their group-related beliefs and feelings and that such rumination temporarily increased the accessibility of different memory contents. This interpretation is consistent with other recent evidence suggesting that automatic activation of stereotypes may be subject to strategic interference—for example, when counterstereotypic expectations have been reinforced for a period of time (Blair & Banaji, 1996; Blair, Ma, & Lenton, 2001; Dasgupta & Greenwald, 2001).

Although we find it plausible that such intentional and strategic interference, practiced over a certain period of time, may produce variation in automatically activated attitudes, it seems less relevant for the kind of situations that we describe earlier in this article. For example, the pattern recognition effects described by Selfridge (1955) certainly do not require the perceiver to first elaborate on the various shapes of *H*s and *A*s that one may encounter. Similarly, we argue that the suspected differences in memory contents activated by a Black target at either the United Center in Chicago or the dark street corner do not result from prior elaboration about the different situations. Study 2, therefore, is intended to address this issue.

## Study 2

Specifically, this second experiment involves a modified version of Fazio et al.'s (1995) evaluative priming paradigm. The paradigm is based on a sequential priming procedure in which participants are first primed with a group exemplar (e.g., a picture of a Black or a White target). The primes are followed by target adjectives, which vary in valence and which participants have to judge for their evaluative connotation (good/bad). Using this procedure, Fazio et al. (1995) showed that for White participants, Black faces facilitated responses to negative items more than to positive items. As was the case for the IAT, such a valence bias is again assumed to indicate activation of negative attitudes toward Blacks.

The current experiment essentially replicates this procedure, with one critical modification. The priming stimuli varied not only with respect to their group membership (Black/White) but also with regard to their context. Independent of group membership, half of the primes consisted of photos depicting the target person in a positive context stereotypic of Blacks (a church), whereas the remaining primes showed the target person in a negative stereotype context (a dilapidated street corner). Thus, different from Study 1, in this second experiment variation of situational context was an integral part of the response time procedure.

In addition to this primary change concerning the nature of the context manipulation, Study 2 addresses several other questions raised by the initial experiment. First, the design of Study 2 allows for within-subject comparisons between the positive and negative context conditions that could not be carried out for the data obtained in Study 1. Second, the use of entirely different stimulus materials in Study 2 enables us to verify that the context effects observed in the first experiment were not merely due to peculiarities of the two different movie clips used in the first experiment. In addition, by relying on a different response time procedure, we intended to illustrate the importance of context effects across multiple implicit measures of stereotyping and prejudice.[5]

### Method

#### Overview

In this second experiment, participants first completed a computer-based reaction time procedure modeled after the Fazio et al. (1995) evaluative priming paradigm. Following this computer task, participants worked on an alleged filler task during which they completed the questionnaire with the six explicit racial attitude measures from Study 1.

#### Participants

Fifty participants (6 Asian Americans, 3 African Americans, 41 White Americans) were recruited in the same fashion as in Experiment 1 (median age = 19 years). Participants who identified themselves as African American were excluded from the data analyses, as was 1 other participant who failed to follow instructions during the reaction time procedure. Two additional participants were excluded from the analyses because they expressed suspicion about the purpose of the experiment. This resulted in a total of 44 participants (26 female, 18 male) who were included in the data analyses.

#### Materials

The reaction time task was presented using the same computer equipment that was used for Study 1. The priming stimuli for this task were based on 35 digital color photos of White and Black young adult males. All photos were head shots taken against a monochrome background. Using digital photo editing software, we removed the background from these photos and replaced it with the experimental stimulus contexts. These contexts consisted of an interior shot of a small Baptist church and the shot of a street corner with a large graffiti-covered wall. In other words, the original 35 photos were transformed into two sets of images that depicted the identical targets either standing in a church or standing at a street corner.

A set of 24 adjectives served as target items for the reaction time task. Whereas Fazio et al.'s (1995) stimulus materials included adjectives based solely on their evaluative connotation, the present study included items that varied both in valence and in their stereotypicality with regard to the two target groups (see Wittenbrink et al., 1997). Of these 24 adjectives, 8 were attributes that are stereotypic of Whites (e.g., educated, greedy), 8 were attributes that are stereotypic of Blacks (e.g., athletic, poor), and a final set of 8 items were nonstereotypic adjectives that are not part of the cultural stereotype for either of these two groups (e.g., appealing). In addition, item stereotypicality was crossed with item valence so that each set was made up of four positive and four negative adjectives. The Appendix presents all 24 target adjectives. During the experiment, these critical target items were complemented by an additional set of 16 filler items that were used on filler trials only. Presentation of all lexical stimuli occurred in black 18-point Times Macintosh font on a white background.

#### Procedures

*Computer task.* The reaction time task was introduced to participants as a study "on how people visually recognize words." It followed, in

[5] Study 2 also included an additional measure of out-group bias, a social distance measure assessing participants' choice of seating distance from an out-group target (e.g., Macrae, Bodenhausen, Milne, & Jetten, 1994). However, this measure yielded results that were difficult to interpret. Because the measure is only tangential to the primary goal of this research and because it was collected after all other parts of the procedure had been completed, we chose not to include it in this article. A description of procedure and results, however, is available on request from us.

principle, the evaluative priming procedure by Fazio et al. (1995) and was organized into four blocks of individually randomized response trials.

The first block assessed baseline response times for participants' evaluative judgments (good/bad) of the target items, presented without a group prime. Each trial in this block began with a cross mark (+) in the center of the computer screen. The cross mark was then replaced by the target item, which remained on the screen for 250 ms. Two seconds after a response had been made, the block continued with the next trial, until participants had seen all 24 target items plus 16 filler items and a set of 10 initial practice trials. For each target, we recorded response and latency of the response, measured from the target onset. These response latencies served as the participant's baseline latency in the later assessment of priming effects.

In keeping with the cover story used by Fazio et al. (1995), the second trial block consisted of an alleged "face-learning" task, in which participants had to attend to facial photos for the purpose of later identifying them from among several foils. Thus, in this second block participants saw a series of eight practice photos, each presented twice, once with the church background and once with the street background. Six of these photos depicted White targets, and two depicted Black targets. None of the photos was used again in the critical (fourth) priming block.

The third block involved a recognition test of the faces participants had just seen. Participants were shown a series of 16 photos (the 8 practice targets, plus 8 foils). Each target was shown with a neutral background and remained on the screen until the participant had pressed one of two keys, labeled *yes* and *no*.

The fourth trial block involved the critical sequential priming procedure. Participants were told that the two previous tasks, the word task and the face-learning task, would be combined to determine how much the distraction from the face-learning task would slow down performance on the word task. In addition, participants were led to believe that another face recognition test for the faces included in this block would follow later in the experiment. In actuality, this second recognition test was never administered, as it served only as a cover story.

The procedure for this fourth experimental block was the same as in the first block, with the exception that the cross mark was replaced by a priming sequence. For this priming sequence, each trial began with the display of a forward mask. The nature of this mask varied with context condition and consisted of the background pictures that were also used for the actual priming stimuli (i.e., the church interior and the street corner). After 1 s, this mask was replaced with the prime. Because the mask and the prime background were identical, the prime display left the impression that a person suddenly appeared in the scene. Presentation of the prime lasted 128 ms, followed by another 128-ms interval during which the screen remained blank, and then was followed by the target item.[6]

After an initial set of practice trials with filler photos and items, participants saw a total of 144 trials. Of these, 96 trials were experimental trials that fully crossed, within participants, the four factors of the study's design: prime (Black/White), prime context (positive/negative stereotype context), target item (stereotypic of Blacks/stereotypic of Whites/nonstereotypic), and valence (positive/negative). In other words, every participant saw all 24 target items four times, each paired once with one of the four different primes (Black/positive context, Black/negative context, White/positive context, White/negative context). Four different Black and four different White faces were used as primes. They were combined with the target items so that each face was used twice as a prime for each item type (i.e., Black stereotypic/positive valence)—once in the positive context and once in the negative context. Although the pairing of target items and faces was randomized across all participants, the same face was paired with the same target item in both context conditions.

In addition to these critical trials, participants saw another 48 filler trials on which an additional eight White faces were paired with filler items.

*Additional measures.* Once participants had completed the response time task, they were instructed that the final face recognition test would take place after a short break and were asked whether they would mind filling up the time by participating in another short experiment that was currently being conducted by a friend of the experimenter. All participants readily complied with this request. The questionnaire that participants filled out as part of this "experiment" contained the six explicit prejudice measures already used in Study 1.

At the end of the experimental session, the experimenter probed participants for suspicion about any aspects of the procedure and then debriefed participants about the actual purpose of the experiment. Finally, participants were thanked and paid for their participation.

### *Results and Discussion*

The primary objective of Study 2 was to demonstrate that context-dependent variation in the spontaneous activation of group attitudes, as found in Study 1, can be observed even without prior elaboration about the nature of this context. In reporting the results, we again begin with the analyses for the response latency measure.

### *Response Latency Measure*

Again, the latency data included a small number of outliers that were due to unintended responses or temporary inattention. As in Study 1, we excluded extremely fast and slow responses from the data analysis (responses faster than 150 ms and slower than 2 standard deviations above the individual participant's mean response time; 3.13% of all responses). The response latencies were then subjected to a log-transformation to approximate the data to a normal distribution. Next, participants' log-transformed response latencies from the experimental block were subtracted from their log-transformed baseline responses from Block 1 to determine the effect of the group primes on the response latencies. Thus, more positive values for these difference scores indicate greater response facilitation due to a group prime. They were analyzed as a function of four within-subject factors: (a) prime (Black/White), (b) prime context (positive/negative), (c) item stereotypicality (Black stereotypic/White stereotypic/nonstereotypic), and (d) item valence (positive/negative), collapsing across the four individual target items within each of the Stereotypicality × Valence cells of the design.[7] Mean facilitation scores, for ease of interpretation again retransformed into milliseconds, are given in Table 2.

Our central prediction for these response latency data was that the context manipulation would alter what responses were facilitated by the different group primes. A comparison of the mean facilitation scores in the top and bottom panels of Table 2 readily confirms this prediction. In the negative context condition, when the group primes were presented as part of an urban street scene, the facilitation scores of our participants reflect the kind of spontaneous prejudice bias reported in the original experiment by Fazio et al. (1995): Black faces disproportionately facilitated responses to negative target items. This effect is equivalent to the baseline

[6] Thus, the interval between prime onset and target onset (stimulus onset asynchrony, or SOA) was a total of 256 ms, significantly shorter than the SOA used by Fazio et al. (1995). We chose this more rigorous stimulus timing to eliminate any potential influences stemming from controlled processing of the priming stimuli (see Neely, 1977).

[7] As in Study 1, preliminary analyses of these scores revealed no significant effects of participant gender.

Table 2
*Mean Response Facilitation by Prime Context in Milliseconds (Study 2)*

| | Prime type | | | | | |
|---|---|---|---|---|---|---|
| | Black faces | | | White faces | | |
| | Item stereotypicality | | | Item stereotypicality | | |
| Item valence | AA | NON | WA | AA | NON | WA |
| | Negative Prime Context | | | | | |
| Positive | −34.16 | −11.18 | −10.41 | −1.39 | −0.56 | −1.30 |
| Negative | 66.81 | 56.29 | 21.14 | 5.55 | 4.70 | 3.16 |
| | Positive Prime Context | | | | | |
| Positive | 61.54 | 26.53 | 44.65 | 41.58 | 26.70 | 42.35 |
| Negative | 10.16 | 3.52 | −6.33 | −7.48 | −6.51 | −3.57 |

*Note.* AA = target items stereotypic of African Americans; NON = target items stereotypic of neither group; WA = target items stereotypic of White Americans.

IAT effect from Study 1 and has been documented by various researchers (e.g., Banaji & Hardin, 1996; Chen & Bargh, 1997; Dovidio et al., 1997; Fazio et al., 1995, Greenwald, et al. 1998; Kawakami et al., 1998; Lepore & Brown, 1997; Moskowitz et al., 1999; Wittenbrink et al., 1997). In contrast, the pattern of means observed in the positive context condition differed substantially from this by now familiar finding. In this condition, the mean facilitation scores showed absolutely no indication of a prejudiced valence bias. Instead, the same facial primes, now displayed as part of the church scene, yielded generally stronger facilitation for positive rather than negative target items.

Analyses of the response latency data confirm this predicted Context × Prime × Item Valence interaction, $F(1, 43) = 10.26$, $p = .003$. The analyses further reveal two significant lower order effects related to this three-way interaction: Context × Valence, $F(1, 43) = 36.30$, $p < .0001$, and context, $F(1, 43) = 4.06$, $p = .050$; all other $F$s $\leq 1.62$. Specifically, the two-way interaction refers to the fact that, overall, there was a lowered facilitation advantage for negative items in the positive context condition ($M$s = −42.26 vs. 36.11), whereas the context main effect indicates that the positive context condition yielded stronger facilitation overall than did the negative condition ($M$s = 19.43 vs. 8.22).[8]

Considering the results for the two context conditions separately, we find that facilitation scores for the negative context condition show an overall valence effect with relatively higher facilitation for negative than for positive target items ($M$s = 26.27 vs. −9.83), $F(1, 43) = 7.71$, $p = .008$. However, this overall valence effect is attributable almost entirely to the already mentioned differential effect from Black face primes, which facilitated responses more when the target items were negative than when they were positive ($M$s = 48.08 vs. −18.58). In contrast, facilitation from White faces was essentially the same for negative and positive items ($M$s = 4.47 vs. −1.09). Thus, the overall valence effect was moderated by a significant Prime × Valence interaction, $F(1, 43) = 12.28$, $p = .001$. Additional tests involving just the Black face primes indicate that this facilitatory bias for Black faces for responses to negative items is observed across all three kinds of adjectives: (Black) stereotypic, nonstereotypic, and (White) counterstereotypic, $F(1,43) = 25.74$, $p < .0001$. However, the bias was somewhat stronger for adjectives that were stereotypic of the group prime than for the other items, $F(1, 43) = 5.16$, $p = .028$. No other significant effects were revealed by the analyses for this condition (all $F$s $\leq 1.18$).

As we have already explained, in the positive context condition, the effect of target item valence was reversed. The same facial primes yielded, overall, stronger facilitation for positive target items. Moreover, this was true for both Black face primes and White face primes. Indeed, the only significant effect that emerged from the analyses for this condition was a main effect due to item valence, $F(1, 43) = 11.91$, $p = .001$ (all other $F$s $\leq 1.35$).

### *Additional Measures*

In addition to the response latency measure, the experiment also included the six questionnaire-based attitude scales from Study 1. The prejudice scores for each of the six questionnaire measures were calculated in the same fashion as in the previous study. The overall results are essentially the same as in Study 1, with one exception: The Anti-Black attitude measure showed uncharacteristically low internal consistency ($\alpha = .36$).

As in Study 1, our primary reason for collecting the explicit measures was to determine how their relationship with participants' automatic attitudes was affected by the context manipulation. Thus, separately for each context condition, we correlated participants' explicit attitude scores with their spontaneous prejudice indices from the response time data. As in Study 1, the resulting correlations remained weak ($r$s $\leq .17$, $n = 44$, $p$s $\geq .26$). And, similar to the results from Study 1, this is again especially true for the correlations involving the response bias assessed in a positive context ($r$s $\leq .12$, $n = 44$, $p$s $\geq .41$). Once again, the Feeling Thermometer measure was the exception to this pattern. At least for the negative context condition, the spontaneous prejudice index showed a correlation of $r = .35$, $n = 44$, $p = .02$ (positive context: $r = .05$, $n = 44$, $p = .752$). Thus, with regard to these correlations, the Study 2 results essentially repeat the general pattern of findings from the first experiment.

## General Discussion

Our primary goal in this research was to determine whether automatic group attitudes and stereotypes, commonly thought to be fixed and invariant, are in fact sensitive to changes in the situational context. The findings from both experiments clearly demonstrate such potential for variation in automatic responses to social category cues.

[8] These effects of the context manipulation were not limited to only those target items that were, by nature of the Black stereotype, most closely related to the two stereotypic contexts included in the study. For example, results remained essentially the same even when items that are associated with the church context (religious, musical) were excluded from the analyses. Specifically, the critical Context × Prime × Item Valence interaction remained significant, although at a slightly lower level, given the reduced number of trials included in these analyses, $F(1, 43) = 6.12$, $p = .017$.

In Study 1, placement of the category cues into either a stereotypically positive or a stereotypically negative stimulus context reliably changed participants' responses on the IAT. In Study 2, results from a rather different assessment procedure that used entirely different stimulus materials again showed that the content of automatically activated memory contents may vary across different situations. Moreover, Study 2, unlike Study 1, manipulated context as a within-subject factor. That is, in Study 1, between-contexts comparisons were carried out across different individuals. In this initial study, we therefore had to take into account individual differences that already existed prior to the experimental manipulation to determine the effect of our context manipulation on participants' automatic attitudes. In Study 2, however, we observed effects of context as a result of variation within the same participants, thus strengthening our argument that under different circumstances, the same person may automatically activate different attitudes in response to an attitude object.

Moreover, the particular stimulus timing as well as the nature of the context manipulation used in Study 2 lead us to believe that the observed context effects reflect variation in automatic activation that occurs without prior elaboration or strategic interference on the side of the perceiver. That is, in Study 2, context was varied at the level of individual response trials, for which the presentation order was fully randomized for each individual participant. In other words, response trials were not presented in blocks repeating the same context, which would have allowed participants to practice and elaborate on the nature of the situation. In addition, the design of Study 2 crossed the context variable with group prime, so that a given context appeared, randomly, with both in-group and out-group faces. Furthermore, the stimulus timing for primes and target stimuli minimized the potential for controlled processing of the primes, whereas the observed effects were critically determined by the nature of the primes. That is, for the negative context condition, Black primes facilitated responses to negative items, whereas White primes yielded no evidence of such effects. All of these factors in combination make it unlikely that the current results reflect effects that stem from participants' rumination over certain aspects of their group-related beliefs and feelings or that require participants' strategic interference for suppressing otherwise automatic responses. Instead, they illustrate that a group reference may spontaneously activate quite different memory contents depending on the particular circumstances under which it is encountered.

This is not to say, however, that other context irrelevant memory contents also associated with a triggering stimulus cue are not being activated at all. In fact, a more detailed analysis of the perceptual and cognitive processes underlying concept activation would probably suggest a sequential mechanism whereby a larger set of memory contents is initially activated and is subsequently filtered for its contextual relevance. For example, research on text comprehension (e.g., Burgess & Simpson, 1988; Gernsbacher, Varner, & Faust, 1990) indicates that word stimuli yield broad activation of context-relevant and irrelevant concepts immediately following exposure to the stimulus (less than 100 ms). However, activation for context-irrelevant concepts drops rapidly thereafter (within a few hundred milliseconds). Similar findings have been reported for activation resulting from nonlinguistic stimuli as well (e.g., Gernsbacher & Faust, 1991). In other words, consistent with our present findings, this research also indicates that activation, although it is initially broad, is context specific and that the mechanism that produces this specific activation occurs quickly and does not require any active control on the side of the perceiver or reader.

In addition, the present experiments offer data that were intended to link the context differences in out-group prejudice observed at the automatic level to other, explicit measures of group attitudes. With regard to these explicit measures, we observed in both experiments a similar pattern of weak to moderate relationships. Of course, given their correlational nature and the relatively small sample sizes for relationships of the magnitude that one might expect between such diverse measures, these results remain far from definitive. However, we believe that the additional measures included in the experiments illustrate that the differences in spontaneous prejudice introduced by the context manipulations covary in meaningful and predictable ways with other measures of out-group prejudice and, therefore, are not merely "blips" in the distribution of millisecond response latencies.

### *Components of Group Attitudes*

One particular finding that is of interest is that in both studies the response time procedures yielded somewhat stronger relationships with the Feeling Thermometer measure than with the belief-based attitude scales. The Feeling Thermometer measure asks respondents about their feelings toward the target group rather than about their beliefs pertaining to the group. Likewise, the two response time procedures that we used in the current experiments are based on evaluative judgments rather than on judgments that focus on conceptual aspects of the target items (e.g., lexical decision tasks). Moreover, in Study 2 the variation of item stereotypicality affected the observed priming effects only to a modest degree (i.e., only for Black primes in the negative context condition). This is consistent with results we recently obtained in related work in which we systematically varied the nature of the judgment task in a sequential priming procedure (Wittenbrink et al., 2001). In this research we found that evaluative judgments yielded overall Prime × Valence effects similar to those observed in the present studies, whereas a lexical decision task yielded the out-group valence biases that interacted with the stereotypicality of the target item. Individual-differences measures based on these response time procedures also showed different relationships with explicit attitude measures. The evaluative priming task showed relatively stronger relationships with a Feeling Thermometer measure, whereas the lexical decision task resulted in stronger relationships with belief-based measures like the Modern Racism Scale. What this suggests, therefore, is that these alternative measures, belief-based measures on the one hand and evaluative measures on the other hand, whether at the explicit or implicit level, seem to tap into separate and partially independent components of group attitudes: conceptual, belief-based aspects of prejudice versus general feelings and affective responses toward the target group (see also Amodio, Harmon-Jones, & Devine, 2000).

### *Automaticity in Social Cognitive Functioning*

We believe that the findings from the current two experiments have important implications for the nature of automatic processing

in social cognition. Several years ago, Bargh (1989, 1994) offered an important clarification to the then already extensive evidence for automaticity in social information processing. He pointed out that automaticity, rather than describing a discrete form of cognitive functioning, varies substantially with regard to the conditions that have to be met for the automatic process to take place. According to this analysis, automaticity comes in a variety of shapes and flavors, each defined by its particular set of conditions. For example, goal-dependent automaticity requires activation of a particular interaction goal prior to encountering a stimulus cue (e.g., self- vs. other impression formation goals; Bargh & Tota, 1988), whereas postconscious automaticity takes place following some form of prior processing that is conscious and aware (e.g., certain priming effects in impression formation; Banaji, Hardin, & Rothman, 1993). In addition, this analysis also suggests that automatic processing may vary with regard to the number of necessary conditions, thus defining a continuum ranging from processes that are conditioned solely on the presence of a relevant stimulus cue to processes that require a more complex combination of circumstances.

We find this analysis particularly useful, as it emphasizes the fact that all automatic processing is conditional and as it emphasizes the need for an analysis of what specific conditions determine a given automatic process. Naturally, such an analysis can only benefit from empirical investigations that vary the relevant variables systematically. For instance, the conditions that determine whether behaviors trigger automatic trait inferences can only be identified correctly to the extent that they have been considered as potential candidates in the first place. Indeed, a number of automatic effects that at first appeared to be conditioned by a single factor (i.e., the presence of a stimulus cue) have turned out to depend on a more complicated set of circumstances once researchers began looking for them (e.g., the perceiver's goal state in the case of trait inferences; Uleman & Moskowitz, 1994).

With regard to group attitudes and stereotypes, research has only recently begun to specify more precisely the conditions of their automatic activation. As we already mentioned, there is now growing evidence that the conditions for automatic stereotype and attitude activation are more complex than the mere exposure to a category cue. Availability of attentional resources (Gilbert & Hixon, 1991), the perceiver's processing goals (Macrae et al., 1997; Moskowitz et al., 1999), and strategic preferences (Blair & Banaji, 1996; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2000) have been identified so far as conditional factors determining whether a category cue will result in automatic stereotyping or attitude activation.

The findings from the present two studies are consistent with this notion of conditional automaticity. In fact, the present data suggest that variation in aspects of the situation other than the category cue cannot only eliminate, hinder, or suppress the automatic process, as demonstrated by the previously mentioned research, but that it is a critical determinant for the exact nature of the automatic process itself. In the present studies the social category cues proved to be capable of automatically activating group-related memory contents under a variety of contexts. However, depending on the context and, thus, depending on the particular conditions under which a triggering stimulus cue was encountered, the particular memory contents that were activated varied significantly.

Although automatic responses to social category cues do not appear to be determined solely by the presence or absence of a triggering cue, the general framework of conditional and multifaceted automaticity still leaves this as a possibility for automatic responses to other kinds of stimuli. However—especially with regard to the kind of stimulus situations that are generally of interest to social psychologists—we are skeptical about the viability of this form of automaticity, which is conditional only on the perceiver's exposure to the stimulus cue. That is, we believe that mere features of a distal stimulus, like the "Blackness" of a target person, are unlikely to be the sufficient condition for a particular response. Mere features have to be translated into percepts, a process that is determined not just by the particular feature in question but also by a variety of contextual factors like the perceiver's focus of attention, other stimulus features present in the environment, and so forth. To the extent that there is variation in these other determinants, there is likely to be variation in the resulting (spontaneous) cognitive activation. The two experiments we report demonstrate such potential for variation in automatic responses with regard to a particular set of stimuli, references to racial groups. We suspect that the present findings are not limited to automatic group attitudes and stereotypes but apply to automatic responses more generally.

Of course, this is essentially the argument that, a long time ago, Gestalt psychologists put forth against the then dominant doctrine that psychological functioning could be explained by linking psychological responses to a specific external stimulus. Despite the fact that Gestalt psychologists emphasized the importance of consciousness and subjective experience, many of the phenomena they investigated required little active control on the side of the perceiver. For example, Wertheimer's (1923) work on perceptual organization focused on the experiential nature of perception, yet it nevertheless was concerned with cognitive processes that clearly qualify as automatic. As this work on perceptual organization shows, stimuli may be perceived as part of a grouped entity or as individual units, depending on the particular context in which they are placed. Because such construal processes must take place for any stimulus to acquire subjective reality, Gestalt psychologists argued that psychological functioning could not be explained on the basis of an analysis of the "objective" stimulus features alone (Köhler, 1947).

Ultimately, the arguments advanced by Wertheimer, Köhler, and their colleagues proved to be critical for a more complete understanding of human functioning as well as instrumental in defining the field of social psychology. The distinction between active controlled processes in social–cognitive functioning and those that are passive and that occur involuntarily without conscious experience has already proven to be enormously important. However, this advancement in social psychological theorizing should not lead us to commit once again what Köhler referred to as the "experience error": assuming that a percept is nothing more than a copy of the distal stimulus object (Köhler, 1947, p. 162). We should not ignore one of the primary lessons learned in earlier days: that distal stimulus features are an insufficient determinant of human experience and behavior.

## References


Amodio, D. M., Harmon-Jones, E., & Devine, P. G. (2000). The emotional and physiological components of race bias: Individual differences in attention- and emotion-modulated startle eyeblink responses. Manuscript submitted for publication.

Banaji, M. R., & Greenwald, A. G. (1995). Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology, 68,* 181–198.

Banaji, M. R., & Hardin, C. D. (1996). Automatic stereotyping. *Psychological Science, 7,* 136–141.

Banaji, M. R., Hardin, C., & Rothman, A. J. (1993). Implicit stereotyping in person judgment. *Journal of Personality and Social Psychology, 65,* 272–281.

Bargh, J. A. (1989). Conditional automaticity: Varieties of automatic influence in social perception and cognition. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 3–51). New York: Guilford Press.

Bargh, J. A. (1994). The four horsemen of automaticity: Awareness, intention, efficiency, and control in social cognition. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 1, pp. 1–40). Hillsdale, NJ: Erlbaum Press.

Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer (Ed.), *The automaticity of everyday life: Advances in social cognition* (Vol. 10, pp. 1–61). Mahwah, NJ: Erlbaum Press.

Bargh, J. A. (1999). The cognitive monster: The case against the controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 361–382). New York: Guilford Press.

Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology, 71,* 230–244.

Bargh, J. A., & Tota, M. E. (1988). Context-dependent automatic processing in depression: Accessibility of negative constructs with regard to self but not others. *Journal of Personality and Social Psychology, 54,* 925–939.

Blair, I. V. (2001). Implicit stereotypes and prejudice. In G. B. Moskowitz (Ed.), *Cognitive social psychology: On the tenure and future of social cognition* (pp. 359–374). Mahwah, NJ: Erlbaum.

Blair, I. V., & Banaji, M. R. (1996). Automatic and controlled processes in stereotype priming. *Journal of Personality and Social Psychology, 70,* 1142–1163.

Blair, I. V., Ma, J. E., & Lenton, A. P. (2001). Imagining stereotypes away: The moderation of implicit stereotypes through mental imagery. *Journal of Personality and Social Psychology, 81,* 828–841.

Bodenhausen, G. V., Schwarz, N., Bless, H., & Wänke, M. (1995). Effects of atypical exemplars on racial beliefs: Enlightened racism or generalized appraisals? *Journal of Experimental Social Psychology, 31,* 48–63.

Brewer, M. B. (1988). A dual process model of impression formation. In T. K. Srull & R. S. Wyer (Eds.), *Advances in social cognition* (Vol. 1, pp. 1–36). Hillsdale, NJ: Erlbaum Press.

Burgess, C., & Simpson, G. B. (1988). Cerebral hemispheric mechanisms in the retrieval of ambiguous word meanings. *Brain & Language, 33,* 86–103.

Chen, M., & Bargh, J. A. (1997). Nonconscious behavioral confirmation processes: The self-fulfilling consequences of automatic stereotype activation. *Journal of Experimental Social Psychology, 33,* 541–560.

Cohen, J., MacWhinney, B., Flatt, M., & Provost, J. (1993). PsyScope: An interactive graphical system for designing and controlling experiments in the psychology laboratory using Macintosh computers. *Behavior Research Methods, Instruments, and Computers, 25,* 257–271.

Dasgupta, N., & Greenwald, A. G. (2001). On the malleability of automatic attitudes: Combating automatic prejudice with images of admired and disliked individuals. *Journal of Personality and Social Psychology, 81,* 800–814.

Davis, D., McCoy, H., & Streeter, K. (Directors). (1997). *Black & white & red all over* [Motion picture]. United States: Spectrum Films.

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56,* 5–18.

Devine, P. G., & Baker, S. M. (1991). Measurement of racial stereotype subtyping. *Personality and Social Psychology Bulletin, 17,* 44–50.

Devine, P. G., Monteith, M. J., Zuwerink, J. R., & Elliot, A. J. (1991). Prejudice with and without compunction. *Journal of Personality and Social Psychology, 60,* 817–830.

Devine, P. G., Plant, E. A., Amodio, D. M., Harmon-Jones, E., & Vance, S. L. (2000). *Exploring the relationship between implicit and explicit prejudice: The role of motivations to respond without prejudice.* Unpublished manuscript, University of Wisconsin—Madison.

Dovidio, J. F., Evans, N., & Tyler, R. (1986). Racial stereotypes: The contents of their cognitive representations. *Journal of Experimental Social Psychology, 22,* 22–37.

Dovidio, J. F., & Gaertner, S. L. (1986). Prejudice, discrimination, and racism: Historical trends and contemporary approaches. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 1–34). Orlando, FL: Academic Press.

Dovidio, J. F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology, 33,* 510–540.

Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology, 69,* 1013–1027.

Gaertner, S. L., & McLaughlin, J. P. (1983). Racial stereotypes: Associations and ascriptions of positive and negative characteristics. *Social Psychology Quarterly, 46,* 23–30.

Gernsbacher, M. A., & Faust, M. E. (1991). The mechanism of suppression: A component of general comprehension skill. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 17,* 245–262.

Gernsbacher, M. A., Varner, K. R., & Faust, M. E. (1990). Investigating differences in general comprehension skill. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16,* 430–445.

Gilbert, D. T., & Hixon, J. G. (1991). The trouble of thinking: Activation and application of stereotypic beliefs. *Journal of Personality and Social Psychology, 60,* 509–517.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74,* 1464–1480.

Hense, R. L., Penner, L. A., & Nelson, D. L. (1995). Implicit memory for age stereotypes. *Social Cognition, 13,* 399–415.

Kahneman, D., & Treisman. A. (1984). Changing views of attention and automaticity. In R. Parasuraman & D. R. Davies (Eds.), *Varieties of attention* (pp. 29–61). San Diego, CA: Academic Press.

Katz, I., & Hass, R. G. (1988). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology, 55,* 893–905.

Kawakami, K., Dion, K. L., & Dovidio, J. F. (1998). Racial prejudice and stereotype activation. *Personality and Social Psychology Bulletin, 24,* 407–416.

Kinder, D. R., & Sanders, L. M. (1990). Mimicking political debate with survey questions: The case of White opinion on affirmative action for Blacks. *Social Cognition, 8,* 73–103.

Köhler, W. (1947). *Gestalt psychology.* (Rev. ed.). New York: Liveright Publishing.

Lepore, L., & Brown, R. (1997). Category and stereotype activation: Is prejudice inevitable? *Journal of Personality and Social Psychology, 72,* 275–287.

Locke, V., MacLeod, C., & Walker, I. (1994). Automatic and controlled

activation of stereotypes: Individual differences associated with prejudice. *British Journal of Social Psychology, 33,* 29–46.

Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Jetten, J. (1994). Out of mind but back in sight: Stereotypes on the rebound. *Journal of Personality and Social Psychology, 67,* 808–817.

Macrae, C. N., Bodenhausen, G. V., Milne, A. B., Thorn, T. M. J., & Castelli, L. (1997). On the activation of social stereotypes: The moderating role of processing objectives. *Journal of Experimental Social Psychology, 33,* 471–489.

Macrae, C. N., Milne, A. B., & Bodenhausen, G. V. (1994). Stereotypes as energy-saving devices: A peek inside the cognitive toolbox. *Journal of Personality and Social Psychology, 66,* 37–47.

Macrae, C. N., Stangor, C., & Milne, A. B. (1994). Activating social stereotypes: A functional analysis. *Journal of Experimental Social Psychology, 30,* 370–389.

McConahay, J. B., Hardee, B. B., & Batts, V. (1981). Has racism declined in America? It depends on who is asking and what is asked. *Journal of Conflict Resolution, 25,* 563–579.

Moskowitz, G. B., Gollwitzer, P. M., Wasel, W., & Schaal, B. (1999). Preconscious control of stereotype activation through chronic egalitarian goals. *Journal of Personality and Social Psychology, 77,* 167–184.

Neely, J. H. (1977). Semantic priming and retrieval from lexical memory: Roles of inhibitionless spreading activation and limited-capacity attention. *Journal of Experimental Psychology: General, 106,* 226–254.

Nusbaum, H. C., & Schwab, E. C. (1986). The role of attention and active processing in speech perception. In E. C. Schwab & H. C. Nusbaum (Eds.), *Pattern recognition by humans and machines* (Vol. 1, pp. 113–157). San Diego, CA: Academic Press.

Perdue, C. W., & Gurtman, M. B. (1990). Evidence for the automaticity of ageism. *Journal of Experimental Social Psychology, 26,* 199–216.

Ratcliff, R. (1993). Methods for dealing with reaction time outliers. *Psychological Bulletin, 114,* 510–532.

Remez, R. E., Rubin, P. E., Pisoni, D. B., & Carrell, T. D. (1981). Speech perception without traditional speech cues. *Science, 212,* 947–950.

Salancik, G. R., & Conway, M. (1975). Attitude inferences from salient and relevant cognitive content about behavior. *Journal of Personality and Social Psychology, 32,* 829–840.

Schwarz, N., & Strack, F. (1991). Context effects in attitude surveys: Applying cognitive theory to social research. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 2, pp. 31–49). London: Wiley.

Selfridge, O. G. (1955). Pattern recognition and modern computers. *Proceedings of the 1955 Western Joint Computer Conference: Published by the Institute of Radio Engineers.* (pp. 91–93). Los Angeles: Institute of Radio Engineers.

Shiffrin, R. M., Pisoni, D. B., & Castaneda-Mendez, K. (1974). Is attention shared between the ears? *Cognitive Psychology, 6,* 190–215.

Shiffrin, R. M., & Schneider, W. (1977). Controlled and automatic human information processing: II. Perceptual learning, automatic attending, and a general theory. *Psychological Review, 84,* 127–190.

Singleton, J. (Writer/Director). (1993). *Poetic justice* [Motion picture]. United States: Columbia Pictures.

Spencer, S. J., Fein, S., Wolfe, C. T., Fong, C., & Dunn, M. A. (1998). Automatic activation of stereotypes: The role of self-image threat. *Personality and Social Psychology Bulletin, 24,* 1139–1152.

Tesser, A. (1978). Self-generated attitude change. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 11, pp. 289–338). New York: Academic Press.

Tourangeau, R., & Rasinski, K. A. (1988). Cognitive processes underlying context effects in attitude measurement. *Psychological Bulletin, 103,* 299–314.

Uleman, J. S., & Moskowitz, G. B. (1994). Unintended effects of goals on unintended inferences. *Journal of Personality and Social Psychology, 66,* 490–501.

Wertheimer, M. (1923). Untersuchungen zur Lehre der Gestalt, II [Laws of organization in perceptual forms]. *Psychologische Forschung, 4,* 301–350.

Wilson, T. D., & Hodges, S. D. (1992). Attitudes as temporary constructions. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 37–66). Hillsdale, NJ: Erlbaum.

Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review, 107,* 101–126.

Wittenbrink, B., Judd, C. M., & Park, B. (1997). Evidence for racial prejudice at the implicit level and its relationship with questionnaire measures. *Journal of Personality and Social Psychology, 72,* 262–274.

Wittenbrink, B., Judd, C. M., & Park, B. (2001). Evaluative versus conceptual judgments in automatic stereotyping and prejudice. *Journal of Experimental Social Psychology, 37,* 244–252.

Zanna, M. P., & Rempel, J. K. (1988). Attitudes: A new look at an old concept. In D. Bar-Tal & A. W. Kruglanski (Eds.), *The social psychology of knowledge* (pp. 315–334). Cambridge, England: Cambridge University Press.

## Appendix

### Target Items Used in Study 2

| Items stereotypic of African Americans | Nonstereotypic items | Items stereotypic of White Americans |
|---|---|---|
| religious | desirable | intelligent |
| cheerful | fabulous | successful |
| athletic | pleasant | educated |
| musical | wonderful | responsible |
| poor | awful | boring |
| violent | horrible | uptight |
| lazy | repulsive | greedy |
| threatening | rotten | selfish |

Received March 3, 2000
Revision received February 2, 2001
Accepted February 7, 2001 ■

Journal of Personality and Social Psychology
2002, Vol. 82, No. 6, 878–902


0022-3514/02/$5.00 DOI: 10.1037//0022-3514.82.6.878

# A Model of (Often Mixed) Stereotype Content: Competence and Warmth Respectively Follow From Perceived Status and Competition

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Stereotype research emphasizes systematic processes over seemingly arbitrary contents, but content also may prove systematic. On the basis of stereotypes' intergroup functions, the stereotype content model hypothesizes that (a) 2 primary dimensions are competence and warmth, (b) frequent mixed clusters combine high warmth with low competence (paternalistic) or high competence with low warmth (envious), and (c) distinct emotions (pity, envy, admiration, contempt) differentiate the 4 competence–warmth combinations. Stereotypically, (d) status predicts high competence, and competition predicts low warmth. Nine varied samples rated gender, ethnicity, race, class, age, and disability out-groups. Contrary to antipathy models, 2 dimensions mattered, and many stereotypes were mixed, either pitying (low competence, high warmth subordinates) or envying (high competence, low warmth competitors). Stereotypically, status predicted competence, and competition predicted low warmth.

Not all stereotypes are alike. Some stereotyped groups are disrespected as incapable and useless (e.g., elderly people), whereas others are respected for excessive, threatening competence (e.g., Asians). Some stereotyped groups are liked as sweet and harmless (e.g., housewives), whereas others are disliked as cold and inhuman (e.g., rich people). Surely, such differences matter.

However, social psychology of late has eschewed the study of stereotype content, focusing instead on stereotyping processes (for reviews, see Brown, 1995; Fiske, 1998; Leyens, Yzerbyt, & Schadron, 1994; Macrae & Bodenhausen, 2000). And for good reason. Stereotyping processes respond to systematic principles that generalize across different specific instances of stereotypes, so the processes invite social–psychological investigation, because they are presumably stable over time, place, and out-group. If the contents of stereotypes come and go with the winds of social pressures, then no single stereotype remains stable and predictable from theoretical principles.

Alternatively, if stereotypes do come and go with the winds of social pressures, maybe we can understand those wind patterns and, thus, some origins of stereotype content. In short, perhaps we need a model that predicts the intergroup weather: Stereotype content may respond to systematic principles, just as stereotyping processes do.

If stereotype content responds to principles, then the first principle must identify common dimensions of content. Following Allport (1954), social psychologists have typically viewed only unflattering stereotypes as indicating prejudice, where prejudice is a uniform antipathy or contempt toward an out-group across a variety of dimensions. Flattering stereotypes have presumably targeted in-groups or, when they target out-groups, have presumably indicated compunction stemming from modern egalitarian ideals.

We argue instead that stereotypes are captured by two dimensions (warmth and competence) and that subjectively positive stereotypes on one dimension do not contradict prejudice but often are functionally consistent with unflattering stereotypes on the other dimension. Moreover, we argue that two variables long identified as important in intergroup relations—status and competition—predict dimensions of stereotypes. We suggest that for subordinate, noncompetitive groups (e.g., elderly people), the positive stereotype of warmth acts jointly with the negative stereotype of low competence to maintain the advantage of more privileged groups. For high-status, competitive out-groups (e.g., Asians), the positive stereotype of their competence justifies the overall system

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This research was partially supported by National Science Foundation Grant 94-21480 to Susan T. Fiske and by National Institutes of Health Grant HD33044 to Nancy Forger, which supported Jun Xu at the University of Massachusetts, Amherst. We thank Stephanie Yellin, who helped with Study 1 data collection, and several individuals who arranged for the Study 3 data collection: Pat Bauer, Harold and Patricia Casselberry, Donald and Barbara Fiske, Beth Haines, D. Brett King, Terry Rew-Gottfried, and Hazel Spears. We also thank Don Operario for his input to early stages of this research and John Darley, Dale Miller, Debbie Prentice, and Penny Visser for comments on a draft of the article.

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but acts jointly with the negative stereotype of low warmth to justify the in-group's resentment of them.

Finally, we argue that different combinations of stereotypic warmth and competence result in unique intergroup emotions—prejudices—directed toward various kinds of groups in society. Pity targets the warm but not competent subordinates; envy targets the competent but not warm competitors; contempt is reserved for out-groups deemed neither warm nor competent.

Each of these issues—focus on dimensions of content, mixed (but functionally consistent) content, predictions of that content, and ensuing types of prejudice—follows precedents set by previous literature. Our innovation is to synthesize these insights into a model of stereotype content that cuts across out-groups.

## Focus on Content: Competence and Warmth

Unencumbered by theory, the classic study of stereotype contents (D. Katz & Braly, 1933) was replicated at Princeton over about 20-year intervals (G. M. Gilbert, 1951; Karlins, Coffman, & Walters, 1969; Leslie, Constantine, & Fiske, 2001). These studies document changes in the favorability (mostly improving) and uniformity (decreasing) of stereotypes over time but do not uncover dimensions or principles therein. Although the Katz–Braly checklist method has limitations (Devine & Elliot, 1995; Madon et al., 2001), it does provide one of the few consistently documented measures of stereotypes across groups.[1] However, the Katz–Braly lineage does not claim theoretical roots.

From a functional, pragmatic perspective (Fiske, 1992, 1993b), we suggest that dimensions of stereotypes result from interpersonal and intergroup interactions. When people meet others as individuals or group members, they want to know what the other's goals will be vis à vis the self or in-group and how effectively the other will pursue those goals. That is, perceivers want to know the other's intent (positive or negative) and capability; these characteristics correspond to perceptions of warmth and competence, respectively.

A variety of work on intergroup and interpersonal perception suggests the relevance of these two dimensions in social perception. In the intergroup domain, early on, one ethnic out-group (i.e., Jews) was viewed as competent but not warm, and another (i.e., "Negroes") was viewed as warm but not competent (Allport, 1954; Bettelheim & Janowitz, 1950). Curiously, this older ethnic-group distinction echoes modern-day views about perceived subgroups of women (Deaux, Winton, Crowley, & Lewis, 1985; Eckes, 1994; Noseworthy & Lott, 1984; Six & Eckes, 1991): disliked, dominant, competent, nontraditional women (e.g., career women, feminists, lesbians, athletes) versus likable, dependent, incompetent, traditional women (e.g., housewives, sometimes "chicks"). Overall, the ethnic and gender distinctions both fit our hypothesized dimensions of competence and warmth.

From various out-group stereotypes, Fiske and Glick (Fiske, 1998, p. 380; Fiske, Xu, Cuddy, & Glick, 1999; Glick & Fiske, 1999, 2001b) constructed a preliminary model of stereotype content: Stereotype content may not reflect simple evaluative antipathy but instead may reflect separate dimensions of (dis)like and (dis)respect. Some out-group stereotypes (e.g., housewives, disabled people, elderly people) elicit disrespect for perceived lack of competence; other out-group stereotypes elicit dislike for perceived lack of warmth (e.g., Asians, Jews, career women). Although some groups may elicit both dislike and disrespect (e.g., welfare recipients), qualitative differences among stereotypes are captured by the crucial dimensions of competence and warmth.

The plausibility of competence and warmth as core dimensions also springs from person perception research: Asch's (1946) warm–cold versus competence-related adjectives (Hamilton & Fallot, 1974; Zanna & Hamilton, 1977) and multidimensional scaling of trait descriptions (Rosenberg, Nelson, & Vivekanathan, 1968; see also Jamieson, Lydon, & Zanna, 1987; Lydon, Jamieson, & Zanna, 1988). Perceptions of individuals in groups also vary along a task dimension and a social dimension (Bales, 1970). Relatedly, Peeters (1983, 1992, 1995) has argued for the dimensions of self-profitability (e.g., confident, ambitious, practical, intelligent)—akin to competence—and other-profitability (e.g., conciliatory, tolerant, trustworthy)—akin to warmth. The Peeters distinction has been applied to national stereotypes (Peeters, 1993; Phalet & Poppe, 1997; Poppe & Linssen, 1999)[2], values (Wojciszke, 1997), and evaluations of social behavior (Vonk, 1999).

Across racial prejudice, gender subgroups, national stereotypes, and person perception, thus, come two dimensions. They fit the functional idea that people want to know others' intent (i.e., warmth) and capability to pursue it (i.e., competence). Groups (like individuals) are distinguished according to their potential impact on the in-group (or the self). Our stereotype content model's first hypothesis hence holds that perceived competence and warmth differentiate out-group stereotypes.

## Mixed Stereotype Content

Across out-groups, stereotypes often include a mix of more and less socially desirable traits, not just the uniform antipathy so often assumed about stereotypes. Specifically, we suggest that mixed stereotypes for some out-groups include low perceived competence but high perceived warmth. These *paternalistic stereotypes* portray out-groups that are neither inclined nor capable to harm members of the in-group. Another, equally important mixture depicts out-groups that are seen as competent but not warm, resulting in *envious stereotypes*. These groups are acknowledged to be doing well (for themselves), but their intentions toward the in-group are presumed not to be positive. Consistent with this idea, Phalet and Poppe's (1997) multidimensional scaling of Central and Eastern European stereotypes revealed the majority (37 out of 58) in two quadrants: incompetent but moral/social (e.g., Byelorussians, Bulgarians, Czechs) and competent but immoral/unsocial (e.g., Germans, Jews).

Paternalistic and envious stereotypes result from the combination of two separate dimensions, which also allows for the more traditional kinds of prejudice, uniform derogation of a disliked and disrespected out-group and pure in-group favoritism toward the competent and warm in-group. But our model emphasizes the mixed combinations, the off-diagonal cells of a theoretical Com-

[1] Case studies of specific groups (e.g., Americans, Sisley, 1970; Blacks, Devine & Elliot, 1995; see Fiske, 1998, for others) document continuity and change over time but do not provide comparable measures across groups.

[2] The Phalet and Poppe (1997) work supported two bipolar dimensions, which they termed competence and morality, but morality included honest, helpful, and tolerant–socially warm traits.

petence × Warmth matrix. We argue that these mixed combinations are frequent because they are functional. Our second hypothesis holds that many stereotypes are mixed on competence and warmth, as defined by low ratings on one dimension coupled with high ratings on the other.

### *Paternalistic Stereotypes*

Paternalistic mixed stereotypes show up in race, age, dialect, and gender prejudice. Ambivalent racism (I. Katz & Hass, 1986) depicts a mix of anti-Black attitudes (e.g., perceived incompetence and laziness, violating the work ethic) and paternalistic pro-Black attitudes (e.g., perceived pitiful disadvantage, deserving help). Overall, paternalistic mixed stereotypes portray a group disrespected but pitied, which carries overtones of compassion, sympathy, and even tenderness, under the right conditions.[3] In ageism, dominant views of older people as not competent but kind suggest a similarly ambivalent dynamic (Cuddy & Fiske, 2002). Linguistic out-groups provide another example: Speakers of nonstandard dialects (e.g., Scottish accents in Great Britain, Chicano accents in the United States) are perceived as less competent but simultaneously friendly (Bradac, 1990; Ruscher, 2001). Paternalism appears prominently in gender stereotypes. The Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996, 2001a, 2001b) measures, in part, subjectively benevolent sexism (BS), which includes paternalistic power relations; BS is directed toward traditional women (homemakers), who are viewed as warm but not competent outside the home. When people rate women in general, traditional homemakers serve as the paternalistic default (Haddock & Zanna, 1994); this generates the "women are wonderful" effect: positive ratings of generic women (Eagly & Mladinic, 1989), but primarily on communal (i.e., warm), not agentic (i.e., competent), qualities. All four paternalistic stereotypes (regarding disadvantaged Blacks, elderly people, nonstandard speakers, and traditional women) describe out-groups perceived as low on competence but high on warmth.[4]

### *Envious Stereotypes*

In contrast stands a different set of out-groups stereotyped as highly competent but not warm (Glick & Fiske, 2001a, 2001b): nontraditional women, Jews, and Asians. The ASI in part measures hostile sexism (HS), which includes competitive gender roles; HS is directed toward nontraditional women (e.g., career women, feminists, lesbians, athletes), who are viewed as task competent but not warm (see also Eagly, 1987; Glick, Diebold, Bailey-Werner, & Zhu, 1997; MacDonald & Zanna, 1998). Anti-Semitic notions of a Jewish economic conspiracy exaggerate Jews' stereotypically feared competence, whereas views of them as self-serving portray them as not warm (Glick, in press). The modern American equivalent, Asians—who are viewed as the model minority—are seen as too competent, too ambitious, too hardworking, and, simultaneously, not sociable (Hurh & Kim, 1989; Kitano & Sue, 1973; Sue & Kitano, 1973; Sue, Sue, & Sue, 1975). The Anti-Asian-American Prejudice scale measures dislike for this perceived lack of sociability along with envious respect of perceived competence (Lin & Fiske, 1999). Thus, nontraditional women, Jews, and Asians elicit a shared stereotype as being too competent and not at all nice.

### *Why Mixed Stereotypes Occur*

Although isolated analyses of specific out-groups suggest mixed competence–warmth ascriptions, the present research aims to examine whether these mixed stereotypes are sustained across a wider variety of out-groups, all compared at once.

Our approach emphasizes a 2 × 2 (Warmth × Competence) interaction (see Table 1). The mixed stereotypes hypothesis predicts that many out-group stereotypes fall into two cells: high warmth but low competence for compliant subordinates, and low warmth but high competence for successful competitors. For paternalized out-groups, the mixed stereotype justifies their subordination (i.e., low competence) and encourages their compliance (i.e., high warmth). They are seen as having no intent to harm societal reference groups and no ability to do so, in any case. The mixed stereotype functions to promote existing systems of privilege and to placate the nonthreatening but disadvantaged out-groups by assigning them socially desirable, though subordinating, traits (Ridgeway, 2001). Socioeconomically successful out-groups, however, pose a competitive threat, and their success elicits envy. For envied out-groups, the mixed stereotype explains their apparent success, thereby justifying the system of meritocracy that benefits societal reference groups and dominant in-groups. Stereotypes of low warmth justify taking action against envied groups by casting the groups as being concerned only with furthering their own goals. Thus, envied groups may be appropriately resented and socially excluded.

Because these mixed stereotypes involve two separate dimensions, they are not psychologically inconsistent—one may view a group as warm but not competent (e.g., the elderly as nice but dotty) or as competent but not warm (e.g., Asians as cold but efficient) without experiencing discomfort. Furthermore, the functional perspective suggests that both envious and paternalistic stereotypes maintain the status quo and defend the position of societal reference groups. We hypothesize that many out-groups are stereotyped as high on either competence or warmth but low on the other, precisely because these combinations are functionally consistent for perceivers. These mixed combinations have been

[3] Although hostility and aggression have surfaced as content in some subtypes of Blacks (Devine, 1989; Devine & Elliott, 1995; Devine, Monteith, Zuwerink, & Elliot, 1991), this may be directed primarily toward criminal or militant Black people, with the generic out-group reflected in modern prejudice scales being those ambivalently perceived as lazy but disadvantaged (i.e., incompetent but deserving sympathy). We return to this point. Note also that these mixed racial stereotypes could reflect a conflict between predominantly negative stereotypes and egalitarian ideals (Allport, 1954; Devine, 1989; Gaertner & Dovidio, 1986; Kinder & Sears, 1981; McConahay, 1983). Although we do not dispute the importance of contemporary egalitarian norms, we note that paternalistic stereotypes of perceived low competence and high warmth are not a uniquely modern development. European colonialism and American slavery both were justified through stereotypes of non-Whites as warm and simple folk requiring the guidance of a superior culture (Jackman, 1994), a stereotype evident in older images of Black people in American films and literature (e.g., Uncle Tom). This low-competence, high-warmth stereotype clearly does not reflect an egalitarian sensibility.

[4] Attributions of warmth to targets should not be confused with perceiver feelings of warmth toward those same targets.

Table 1
*Four Types of Out-Groups, Combinations of Status and Competition, and Corresponding Forms of Prejudice as a Function of Perceived Warmth and Competence*

| | Competence | |
|---|---|---|
| Warmth | Low | High |
| High | Paternalistic prejudice<br>Low status, not competitive<br>Pity, sympathy<br>(e.g., elderly people, disabled people, housewives) | Admiration<br>High status, not competitive<br>Pride, admiration<br>(e.g., in-group, close allies) |
| Low | Contemptuous prejudice<br>Low status, competitive<br>Contempt, disgust, anger, resentment<br>(e.g., welfare recipients, poor people) | Envious prejudice<br>High status, competitive<br>Envy, jealousy<br>(e.g., Asians, Jews, rich people, feminists) |

neglected by prior treatments that focus on uniformly negative stereotypes (see Glick & Fiske, 2001b).

Of course, out-groups do not fall into only these two mixed cells. Low-status groups viewed as openly parasitic (i.e., opportunistic, freeloading, exploitative) underlings are banished to the not warm, not competent cell. These groups are rejected for their apparent negative intent toward the rest of society (i.e., not warm) and for their apparent inability to succeed on their own (i.e., not competent).

At the opposite extreme, who is favored as both warm and competent? We suggest three possible inhabitants of this cell: Through in-group favoritism, the in-group may be rated both warm and competent. Close allies in a hostile world might also be allowed a purely positive stereotype. And the cultural default (e.g., middle class) may be viewed in an unmixed, positive way. We refer to both in-groups and societal reference groups because in the United States, at least, many groups view themselves as part of the societal ideal; for instance, most Americans identify themselves as middle class (even if qualified by *lower* or *upper*). Similarly, Whites and Christians, even where they are not a local majority, may be viewed as culturally dominant, societywide reference groups. Even groups who acknowledge their own exclusion from the cultural ideal may still identify with aspects of the societal reference group. Hence, people's understanding of culturally shared stereotypes takes the perspective of society's dominant reference groups.

## Predicting Stereotype Content

If stereotype contents systematically vary along competence and warmth, with many stereotypes falling in the mixed combinations, the question follows, what predicts where groups fall on these mixed dimensions? In their 1933 study, D. Katz and Braly noted that

> the degree of agreement among students in assigning characteristics . . . seems too great to be the sole result of the students' contacts with members of those races. . . . Prejudice of this kind seems largely a matter of public attitude toward a race name or symbol. (pp. 288, 290)

Stereotype content may result from shared public views of groups. Hence, we focus on perceived cultural—that is, shared—stereotypes. Why the consensus on groups' warmth and competence?

We suggest that cultural stereotypes result from the social structural relations between groups in two primary ways. Specifically, the social structural hypothesis proposes, first, that out-groups are perceived as more competent to the extent that they are perceived as powerful and high status or as less competent to the extent that they are perceived as powerless and low status. The perceived link between a group's societal outcomes and its perceived competence serves several functions. This link may represent a form of correspondence bias, namely, that people's behavior (in this case, their position) reflects their traits (D. T. Gilbert & Malone, 1995). Or it might reflect just-world thinking, namely, that people get what they deserve (Lerner & Miller, 1978). At the level of groups, it justifies the system (Jost & Banaji, 1994) and legitimates power–prestige rankings (Berger, Rosenholtz, & Zelditch, 1980; Ridgeway & Berger, 1986).

The opposite viewpoint is conceivable: Cultural stereotypes could instead reflect group-level sour grapes (with a bigot reasoning that the out-group may have high status, but they inherited it, lucked out, or cheated, so they do not deserve it, and they actually are stupid). However, we suggest that intergroup stereotypes turn in part on consciousness of power relations; stereotypes function to justify the status quo (Berger et al., 1980; Fiske, 1993a; Glick & Fiske, 2001b; Jost & Banaji, 1994; Jost, Burgess, & Mosso, 2001; Ridgeway & Berger, 1986). Envious stereotypes devolve on that high competence but low warmth lot who seem to be doing better than others. This prediction receives support from findings that perceived power strongly predicted perceived competence in Central and Eastern European stereotypes (Phalet & Poppe, 1997; Poppe & Linssen, 1999).

The second part of the social structure hypothesis holds that out-groups are seen as relatively warm and nice to the extent that they do not compete with others. Compliant subordinate groups fulfill a convenient role, so they receive paternalistic prejudice, which disrespects their competence but simultaneously likes the qualities that keep them subordinated as long as they do not pose a threat. Warmth-related identities placate subordinates by assigning them socially desirable traits that conveniently also imply deference to others (Glick & Fiske, 2001b; Ridgeway, 2001). Negative intentions are not attributed to noncompetitive out-groups, and attributions of warmth help to maintain the status quo with a minimum of conflict (Jackman, 1994).

In contrast, competitive out-groups frustrate, tantalize, and annoy, so they are viewed as having negative intent. Out-group goals presumably interfere with in-group goals, so they are not warm. A primary source of negative affect toward out-groups results from perceived incompatibility of their goals with in-group goals (Fiske & Ruscher, 1993). If out-groups are successful, they receive grudging respect for their envied control over resources but never are liked as warm.

Low–low groups (e.g., welfare recipients), viewed as parasites in the system, also compete with other groups, not for status but for resources nonetheless. In allegedly draining economic and political capital from society, they supposedly compete in a zero-sum allocation of resources. Their goals are incompatible with others (and in that sense are competitive), so they are not warm.

Finally, of course, the in-group, its allies, and reference groups do not compete with themselves, so they are acknowledged as warm. The cultural default groups (middle class, Christian, heterosexual) may not be viewed as competitive, precisely because they possess cultural hegemony. Support for the competition → warmth prediction also comes from the Phalet and Poppe (1997) and Poppe and Linssen (1999) studies, in which perceived internation conflict negatively predicted socially desirable traits (i.e., morality or warmth).

Generally parallel efforts to predict intergroup images from structural relations show up in previous work: for example, enemy images in political psychology (Alexander, Brewer, & Herrman, 1999)[5], the social role theory of gender stereotypes (Eagly, 1987; Eagly, Wood, & Diekman, 2000)[6], and analyses of city-dweller and rural-dweller stereotypes (Campbell, 1967; LeVine & Campbell, 1972).[7] Both the Eagly (1987) and the Campbell (1967) role analyses focus on characterizing behaviors that result from roles, hence their social utility. Nevertheless, our view is more general, at once applying to many more social groups and going beyond analyses of specific roles. We also emphasize the functional compatibility of combinations that mix perceived competence and warmth, whereby the high–low combination justifies resentment, the low–high combination justifies subordination, and both maintain the status quo.

## Review of Hypotheses

The goals of this research are to investigate our proposals regarding stereotype content:

1. Perceived competence and warmth differentiate out-group stereotypes.
2. Many stereotypes include mixed ascriptions of competence and warmth, as defined by low ratings on one dimension coupled with high ratings on the other.
3. Stereotypes depict out-groups as competent to the extent that they are perceived as powerful and high status; stereotypes depict out-groups as relatively warm and nice to the extent that they do not compete with others.

## Research Strategy

A preliminary study and three of the current studies (on eight samples) address these hypotheses. Each study uses a sample of 6–25 out-groups, which come primarily from judges' nominations of out-groups that are important in the current U.S. scene. Participants rated cultural stereotypes of the out-groups on a series of trait adjectives derived from previous work. We then separately factor analyzed each group's trait ratings and isolated those that loaded distinctly on competence and warmth dimensions. Traits that loaded consistently across groups constituted two common dimensions, which provides an initial evaluation of the hypothesis that competence and warmth differentiate out-groups. Each group, with its score on the common competence and warmth dimensions, became a unit in cluster analyses. Reasonable cluster solutions derive from standard decision rules. We compared clusters for distributions of groups across the entire space to examine further the dimensional hypothesis.

For the mixed stereotypes hypothesis, we examined (a) proportions falling into the mixed, off-diagonal combinations, (b) between-clusters group differences on competence and on warmth, (c) within-cluster group differences between competence and warmth, and (d) individual within-group competence and warmth differences.

Participants also rated each group on items assessing perceived status and competition, with specific items again derived from their reliability across a new set of factor analyses within each rated individual group. Correlations of status and competition scales with competence and warmth scales assess the third, social structural hypothesis.

A fourth study, on a ninth sample, examines unique affective responses for each of the four competence–warmth combinations. Elaboration of that hypothesis appears later.

## Preliminary Evidence

Previous studies have lacked theory, cross-groups comparison, or generalizable samples. To examine the mixed content of stereotypes, as predicted by social structural variables of status and competition, we undertook some preliminary studies (Fiske et al., 1999). Forty-two undergraduates rated consensual stereotypes of 17 groups on competence and warmth traits.[8] A first study

[5] When we examine internation images, we find that their taxonomy predicts that incompatible goals (paired with status or strength) lead to negative perceptions along the warmth dimension: hostile, untrustworthy, ruthless, evil. Low status and power lead to perceived lack of competence and some form of warmth. Their parsing of the dimensions differs from ours, as they separate status, capacity (strength), and compatibility, logically creating the possibility of a $2 \times 2 \times 2$ matrix, of which they specified four cells. Moreover, they did not theorize about fundamental dimensions or the mixture of stereotype content or address how the attribution of positive traits can reinforce some types of prejudice (e.g., attributed competence can be integral to feelings of envy and resentment). But their scenario studies support the point that social structure (status and competition) predicts out-group images.

[6] Broad gender stereotypes distinguish stereotypically female communal traits (e.g., warmth, nurturance) from stereotypically male agentic traits (e.g., competent, confident, assertive). Social role theory suggests that gender stereotypes result from three overlapping factors: division into homemakers and employees, sex-typed distribution in paid occupations, and high-status versus low-status roles. Social role theory holds that perceivers infer traits from observations of role-constrained behavior, so when groups tend to be concentrated in certain roles, they receive the stereotype that follows from these roles. As these roles shift, gender stereotypes should, too (Diekman & Eagly, 2000). In a fictional portrayal of city workers and child raisers, role-based stereotypes mimicked gender stereotypes, perhaps rationalizing the distribution of the sexes into social roles (Hoffman & Hurst, 1990). This framework for gender roles resembles ours, but applied so far only to men and women.

[7] Low-status rural people stereotypically are close to the earth, resemble animals, and inhabit a sphere related to sociality; when they are disrespected, their perceived faults follow primitive, emotional–social lines: sex, aggression, and laziness. In contrast, high-status city dwellers inhabit a sphere related to sophisticated, cerebral, economic enterprise; when they are disliked, their perceived faults follow achievement-related lines: greed, ambition, and dishonesty.

[8] We used a pool of traits derived from Conway, Pizzamiglio, and Mount's (1996) study of communality and agency in gender stereotypes, and the final scales included five competence traits (i.e., competent, intelligent, confident, competitive, independent) and four warmth traits (i.e., sincere, good natured, warm, tolerant). The original list of adjectives

indicated that many groups fell along the diagonal from being relatively high on competence but low on warmth to being relatively low on competence but high on warmth, forming two predominantly mixed clusters.

A second study examined social structure correlates of stereotypic competence and warmth, with the same groups rated on the single traits of competence and likability (for warmth) along with the hypothesized social structural correlates, status and competition.[9] Perceived status did predict perceived competence, and perceived competition predicted perceived (lack of) warmth.

Although they are generally supportive of our framework, these preliminary studies were theoretically undeveloped (i.e., did not include the functional analysis developed here), focused on a broad-brush description that has proven insufficiently sensitive (i.e., only two clusters), and did not include emotional reactions (i.e., prejudices). Moreover, the preliminary studies have several methodological shortcomings. First, they used groups that are certainly current on the U.S. scene but that were selected by our own judgment. Thus, a critic could argue that the results fit the hypotheses because the groups were selected to fit the model. Second, the entire trait scale appeared in the first study only, so the second study's social structural correlates tested only one trait for each dimension, which is hardly ideal but was necessary to prevent participant fatigue. A critic could argue that this creates a weak test of the hypotheses, generalizing inappropriately from one study to another without completely overlapping scales. Third, the respondents were University of Massachusetts undergraduates, so if they accorded some positive attributes to any given out-group (i.e., not rating any minorities as completely without positive attributes), perhaps this derived from their liberal political orientation, northeast subculture, or college egalitarianism. Fourth, a salient American out-group, Blacks, fell unaccountably in the middle on warmth and competence.

## Current Studies

The current full-scale studies, long surveys on four samples and short surveys on five samples, formally test our hypotheses. To avoid potential bias in sampling out-groups, in our pilot studies we checked the selection of groups to be included in the surveys. To avoid separating the trait and social structure scales, we included both scales on each questionnaire. To include varied samples, we ensured that five out of nine samples comprised adult respondents, whereas four samples went outside Massachusetts to diverse locations across the United States. To address the puzzlingly nondescript stereotypes of Blacks, we better specified that out-group in terms of commonly used subgroups.

This research fills a gap in studies of stereotype content by simultaneously examining groups that cut across gender, age, race, ethnicity, nationality, social class, and disability. It investigates stereotypes that do not neatly fit into the antipathy model of prejudice. It also examines prejudices that correspond to different types of out-groups. Moreover, it offers theoretically guided social structure correlates as predictors of stereotype content. In addition, it taps a wide variety of respondents in the United States.

## Pilot Study: Selecting Representative and Relevant Groups for Study 1

The pilot study sought a more representative array than the groups in our initial studies.

### *Method*

#### *Participants*

University of Massachusetts undergraduates (24) and nonstudent Amherst, Massachusetts, residents (7) volunteered to complete the questionnaire (15 women, 12 men, 4 unknown; mean age = 21.5 years). They were completely unaware of our hypotheses and unacquainted with stereotyping research.

#### *Questionnaire and Procedure*

Participants completed a self-administered, open-ended questionnaire at home, reading the following:

> Off the top of your head, what various types of people do you think today's society categorizes into groups (i.e., based on ethnicity, race, gender, occupation, ability, etc.)? In the space below, please list between eight and sixteen such groups.

Most participants finished the questionnaire in less than 10 min.

### *Results and Discussion*

The most frequently listed groups were Blacks (74%), Hispanics (45%), rich people (45%), poor people (42%), gay men (39%), Asians (32%), elderly people (29%), blue-collar workers (23%), Jews (23%), disabled people (19%), retarded people (16%), poor Whites (13%), physically attractive people (13%), professionals (13%), southerners (10%), welfare recipients (10%), business or

included some negative ones, but our respondents did not use these consistently to describe societal stereotypes across groups, as revealed by patterns across factor analyses calculated for each group separately. Hence, we are left with two positive dimensions that run from low to high. This, however, seems acceptable for reasons of theory and precedent. First, much prejudice is indicated by the withholding of positive attributes and rewards from out-groups, as Mummendey (1995) and Dovidio, Kawakami, and Gaertner (2000) have shown, so one might expect more variation in positive attributes than in negative ones. Second, the person perception literature has shown for some time that people tend to use variations in the positive end of the scale to assess other people because negative evaluations carry disproportionate weight (Fiske, 1980; Skowronski & Carlston, 1989).

[9] The structural measures included perceived status (e.g., prestigious jobs, economic success, good education) and perceived competition with the in-group (e.g., special breaks, resource conflict, power trade-off). In addition, several measures involved what was intended to be cooperation or voluntary mutuality, which we expected to load on a bipolar cooperation–competition factor. Instead, these items (i.e., cooperative relations being necessary, difficult to achieve goals without their help, relying on them, being in a cooperative relationship to achieve common goals) ended up being perceived as obligatory asymmetrical dependence. That is, participants seemed to view these items as indicating that cooperative relations were necessary, often because the group being rated was perceived as powerful. Because repeated attempts to construct a reliable measure in Studies 1 and 3 yielded no useful results, these items are omitted in descriptions of these studies.

professional women (10%), and housewives (3%). Of the 17 groups used in the preliminary studies, 12 were listed by at least 1 person in our new sample, which suggests that the preliminary list was not too biased by our hypotheses. Nevertheless, these responses—as well as the prior results—changed some of the groups considered.

The new set included 23 groups, 12 of which appeared in both our preliminary studies and the pilot sample: rich people, gay men, Asians, elderly people, Jews, disabled people, retarded people, southerners, welfare recipients, businesswomen, housewives, and Latinos (which we changed to *Hispanic* to reflect respondents' own terms). The pilot study added blue-collar workers and poor Whites, which makes 14 groups that directly fit the pilot study.

Five groups were included for purely theoretical reasons. Because of the gender subgrouping literature, which indicates four consistently replicated subtypes (i.e., housewives, career women, feminists, and sex objects), feminists were retained, although they were not mentioned in the pilot, and sexy women were added.

Because of our interest in locating Blacks more precisely, we tried separating Black subgroups by social class on the basis of our pilot sampling listing poor Blacks among poor people, our own judgment, and prior studies (Bayton, McAlister, & Hamer, 1956; Smedley & Bayton, 1978): We chose Black professionals and poor Blacks. If respondents had been combining these two groups previously, the averaged response might land generic Blacks in the middle. If we were wrong to divide them, professional and poor Blacks should end up in the same middle location as before. We added poor Whites to examine race–class stereotypes suggested by this division of Blacks and also to fit the pilot study item *poor people*.

Finally, four groups resulted from psychometric concerns. Because of our interest in retaining groups that might be significant in the United States outside the northeast, we kept migrant workers and house cleaners and added Arabs. For continuity, we also retained blind people. Thus, the new set of groups, although it was not entirely determined by our pilot sample's response, included the major groups mentioned by them as well as some other theoretically and politically interesting ones. In any event, the essential sample was not determined a priori by our specific hypotheses.

## Study 1, Long Survey: Competence, Warmth, Mixed Stereotypes, and Their Predictors

Students and nonstudents were surveyed about society's perceptions of social groups' traits and the structural relationships of status and competition. An adult and a student sample, both from Massachusetts, completed a questionnaire on which they rated 23 groups on warmth and competence traits and on social structure variables representing status and competition.

### *Method*

### *Participants*

*Students.* University of Massachusetts undergraduates, recruited from various psychology courses, completed the questionnaire for course credit (50 women, 23 men, 1 who did not indicate gender; mean age = 19.4). Of the 74 participants, 58 (78%) identified themselves as White or Caucasian, 6 (8%) as Black or African American, 4 (5%) as Asian, 3 (4%) as multiethnic, and 2 (3%) as European, leaving 1 (1%) unknown. Participants completed the questionnaires in groups of 10–20, using an empty classroom and taking less than half an hour. One questionnaire was eliminated because it had a completion rate of less than one fifth, which left us with $n = 73$.

*Nonstudents.* Fifty nonstudents (25 women, 13 men, and 12 who did not indicate gender; mean age = 35.2), recruited by undergraduate psychology students, completed the questionnaires in their own home on a volunteer basis. Most of the adults were friends or family of University of Massachusetts students. Two thirds of the participants identified themselves as White. The students who recruited participants received extra course credit for their involvement. Because of the unmonitored conditions under which the questionnaires were completed and some of the sample's apparent inexperience with questionnaires, 12 questionnaires were omitted because respondents failed to follow the instructions, which left us with $n = 38$.

### *Questionnaire and Procedure*

The questionnaire named the same 23 groups listed on the second pilot questionnaire. Participants rated these groups on scales reflecting warmth, competence, perceived status, and perceived competition (see Table 2); items were scrambled. Participants were instructed to make the ratings, using 5-point scales (1 = *not at all* to 5 = *extremely*), on the basis of how the groups are viewed by American society. They read, "We are not interested in your personal beliefs, but in how you think they are viewed by others." As in all our studies, this instruction was intended to reduce social

Table 2
*Scales, Study 1*

| Construct | Items |
|---|---|
| Competence | As viewed by society, how . . . are members of this group? [competent, confident, independent, competitive, intelligent] |
| Warmth | As viewed by society, how . . . are members of this group? [tolerant, warm, good natured, sincere] |
| Status | How prestigious are the jobs typically achieved by members of this group? |
| | How economically successful have members of this group been? |
| | How well educated are members of this group? |
| Competition | If members of this group get special breaks (such as preference in hiring decisions), this is likely to make things more difficult for people like me. |
| | The more power members of this group have, the less power people like me are likely to have. |
| | Resources that go to members of this group are likely to take away from the resources of people like me. |

*Note.* For the Competence and Warmth Scales, the points of ellipsis were replaced by the words in brackets for each question.

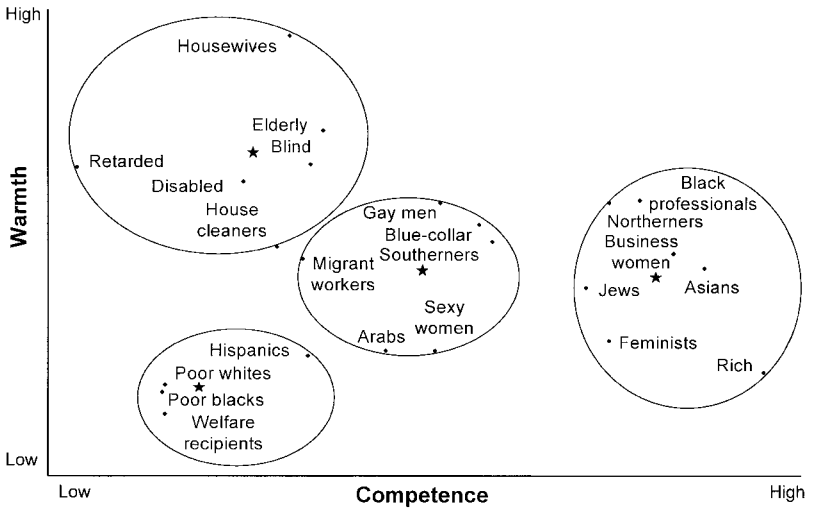


*Figure 1.* Four-cluster solution, Study 1, long survey, student sample.

desirability concerns and to tap perceived cultural stereotypes. Students received written feedback, and nonstudents received oral feedback.

### *Results*

This study tests the introduction's three hypotheses. To test the utility of warmth and competence in describing out-groups, we examined their two-dimensional array in cluster analyses. To test the frequency of mixed combinations, we examined the distribution of groups into various clusters and assessed differences in warmth and competence ratings for each group. To test the structural hypotheses, we examined correlations of status with competence and competition with (lack of) warmth.

#### *Perceived Competence and Warmth Differentiate Among Out-Group Stereotypes*

To construct trait and predictor scales, we needed ones that worked for each group separately but that overlapped across groups. We calculated 23 factor analyses (one per group) examining all 26 response items; these typically yielded five–eight factors with eigenvalues greater than 1.0. Across groups, five similar factors emerged consistently, and these formed the scales of competence, warmth, status, and competition (as noted in Footnote 2, we omitted cooperation).

Each participant rated the 23 groups according to the competence scale (competent, confident, independent, competitive, intelligent; student $\alpha = .90$, nonstudent $\alpha = .85$) and warmth scale (tolerant, warm, good-natured, sincere; student $\alpha = .82$, nonstudent $\alpha = .82$). For each of the 23 groups, the competence and warmth ratings each were averaged across participants, so the means supplied competence and warmth scores for each group. According to these means, the 23 groups arrayed on a two-dimensional Competence $\times$ Warmth space (see Figures 1 and 2). As predicted, the two dimensions differentiated the groups.

To examine the structure of this two-dimensional space, we conducted two types of cluster analyses of the 23 groups. Following Hair, Anderson, Tatham, and Black (1995), we first conducted hierarchical cluster analyses (Ward's, 1963, method, which minimizes within-cluster variance) to determine the best fitting number of clusters. We then conducted *k*-means cluster analyses (with the parallel threshold method) to determine which groups fell into which clusters. The distinction between the two analyses roughly parallels stepwise and simultaneous multiple regression.

To decide the number of clusters that best reflect the data, we examined agglomeration statistics from the hierarchical analysis. Using Blashfield and Aldenderfer's (1988) guidance, we interpreted the hierarchical cluster analyses with a twofold approach. First, we identified a plausible number of clusters using typical decision rules, and, second, we validated that solution several ways.[10]

[10] Regarding the first step, Blashfield and Aldenderfer (1988) wrote, "Most resolutions to the number-of-clusters problem in applied research have involved some subjective analysis of the cluster solution" (p. 463). Hierarchical cluster analysis produces an agglomeration schedule that specifies which cases or clusters have been merged in each stage and that provides coefficients indicating distances between each pair of cases or clusters being merged at each stage. According to Blashfield and Aldenderfer (1988), "a jump (in coefficients) implies that two relatively dissimilar clusters have been merged, thus the number of clusters prior to the jump is the most reasonable estimate of the number of clusters" (p. 463). The SPSS statistical package Version 10.1 in-program tutorial also instructs, "The stage before the sudden change indicates the optimal stopping point for the merging clusters." This technique, as in the more familiar scree plots of factor analysis eigenvalues, searches for the "elbow" in the plot, using the relatively vertical portion of the plot as the number of clusters or factors to pursue. Thus, we used this graphical technique as the stopping rule for determining the ideal number of clusters for each data set.

Blashfield and Aldenderfer (1988) recommended validating a cluster solution by (a) replicating across samples. We follow this advice, as reviewed in each study. Additionally, as in factor analysis, one can validate the utility of the proposed solution by (b) examining the relationships of the obtained factors or clusters to each other. We provide *t* tests that compare clusters centers with each other. Moreover, one can validate cluster solutions by (c) examining their relationship to other variables. We provide a second pair of variables (the status and competition predictors) that map onto our warmth–competence clusters in Studies 1–3. And Study 4 examines the clusters' ratings on still another set of variables (emotions).

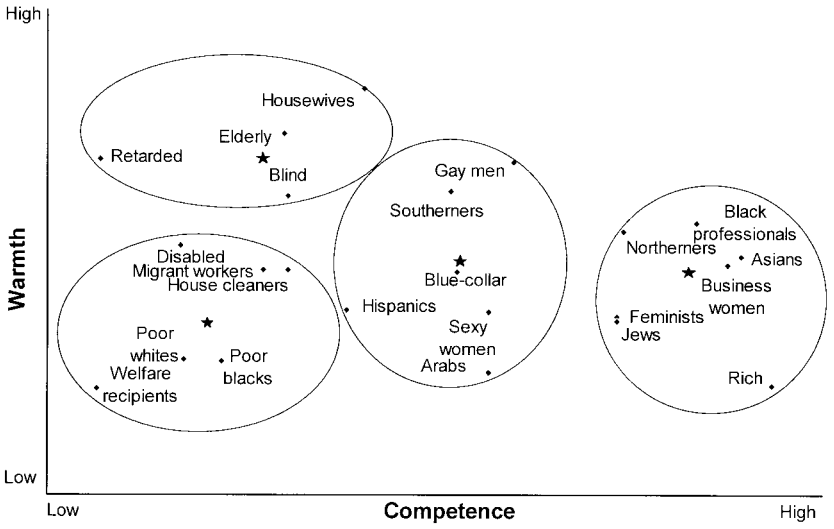


*Figure 2.* Four-cluster solution, Study 1, long survey, nonstudent sample.

For both student and nonstudent samples in this study, the last large change came in the break between three and four clusters, so we adopted a four-cluster solution. As footnoted, this decision rule resembles the scree test in factor analysis, whereby researchers have typically cut the number of factors at the bend in the eigenvalues, below which lies statistical rubble.

Next, we turned to the *k*-means cluster analysis to examine which groups fit into which cluster. For both the student sample (see Figure 1) and the nonstudent sample (see Figure 2), one cluster comprised seven groups: Asians, Black professionals, businesswomen, feminists, Jews, northerners, and rich people. These groups also clustered together in the less useful three- and two-cluster solutions in both samples (Table 3), so this cluster was stable across samples and across solutions.

Another cluster comprised three groups: blind people, elderly people, and housewives; for both samples, these were groups that clustered together also in the four-, three-, and two-cluster solutions, making these stable solutions. The student sample added to this cluster disabled people, house cleaners, and retarded people, who appeared with the others in all three student cluster solutions, making this addition a stable result for the student but not the nonstudent sample.

Another cluster also included, for both students and nonstudents, three groups: poor Blacks, poor Whites, and welfare recipients, groups that appeared together in all three cluster solutions for each sample, making this a stable result. Students consistently added Hispanics to this trio in all cluster solutions, making this group stable in this cluster for students. Nonstudents included house cleaners and disabled people here rather than in the previous cluster, in which the students had placed them; nonstudents also added migrant workers here; the last three groups remained in all nonstudent solutions.

The final cluster included only two groups that consistently appeared together across solutions and across samples: blue-collar workers and southerners. Across samples and across solutions, the remaining groups (Arabs, gay men, sexy women, and, for students, migrant workers) did not reliably cluster with these two or with each other.

In short, competence and warmth dimensions differentiated among four stable clusters that meaningfully and reliably accounted for 16 of the 23 groups (70%) across solutions and samples.

Table 3
*Group Cluster Assignments in Two-, Three-, and Four-Cluster Solutions, Students and Nonstudents, Study 1*

| | Students | | | Nonstudents | | |
|---|---|---|---|---|---|---|
| Group | 4[a] | 3 | 2 | 4 | 3 | 2 |
| **Asians** | 2 | 2 | 2 | 2 | 2 | 2 |
| **Black professionals** | 2 | 2 | 2 | 2 | 2 | 2 |
| **Businesswomen** | 2 | 2 | 2 | 2 | 2 | 2 |
| **Feminists** | 2 | 2 | 2 | 2 | 2 | 2 |
| **Jews** | 2 | 2 | 2 | 2 | 2 | 2 |
| **Northerners** | 2 | 2 | 2 | 2 | 2 | 2 |
| **Rich people** | 2 | 2 | 2 | 2 | 2 | 2 |
| **Blind people** | 4 | 3 | 1 | 3 | 3 | 1 |
| **Elderly people** | 4 | 3 | 1 | 3 | 3 | 1 |
| **Housewives** | 4 | 3 | 1 | 3 | 3 | 1 |
| Retarded people | 4 | 3 | 1 | 3 | 1 | 1 |
| Disabled people | 4 | 3 | 1 | 4 | 1 | 1 |
| Housecleaners | 4 | 3 | 1 | 4 | 1 | 1 |
| **Poor Blacks** | 1 | 1 | 1 | 4 | 1 | 1 |
| **Poor Whites** | 1 | 1 | 1 | 4 | 1 | 1 |
| **Welfare recipients** | 1 | 1 | 1 | 4 | 1 | 1 |
| Hispanics | 1 | 1 | 1 | 1 | 1 | 1 |
| Migrant workers | 3 | 3 | 1 | 4 | 1 | 1 |
| **Blue-collar workers** | 3 | 2 | 2 | 1 | 3 | 2 |
| **Southerners** | 3 | 2 | 2 | 1 | 3 | 2 |
| Gay men | 3 | 3 | 2 | 1 | 3 | 2 |
| Arabs | 3 | 1 | 1 | 1 | 2 | 2 |
| Sexy women | 3 | 3 | 1 | 1 | 2 | 2 |

*Note.* Groups indicated in boldface showed the most stable respective clusters, across solutions and across samples. Breaks between clusters indicate student solutions; nonstudent solutions differed only slightly, as indicated in the right three columns.
[a] Indicates the number of clusters in the solution.

### *Many Stereotypes Include Mixed Competence and Warmth*

We defined mixed stereotypes as low ratings on one dimension coupled with high ratings on the other; our hypothesis holds that a substantial number of out-group stereotypes will prove high on either competence or warmth but low on the other. Three analyses address this hypothesis.

First, compare the means for the four cluster centers (Table 4). In both samples, the cluster with the highest competence ratings (student $M = 4.04$, nonstudent $M = 3.78$) is the one that reliably contains Asians, Black professionals, businesswomen, feminists, Jews, northerners, and rich people. In both samples, this cluster's rated competence differed significantly from all the other clusters (student $M = 2.29$ to 3.14, nonstudent $M = 2.41$ to 3.12, all $p$s $< .001$). Matched pair $t$ tests reveal a significant difference between this cluster center's scores on competence (above) and warmth (student $M = 3.12$, nonstudent $M = 2.94$), student $t(6) = 5.61$, $p < .01$; nonstudent $t(6) = 6.34$, $p < .01$. Therefore, in both samples, this cluster was higher in competence than in warmth, a mixed combination by our definition.

The cluster with the highest warmth rating (student $M = 3.62$, nonstudent $M = 3.48$) was the one that reliably contained housewives, elderly people, and blind people, with some others included by students. In both samples, this cluster's warmth differed significantly from all other clusters (student $M = 2.66$ to 3.14, nonstudent $M = 2.74$ to 3.01; all $p$s $< .05$). Warmth scores (above) were significantly higher than the competence scores (student $M = 2.49$; nonstudent $M = 2.50$) for members of this cluster, student $t(5) = 6.76$, $p < .001$; nonstudent $t(3) = 6.98$, $p < .01$. For both samples, this cluster was higher in warmth than in competence and therefore mixed by our definition.

Note that, of 23 groups, the two mixed clusters contained 13 groups for the student sample and 11 groups for the nonstudent sample, which suggests a substantial number of out-groups that did not fit the pure antipathy hypothesis.

Who came closest to fitting the pure antipathy hypothesis? Poor Blacks, poor Whites, and welfare recipients (along with other groups that depend on the sample, as noted) reliably elicited low marks on both dimensions, which amounts to derogation relative to other clusters. The cluster that reliably scored the lowest on both warmth (student $M = 2.66$, nonstudent $M = 2.74$) and competence (student $M = 2.29$, nonstudent $M = 2.41$) differed significantly ($p < .01$) from the other means in 8 out of 12 comparisons across the two samples. Though lowest on both dimensions, they fared worse on competence than warmth, student matched $t(3) = 3.80$, $p < .05$; nonstudent matched $t(5) = 4.66$, $p < .05$.

The remaining cluster (which reliably contained southerners and blue-collar workers, and others depending on the sample and the solution) lay in the middle on both dimensions (student $M = 3.14$ and 3.14 for competence and warmth, respectively; nonstudent $M = 3.01$ and 3.12), which did not differ significantly from each other. They elicited neither pure derogation nor mixed prejudice, by our definition.

Finally, at the level of individual groups, we examined matched pair $t$ tests comparing competence and warmth ratings for each of the 23 groups, separately for the student and nonstudent participants. Competence and warmth ratings differed significantly for 20 groups in the student sample and for 17 groups in the nonstudent sample (see Table 5). In both samples, 9 groups were perceived to be significantly more competent than warm (from highest to lowest difference): rich people, Asians, feminists, businesswomen, Jews, Black professionals, northerners, sexy women, and Arabs; all except the latter two (which showed the smallest differences) fell in the direction predicted by their cluster membership.

For students, 11 groups, and for nonstudents, 8 groups were rated as more warm than competent (from highest to lowest): retarded people, housewives, disabled people, elderly people, blind people, house cleaners, poor Whites, migrant workers, poor Blacks, welfare recipients, and gay men; the first six (the biggest

Table 4
*Competence and Warmth Means for Each Cluster, Study 1*

| Cluster | Students ($n = 73$) | | | Nonstudents ($n = 38$) | | |
|---|---|---|---|---|---|---|
| | Competence | | Warmth | Competence | | Warmth |
| Asians, Black professionals, businesswomen, feminists, Jews, northerners, rich people | $4.04_a$ | $>$ | $3.12_b$ | $3.78_b$ | $>$ | $2.94_b$ |
| Housewives, elderly people, blind people retarded people (student sample adds housecleaners, disabled people) | $2.49_c$ | $<$ | $3.62_a$ | $2.50_c$ | $<$ | $3.48_a$ |
| Poor Whites, poor Blacks, welfare recipients (student sample adds Hispanics; nonstudent sample adds housecleaners, disabled people, migrant workers) | $2.29_c$ | $<$ | $2.66_c$ | $2.41_c$ | $<$ | $2.74_b$ |
| Blue-collar workers, southerners (both samples four-cluster solution adds Arabs, gay men, sexy women; nonstudents add Hispanics; students add migrant workers) | $3.14_b$ | $=$ | $3.14_b$ | $3.12_b$ | $=$ | $3.01_b$ |

*Note.* Groups clustered reliably across solutions and across samples, except for the variants noted parenthetically. See text for details of cluster membership. Within each row, within each sample, means differ ($p < .05$) if $>$ or $<$ is indicated. Within each column, means that do not share a subscript differ ($p < .05$).

Table 5
*Mean Paired Differences (Competence − Warmth) for Student and Nonstudent Samples, Study 1*

| Group | Student ($n$ = 73) | Nonstudent ($n$ = 38) |
|---|---|---|
| Rich people | 1.736*** | 1.493*** |
| Asians | 1.073*** | 0.897*** |
| Feminists | 1.016*** | 0.779*** |
| Businesswomen | 0.902*** | 0.824*** |
| Jewish people | 0.706*** | 0.733*** |
| Black professionals | 0.551*** | 0.625*** |
| Northerners | 0.429*** | 0.371* |
| Sexy women | 0.374*** | 0.371* |
| Arabs | 0.194* | 0.601*** |
| Southerners | 0.143 | −0.206 |
| Hispanics | 0.009 | −0.006 |
| Blue-collar workers | 0.002 | 0.110 |
| Gay men | −0.213* | −0.174 |
| Welfare recipients | −0.401*** | −0.422** |
| Poor Blacks | −0.500*** | −0.118 |
| Migrant workers | −0.511*** | −0.383** |
| Poor Whites | −0.518*** | −0.236 |
| House cleaners | −0.654*** | −0.429** |
| Blind people | −0.865*** | −0.706** |
| Elderly people | −0.960*** | −0.982*** |
| Disabled people | −1.058*** | −0.829*** |
| Housewives | −1.475*** | −0.991*** |
| Retarded people | −1.755*** | −1.460*** |

*Note.* Matched pair $t$ tests revealed that the competence and warmth ratings significantly differed for most groups. Means of paired differences (competence rating − warmth rating) are reported.
* $p < .05$. ** $p < .01$. *** $p < .001$.

differences) all fell in the direction predicted by their cluster membership.

Competence and warmth ratings did not differ for southerners, blue-collar workers, and Hispanic people in either sample; this result fits their consistent location in the middle of the cluster space.

Levels of analysis for clusters and for individual groups can be combined: For the students, 13 groups, and for the nonstudents, 10 groups elicited mixed stereotypes (indicated by the within-group $t$ tests) predicted by their cluster membership. Thus, roughly half the groups showed consistently mixed stereotypes across samples and methods of analysis.

### *Status Predicts Competence, and Competition Predicts Warmth*

Having provided evidence of the importance of the competence and warmth dimensions as well as the substantial numbers of groups in the mixed combinations, we turn to social structural predictors of groups' places in the trait space. Out-groups are perceived as competent to the extent that they are perceived as powerful and high status or as incompetent to the extent that they are perceived as powerless and low status; out-groups are seen as relatively warm and nice to the extent that they are perceived as not competing with the mainstream in-group.

We had developed social structure predictor scales for status (student $\alpha = .92$, nonstudent $\alpha = .78$) and competition (student $\alpha = .69$, nonstudent $\alpha = .61$; see Table 2). The student participants and nonstudent participants rated the 23 groups on these scales. We used two procedures to analyze the relationships between the traits (competence and warmth) and the hypothesized social structure correlates. First, the group-level procedure averaged the trait and social structure ratings across participants for each of the 23 groups and then entered each group's mean ratings for correlational analyses (see upper portion of Table 6). The second, individual-level procedure examined the correlation between traits and social structure for the 23 groups, separately for each individual participant (73 student participants, 38 nonstudent participants), after which the participants' correlation coefficients were averaged within sample (see lower portion of Table 6).

The results from the two procedures and samples are similar. Perceived status was highly correlated with perceived competence by both procedures for the student sample, group-level $r(21) = .98$, $p < .001$; individual-level $r(71) = .83$, $p < .001$, and the nonstudent sample, group-level $r(21) = .97$, $p < .001$; individual-level $r(36) = .64$, $p < .001$. Although the group-level correlations might seem surprisingly high, recall that they are based on the stable group means collapsed across all participants, so they aggregate across individual-level variation as well as across multiple items for each scale. However, even the individual-level mean correlations substantially support our hypothesis that perceived status confers competence.

Perceived competition negatively correlated with perceived lack of warmth for the student sample, group-level $r(21) = .98$, $p < .001$; individual-level $r(71) = .83$, $p < .10$, and the nonstudent sample, group-level $r(21) = .97$, $p < .001$; individual-level $r(36) = .64$, *ns*. Again, the group-level correlation takes advantage of the stability achieved when we averaged across all participants in the sample, and those correlations substantially support our hypotheses. The individual-level correlations are weak. Surprised by the discrepancy between the individual-level and group-level correlations, we examined the distributions of the individual correlations. For the students, the distribution was clearly bimodal, with 52 correlations centering on a mode of −.46, a dip at .00, and 20 correlations centering at .13. For nonstudents, although the

Table 6
*Correlations Between Traits and Predictors, Study 1*

| | Competence | | Warmth | |
|---|---|---|---|---|
| Predictor | Students | Nonstudents | Students | Nonstudents |
| | Group-level | | | |
| Status | .98*** | .97*** | .04 | −.09 |
| Competition | .33† | .55** | −.68*** | −.53** |
| | Individual-level | | | |
| Status | | | | |
| *r* | .83*** | .64*** | .08 | .06 |
| % | 94 | 76 | 27 | 24 |
| Competition | | | | |
| *r* | .16 | .19 | −.22† | −.11 |
| % | 31 | 21 | 29 | 24 |

*Note.* Group-level $df = 21$; individual-level student $df = 71$; individual-level nonstudent $df = 36$. Individual-level correlations were converted to Fisher's $z$ scores, averaged, then reconverted to correlations. Percentages are the percentage of participants for whom that correlation was significant ($p < .05$).
† $p < .10$. ** $p < .01$. *** $p < .001$.

distribution was not bimodal, 26 of 35 correlations were negative, ranging between −.61 and .00, with the minority again positive. Thus, the competition–warmth hypothesis holds at the group level of analysis for both samples and at the individual level of analysis for 72% of the student sample and 74% of the nonstudent sample.

The off-diagonal correlations (i.e., status with warmth, competition with competence) were nonsignificant, as predicted, except for unexpected group-level correlations between competition and competence. Examination of the competence items suggests why: In our preliminary studies, factor analyses of students' trait ratings indicated that competence included the traits *competitive* and *independent*. Those items naturally correlate with a scale of zero-sum tradeoffs. (Study 2 addresses this point.)

### *Discussion*

This study focuses on three hypotheses. Support for perceived competence and warmth as differentiating out-group stereotypes appeared in cluster analyses that used competence and warmth; four stable clusters consistently accounted for 70% of the groups, across solutions and samples. Support for the substantial number of mixed stereotypes—low ratings on competence coupled with high ratings on warmth or vice versa—came from three analyses: For each sample, two cluster centers were rated significantly higher on warmth than on competence or vice versa. Half the studied groups fell into one of these two mixed clusters. And across samples, matched pair *t* tests indicated that the same half of the groups showed consistently mixed stereotypes. Finally, support for the hypothesized correlations between social structure predictors and traits is strong for the status–competence prediction at the group and individual levels of analysis. For the competition–warmth correlation, support is strong at the group level and weaker at the individual level, though in the predicted direction for 72–74% of the participants.

The reasons for this last discrepancy are not clear. One possibility is that a minority of respondents hurried through the questionnaire, using a halo heuristic, simply rating some groups more positively than others on all dimensions, thereby positively correlating warmth and competition in their own answers. This fits the bimodal pattern of these data for the student sample and is plausible for the nonstudent sample as well. Study 2 reassesses this relationship under circumstances that are less overwhelming for respondents. In addition, Study 3 reassesses the relationship using far fewer groups and scales to undercut any fatigue or carelessness caused by the sheer number of ratings in Study 1 (23 groups × 26 ratings = 598 responses).

Overall, the support for the hypotheses is substantial, as predicted for many of the included groups. Nonetheless, the exceptions are informative. Although cross-culturally a gender subgroup of sexy women appeared reliably (Fiske, 1998), this group did not emerge as incompetent but warm in these Massachusetts samples. Although we had brainless bimbo in mind, some of our respondents may have been thinking villainous vamp. Moreover, the blue-collar workers, gay men, Hispanics, and southerners did not fall into any of the expected quadrants. These groups may possess less consensual stereotypes in our sample. Alternatively, subgroups might explain the middling and unstable results for these groups; two polarized subgroups can cancel each other out.

This had been exactly the case for Blacks in our prior studies. The Study 1 results for Black professionals and poor Blacks explain the previously obtained nondescript stereotype for Blacks as a whole. That is, in the previous studies, the two distinct subgroups apparently had canceled each other out, leaving the generic group in the middle. In these data, the content of Black racial stereotypes depends entirely on social class (cf. Bayton et al., 1956; Smedley & Bayton, 1978). Along these class-oriented lines, participants did not distinguish poor people by race: Poor Blacks, poor Whites, and all welfare recipients were incompetent and not warm.

Revealing as these results are, our sampling of groups still is not fully representative. Although many were picked according to our pilot test, some were selected on the basis of our theories and our curiosities. One might argue that the empirical support emerges from the particular groups used. Study 2 adheres to stricter criteria for selecting groups.

The four-cluster solutions for Study 1 reveal clusters in three quadrants of a 2 × 2 Competence × Warmth matrix, with a fourth cluster indecisively stationed in the middle. What groups fit into the high competence, high warmth combination? Not out-groups, we suggest, but in-groups, their allies, or cultural default reference groups. To test this hypothesis, Study 2 explicitly includes in-groups.

Among the Study 1 groups, competence differentiated more than warmth did. For students, the range was 1.75 on competence and 0.96 on warmth; for nonstudents, the range was 1.37 on competence and 0.74 on warmth. Both dimensions differentiated significantly among the groups, and the warmth effect sizes are large by Cohen's (1992) standards (see General Discussion). The warmth differences may suffer merely in comparison with the larger competence differences, not because they are intrinsically small effects. In any case, these particular groups and scales do not establish whether competence is generally a stronger dimension in intergroup perceptions, so a new sample of groups and traits would be informative.

One might also critique the competence and warmth scales in their own right. The warmth scale includes elements of both sociality (good-natured, warm, tolerant) and morality (sincere), but all are prosocial traits. On the other dimension, we defined competence as task competence, in keeping with the person perception and small groups literatures. Moreover, undergraduates' own ratings of the adjectives went into the factor analyses that determined which traits entered the scales. But others might disagree, so a thesaurus resolved the issue in Study 2.

Turning to the social structure variables, we note that status and competition for the most part correlated respectively with competence and (lack of) warmth. The competition–warmth negative relationship held across groups and for the majority of participants at the individual level of analysis; the sizes of the group-level correlations indicate a substantial relationship between perceived competition and lack of warmth. However, in both samples, individual-level analyses showed weaker results; improved scales might increase the correlation, so Study 2 addresses this question.

On the other hand, the group-level correlation for status predicting competence might seem suspiciously high. One answer is statistical: Averaging across participants to derive a score for each group, then assessing the correlation across groups, allows an unusually large, stable correlation. A critic might argue that we are

measuring the same variable twice (after all, the correlations are in the range of more than satisfactory reliabilities). To this, we respond that social status variables (e.g., prestigious jobs, economic success, good education) are not conceptually identical to competence traits (e.g., competent, competitive, confident, independent, intelligent). Nevertheless, Study 2 sharpens the distinction between predictors and traits by removing the potential overlap between the predictor *well-educated* and the trait *intelligent*; it eliminates the former. It also adds new competence traits (e.g., capable, skillful) that are distinct from status.

If they are not the same conceptual variable, a critic might argue, the status–competence results are obvious. We respond that, a priori, our hypothesis was not obvious. As suggested in the introduction, the reported cultural stereotype could have viewed high-status groups resentfully, as not deserving their position but instead being incompetent and phony. People could have responded differently if they thought the cultural stereotype holds that many high-status people do not deserve their attainments or that outcomes are arbitrary. Finally, the extremely high status–competence correlation in our samples is further sustained by the Phalet and Poppe (1997) high beta coefficients for a similar relationship.

Finally, the oddly high (and not predicted) correlation of competence with competition is easily explained by the inadvertent inclusion of *competitive* and *independent* in the traits for competence. Study 2 deletes these traits.

## Groups-Listing Pilot Study for Study 2

In addition to concerns that our inclusion of theoretically interesting out-groups may have biased previous samples, we noted that groups representing pure antipathy may not have been given sufficient chance to emerge, so we explicitly asked pilot participants for low-status groups. Moreover, our eliciting procedures may have omitted mainstream groups or the respondents' own in-groups, so we explicitly requested them as well.

### *Method*

#### *Participants and Procedure*

*Sample 1.* Thirty Massachusetts students and nonstudents, recruited by undergraduates in psychology, volunteered to complete the self-administered, open-ended survey in their own homes. One respondent was omitted for failing to follow instructions, leaving $n = 29$ (16 men, 13 women; mean age = 46.1). The majority of participants (27) identified themselves as White (plus 1 biracial, 1 Black).

*Sample 2.* Thirty-one University of Massachusetts undergraduates completed the self-administered, open-ended survey in their own homes. Six were omitted for failing to follow instructions, leaving $n = 25$ (10 men, 15 women; mean age = 20.1). Most participants (18) were White (plus 5 biracial, 2 Black).

*Sample 3.* Twenty-one University of Massachusetts psychology undergraduates (4 men, 17 women; mean age = 21.3) volunteered to complete the third item in the questionnaire at the beginning of a class period. All were White except 1 participant (who was biracial).

#### *Questionnaire*

Sample 1 and 2 participants read and answered the following three questions:

1. Off the top of your head, what various types of people do you think today's society categorizes into groups (i.e., based on ability, age, ethnicity, gender, occupation, race, religion, etc.)?

2. What groups are considered to be of very low status by American society?

3. What groups, based on the same kinds of criteria used in the first question, do you consider yourself to be a member of?

Planning to survey students for the revised questionnaire, we desired a roster of in-groups relevant to that sample. Thus, we included only undergraduates in analyses of the in-group question.

### *Results and Discussion*

In Question 1, 21 groups were listed by 15% or more of the participants, our criterion for inclusion on Study 2′s revised long survey; they were (in descending order): Blacks/African Americans (65%), Whites (57%), Hispanics (56%), Jews (48%), women (46%), Christians (44%), elderly people (43%), men (43%), Asians (41%), blue-collar workers (30%), disabled people (26%), teens/young people (26%), poor people (22%), rich people (22%), middle class (20%), professionals (20%), educated people (20%), Muslims (20%), Native Americans (17%), students (17%), and gay men (15%).

Question 2 elicited some redundant groups: Blacks (57%), Hispanics (54%), poor people (28%), and blue-collar workers (26%). Also, the following four groups emerged: welfare recipients (37%), homeless people (26%), drug dealers (20%), and mentally retarded people (20%).

When asked to list in-groups (Question 3), participants named Whites (60%), students (40%), Christians (48%), middle class (38%), women (32%), educated (36%), and men (22%).

## Study 2, Revised Long Survey: Competence, Warmth, Mixed Stereotypes, and Their Predictors

Armed with a new list of groups in Study 2, we aimed to use stricter inclusion criteria, determined solely by our pilot participants, and to explicitly include both in-groups and those out-groups that might most favor the antipathy hypothesis rather than our mixed prejudice hypothesis. Revised competence and warmth scales aimed to fit more closely with common usage and to see whether warmth would differentiate more strongly among groups and correlate more strongly with its hypothesized predictor, competition. For the status–competence correlations, Study 2 used scales with even less potential overlap than the Study 1 scales had. Finally, to prevent halo effects, we decreased demands on participants by dividing the groups list.

### *Method*

#### *Participants*

University of Massachusetts undergraduates ($N = 148$; 111 women, 37 men; mean age = 19.8), recruited from lower level psychology courses, completed the questionnaire for extra credit. The majority of participants (122) identified themselves as White. Of the remaining 26 participants, 13 self-identified as Asian, 5 as Hispanic, 4 as Black, 2 as multiethnic, and 2 as being in no group. On a 5-point scale ranging from *low* (1) to *upper* (5), the average social class was 3.27, and the modal response was "middle."

### *Questionnaire and Procedure*

Instructions and circumstances were the same as Study 1′s student sample, except as follows: Participants rated 25 social groups (designated by the second groups-listing pilot) on items measuring competence, warmth, status, and competition (see Table 7). To prevent fatigue, participants rated the group list split in half (12 and 13). Because results are analyzed primarily at the group level (i.e., each out-group receives mean ratings, which are then compared with other groups' mean ratings), randomly assigning different participants to rate different groups and then combining the data sets seemed permissible. The order of presentation reversed for each list, yielding four versions of the questionnaire, to which participants were randomly assigned.

This questionnaire differed essentially from the first long survey in two regards: (a) Items were added and deleted to reflect warmth (we added friendly, well-intentioned, and trustworthy, and we dropped tolerance) as well as competence (we added capable, efficient, and skillful, and we dropped competitive and independent). (b) The roster of social groups, derived from the groups-listing pilot, now included in-groups and additional low-status groups.

### *Results*

Using Study 1′s technique, 25 factor analyses (1 per group) examining 25 items yielded five–eight factors with eigenvalues greater than 1.0. Across groups, five similar factors emerged consistently: Competence (competent, capable, intelligent, efficient, skillful, and confident; $\alpha = .94$), Warmth (warm, good-natured, sincere, friendly, well-intentioned, and trustworthy; $\alpha = .90$), and abridged scales of Status (prestigious jobs and economic success; $\alpha = .89$) and Competition ("special breaks . . . make things more difficult for me" and "resources to this group . . . take away from resources for me"; $\alpha = .67$). (See Footnote 9.)

### *Perceived Competence and Warmth Differentiate Among Out-Group Stereotypes, and Many Stereotypes Are Mixed*

As in Study 1, two types of cluster analysis examined the first hypothesis, that stereotypes of groups fall along two main dimensions of competence and warmth. We calculated competence and warmth scores for each of the 25 groups by averaging across participants. Preliminary analyses indicated that on warmth, drug dealers scored three standard deviations below the mean of all other groups, so they seemed to be from a different population distribution; we eliminated this outlier from the remaining analyses. (If included, it would constitute by far the lowest score on warmth, $M = 1.45$, and comparable to the lowest competence, $M = 2.31$.)

Agglomeration statistics generated by hierarchical cluster analysis point to a five-cluster solution as the best fit for the 24 groups, using the same rule as before. Because this survey added in-groups, which we expected to score high on both competence and warmth, but did not delete the previously middling groups, the five-cluster solution was expected.

As before, a *k*-means cluster analysis, parallel threshold method examined cluster memberships (see Figure 3). One cluster, high competence and low warmth, comprised six groups: Asians, educated people, Jews, men, professionals, and rich people. A matched pair *t* test on its cluster center shows this cluster to be perceived as significantly more competent ($M = 4.29$) than warm ($M = 3.23$), $t(5) = 7.80$, $p < .01$. The contents and center of the cluster closely resemble the comparable cluster in the first two samples, despite changes in scales and groups; feminists, businesswomen, northerners, and Black professionals are missing from Study 2, but otherwise the configuration is similar. This cluster scored the highest on competence (see Table 8).

Another cluster, containing disabled people, elderly people, and retarded people, scored significantly higher on warmth ($M = 3.73$) than on competence ($M = 2.28$), $t(2) = 8.04$, $p < .05$. This cluster resembles the comparable cluster in Study 1, except that Study 2 eliminated housewives and blind people. This cluster scored high on warmth, fully comparable to the in-groups (see below). Together, the two mixed clusters included nine groups, nearly a third of the groups sampled.

As before, pure derogation was directed only toward the poor—poor people, welfare recipients, and homeless people. Although this cluster was perceived to be lower on warmth than was any other cluster, its warmth score ($M = 2.42$) was still significantly higher than its competence score ($M = 1.97$), $t(2) = 4.95$, $p < .05$. The cluster's competence, however, was equivalent to that of disabled, elderly, and retarded people.

The middle included seven groups: gay men, blue-collar workers, Hispanics, Muslims, Native Americans, Blacks, and young people. The first few overlap the middle cluster in Study 1; new warmth and competence scales and new neighboring groups did

Table 7
*Scales, Study 2*

| Construct | Items |
|---|---|
| Competence | As viewed by society, how . . . are members of this group? [competent, confident, capable, efficient, intelligent, skillful] |
| Warmth | As viewed by society, how . . . are members of this group? [friendly, well-intentioned, trustworthy, warm, good-natured, sincere] |
| Status | How prestigious are the jobs typically achieved by members of this group?<br>How economically successful have members of this group been? |
| Competition | If members of this group get special breaks (such as preference in hiring decisions), this is likely to make things more difficult for people like me.<br>Resources that go to members of this group are likely to take away from the resources of people like me. |

*Note.* For the Competence and Warmth Scales, the points of ellipsis were replaced by the words in brackets for each question.

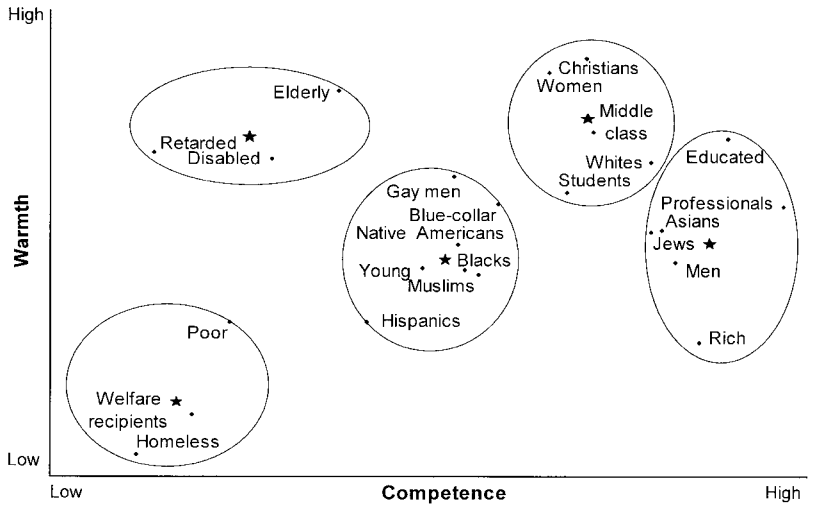


*Figure 3.* Five-cluster solution with the addition of in-groups, Study 2, revised long survey.

not change their position. Warmth scores ($M = 3.14$) did not differ from competence scores ($M = 3.16$), $t(6) = 0.20$, *ns*, as expected.

As predicted, a final, new cluster also emerged. The in-groups—Christians, middle class, students, Whites, and women—composed the only cluster scoring high on both competence ($M = 3.78$) and warmth ($M = 3.79$). Warmth and competence scores did not differ for these groups, $t(4) = 0.05$, *ns*. They scored the highest on warmth and next to highest on competence, surpassed there only by the high-status groups. The groups in this high–high cluster perfectly describe the majority of Study 2′s participant sample, omitting only the potentially relevant groups young and educated people, designations that may have held a different meaning for our respondents than for us.

Table 8
*Groups in Two-, Three-, Four-, and Five-Cluster Solutions, and Means for Each of Five Clusters, Study 2*

| | Cluster solution | | | | Mean for each of five clusters | | |
|---|---|---|---|---|---|---|---|
| Group | 5 | 4 | 3 | 2 | Competence | | Warmth |
| Asians | 3 | 4 | 3 | 1 | $4.29_a$ | > | $3.23_b$ |
| Educated people | 3 | 4 | 3 | 1 | | | |
| Jews | 3 | 4 | 3 | 1 | | | |
| Men | 3 | 4 | 3 | 1 | | | |
| Professionals | 3 | 4 | 3 | 1 | | | |
| Rich people | 3 | 4 | 3 | 1 | | | |
| Disabled people | 5 | 3 | 2 | 2 | $2.28_d$ | < | $3.73_a$ |
| Elderly people | 5 | 3 | 2 | 2 | | | |
| Retarded people | 5 | 3 | 2 | 2 | | | |
| Homeless people | 1 | 1 | 1 | 2 | $1.97_d$ | < | $2.42_c$ |
| Poor people | 1 | 1 | 1 | 2 | | | |
| Welfare recipients | 1 | 1 | 1 | 2 | | | |
| Christians | 4 | 4 | 3 | 1 | $3.78_b$ | = | $3.79_a$ |
| Middle-class people | 4 | 4 | 3 | 1 | | | |
| Students | 4 | 4 | 3 | 1 | | | |
| White people | 4 | 4 | 3 | 1 | | | |
| Women | 4 | 4 | 3 | 1 | | | |
| Black people | 2 | 2 | 2 | 1 | $3.16_c$ | = | $3.14_b$ |
| Blue-collar workers | 2 | 2 | 2 | 1 | | | |
| Gay men | 2 | 2 | 2 | 1 | | | |
| Muslims | 2 | 2 | 2 | 1 | | | |
| Native Americans | 2 | 2 | 2 | 1 | | | |
| Young people | 2 | 2 | 2 | 1 | | | |
| Hispanics | 2 | 2 | 2 | 2 | | | |

*Note.* Within each row, means differ ($p < .05$) if > or < is indicated. Within each column, means that do not share a superscript differ ($p < .05$).

Finally, supporting the mixed stereotypes hypothesis at the level of individual groups, matched pair *t* tests reveal 19 of 24 groups to differ significantly on competence and warmth (see Table 9). Ten were significantly more competent than warm (from highest difference): rich people, professionals, men, Asians, Jews, educated people, Whites, Blacks, students, and Muslims. Nine were rated significantly more warm than competent (from highest): retarded people, elderly people, disabled people, poor people, women, homeless people, gay men, welfare recipients, and Christians.

Again, when we combine the cluster and individual group levels of analysis, nine groups show *t* test differences between warmth and competence that reflect their mixed cluster membership, so roughly one third show mixed stereotypes across analysis methods.

### *Social Structure Predicts Stereotype Contents*

We examined relationships between the social structure variables of perceived competence and perceived status at both the group and the individual levels (see Study 1). Again (see Table 10), perceived status was highly correlated with perceived competence, group-level $r(22) = .98$, $p < .001$; individual-level $r(147) = .88$, $p < .001$. And, again, perceived competition correlated with perceived lack of warmth, group-level $r(22) = -$w.64, $p < .001$; individual-level $r(147) = -.31$, $p < .01$. Note that the individual-level results are stronger than in Study 1, and Study 1′s anomalous competition–competence correlation is eliminated, presumably by more careful scale construction. However, this time the individual-level correlations reveal an unexpected status–warmth correlation; this does not occur in any of this article's other

Table 9
*Paired Competence–Warmth Differences, by Group, Study 2*

| Group | Difference |
|---|---|
| Rich people | 1.598*** |
| Professionals | 1.304*** |
| Men | 1.091*** |
| Asians | 0.888*** |
| Jews | 0.833*** |
| Educated people | 0.705*** |
| Whites | 0.480*** |
| Blacks | 0.257*** |
| Students | 0.253*** |
| Muslims | 0.199** |
| Middle class | 0.062 |
| Native Americans | 0.018 |
| Hispanics | 0.005 |
| Blue-collar workers | −0.007 |
| Young people | −0.018 |
| Welfare recipients | −0.331*** |
| Christians | −0.333*** |
| Gay men | −0.345*** |
| Homeless people | −0.390*** |
| Women | −0.436*** |
| Poor people | −0.612*** |
| Disabled people | −1.233*** |
| Elderly people | −1.293*** |
| Retarded people | −1.813*** |

*Note.* $n = 73$ or 74 (each group was rated by half the sample). Matched pair $t$ tests revealed that the competence and warmth ratings significantly differed for most groups. Means of paired differences (competence rating − warmth rating) are reported.
** $p < .01$. *** $p < .001$.

six operationalizations of this relationship, and inclusion of in-groups may explain its appearance here. With that exception, these findings support the hypothesis that perceived status and competition respectively predict perceived competence and lack of warmth.

### *Discussion*

Using groups nominated solely by pilot respondents and using improved trait and predictor scales, Study 2 supports findings from Study 1′s two samples. The addition of in-groups created clusters of groups in all four quadrants of the Competence × Warmth space. Fitting hypotheses, many groups fell into the mixed quadrants, being high on either competence or warmth but low on the other. The pure derogation hypothesis fit only poor people, and the main diagonal followed through neutral groups to positively favored in-groups. Competence and warmth again differentiated out-groups, many with mixed stereotypes.

One concern about the Study 1 data is that competence distinguished among the out-groups more than warmth did. Study 2, with improved scales and an altered sample of groups, creates a bigger range from highest to lowest cluster on both competence (2.32) and warmth (1.37). Both were significant and substantial differences on a 5-point scale. Though the range for competence again was larger, the disparity was far less.

Study 2 lends considerable support to our first three hypotheses. Perhaps, however, students in Amherst, Massachusetts, and their friends or relatives believe, more than do most Americans, that the cultural stereotype endorses a just world where talent and hard work pay off. Perhaps, also, our other findings are limited by other world views peculiar to this region, for example, a politically correct concern with saying something good about almost any out-group. Either kind of sample bias would create a misleading picture. To explore these alternatives, we took our hypotheses outside the northeast.

## Study 3, Short Survey and Varied Samples: Competence, Warmth, Mixed Stereotypes, and Their Predictors

### *Method*

In Study 3, 230 participants completed surveys in five separate samples differing by participants' location (from Florida to Colorado) and age (college to late retirement). All participants were assured of the anonymity of their responses and received written feedback explaining the study. Materials and procedures varied slightly among the samples.

### *Participants and Procedures*

*Colorado students.* The first sample consisted of 125 University of Colorado at Boulder undergraduate psychology students (54 men, 63 women, 8 unknown; mean age = 19.9) who volunteered to complete the questionnaire. The majority of participants (77%) were White. The questionnaire was administered to all participants in a lecture hall in the second half of a class period. Most participants completed the questionnaire in less than 15 min.

*Massachusetts adults.* Under the same recruitment and administration conditions used with Study 1′s nonstudent sample, 61 nonstudents (25 men, 36 women; average age = 37.9) were recruited by University of Massachusetts undergraduates. Seventy-one percent of the participants were White. Extra course credit was awarded to the students who recruited.

*Wisconsin adults.* Students in an undergraduate psychology course at Lawrence University in Appleton, Wisconsin, volunteered to collect questionnaires from friends and family members. Sixty-four nonstudents (39 women, 17 men, 8 unknown; mean age = 47.7) completed the questionnaire in their homes. The majority of participants (84%) were White.

Table 10
*Correlations Between Traits and Predictors, Group and Individual Levels, Study 2*

| Predictor | Competence | Warmth |
|---|---|---|
| | Group-level | |
| Status | .98*** | .35 |
| Competition | −.16 | −.64*** |
| | Individual-level | |
| Status | | |
| *r* | .88*** | .36** |
| % | 93 | 29 |
| Competition | | |
| *r* | −.07 | −.31** |
| % | 28 | 33 |

*Note.* Group-level $df = 22$; individual-level $df = 147$. Individual-level correlations were converted to Fisher's $z$ scores, averaged, then reconverted to correlations. Percentages are the percentages of participants for whom that correlation was significant ($p < .05$).
** $p < .01$. *** $p < .001$.

*Florida retirees.* The third sample was collected in a Northern Florida retirement community. Twenty-five participants (13 men, 12 women; mean age = 61.1) completed the questionnaire in their own homes on a volunteer basis. All of the participants were White.

*Illinois retirees.* Nineteen residents (6 men, 10 women, 3 unknown; mean age = 78.4) of a Chicago retirement home responded to an ad in a community newsletter. For each questionnaire, $1 was donated to a communal fund. Sixteen identified themselves as White, 1 as Black, and the other 2 did not identify their race. The questionnaire replaced the group *elderly people* with the group *retarded people*. Two questionnaires were omitted because they were less than one third complete.

### *Questionnaires*

An abbreviated version of the questionnaire listed 6 groups selected to represent a full range of the 23 groups sampled in Study 1 (this study was started before Study 2 was completed). We judged 6 groups to be the smallest number reasonable for analysis, and we made every effort to sample without regard to our hypotheses. The subset of 6 groups arose according to several simultaneous criteria: In the Study 1 nonstudent sample, we calculated a six-cluster solution in the two-dimensional space defined by Competence × Warmth. We picked six clusters to generate 6 groups from a cluster solution that would be sufficiently detailed not to privilege our hypothesized three-cluster solution for this dataset. Then, (a) we picked 1 group per cluster, to include groups fully distributed across the space to represent the greatest variety of different types of societal out-groups. Given those constraints, we chose the following groups: (b) within each of the six clusters, groups whose locations tended to be farther from the two-dimensional midpoint, to minimize groups viewed ambiguously or differently by different participants; (c) groups whose standard deviations on competence and warmth were low, indicating consensus within the sample; and (d) groups that did not overlap in meaning and identifying characteristics (i.e., the overall sample to include out-groups variously designated by gender, race, age, socioeconomic status). The resulting groups were welfare recipients, housewives, elderly people, feminists, Black professionals, and rich people, but in keeping with this study's focus on out-groups, for the Illinois retirees (average age 78.41), retarded people replaced elderly people.

Twelve items, two for each dimension, represented the trait (competence and warmth) and social structure correlates (status and competition). Item selections (see Table 11) were based on the most reliable item–scale correlations in the Study 1 Massachusetts samples.

## *Results*

As in the three long-survey samples, we predicted that the out-groups would be differentiated by competence and warmth, with mixed stereotypes well-represented, and that the status–competence and competition–warmth correlations would replicate. We used the main statistical techniques used in Studies 1 and 2: cluster analysis, *t* tests, and correlations.

Table 11
*Items in Abbreviated Questionnaire, Study 3*

| Construct | Items |
|---|---|
| Competence | How confident are members of this group? |
| | How competent . . .? |
| Warmth | How sincere . . .? |
| | How warm . . .? |
| Status | How well educated . . .? |
| | How economically successful . . .? |
| Competition | If members of this group get special breaks, this is likely to make things more difficult for people like me. |
| | Resources that go to members of this group are likely to take away from the resources of people like me. |

### *Perceived Competence and Warmth Differentiate Among Out-Group Stereotypes, and Many Stereotypes Are Mixed*

Cluster analyses are relatively unsuited to examining only six items, but the groups do array in the Competence × Warmth space. Hierarchical cluster analysis indicated a three-cluster solution; agglomeration statistics were aggregated over the five samples (which separately show the same pattern). The selected groups included neither in-groups nor moderate, middling groups, so the three-cluster solution would be expected.

The *k*-means parallel threshold cluster method identified the predicted groups (see Figure 4). Rich people, feminists, and Black professionals, in one cluster, centered on 3.93 competence and 2.83 warmth (averaged across samples), differing over a full scale point, $t(14) = 7.06$, $p < .001$. This cluster scored significantly the highest on competence, $p < .001$ (see Table 12). The included groups fit the results of Studies 1 and 2, despite changes in format, groups, items, and samples.

The elderly (or retarded) people and housewives in the other mixed cluster averaged 2.94 on competence and 4.00 on warmth, a substantial and significant difference, $t(9) = 7.66$, $p < .001$. (The means differ only trivially when we exclude retarded people used for the Illinois sample.) This cluster scored significantly the highest on warmth, $p < .001$. The groups fit the earlier long surveys.

Finally, welfare recipients ended up alone in a low–low position, scoring lowest on both dimensions (competence $M = 1.86$, warmth $M = 2.42$), significantly different from each other, $t(4) = 12.06$, $p < .001$, and from the other clusters, $p < .05$. Because we picked groups at the extremes of their clusters, no middling cluster appears. And because in-groups were not explicitly included, no high–high quadrant appears.

Next, we compared competence and warmth, group by group (Table 12); they differed significantly for all groups examined. In all six groups, in each of five samples, rich people, feminists, and Black professionals showed significantly more competence than warmth, whereas housewives, elderly (in Illinois, retarded) people, and welfare recipients showed significantly more warmth than competence. With a shorter questionnaire, across 6 decades in average ages and five U.S. locations, respondents agreed on cultural stereotypes that some kinds of out-groups specialize in competence over warmth, whereas others specialize in warmth over competence, and only welfare recipients fit the pure derogation model.

### *Status Predicts Perceived Competence, and Competition Predicts Perceived Warmth*

Finally, we examined the social structural correlates of perceived competence and warmth. The correlation between perceived status and perceived competence averaged a group-level $r(4) = .97$, $p < .01$, and an individual-level $r(228) = .87$, $p < 001$, comparable to the Study 1 and Study 2 samples. The correlation between perceived competition and perceived warmth averaged $r(4) = -.69$, $p < .15$, at the group level and $r(228) = -.36$,

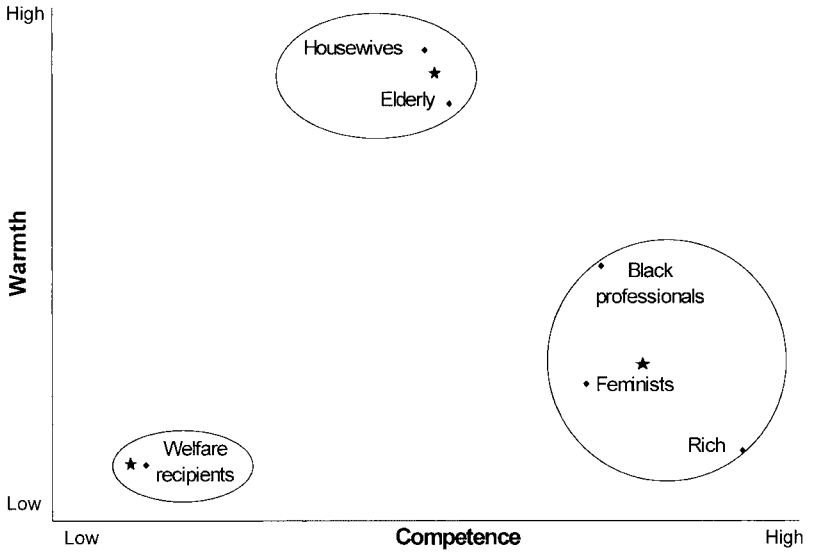


*Figure 4.* Four-cluster solution, Study 3, short survey, five samples combined, no in-groups.

$p < .001$, at the individual level, again comparable to or even better than the Study 1 and Study 2 samples. Whereas the group-level analyses are of roughly the same magnitude as the long survey samples, the individual-level analyses are stronger than Study 1 and comparable to Study 2, perhaps because, as in Study 2, participants were not so overloaded, given only 72 questions to answer instead of Study 1's 598. In any case, the structural correlates of the traits performed as hypothesized in these new samples, at both levels of analysis. Moreover, the off-diagonal correlations, as predicted, do hover around zero (status–warmth, group $r = -.07$, individual $r = .02$; competition–competence, group $r = .00$, individual $r = -.12$).

Table 12
*Groups' Competence and Warmth Scores Across Five Samples, Study 3*

| Group and cluster | Competence | | Warmth | Difference |
|---|---|---|---|---|
| Rich people | 4.34 | > | 2.48 | 1.86 |
| Feminists | 3.69 | > | 2.75 | 0.94 |
| Black professionals | 3.83 | > | 3.37 | 0.46 |
| Cluster | $3.93_a$ | > | $2.83_b$ | 1.10 |
| Elderly people[a] | 2.74 | < | 4.06 | −1.32 |
| Housewives | 3.06 | < | 3.94 | −0.88 |
| Cluster | $2.94_b$ | < | $4.00_a$ | −1.06 |
| Welfare recipients | $1.86_c$ | < | $2.42_c$ | −0.56 |

*Note.* Matched pair *t* tests reveal significant competence − warmth differences for all groups and clusters, $p < .05$, as indicated by < or >. Within columns, cluster means with different subscripts differ, by independent sample *t*s, at $p < .05$.

[a] This row of statistics includes the Illinois sample, in which the group *retarded people* replaced *elderly people*; with retarded people omitted, the competence mean equals 3.02, the warmth mean equals 4.15, the difference is −1.13, and the difference is still significant.

### *Discussion*

The results of five more varied samples corroborate Studies 1 and 2, suggesting that the original respondent samples did not create any obvious bias. The hypotheses about Competence × Warmth, mixed stereotypes, and social structure correlates were supported.

## Study 4, Prejudiced Emotions: Affective Reactions to Distinct Stereotype Content

Our stereotype content model proposes, and the first three studies support the idea, that many stereotypes are mixed, portraying groups as high competence but low warmth or low competence but high warmth. Strictly speaking, stereotypes are cognitive, and mixed stereotypes do not speak to the affective or evaluative response. Study 4 addresses the mixed emotional responses we hypothesize to differentiate the main group clusters.

Previous work specifies affective reactions to different out-groups but not a theory of their origins (Dijker, 1987). Previous work also suggests that people view the in-group as overlapping the self (E. R. Smith, 1993); just as appraisal of threats and benefits to the self provoke emotion, so do appraisals regarding the in-group's well-being. If all this is so, then emotional reactions to out-groups should vary by their structural relations to others in society. We hypothesize four types of affective reactions to the four primary combinations on the basis of perceived competence and warmth (Glick & Fiske, 2001a; see Table 1). Consider first the two mixed cells.

We hypothesize that paternalistic prejudice targets low-status, noncompetitive groups (e.g., elderly, disabled) that are seen as incompetent but warm; they should elicit pity and sympathy. Pity is directed toward people with negative outcomes who cannot control the cause (Weiner, 1985; Weiner, Graham, & Chandler, 1982; Weiner, Perry, & Magnusson, 1988). In an interpersonal theory of social comparison-based emotions, Richard Smith (2000)

described downward assimilative emotions as including sympathy and pity. If we translate his theory to our group level of analysis, a lower status group elicits downward comparison (by definition), and, in our terms, a noncompeting group allows assimilation to one's own group. This form of response is paternalistic when directed at out-groups, because it combines assumed superiority with potential care taking. Groups that are low status and incompetent are seen as badly off but not able to control their outcomes and so not responsible. Moreover, if they are warm, their intent is positive. Groups deserve pity and sympathy for uncontrollable negative outcomes that occur despite their best intentions.

High-status, competitive groups that are seen as competent but not warm should elicit envy and jealousy (along with a grudging admiration for their perceived skills), a response we call *envious prejudice*. High status represents a positive outcome, and competence implies control over it, so these groups are seen as responsible for their position. The lack of warmth imputed to these groups corresponds to perceived competition and hostile intent. When people's own controllable, positive outcomes deprive others, those others feel envy. That is, when one person lacks another's superior outcome but wishes the other lacked it, envy results (Parrott & Smith, 1993). Upward contrastive (i.e., competitive) social comparisons elicit envy and resentment along with subjective feelings of injustice and inferiority (R. H. Smith, 1991, 2000; see also E. R. Smith, 1993). In intergroup perceptions, one might expect that higher status, competent groups would also elicit anger, which they may, but anger could also be directed downward, toward groups that are perceived to be parasitic on one's own higher position, so envy seems more diagnostic than does resentment.

The third combination, low-status, free-loading groups that are perceived as neither competent nor warm, receive what we have termed *contemptuous prejudice*, encompassing anger, contempt, disgust, hate, and resentment. Anger is directed toward those with negative outcomes that they could have avoided; blame results from perceiving individually controllable causes (Weiner, 1985; Weiner et al., 1982; Weiner et al., 1988; Zucker & Weiner, 1993). Again, however, more specific reactions than anger are relevant; contempt, disgust, and resentment involve moral overtones of injustice, indignation, and bitterness toward illegitimate behavior. In this case, groups that are perceived to have interests that detract from others create competition in a zero-sum sense. Groups that use up societal resources compete with other societal priorities, though they are not viewed as successful per se. Contempt and disgust are directed downward in contrastive comparisons (R. H. Smith, 2000; also see E. R. Smith, 1993). If we translate to the group level, the low-status, incompetent groups that are perceived not to be warm may be perceived to have hostile, exploitative intent that impacts others in society, also provoking resentment and hatred.

Finally, some groups elicit unmixed positive regard: pride, admiration, and respect. Pride is directed toward those with positive outcomes (e.g., high status) when that reflects well on the self. In-groups and reference groups with whom one identifies both are extensions of the self (see E. R. Smith, 1993, on in-groups). Pride results from self-relevant, positive, controllable outcomes (Weiner, 1985). People feel positive about the successes of close others as long as the domain is not reserved for the self (Tesser, 1988). Admiration is directed toward those with positive outcomes when that does not detract from the self. Upward, assimilative social comparisons elicit admiration and inspiration (R. H. Smith, 2000). At the group level, pride and admiration should target successful in-groups and close allies as well as the cultural default, those groups that might be considered collective reference groups (e.g., the middle class).

In short, we hypothesize that pity, envy, contempt, and admiration (and related emotions) differentiate the four combinations of perceived warmth and competence.

## Method

### Participants

Fifty-five University of Massachusetts undergraduates (50 women, 5 men; mean age = 19.8), recruited from lower level psychology courses, completed the questionnaire for extra credit. Once again, the majority of participants (43) identified themselves as White.

### Questionnaire and Procedure

Using a 5-point Likert scale (1 = *not at all*, 5 = *extremely*), participants rated the same 24 social groups rated in Study 2 on 24 emotions items: "As viewed by society, does this group make your group feel: disappointed, fearful, sympathetic, envious, uneasy, proud, angry, disgusted, respectful, pitying, hateful, frustrated, jealous, admiring, resentful, inspired, contemptuous, compassionate, tense, ashamed, comfortable, fond, anxious, secure?" As in Study 2, to prevent participant fatigue, we split the list of groups in half and reversed the order of presentation for each list, which yielded four versions of the questionnaire. Participants were randomly assigned to complete one of the four versions. They read the same instructions and completed the questionnaire under the same conditions as in Study 1 and Study 2.

## Results

Again, using the same technique employed in Studies 1 and 2, 24 factor analyses (1 per group) examining 24 items yielded five–eight factors with eigenvalues greater than 1.0. Across groups, four factors emerged consistently: Admiration (admiring, fond, inspired, proud, respectful; $\alpha = .86$), Contempt (angry, ashamed, contemptuous, disgusted, frustrated, hateful, resentful, uneasy; $\alpha = .93$), Envy (envious, jealous; $\alpha = .89$), and Pity (pity, sympathetic; $\alpha = .82$). The remaining items were dropped because they did not load consistently on any given factor across groups.

We predicted (see Table 1) that high competence, low warmth groups would elicit envious prejudice; low competence, high warmth groups would elicit pitying, paternalistic prejudice; low competence, low warmth groups would elicit contemptuous prejudice; and in-groups would be admired.

### Comparing Prejudices Within Clusters

Emotions scores differed significantly within all clusters, which were drawn from Study 2 (Table 13). As predicted, participants strongly endorsed emotions reflecting admiration ($M = 2.72$) for the in-groups cluster (students, Whites, middle class, women, and Christians), with much less envy ($M = 1.57$), contempt ($M = 1.43$), and pity ($M = 1.42$), $F(3, 16) = 24.45$, $p < .001$.

The high competence and low warmth cluster (rich people, men, Jews, Asians, professionals, and educated people) elicited both

Table 13
*Emotions Expressed for Key Clusters, Study 4*

| Cluster | Admiration | Envy | Pity | Contempt |
|---|---|---|---|---|
| In-groups (students, Whites, middle class, women, Christians) | **2.72** | 1.57 | 1.42 | 1.43 |
| Competent, not warm (rich people, men, Jews, Asians, professionals, educated people) | **2.82** | **2.58** | 1.37 | 1.76 |
| Warm, not competent (disabled people, elderly people, retarded people) | 2.29 | 1.03 | **3.66** | 1.70 |
| Not competent, not warm (poor people, welfare recipients, homeless people) | 1.36 | 1.03 | 3.39 | **2.50** |
| Middle (gay men, Hispanics, blue-collar workers, Blacks, Native Americans, Muslims, young people) | 2.06 | 1.26 | 1.96 | 1.82 |

*Note.* Numbers in boldface indicate emotions predicted to be high for particular clusters. Between-clusters contrasts examining each emotion separately (i.e., by column) show significant differences between the main cluster predicted to score high on that emotion and the average of the other four clusters (contrast *p*s = .015–.0001). Within-cluster contrasts examining each cluster separately (i.e., by row) show significant differences between the main emotion predicted to be high for that cluster and the average of the other three emotions. In addition, admiration for the high-competence, low-warmth cluster was predicted but not tested separately because it was not completely orthogonal to the envy predictions. Also, the unpredicted result of pity toward the low–low cell was not tested.

envy ($M = 2.58$) and admiration ($M = 2.82$) but not much contempt ($M = 1.76$) or pity ($M = 1.37$), $F(3, 20) = 6.79$, $p < .01$.

For the high warmth and low competence cluster (disabled people, elderly people, and retarded people), participants endorsed paternalistic prejudice: pity ($M = 3.66$), but much less admiration ($M = 2.29$), contempt ($M = 1.70$), and envy ($M = 1.03$), $F(3, 8) = 41.79$, $p < .001$.

Emotions toward the low competence and low warmth cluster (poor people, welfare recipients, and homeless people) unexpectedly reflected both pity ($M = 3.39$) and contempt ($M = 2.50$) and little admiration ($M = 1.36$) or envy ($M = 1.03$), $F(3, 8) = 47.12$, $p < .001$. This cluster's contempt ratings, though lower than its pity ratings, were the highest for that emotion (see below).

Emotion ratings for the middle cluster (gay men, blue-collar workers, Native Americans, Blacks, young people, Muslims, and Hispanics) were nondescript, as follows: admiration ($M = 2.06$), pity ($M = 1.96$), contempt ($M = 1.82$), and envy ($M = 1.26$); because of the low envy ratings, they differed significantly, $F(3, 24) = 9.61$, $p < .001$.

### *Comparing Clusters Within Prejudices*

The highest admiration ratings went to the in-group and the competent but not warm out-groups (see Table 13). We had predicted that the high-competence out-groups would receive some grudging (i.e., envious) acknowledgement of their achievements. Admiration for high-competence out-groups, however, coexisted with envy, suggesting a volatile mix of emotions that could create hostility when groups feel threatened (Glick, in press). Moreover, all groups except the low–low groups received some admiration, which may constitute a positive baseline.

The highest envy ratings went to the high-competence out-groups, and no other group came close to eliciting comparable envy. Pity went to the warm, not competent out-groups, as predicted, but also to the low–low groups, reflecting less uniform antipathy than predicted. Contempt was reserved for the low–low group, and no other groups came close.

In summary, our hypotheses specified 20 predictions for emotions (four emotions on five clusters). The 5 predictions of particular emotions as targeting particular clusters indeed emerged as predicted; of the remaining 15 predicted to be low, 14 emerged as predicted. The sole anomaly (pity for the poor) is not surprising, in hindsight.

### *Discussion*

These data support the hypothesis that emotions differentiate among the four main quadrants. Each cluster elicited a unique pattern of emotions, hypothesized to be characteristic of the prejudice directed toward that kind of out-group. In addition, the affect directed toward the high competence but low warmth groups and the low competence but high warmth groups suggests a mix of emotions (rather than the pure contempt usually assumed to be characteristic of prejudices).

Both envy items (i.e., envious, jealous) reflect the belief that another possesses some object that the self desires but lacks; this, then, acknowledges the out-groups' possession of good qualities and also that the out-group is responsible for the in-group's distress. In short, envy and jealousy are inherently mixed emotions. In a similar way, pity and sympathy directed toward warm but incompetent out-groups suggest a mixture of subjectively good feelings and acknowledgement of the out-groups' inferior position. Again, pity is inherently a mixed emotion.

Study 4 thus supports the validity of the four main clusters, as distinguished by emotion responses, evidence that converges with the earlier cluster results as well as the social structural predictors.

## General Discussion

These data, from nine survey samples, support our hypotheses regarding stereotype content. Conducted on a variety of samples with a variety of group selection methods, the cluster analyses in Studies 1–3 found evidence for the *dimensional hypothesis* that perceived competence and warmth differentiate out-group stereotypes. These studies also support the *mixed stereotypes hypothesis* that many out-groups are viewed as competent but not warm or not competent but warm. They also found *social structural correlates* of perceived competence and warmth. That is, perceived social status predicted perceived competence, whereas perceived competition predicted perceived lack of warmth. Finally, Study 4 addresses the *emotional concomitants* of different stereotype contents, showing that pity, envy, contempt, and admiration differentiated the four combinations of perceived warmth and competence.

These data go beyond previous discussions (including our own) of stereotype contents and prejudiced affects. They uniquely show

the full combination of the Competence × Warmth dimensions, emphasize mixed but functionally consistent stereotypes, and display the full range of mixed emotions. These data simultaneously address pity, contempt, pride, and envy at the group level, and they document both trait attributions and social structural variables at once.

Nevertheless, several issues arise. Regarding meaning of responses, were participants reporting the culture's, their group's, or their own personal stereotypes and prejudices? The questionnaire at the outset emphasized the project's interest in American society and at the top of each page instructed participants to answer "as viewed by society." However, as the questionnaire went on, participants may have forgotten these instructions and begun to respond as individuals or group members, particularly on the competition items, which used the term "people like me." In retrospect, we might have phrased those items differently.

However, several clues argue against the possibility that participants responded primarily either as group members or as individuals rather than reporting on society's cultural stereotypes and prejudices. Students and nonstudents did not differ radically in their responses, and, in Study 3, variations in age and region did not produce radically different responses. Moreover, if members of different gender and ethnic groups might be expected on average to hold different personal or group stereotypes, their responses should differ. Our reanalysis of the largest data sets (Study 1 student and nonstudent samples, plus Study 2) suggests otherwise. In each of these three samples, we could compare responses of White women (the largest group), White men, and minorities of both genders (minority samples were not large enough to break down by gender). We conducted 280 *F* tests on four kinds of ratings (competence, warmth, status, and competition) across the 23–24 groups per sample. Of these comparisons, only 8% revealed differences by gender and ethnicity of participants.[11] Compared with the 92% that showed no difference by gender or ethnicity, this suggests that participants answered as requested, according to consensual societal stereotypes.

In a related vein, we have hedged about whether membership in the high–high cell consists of the in-group of raters or the culture's main reference group. We suspect something of a mix. In the study that explicitly included potential in-groups or societal reference groups, the ones in the unambivalently well-regarded cluster were probably both cultural reference groups and in-groups for most of our participants in that sample: Christian, middle class, and White. However, the presence of students and women in that cluster suggests some in-group favoritism, though the *F* tests revealed no group differences in the placement of those two groups. This seems a task for further research. Preliminary data collected in other countries suggest that participants are quite capable of reporting how their group is viewed negatively by the culture at large. On balance, we suspect that the high–high cluster is reserved mostly for societal reference groups.

The data leave another puzzling cluster as well. The groups that persistently landed in the middle of the competence–warmth space (gay men, Arabs and Muslims, blue-collar workers, Native Americans, migrant workers) may indeed elicit the nondescript stereotypes suggested by this location. However, consider the case of Black people, who inhabited the middle cluster when labeled at this abstract level yet, at the subgroup level, split neatly into competent but not warm Black professionals and incompetent but warm poor Blacks. Stereotypes of gay men might, for example, subdivide into threatening militants, imagined predators, harmless buffoons, and respected aesthetic professionals. American stereotypes of Muslims might divide among American citizens, harmless Arab nationals, and terrorists. Our data for these middle groups do not distinguish between unformed stereotypes and averages over opposite subgroups. Nor do they address the possibility that massive and contradictory individual differences may have resulted in a lack of consensus. We did examine the variances of ratings for these middling groups and found no pattern of higher variances, which might have indicated idiosyncratic responses or aggregation over disparate subtypes. At this point, the answer is not clear.

Turning to rating dimensions, we note that the competence dimension consistently differentiated the groups more than the warmth dimension did. Perhaps this is not surprising, given that it has more readily manifested public signs (e.g., academic performance) than the warmth dimension allows (e.g., no consensual indicators of a group's intent). Moreover, if intent (i.e., warmth) and capability to enact it (i.e., competence) are central, competence matters first because it may be seen as more stable than warmth. And intentions matter only for those capable of enacting them.

Nevertheless, across samples, effect sizes comparing the two mixed clusters on warmth averaged large by Cohen's (1992) standards (group-level $d = 1.28$; individual-level $d = 0.83$). And effect sizes comparing the low–low cluster with the low competence–high warmth cluster averaged even larger (respectively, 2.24 and 1.35). Thus, the warmth dimension did consistently distinguish among groups. Across studies, 76.4% of the warmth comparisons were significant. More specifically, a critic might argue that the high competence, low warmth group was not consistently low on warmth. However, it was significantly lower than the high warmth groups in nine of nine tests and equivalent to the other low warmth cluster four of eight times. Thus, the warmth dimension remains important, although it admittedly distinguished less than the competence dimension did. Because competence varied more than warmth, the warmth differences suffer by comparison. Nevertheless, the warmth effects are sizable, significant, and reliable.

Regarding predictors, we were surprised, in initial pilot studies, that cooperation, as we measured it, did not predict warmth. Instead, a lack of competition predicted warmth. Attempts to find survey items reflecting mutual cooperation failed. In our view, most out-groups are not viewed as cooperating equally with the in-group, so cooperation is inherently asymmetrical, with one group depending on the other more than vice versa. As our pilot studies found, two depend-on-us and depend-on-them cooperation variables were associated with competence and status but not with warmth. Equal-status cooperation might occur only for the in-group and its closest allies, a phenomenon we measured by perceptions of the competent and warm in-groups; the Alexander et al.

[11] Although they were close to the level expected by chance, we examined the few significant differences and found weak evidence for two patterns. For 10 ratings of particular characteristics of particular groups (3.6%), White men tended to be more negative than did White women and minorities of either gender. For another 7 (2.5%), minorities rated low-status groups as less competitive that Whites did.

(1999) and Phalet and Poppe (1997) studies also support that prediction. However, an unpublished study conducted after our data were collected (Eckes, 2001), for which new measures of cooperation were developed, found evidence that cooperation predicts perceived warmth, so the possibility of perceived cooperation remains viable and merits further attention.

In any case, status and competition did reliably differentiate groups' competence and warmth. The relationship between status and competence was stronger than that between competition and (lack of) warmth. Perhaps stable group hierarchies determine intergroup stereotypes and prejudices more than the potentially changeable competitions do.

Although we have argued for the competence and warmth dimensions (on the basis of their theoretical functions in interpersonal and intergroup detection of goals, their prevalence in past research on both person perception and group stereotypes, and their effects on emotions toward groups), this is not to say that these are the only possible dimensions in stereotypes. For example, sheer activity level is a dimension suggested by the small groups' task, social, and dominance dimensions (Bales, 1970) or by the semantic differential dimensions of evaluation, potency, and activity (Osgood, Suci, & Tannenbaum, 1957).

Our data do suggest that stereotypes of out-groups carry two central dimensions and that the corresponding prejudices frequently show mixed reactions, not univalent antipathy. We have avoided labeling paternalistic and envious stereotypes as ambivalent because that term typically assumes cognitive conflict and warring emotions. The predominant prejudices (envy and pity) for these two mixed clusters, however, are inherently mixed emotions. Pity combines sympathy with superiority. Envy combines admiration with resentment. Nevertheless, neither form of prejudice necessitates a state of psychological conflict (presumably typical of ambivalence). In each case, positive perceptions and feelings are consistent with negative aspects: One would not envy a group that has no desirable attributes, and one would not typically pity a group considered superior to one's own. Thus, the more positive aspects entirely fit the more negative prejudices.

Social psychologists have tended to assume that prejudice involves simultaneous dislike and disrespect for an out-group. Our data suggest, however, that out-group prejudice often focuses on dislike or disrespect but not both. High-status out-groups may elicit an envious mixture of admiration (rather than disrespect) plus intense dislike motivated by a sense of threat (for dangerous competitors). Thus, a person's belief that Asian Americans, Jews, and businesswomen are competent (perhaps even hypercompetent) may only add fuel to the fire of prejudice. Anti-Semites, for instance, often believe outrageous conspiracy theories of Jewish economic and social influence. In this case, positive stereotypes of an out-group's competence (along with correspondingly negative stereotypes of the group's lack of warmth and ill intentions) drive a particularly dangerous form of prejudice that all too often results in extreme forms of violence (Glick, in press; Glick & Fiske, 2001b). Agreeing that "Jews are extraordinarily clever" is at least as likely to indicate dangerously anti-Semitic prejudice as the lack of it (Wilson, 1996). Although these emotions are mixed and even multivalent, they are not cognitively inconsistent or unstable (as is usually assumed about ambivalent emotions). Envious resentment entirely fits with (and is even motivated by) admiration for certain attributes.

Likewise, the mixed components of paternalism are psychologically consistent. Members of subordinated groups are often rewarded for showing the low competence and high warmth that make them nonthreatening. (Think of sexist admonitions to women not to appear too smart or ageist admonitions to older people not to work too hard.) Positive stereotypes of low-status groups' warmth may come at the cost of these groups' being perceived as incompetent and safely subordinated (i.e., as posing no competitive threat). Again, the subjectively positive aspects of these stereotypes and prejudices are perfectly consistent with the negative aspects. Whereas envious prejudices evoke feelings of threat, defensiveness, and resentment, paternalistic prejudices elicit patronizing forms of affection and pity. Both envious and paternalistic prejudice are psychologically consistent mixed feelings.

Moving to hypothesized predictors, we note that correlational results linking status–competence and competition–warmth are encouraging for our model. However, the links are only correlational. One could reasonably argue that social structural variables precede the perceived traits of groups and so logically should be prior and therefore potentially causal. But one could argue the opposite, that the groups' actual or perceived traits give them their place in society. We do not deny this possibility, but we focus on perceptions.

## Conclusion

The stereotype content model posits qualitative differences in stereotypes and prejudices toward different groups, simultaneously providing a conceptual framework that explains why and when these differences occur. For example, our model suggests that anti-Semitism and racism (Allport's, 1954, most frequent examples) follow distinct psychological dynamics, explaining differences in how these groups have been treated historically. Earlier Europeans viewed Africans as a low-status group that they could safely domesticate and exploit because of their own superior technological power. In the contrasting social conditions of a radical loss of status and power, many Germans viewed the Jews as a hyperpotent enemy that had to be destroyed. In other cases, the model suggests underlying psychological similarities between prejudices (e.g., paternalistic forms of both racism and sexism, equivalently envious anti-Asian and anti-Semitic prejudice) that might otherwise go unrecognized.

By linking intergroup attitudes to status and interdependence, the model suggests how prejudice is likely to be affected by changing social circumstances that alter groups' relative status and interdependence (e.g., an increasing economic gap between rich and poor ought to exacerbate envious prejudices toward successful minorities). And, although the current research purposely restricted participants to reporting on shared societal stereotypes, distinguishing the psychological dynamics of prejudice directed upward (envy) versus downward (paternalism, contempt) suggests how a person's own (or his or her group's) social status may affect prejudice. Members of disadvantaged minorities or unsuccessful members of dominant groups (e.g., poor Whites) may be more likely to exhibit envious prejudice. In contrast, successful members of high-status groups may be more prone to paternalistic and contemptuous prejudices toward other, less successful groups in their society.

The mixed stereotypes we have described may be the product of historical and social accidents, but we have shown that—at the level of the two crucial dimensions of competence and warmth—they are predictable from variables that have long been of interest to prejudice theorists. Other theorists have argued that relative status leads to predictable forms of group differentiation (Jost & Banaji, 1994; Tajfel, 1981). Similarly, competition has a history in prejudice work, from Sherif's (1966) manipulation of group interdependence to the contact hypothesis (Allport, 1954) and more recent attempts at prejudice reduction (e.g., Dovidio, Gaertner, & Validzic, 1998; Dovidio, Kawakami, & Gaertner, 2000; Gonzalez & Brown, 1999). The idea that these social structural variables determine the quality of relations with out-groups is not new, but our approach shows how status and competition together create different forms of prejudice. Although it is impossible to predict the paths of individual snowflakes in a blizzard, we may at least be able to understand why and in what direction the wind will blow.

## References


Alexander, M. G., Brewer, M. B., & Herrman, R. K. (1999). Images and affect: A functional analysis of out-group stereotypes. *Journal of Personality and Social Psychology, 77,* 78–93.

Allport, G. W. (1954). *The nature of prejudice.* Reading, MA: Addison-Wesley.

Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal and Social Psychology, 41,* 1230–1240.

Bales, R. F. (1970). *Personality and interpersonal behavior.* New York: Holt, Rinehart and Winston.

Bayton, J. A., McAlister, L. B., & Hamer, J. (1956). Race-class stereotypes. *Journal of Negro Education, 25,* 75–78.

Berger, J., Rosenholtz, S. J., & Zelditch, M. (1980). Status organizing processes. *Annual Review of Sociology, 6,* 479–508.

Bettelheim, B., & Janowitz, M. (1950). *Dynamics of prejudice.* New York: Harper.

Blashfield, R. K., & Aldenderfer, M. S. (1988). The methods and problems of cluster analysis. In J. R. Nesselroade & R. B. Cattell (Eds.), *Handbook of multivariate experimental psychology* (pp. 447–473). New York: Plenum.

Bradac, J. J. (1990). Language attitudes and impression formation. In H. Giles & W. P. Robinson (Eds.), *Handbook of language and social psychology* (pp. 387–412). New York: Wiley.

Brown, R. (1995). *Prejudice: Its social psychology.* Oxford, England: Blackwell.

Campbell, D. T. (1967). Stereotypes and the perception of group differences. *American Psychologist, 22,* 817–829.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155–159.

Conway, M., Pizzamiglio, M. T., & Mount, L. (1996). Status, communality, and agency: Implications for stereotypes of gender and other groups. *Journal of Personality and Social Psychology, 71,* 25–38.

Cuddy, A. J., & Fiske, S. T. (2002). Doddering, but dear: Process, content, and function in stereotyping of elderly people. In T. D. Nelson (Ed.), *Ageism* (pp. 3–26). Cambridge, MA: MIT Press.

Deaux, K., Winton, W., Crowley, M., & Lewis, L. L (1985). Level of categorization and content of gender stereotypes. *Social Cognition, 3,* 145–167.

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56,* 5–18.

Devine, P. G., & Elliot, A. J. (1995). Are racial stereotypes really fading? The Princeton trilogy revisited. *Personality and Social Psychology Bulletin, 21,* 1139–1150.

Devine, P. G., Monteith, M. J., Zuwerink, J. R., & Elliot, A. J. (1991). Prejudice with and without compunction. *Journal of Personality and Social Psychology, 60,* 817–830.

Diekman, A. B., & Eagly, A. H. (2000). Stereotypes as dynamic constructs: Women and men of the past, present, and future. *Personality and Social Psychology Bulletin, 26,* 1171–1188.

Dijker, A. J. (1987). Emotional reactions to ethnic minorities. *European Journal of Social Psychology, 17,* 305–325.

Dovidio, J. F., Gaertner, S. L., & Validzic, A. (1998). Intergroup bias: Status, differentiation, and a common in-group identity. *Journal of Personality and Social Psychology, 75,* 109–120.

Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2000). Reducing contemporary prejudice: Combating explicit and implicit bias at the individual and intergroup level. In S. Oskamp (Ed.), *Reducing prejudice and discrimination* (pp. 137–163). Mahwah, NJ: Erlbaum.

Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation.* Hillsdale, NJ: Erlbaum.

Eagly, A. H., & Mladinic, A. (1989). Gender stereotypes and attitudes toward women and men. *Personality and Social Psychology Bulletin, 15,* 543–558.

Eagly, A. H., Wood, W., & Diekman, A. H. (2000). Social role theory of sex differences and similarities: A current appraisal. In T. Eckes & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 123–174). Mahwah, NJ: Erlbaum.

Eckes, T. (1994). Features of men, features of women: Assessing stereotypic beliefs about gender subtypes. *British Journal of Social Psychology, 33,* 107–123.

Eckes, T. (2001). *Paternalistic and envious prejudice: Testing predictions from the stereotype content model.* Unpublished manuscript, University of Hagen, Hagen, Germany.

Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology, 38,* 889–906.

Fiske, S. T. (1992). Thinking is for doing: Portraits of social cognition from Daguerreotype to laserphoto. *Journal of Personality and Social Psychology, 63,* 877–889.

Fiske, S. T. (1993a). Controlling other people: The impact of power on stereotyping. *American Psychologist, 48,* 621–628.

Fiske, S. T. (1993b). Social cognition and social perception. In J. T. Spence, J. Darley, & D. Foss (Eds.), *Annual review of psychology* (Vol. 44, pp. 155–194). Palo Alto, CA: Annual Reviews.

Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 2, pp. 357–411). Boston: McGraw-Hill.

Fiske, S. T., & Ruscher, J. B. (1993). Negative interdependence and prejudice: Whence the affect? In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 239–268). San Diego, CA: Academic Press.

Fiske, S. T., Xu, J., Cuddy, A., & Glick, P. (1999). (Dis)respecting versus (dis)liking: Status and interdependence predict ambivalent stereotypes of competence and warmth. *Journal of Social Issues, 55,* 473–491.

Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61–89). San Diego, CA: Academic Press.

Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin, 117,* 21–38.

Gilbert, G. M. (1951). Stereotype persistence and change among college students. *Journal of Personality and Social Psychology, 46,* 245–254.

Glick, P. (in press). Sacrificial lambs dressed in wolves' clothing: Envious prejudice, ideology, and the scapegoating of Jews. In L. Newman & R. Erber (Eds.), *What social psychology can tell us about the Holocaust.* New York: Oxford University Press.

Glick, P., Diebold, J., Bailey-Werner, B., & Zhu, L. (1997). The two faces of Adam: Ambivalent sexism and polarized attitudes towards women. *Personality and Social Psychology Bulletin, 23,* 1323–1334.

Glick, P., & Fiske, S. T. (1996). The Ambivalent Sexism Inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70,* 491–512.

Glick, P., & Fiske, S. T. (1999). Sexism and other " isms": Interdependence, status, and the ambivalent content of stereotypes. In W. B. Swann, Jr., J. H. Langlois, & L. A. Gilbert (Eds.), *Sexism and stereotypes in modern society: The gender science of Janet Taylor Spence* (pp. 193–221). Washington, DC: American Psychological Association.

Glick, P. & Fiske, S. T. (2001a). Ambivalent sexism. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 33, pp. 115–188). Thousand Oaks, CA: Academic Press.

Glick, P., & Fiske, S. T. (2001b). Ambivalent stereotypes as legitimizing ideologies: Differentiating paternalistic and envious prejudice. In J. Jost & B. Major (Eds.), *The psychology of legitimacy* (pp. 278–306). Cambridge, England: Cambridge University Press.

Gonzalez, R., & Brown, R. J. (1999, July). *Reducing intergroup conflict by varying the salience of subgroup and superordinate group identifications.* Paper presented at the 12th general meeting of the European Association of Experimental Social Psychology, Oxford, England.

Haddock, G., & Zanna, M. P. (1994). Preferring "housewives" to "feminists": Categorization and the favorability of attitudes toward women. *Psychology of Women Quarterly, 18,* 25–52.

Hair, J. E. Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis* (4th ed.). Upper Saddle, NJ: Prentice-Hall.

Hamilton, D. L, & Fallot, R. D. (1974). Information salience as a weighting factor in impression formation. *Journal of Personality and Social Psychology, 30,* 444–448.

Hoffman, C., & Hurst, N. (1990). Gender stereotypes: Perception or rationalization? *Journal of Personality and Social Psychology, 58,* 197–208.

Hurh W. M., & Kim, K. C. (1989). The "success" image of Asian Americans: Its validity, and its practical and theoretical implications. *Ethnic and Racial Studies, 12,* 512–538.

Jackman, M. R. (1994). *The velvet glove: Paternalism and conflict in gender, class, and race relations.* Berkeley: University of California Press.

Jamieson, D. W., Lydon, J. E., & Zanna, M. P. (1987). Attitude and activity preference similarity: Differential bases of interpersonal attraction for low and high self-monitors. *Journal of Personality and Social Psychology, 53,* 1052–1060.

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system justification and the production of false consciousness. *British Journal of Social Psychology, 22,* 1–27.

Jost, J. T., Burgess, D., & Mosso, C. O. (2001). Conflicts of legitimation among self, group, and system: The integrative potential of system justification theory. In J. Jost & B. Major (Eds.), *The psychology of legitimacy* (pp. 363–390). Cambridge, England: Cambridge University Press.

Karlins, M., Coffman, T. L., & Walters, G. (1969). On the fading of social stereotypes: Studies in three generations of college students. *Journal of Personality and Social Psychology, 13,* 1–16.

Katz, D., & Braly, K. (1933). Racial stereotypes of one hundred college students. *Journal of Abnormal and Social Psychology, 28,* 280–290.

Katz, I., & Hass, R. G. (1986). Racial ambivalence and value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology, 55,* 893–905.

Kinder, D. R., & Sears, D. O. (1981). Prejudice and politics: Symbolic racism versus racial threats to the good life. *Journal of Personality and Social Psychology, 40,* 414–431.

Kitano, H. H. L., & Sue, S. (1973). The model minorities. *Journal of Social Issues, 29,* 1–9.

Lerner, M. J., & Miller, D. T. (1978). Just world research and the attribution process: Looking back and ahead. *Psychological Bulletin, 85,* 1030–1051.

Leslie, L. M., Constantine, V. S., & Fiske, S. T. (2002). *The Princeton quartet: How are stereotypes changing?* Unpublished manuscript, Princeton University.

LeVine, R. A., & Campell, D. T. (1972). *Ethnocentrism: Theories of conflict, ethnic attitudes and group behavior.* New York: Wiley.

Leyens, J.-Ph., Yzerbyt, V., & Schadron, G. (1994). *Stereotypes, social cognition, and social explanation.* London: Sage.

Lin, M. H., & Fiske, S. T. (1999). *Attitudes toward Asian Americans: Developing a prejudice scale.* Unpublished manuscript, University of Massachusetts at Amherst.

Lydon, J. E., Jamieson, D. W., & Zanna, M. P. (1988). Interpersonal similarity and the social and intellectual dimensions of first impressions. *Social Cognition, 6,* 269–286.

MacDonald, T. K., & Zanna, M. P. (1998). Cross-dimensions ambivalence toward social groups: Can ambivalence affect intentions to hire feminists? *Personality and Social Psychology Bulletin, 24,* 427–441.

Macrae, C. N., & Bodenhausen, G. V. (2000). Stereotypes. In S. T. Fiske, D. L. Schacter, & C. Zahn-Waxler (Eds.), *Annual review of psychology* (Vol. 51, pp. 93–120). Palo Alto, CA: Annual Reviews.

Madon, S., Guyll, M., Aboufadel, K., Montiel, E., Smith, A., Palumbo, P., & Jussim, J. (2001). Ethnic and national stereotypes: The Princeton trilogy revisited and revised. *Personality and Social Psychology Bulletin, 27,* 996-1010.

McConahay, J. B. (1983). Modern racism and modern discrimination: The effects of race, racial attitudes, and context on simulated hiring decisions. *Personality and Social Psychology Bulletin, 9,* 551–558.

Mummendey, A. (1995). Positive distinctiveness and social discrimination: An old couple living in divorce. *European Journal of Social Psychology, 25,* 657–670.

Noseworthy, C. M., & Lott, A. J. (1984). The cognitive organization of gender-stereotypic categories. *Personality and Social Psychology Bulletin, 10,* 474–481.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning.* Urbana: University of Illinois Press.

Parrott, W. G., & Smith, R. H. (1993). Distinguishing the experiences of envy and jealousy. *Journal of Personality and Social Psychology, 64,* 906–920.

Peeters, G. (1983). Relational and informational patterns in social cognition. In W. Doise & S. Moscovici (Eds.), *Current issues in European social psychology* (pp. 201–237). Cambridge, England: Cambridge University Press; and Paris: Maison des Sciences de l'Homme.

Peeters, G. (1992). Evaluative meanings of adjectives in vitro and in context: Some theoretical implications and practical consequences of positive-negative asymmetry and behavioral-adaptive concepts of evaluation. *Psychologica Belgica, 32,* 211–231.

Peeters, G. (1993). *Self-other anchored evaluations of national stereotypes.* Unpublished manuscript, Catholic University of Leuven, Leuven, Belgium.

Peeters, G. (1995). What's negative about hatred and positive about love? On negation in cognition, affect, and behavior. In H. C. M. de Swart, & L. J. M. Bergman (Eds.), *Perspectives on negation* (pp. 123–133). Tilburg, the Netherlands:Tilburg University Press

Phalet, K., & Poppe, E. (1997). Competence and morality dimensions of national and ethnic stereotypes: A study in six eastern-European countries. *European Journal of Social Psychology, 27,* 703–723.

Poppe, E., & Linssen, H. (1999). In-group favouritism and the reflection of realistic dimensions of difference between national states in Central and Eastern European nationality stereotypes. *British Journal of Social Psychology, 38,* 85–102.

Ridgeway, C. L. (2001). How do status beliefs develop? The role of resources and interactional experiences. In J. T. Jost & B. Major (Eds.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations* (pp. 357–277). Cambridge, England: Cambridge University Press.

Ridgeway, C. L., & Berger, J. (1986). Expectations, legitimation, and dominance behavior in task groups. *American Sociological Review, 51,* 603–617.

Rosenberg, S., Nelson, C., & Vivekanathan, P. S. (1968). A multidimensional approach to the structure of personality impressions. *Journal of Personality and Social Psychology, 9,* 283–294.

Ruscher, J. B. (2001). *The social psychology of prejudiced communication.* New York: Guilford Press.

Sherif, M. (1966). *In common predicament: Social psychology of intergroup conflict and cooperation.* Boston: Houghton Mifflin.

Sisley, E. L. (1970). The breakdown of the American image: Comparison of stereotypes held by college students over four decades. *Psychological Reports, 27,* 779–786.

Six, B., & Eckes, T. (1991). A closer look at the complex structure of gender stereotypes. *Sex Roles, 24,* 57–71.

Skowronski, J. J., & Carlston, D. E. (1989). Negativity and extremity biases in impression formation: A review of explanations. *Psychological Bulletin, 105,* 131–142.

Smedley, J. W., & Bayton, J. A. (1978). Evaluative race-class stereotypes by race and perceived class of subjects. *Journal of Personality and Social Psychology, 36,* 530–535.

Smith, E. R. (1993). Social identity and social emotions: Toward new conceptualizations of prejudice. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping* (pp. 297–316). New York: Academic Press.

Smith, R. H. (1991). Envy and the sense of injustice. In P. Salovey (Ed.), *The psychology of jealousy and envy.* (pp. 79–99). New York: Guilford Press.

Smith, R. H. (2000). Assimilative and contrastive emotional reactions to upward and downward social comparisons. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 173–200). New York: Plenum.

Sue, S., & Kitano, H. H. L. (1973). Stereotypes as a measure of success. *Journal of Social Issues, 29,* 83–98.

Sue, S., Sue, D. W., & Sue, D. W. (1975). Asian Americans as a minority group. *American Psychologist, 30,* 906–910.

Tajfel, H. (1981). *Human groups and social categories.* Cambridge, England: Cambridge University Press.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 181–227). San Diego, CA: Academic Press.

Vonk, R. (1999). Effects of self-profitability and other-profitability on evaluative judgements of behaviours. *European Journal of Social Psychology, 29,* 833–842.

Ward, J. H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association, 58,* 236–244.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92,* 548–573.

Weiner, B., Graham, S., & Chandler, C. (1982). Pity, anger, and guilt: An attributional analysis. *Personality and Social Psychology Bulletin, 8,* 226–232.

Weiner, B., Perry, R. P., & Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *Journal of Personality and Social Psychology, 55,* 738–748.

Wilson, T. C. (1996). Compliments will get you nowhere: Benign stereotypes, prejudice, and anti-Semitism. *Sociological Quarterly, 37,* 465–479.

Wojciszke, B. (1997). Parallels between competence- versus morality-related traits and individualistic versus collectivistic values. *European Journal of Social Psychology, 27,* 245–256.

Zanna, M. P., & Hamilton, D. L. (1977). Further evidence for meaning change in impression formation. *Journal of Experimental Social Psychology, 13,* 224–238.

Zucker, G. S., & Weiner, B. (1993). Conservatism and perceptions of poverty: An attributional analysis. *Journal of Applied Social Psychology, 23,* 925–943.

Received February 19, 2001
Revision received November 18, 2001
Accepted November 19, 2001 ■

# Research Report

## RELATIONS BETWEEN IMPLICIT MEASURES OF PREJUDICE: What Are We Measuring?

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**Abstract—***Some recent findings suggest that different implicit measures of prejudice assess the same underlying construct, but other work suggests that they may not. In this experiment, White participants completed a version of a priming measure of racial attitudes that either encouraged categorization of the face primes in terms of race or did not encourage such categorization, and then completed the Implicit Association Test. Correspondence between the two measures was found only when categorization by race was required on the priming measure. Moreover, participants appeared more prejudiced when they were led to construe individuals in terms of race than when they were not so encouraged. The discussion focuses on the potential for dissociations between evaluations of a category and evaluations of members of the category.*

Asking someone to report his or her attitude toward another race may not produce an honest response. Implicit measures do not require respondents to report an attitude and are less controllable by respondents, so they appear to solve the social-desirability biases of explicit measures (Fazio & Olson, 2003). The present research addresses the correspondence between two implicit measures of attitudes: the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) and a priming technique sometimes referred to as the "bona fide pipeline" (BFP; Fazio, Jackson, Dunton, & Williams, 1995).

The IAT measures the associative strength between two target categories (e.g., Blacks and Whites) and two attributes (e.g., pleasant and unpleasant) by forcing participants to categorize exemplars of both the target and the attribute categories within a single task. Negativity toward Blacks is evident in faster response latencies on Black-unpleasant (and White-pleasant) trials than on Black-pleasant (and White-unpleasant) trials. The BFP assesses the evaluation activated in response to a prime by considering how the prime (e.g., a Black or White face) facilitates judging the connotation of subsequently presented evaluative adjectives. Prejudice toward Blacks is evident in faster latencies to negative adjectives (and slower latencies to positive adjectives) following Black compared with White primes.

Both measures have been shown to predict race-related behaviors (Fazio & Olson, 2003), and several researchers have argued that, apart from measurement error and procedural differences, they should correspond to one another (e.g., Banaji, 2001). In fact, Cunningham, Preacher, and Banaji (2001) found that correspondence between the measures improved from around .20 to over .50 after latent structural equation modeling was used to control for low reliabilities.

However, evidence suggests that the IAT and BFP may measure different constructs. In our own lab, four studies with more than 300 participants altogether have revealed little correspondence between them (*r*s from .05 to −.13). Correlations of essentially zero also have been reported for smoking attitudes (Sherman, Presson, Chassin, Rose, & Koch, 2003) and condom use (Marsh, Johnson, & Scott-Sheldon, 2001). Although measurement error undoubtedly plays a role, it probably cannot fully account for such null relations.

Another difference between the measures is the percentage of participants who appear prejudiced on each. The BFP reveals negativity in 50 to 60% of White college students (e.g., Fazio et al., 1995), but prejudiced IAT scores are found in 70 to 90% of Whites (e.g., Nosek, Banaji, & Greenwald, 2002).

That the two measures correlate sporadically at best and show different distributions of prejudice implies some difference in the psychological constructs they tap. Consideration of the mechanism underlying each measure may point to the nature of that difference and provide insight into one condition in which they might correspond (see Fazio & Olson, 2003, for a detailed analysis). In the BFP, positivity or negativity is automatically activated in response to an attitude-evoking prime, which readies an evaluatively congruent response. Evaluatively congruent adjectives are responded to relatively quickly, and response competition slows responses to incongruent adjectives (see Fazio, 2001, for a review). The BFP typically includes exemplars of two categories as primes (e.g., Black and White faces), and responses are averaged across exemplars to estimate attitudes toward the categories. It is important to note that responses are made at the level of the individual exemplar, and participants are not forced to construe primes as members of a particular category. This sensitivity to specific exemplar primes was illustrated by Livingston and Brewer (2002), who observed greater automatically activated negativity in response to prototypical compared with less prototypical Black faces. This difference, however, was eliminated when participants were instructed to attend to race.

The IAT is based on the assumption that two categories that are associated in memory (e.g., Blacks and unpleasant) will be more easily represented by the same response key (Greenwald & Nosek, 2001) than two categories that are not associated. De Houwer (2001) suggested that associations to categories drive the IAT more than do specific exemplars. In a British-foreigner IAT that included both liked and disliked Brits (princess Diana, a mass murderer) and foreigners (Einstein, Hitler), British participants showed a bias toward Brits regardless of the valence of the specific exemplars (De Houwer, 2001). This suggests that the IAT is affected more by associations to category labels than by evaluations activated by a given exemplar (see also Mitchell, Nosek, & Banaji, in press).

The BFP bases scores only on the evaluation automatically activated in response to an exemplar, which may or may not include category-level information. This implies that forcing participants to construe the exemplar primes as representatives of the category, as in Livingston and Brewer's (2002) experiment, will produce responses that tap associations to the category, resulting in increased BFP-IAT

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correspondence. The experiment reported here was designed to test this hypothesis.

The BFP involves a cover story justifying the presence of the primes. Participants are told that if judging word meaning occurs automatically, then they should be able to perform the adjective-connotation task well, even while performing another task simultaneously. We used this secondary task to manipulate whether participants were free to construe the faces as they would normally, as in the "traditional" BFP, or were forced to categorize them by race, as in the "category" BFP. We predicted better correspondence between the IAT and the category BFP than between the IAT and the traditional BFP.

## METHOD

One hundred White undergraduates participated for course credit. Participants with high error rates ($>$ 20%) on either measure were omitted, resulting in a sample of 61 females and 31 males. They were told that they would be participating in two separate experiments, the first (BFP) about word meaning as an automatic skill and the second (IAT) about categorization skills.

The BFP procedure (for more details, see Fazio et al., 1995) involved multiple phases. In Phase 1, participants identified the connotation of 12 positive and 12 negative adjectives by pressing either a "good" or a "bad" key. In Phase 2, Black, White, Asian, and Latino faces were presented. In the traditional condition, participants were told, "We're interested in how well you can learn these faces, so it's important that you pay attention to them. After you finish this task, we are going to test you for how well you can recognize these faces." In the category condition, they were told, "We want you to keep a mental tally of how many of the faces were Caucasian, Asian, Latino, and African-American. After you finish this task, we are going to have you estimate how many members of each race you saw." Phase 3 consisted of the test that participants anticipated.

Participants were told that Phase 4 (the priming phase) combined Phases 1 and 2, and consisted of four blocks. On a given trial, a prime, which participants were to either study or add to their racial tally, was presented for 315 ms, followed by a 135-ms interval and then the target adjective. Participants responded to the target as in Phase 1. Thirty-two of the 48 trials per block included a prime from 16 gender-matched Black-White pairs presented with the same two positive and two negative adjectives. Primes were yearbook-style color photos (and included other-race fillers). Participants in the category condition estimated the number of faces presented for one of the four races after each block. In the traditional condition, participants completed a face recognition test at the end of the priming phase. They were then escorted to another area of the lab.

The IAT included 12 blocks of 50 trials each. On a given trial, participants were presented with an exemplar of one of four categories: Black names, White names, pleasant words, and unpleasant words (stimuli were from Greenwald et al., 1998). Participants categorized items by pressing one of two keys whose meanings changed depending on the block. Participants categorized Black and White names in Blocks 1 and 2, and pleasant and unpleasant items in Blocks 3 and 4. Blocks 5 through 7 were critical combined blocks, in which one of the races and pleasant words were assigned to one response key, and the other race and unpleasant words were assigned to the other response key (counterbalanced). Blocks 8 and 9 involved categorizing Black and White names, with the meaning of the keys now reversed. Blocks 10 through 12 were identical to Blocks 5 through 7, but the race that was associated with pleasant items was now associated with unpleasant items (and vice versa).

**Table 1.** *Descriptive data for each implicit measure*

| Measure | Mean | *SD* | Proportion prejudiced |
|---|---|---|---|
| Traditional BFP | 0.00 | .26 | .52 |
| Category BFP | −.19 | .33 | .74 |
| IAT | 79.6 ms | 91.5 | .79 |

*Note.* For the bona fide pipeline (BFP), more positive numbers reflect more positivity toward Blacks; the reverse is true for the Implicit Association Test (IAT). The last column refers to the proportion of participants with scores on the side of the neutral point indicative of prejudice toward Blacks.

## RESULTS

### BFP

Attitude estimates were derived as described in Fazio et al. (1995). For each participant, mean facilitation scores for the two positive and two negative adjectives were computed for each face. An effect size of the Race of Prime $\times$ Valence of Adjective interaction was computed for each participant, resulting in an attitude estimate in which negative numbers imply more negativity toward Blacks than Whites (see Table 1). Participants' scores were more negative in the category condition than in the traditional condition, $t(90) = 3.06$, $p < .01$, with the former mean differing significantly from zero, $t(42) = 3.67$, $p < .01$.[1]

### IAT

IAT scores were computed as described in Greenwald et al. (1998). The first two trials from each block were dropped, and response latencies were natural-log-transformed. The mean from the three blocks involving White-pleasant and Black-unpleasant pairings was subtracted from the mean from the blocks involving White-unpleasant and Black-pleasant pairings, resulting in a measure for which higher numbers indicate more negativity toward Blacks (see Table 1). On average, participants appeared prejudiced against Blacks, $t(91) = 9.12$, $p < .001$. IAT scores did not vary as a function of BFP condition, $t < 1$.

### Proportion Appearing Prejudiced

The proportion of participants displaying some degree of negativity toward Blacks (see Table 1) was significantly lower for the traditional BFP than for either the category BFP ($p < .05$) or the IAT ($p < .01$).

1. In the many studies we have conducted using the BFP, the average score has sometimes been significantly more negative than zero (e.g., Fazio et al., 1995; Olson & Fazio, 1999; Towles-Schwen & Fazio, 2001) and sometimes not (e.g., Fazio & Dunton, 1997; Fazio & Hilden, 2001; Jackson, 1997; Olson & Fazio, in press; Towles-Schwen, 2002). We presume this simply reflects sampling variability. Relations between the attitude estimates and race-related judgments and behaviors have been observed regardless of the sample's average negativity toward Blacks.

### BFP-IAT Correspondence

A regression analysis predicting IAT scores from BFP scores, a condition dummy variable, and the interaction term revealed a significant BFP Score × Condition interaction, $t(87) = 2.07$, $p < .05$. The category BFP corresponded with the IAT, $\beta = -.28$, $t(40) = 2.03$, $p = .04$, but the traditional BFP did not, $\beta = .18$, $t < 1$.[2]

### Reliability

Split-half correlation coefficients were computed using attitude estimates based on the first and second halves of the critical trials for each measure. Correlations were .04 (n.s.) and .39 ($p < .05$) for the traditional and category BFP, respectively, and .53 ($p < .05$) for the IAT.

## DISCUSSION

Confirming our reasoning that they measure different constructs, a traditional version of the BFP and the IAT showed little correspondence. However, correspondence was observed when participants were forced to categorize exemplars as representatives of racial categories during the BFP. These results are consistent with our reasoning that the BFP assesses evaluations of exemplars and the IAT assesses associations to categories.[3] We reconcile these findings with those of Cunningham et al. (2001) by noting that their participants completed several explicit measures of prejudice, that their priming procedure used only Black and White faces, and that it sometimes was completed after the IAT. Hence, their procedures made race salient, encouraging categorization by race, much as the category version of the BFP does.

The distribution of prejudice also showed an interesting pattern. Roughly three quarters of the participants appeared prejudiced on the IAT and the category version of the BFP, compared with about half on the traditional BFP. Thus, it appears that evaluations of Blacks are more negative when assessed at the category level than when assessed at the level of the exemplar, a finding that extends Sears's (1983) notion of more favorable self-reported evaluations of exemplars than collectives to implicit measures. Although it may appear surprising that evaluations of a category can be somewhat distinct from evaluations of the category exemplars, the informational environment might encourage such dissociations. For example, "Blacks" are often represented negatively without reference to individual members, and individual Black celebrities are often represented positively without reference to their category membership.

We argued that the category BFP related to the IAT more strongly than the traditional BFP did because both the category BFP and the IAT assessed category-level associations. In our view, the observed difference in reliability between the two versions of the BFP also reflects their differential emphasis on exemplar- versus category-level construal. In the traditional BFP, people are free to construe the faces as they do naturally; they need not categorize by race (Fazio & Dunton, 1997). They may, for example, attend to the gender of some faces, and to the attractiveness of others. Thus, for people who do not spontaneously attend to race, the estimate of racial attitudes will be essentially noise, because it is based on Black-White difference scores. People with more extreme racial-attitude estimates, in contrast, are known to categorize social targets by race more extensively (Fazio & Dunton, 1997). They also displayed more reliability on the traditional BFP in the current study.[4] So what appears to be poor reliability based on simple measurement error is at least in part based on real differences regarding spontaneous categorization by race. Because it forces categorization by race, the category BFP provides both a reliable estimate of reactions to the Black versus White faces and correspondence with the IAT.

It is important to note that the traditional BFP has proven to be a reliable predictor of behavior in past studies (see Fazio & Olson, 2003). Given the many demonstrations of the predictive validity of the traditional BFP, it seems inappropriate to dismiss the lack of a relation between the BFP and the IAT as due to the former's unreliability. Although allowing categorization by race to vary reduces the traditional BFP's reliability, that same natural variation may make it a relatively superior predictor of judgments and behavior toward individual Blacks in settings that do not promote categorization by race. In contrast, behavior toward the category "Black," or toward an individual Black in settings that do encourage categorization by race, may be better predicted by the IAT or the category version of the BFP.

**Acknowledgments—**This research was supported by National Institute of Mental Health Grant MH38832 and Senior Scientist Award MH01646. Julie Brown, Eric Currence, Nicole Deland, Don Ladwig, Sarah Lifland, and Suzanne Miller assisted in data collection, and Marilynn Brewer provided helpful feedback.

## REFERENCES

Banaji, M.R. (2001). Implicit attitudes can be measured. In H.L. Roediger & J.S. Nairne (Eds.), *The nature of remembering: Essays in honor of Robert G. Crowder* (pp. 117–150). Washington, DC: American Psychological Association.

Cunningham, W.A., Preacher, K.J., & Banaji, M.R. (2001). Implicit attitude measures: Consistency, stability, and convergent validity. *Psychological Science*, *12*, 163–170.

De Houwer, J. (2001). A structural and process analysis of the Implicit Association Test. *Journal of Experimental Social Psychology*, *37*, 443–451.

Fazio, R.H. (2001). On the automatic activation of associated evaluations: An overview. *Cognition and Emotion*, *15*, 115–141.

Fazio, R.H., & Dunton, B.C. (1997). Categorization by race: The impact of automatic and controlled components of racial prejudice. *Journal of Experimental Social Psychology*, *33*, 451–470.

Fazio, R.H., & Hilden, L.E. (2001). Emotional reactions to a seemingly prejudiced response: The role of automatically-activated racial attitudes and motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin*, *27*, 538–549.

Fazio, R.H., Jackson, J.R., Dunton, B.C., & Williams, C.J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, *69*, 1013–1027.

Fazio, R.H., & Olson, M.A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology*, *54*, 297–327.

Greenwald, A.G., McGhee, D., & Schwartz, J.L.K. (1998). Measuring individual differences in cognition: The implicit association task. *Journal of Personality and Social Psychology*, *74*, 1469–1480.

Greenwald, A.G., & Nosek, B.A. (2001). Health of the Implicit Association Test at age 3. *Zeitschrift für Experimentelle Psychologie*, *48*, 85–93.

Jackson, J.R. (1997). *Automatically activated racial attitudes.* Unpublished doctoral dissertation, Indiana University, Bloomington.

2. IAT block was also included and, as is typical, accounted for significant variance, $t(87) = 1.97$, $p = .05$.

3. The BFP and IAT may not correspond for other reasons as well (see, e.g., Karpinski & Hilton, 2001, and Fazio & Olson, in press, for consideration of the potential effects of environmental associations that are discrepant from personal evaluations).

4. For the 15 participants who showed the largest race differences (positive or negative) in their responses on the traditional BFP, split-half reliability improved to .46. The comparable figure for the category BFP was .49.

Karpinski, A., & Hilton, J.L. (2001). Attitudes and the Implicit Association Test. *Journal of Personality and Social Psychology*, *81*, 774–778.

Livingston, R.W., & Brewer, M.B. (2002). What are we really priming? Cue-based versus category-based processing of facial stimuli. *Journal of Personality and Social Psychology*, *82*, 5–18.

Marsh, K.L., Johnson, B.L., & Scott-Sheldon, L.A. (2001). Heart versus reason in condom use: Implicit versus explicit attitudinal predictors of sexual behavior. *Zeitschrift für Experimentelle Psychologie*, *48*, 161–175.

Mitchell, J.A., Nosek, B.A., & Banaji, M.R. (in press). Contextual variations in implicit evaluation. *Journal of Experimental Psychology: General.*

Nosek, B.A., Banaji, M.R., & Greenwald, A.G. (2002). Harvesting implicit group attitudes and beliefs from a demonstration website. *Group Dynamics*, *6*, 101–115.

Olson, M.A., & Fazio, R.H. (1999, May). *Nonverbal leakage during public evaluations of Black candidates: The roles of automatically-activated racial attitudes and motivation to control prejudiced reactions.* Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago.

Olson, M.A., & Fazio, R.H. (in press). Trait inferences as a function of automatically-activated racial attitudes and motivation to control prejudiced reactions. *Basic and Applied Social Psychology.*

Sears, D.O. (1983). The person-positivity bias. *Journal of Personality and Social Psychology*, *44*, 233–250.

Sherman, S.J., Presson, C.C., Chassin, L., Rose, J.S., & Koch, K. (2003). Implicit and explicit attitudes toward cigarette smoking: The effects of context and motivation. *Journal of Social and Clinical Psychology*, *22*, 13–39.

Towles-Schwen, T. (2002). *White students' relationships with their African-American roommates: Automatically-activated racial attitudes and motivation to control prejudiced reactions as antecedents and consequences.* Unpublished doctoral dissertation, Indiana University, Bloomington.

Towles-Schwen, T., & Fazio, R.H. (2001). On the origins of racial attitudes: Correlates of childhood experiences. *Personality and Social Psychology Bulletin*, *27*, 162–175.

(RECEIVED 7/23/02; REVISION ACCEPTED 2/4/03)

Available online at www.sciencedirect.com
ScienceDirect
International Journal of Intercultural Relations
30 (2006) 751–768
International Journal of INTERCULTURAL RELATIONS
www.elsevier.com/locate/ijintrel

# Not an outgroup, not yet an ingroup: Immigrants in the Stereotype Content Model

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Received 2 February 2006; received in revised form 13 June 2006; accepted 19 June 2006

**Abstract**

Stereotype research depicts the generic immigrant as incompetent and untrustworthy. The current research expands this image, specifying key information dimensions (e.g. nationality, socioeconomic status) about immigrants. To see how perceivers differentiate among particular immigrant groups, we extend a model of intergroup perception, the Stereotype Content Model (SCM; Fiske, Cuddy, Glick, & Xu, 2002. *Journal of Personality and Social Psychology*, *82*, 878–902), to immigrant subgroups. The SCM predicts that perception centers on competence and warmth, and relates to targets' perceived status and competition within society. Specified by nationality, race, ethnicity, and class, images of immigrants differ by both competence and warmth, with most groups receiving ambivalent (low–high or high–low) stereotypes rather than the uniform low–low for the generic immigrant. As predicted, ambivalent stereotypes reflect target nationality combined with socioeconomic status, supporting the SCM's ambivalent stereotypes and social structural hypotheses, as well as better defining immigrant stereotypes and their contingencies.


## 1. Introduction

The prevailing stereotype of an immigrant is an incompetent and untrustworthy outsider. Stereotype research documents this image of a generic immigrant in Belgium (Cuddy, Fiske, Demoulin, & Leyens, 2000), in Germany (Eckes, 2002), and in Hong Kong and South Korea (Cuddy et al., in press-b). Apparently, people hold a limited image of

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doi:10.1016/j.ijintrel.2006.06.005

immigrants in general, but we argue that, given additional information along key dimensions (nationality, ethnicity, and socioeconomic status), they will differentially evaluate immigrant groups and make attributions about immigrants at each of these levels, consistent with previous intergroup perception research: Italians are warm and friendly but lax (Cuddy et al., in press-b); Asians are shy but successful (Kitano & Sue, 1973); rich people are accomplished but not nice (Fiske, Cuddy, Glick, & Xu, 2002). We propose a taxonomy of immigrant images, given a target group whose classifications implicate different categories. Here, we extend a model of intergroup perception, the Stereotype Content Model.

## 2. Stereotypes of national, racial, and ethnic groups

Perceivers tend to agree on stereotypes of different nationalities (Peabody, 1985), due to their reliance on certain features of the nation, ranging from politics and economics (Poppe, 2001), to religion (Peabody, 1985), to geography (Linssen & Hagendoorn, 1994), and relational status, cooperating or conflicting, between one's ingroup and the outgroup (Alexander, Brewer, & Herrmann, 1999; Salazar & Marin, 1977). Various combinations of these features then catalyze images of that nation's people (Hagendoorn, 1991), usually viewed within a two-dimensional framework utilizing competence and morality (Phalet & Poppe, 1997; Poppe & Linssen, 1999).

Within the United States, over 70 years, perceivers agree on stereotypes of nine specific national, racial, and ethnic groups (African–Americans, Chinese, English, Germans, Irish, Italians, Japanese, Jews, and Turks), which have increased in favorability, while the stereotype of the ingroup (Americans) has decreased in favorability (Leslie, Constantine, & Fiske, 2006). Although African–Americans, Chinese, and Turks originally received the most negative stereotypes (Katz & Braly, 1933), this no longer holds true. Across four studies, stereotypes of the same target groups fluctuated in uniformity over time (Gilbert, 1951; Karlins, Coffman, & Walters, 1969; Katz & Braly, 1933; Leslie et al., 2006), but some recognizable patterns emerge for distinct groups.

Despite these studies of national, racial, and ethnic groups, few studies have targeted stereotypes of immigrants specifically. In those few studies, a striking finding consistently emerged: People perceive immigrants as low in competence and low in warmth (specifically trustworthiness). But perhaps immigrant groups, if specified by originating country, would have received differentiated ratings on these two key dimensions.

## 3. Interpersonal and intergroup perception

Previous stereotype research documents a two-dimensional framework that combines competence and warmth/morality. Individual person perception research demonstrated the efficiency of such a two-dimensional framework for perceiving others (Asch, 1946; Rosenberg, Nelson, & Vivekananthan, 1968). A literature search shows that two recurring dimensions appear, reflecting competence and warmth: task and social (Bales, 1970); intelligence and honesty (Van Lange & Kuhlman, 1994); competence and morality (Phalet & Poppe, 1997; Poppe & Linssen, 1999; Wojciszke, 1994); self- and other-profitability (Peeters, 2002); and self-promotion and self-deprecation (Vonk, 1999).

### 3.1. The stereotype content model: ambivalent dimensions predicted by social structural relations

One specific instance of intergroup perception, the Stereotype Content Model (SCM), posits stereotyping along perceived warmth and competence dimensions (Fiske et al., 2002; Fiske, Xu, Cuddy, & Glick, 1999). The SCM's premise is that social perception immediately answers two key questions: Is the outgroup's intention good or ill toward me and my group (friend or foe)? and Can the outgroup members enact their intentions (able or unable)? This model works well in a variety of intergroup perception, whether targets are elderly people (Cuddy, Norton, & Fiske, 2005), gay subgroups (Clausell & Fiske, 2005), or female subgroups (Eckes, 2002), in both American (Fiske et al., 2002) and international (Cuddy et al., in press-b) samples.

The SCM proposes two key components: cross-dimensional ambivalence and the reflection of societal power relations in stereotype content. Ambivalent stereotypes describe inconsistency between the competence and warmth dimensions. For example, high-status outgroups receive envious stereotypes (people think of them as competent although not nice) and are therefore respected but disliked, and low-status outgroups receive paternalistic stereotypes (their niceness compensates for their low competence) and are liked but disrespected. Rather than uniform antipathy, as in most traditional prejudice (Allport, 1954), many groups receive ambivalent stereotypes. Ambivalence in group perception manifests in racial attitudes (Katz & Hass, 1986), gender beliefs (Glick & Fiske, 1996, 1999, 2001), and ageist perceptions (Cuddy et al., 2005).

The SCM also proposes a social structural hypothesis: Competence assessments correspond positively to perceived societal status and power, while warmth assessments negatively reflect perceived competition with the ingroup. People attribute competence to those perceived as holding prestigious jobs and being economically successful, and they attribute warmth to those perceived to be harmless (in that they are not competitive with the ingroup, for jobs, school admissions, power, and resources).

Additional studies demonstrate the SCM's utility at subgroup levels: Women are either competent or warm, depending on whether they are professionals or homemakers (Cuddy, Fiske, & Glick, 2004; Eckes, 2002), and gay men likewise receive stereotypes according to their perceived subgroup (Clausell & Fiske, 2005). Women generically are perceived positively (consistent with the homemaker stereotype), and gay men generically are perceived neutrally (consistent with averaging across all the varied subgroups). Here, we propose to extend the SCM to study perceptions of immigrants at multiple levels. If immigrants are perceived negatively—as international data indicate—how do people feel about specific immigrants? Will they average across subgroups, as in the case of gay men, or will they assimilate to a specific (probably negative) salient subgroup, unless prompted otherwise? Depending on the mix of stereotype dimensions (e.g. nationality, ethnicity, socioeconomic status), reactions to specific immigrant groups may drastically differ. But these differences should be systematic, not arbitrary, according to the SCM, which means their effects also are predictable, as we shall see. We believe that most immigrant stereotypes should reveal ambivalence and reflect social structural correlates.

## 4. Applying the stereotype content model to immigrant perception

The current research explores perceptions of immigrants by members of the receiving country. We believe that the content of majority members' perceptions of immigrants will

mimic the content of intergroup perception. Although the SCM two-dimensional framework in person perception and group perception apply widely, little research has applied this model to study specific immigrant groups. This matters because the host country's reception of immigrant groups reflects a particular set of intergroup relations and images, which will require knowledge of how those particular groups fare in the new country. This research explores whether this is the case.

SCM predicts that immigrant groups labeled by country of origin thus will disperse from the low-competence, low-warmth corner, landing in locations across the SCM space and receiving attributions varying in levels of competence and warmth. Comparing stereotypes of a group with its subgroups, similar trends emerge. Besides subgroups for women and for gay men: While black people as a category received neutral ratings, black professionals and poor blacks differed dramatically along the competence dimension (Fiske et al., 2002). Outside the SCM, other evidence comes from the Dutch majority reporting degrees of perceived similarity between themselves and each of four immigrant groups (Moroccans, Turks, Antilleans, and Surinamers) (Schalk-Soekar, van de Vijver, & Hoogsteder, 2004). All this suggests that, at levels more specific than the generic, immigrant images should systematically differ from each other.

### *4.1. Immigrants' nationality determines stereotypes, as a function of social structure*

According to the SCM, immigrants' national origin will guide majority members' perceptions of them. Each immigrant nationality has its own unique economic and social history with regard to its host country. When one country happens, for its own social structural reasons, to send immigrants of certain social configurations to another country, status and competition relations are created in the host country. The SCM posits that status buys respect (perceived competence) and competition costs liking (perceived lack of warmth). Stereotype contents, thus, are immigration accidents: who happens to come under what circumstances. We can make a number of specific predictions for specific immigrant groups in the US, based on SCM principles.

Consider each sending continent in turn. For Latin America, the closest neighboring continent, North American samples have rated "Hispanics" as either average on competence and warmth or low on both dimensions, and migrant workers (a common North American role, currently, for Latinos) have likewise ended up in the lower left corner, low in both attributes (Fiske et al., 2002). SCM suggests that immigrants of Hispanic background or from Latin American nations will be attributed similar stereotypes as Hispanics and migrant workers, the latter association because Latin American immigrants in the US are associated with migrant or farm work.

Consider Asia. Across cultures, rich people consistently elicit stereotypes as competent but not nice (Cuddy et al., in press-b; Eckes, 2002; Fiske et al., 2002). Immigrant groups perceived as well-to-do should receive similar stereotypes. We suggest that this is one reason Asian immigrants to the US will fall into this category. Perceived as a relatively successful "model minority," the stereotype of Chinese and Japanese as competent, but lacking socially desirable interpersonal traits appeared decades ago (Karlins et al., 1969; Katz & Braly, 1933; Sue & Kitano, 1973). Asians as a category (not specifying "immigrant") have received the competent-but-not-nice stereotype, whether perceived by Americans (Fiske et al., 2002; Lin, Kwan, Cheung, & Fiske, 2005) or Belgians (Cuddy et al., in press-b).

Moving to another continent, perceptions of European immigrants to the United States, given the early European hegemony over native American nations and over African slaves, transplanted an initially Anglo-European culture to the US, which survives in modified form to date. Hence, American society perceives European countries (especially the UK) to be its closest global allies, so many European immigrants should fall in a space similar to native-born Americans. Indeed, in one study, the British nationality was closest to Americans (Leslie et al., 2006). However, of European immigrants, for reasons of social class, Irish and Italian immigrants used to be perceived as low-status, but their changing status over the past century suggests that they will receive either stereotypes associated with low-status (low-competence, high-warmth) or that they will fit in with the American mainstream.

Moving to Africa, two immigrant subgroups generate more complicated predictions. We do not predict that African immigrants will receive the same stereotype as "blacks" (middle on both dimensions) (Eckes, 2002; Fiske et al., 2002), because perceptions of black subgroups resulted in an averaged aggregate neutral rating for blacks as a group. Voluntary African immigrants to the US now include many high-status people; indeed fully half the black students at elite universities are of immigrant African (and Caribbean) origin (Massey, Charles, Lundy, & Fischer, 2003). However, this reality is complicated by media images of challenges in their countries of origin, so the predictions here could go either way, or average over the two extremes.

In previous SCM research, Arabs received average competence and low warmth ratings (Fiske et al., 2002). We predict that immigrants from Middle Eastern nations, because of their association to Arab background (whether accurate or not), will receive average competence stereotypes compared to other groups, perhaps mixing low- and high-status images, along with low-warmth, because of the tragically difficult relationship between the US and the Middle East.

Overall, then, stereotypes are not confined to national, racial, and ethnic categories but also socioeconomic status, which cross-cuts the former. The aforementioned stereotypes of Black Americans is one illustrative example. That poor blacks and professional blacks received distinct stereotypes demonstrates the influence of socioeconomic status in intergroup perception. As noted, the social structural hypothesis of the SCM posits that stereotypes reflect the perceiver's knowledge of power relations in society. Perceived status leads to perceived competence, and the people perceived as competent are begrudgingly given respect. On the other hand, those perceived as non-competitive are consequently perceived as warm, in order to placate them in their lower status in society. We predict that certain immigrant groups will be stereotyped based on occupations associated with them, such as farm-worker or tech industry employees, or social status, such as their legality in the host nation.

## 5. The current research

Prior work points to immigrants generically as low in competence and low in warmth. However, given previous research on national, racial, ethnic, and social class stereotypes, we argue that specific immigrant groups will differentiate and locate at various points along the two dimensions. We apply the SCM to understand how people differentiate among immigrant group stereotypes. We also conduct auxiliary analyses to see if those stereotypes illustrate the ambivalent stereotype and social structural aspects of the SCM.

## 6. Review of hypotheses

(1) Perceptions of specific immigrant groups will vary, such that groups will occupy distinct locations in the SCM space. That is, competence and warmth will differentiate immigrant images.
(2) Immigrant groups from Asian, Latin American, and Middle Eastern countries will locate in clusters corresponding to previous SCM research on, respectively, "Asians," (high-competence and low-warmth) "Hispanics," (low-competence and low-warmth or average in both) and "Arabs" (average-competence and low-warmth). Immigrants from specific European nations will group in clusters corresponding to previous stereotype research on European nations: low-competence and low-warmth for Russian, and high-competence and low-warmth for German, and average-competence and low-warmth for French.
(3) Similar to other social groups in previous research, most immigrants will receive ambivalent stereotypes.
(4) Social structure will influence the stereotypes immigrants receive, in that perceived socioeconomic status and competition will correlate with attributions of competence and warmth, respectively.

## 7. Pilot study: selecting immigrant groups

### 7.1. Method

#### 7.1.1. Participants

Thirty-nine undergraduates (31 from Princeton University, 8 from Stanford University; 24 women, 14 men, 1 unknown; mean age = 19.84, SD = 1.37) volunteered to complete the questionnaire; 28 were born in the United States.

#### 7.1.2. Questionnaire and procedure

In the open-ended questionnaire, participants read the following instruction: "In the space below, please list the main immigrant groups in the US that come to your mind. There are no right or wrong answers." The rest of the page was blank. To avoid suggesting that we expected a particular quantity of responses, we did not provide an allotted number of lines. A list of basic demographic questions followed on the back side of the paper.

### 7.2. Results and discussion

Participants provided a total of 45 groups. We selected groups to include in our survey if they were mentioned by at least five respondents (13%). They were Mexican (59%), Asian (49%), Chinese (44%), African (36%), Hispanic (31%), Latino or Latin American (31%), Irish (26%), Indian (23%), South American (23%), Eastern Europeans (21%), Japanese (21%), German (18%), Middle Eastern (18%), European (15%), Korean (15%), Canadian (13%), French (13%), Italian (13%), Russian (13%), and Vietnamese (13%) immigrant groups. Since no participant listed both Latino (or Latin American) and Hispanic, we combined them into one group labeled Latino.

Because we were interested in perceptions of immigrants based on political-economic factors beyond their race or ethnicity, we added additional categories: documented, undocumented, farm-worker, tech industry, first generation, and third generation. They were included to understand the impact of perceived socioeconomic status. We believe that people's occupation most directly influences their perceived status, but also in the case of immigrants, documentation status and acculturation also matter. For comparison with our immigrant groups, and to anchor the social space, we included eight groups that have reliably appeared in one of the four SCM quadrants: Americans and college students in high-competence and high-warmth, rich people and professionals in high-competence and low-warmth, elderly people and housewives in low-competence and high-warmth, and homeless people and poor people in low-competence and low-warmth (Cuddy et al., 2004, in press-b; Cuddy et al., 2005; Fiske et al., 1999, 2002). A total of 33 groups appeared in the final survey.

## 8. Survey: attributions of warmth and competence

### 8.1. Method

#### 8.1.1. Participants

Two participant samples provided data. Fifty-two undergraduates, recruited from an introductory psychology course, completed the short survey. An additional 150 students (mean age = 20.16, SD = 1.77) constituted our second sample, who completed the long survey in a volunteer, paid "Questionnaire Day."

We analyzed data from only those participants who had lived in the country at least five years because we wanted to ensure familiarity with societal perceptions of stereotypes; this left 49 participants (28 women, 18 men, 3 unknown; 2 immigrants longer than 5 years) in the first sample and 137 (69 women, 65 men, 3 unknown; 17 immigrants longer than 5 years) in the second. The combined sample comprised 186 participants.

#### 8.1.2. Questionnaire and procedure

In the short survey, participants rated each target group on perceived warmth and competence using a 5-point scale (1 = *not at all*; 5 = *extremely*). They read that we were interested in "people's perceptions of different social groups in American society" and simply and directly, were asked, "To what extent do others in society believe each group is warm? Competent?".

The long survey added two more immigrant groups: first and third generation immigrants. Additionally, this survey included questions related to the perceived structural variables: socioeconomic status and competition they posed for the perceiver's own group. For status, participants rated the prestige of immigrants' jobs and their economic and educational success. For competition, they rated anticipated impact on one's ingroup if immigrants received special breaks, had power, and received more resources. (See Appendix A for the status and competition scale items.)

In both versions of the survey, participants initially could see only the eight comparison groups on the first page and therefore were at first unaware of the list of immigrants on the following page. Thus, they rated immigrants in comparison to these anchors, not vice versa. Immigrant groups were explicitly labeled by their immigration status (e.g., "Italian

immigrants,'' not ''Italians''), so participants were continually reminded to rate immigrant groups and not nationalities per se.

### 8.2. Analyses

To conduct cluster analyses using warmth and competence, we calculated the means for first and third generation immigrants using data from the second sample ($n = 137$), but for all other target groups using the combined data from both samples ($n = 186$).

Preliminary analyses determined that homeless people were an outlier group on the competence dimension (2.68 SDs away from the overall mean) and were omitted from cluster analyses, as in some previous research (Cuddy, Fiske, & Glick, in press-a).

Analyses on perceived status and competition used data from only the second sample because these items were not asked in the first sample. As in previous research, we created aggregate scores for status ($\alpha = .81$) and competition ($\alpha = .90$).

### 8.3. Results

#### 8.3.1. Immigrant groups scatter over SCM space

We hypothesized that people's perceptions of specific immigrant groups vary on the dimensions of competence and warmth, and consequently they hold distinct images of different immigrant groups. We used cluster analysis to capture (a) how these groups differentiate in perceivers' minds along competence and warmth dimensions, (b) which groups are perceived as similar to each other, and (c) how immigrant groups compare to the prototypical American. We expected to see clusters of immigrant groups disperse throughout the SCM space, not contained in the lower left corner only, as in previous research on perceptions of the generic immigrant.

Two cluster analyses determined respectively, first, the number of clusters and then their members. A hierarchical cluster analysis using Ward's method (minimizing within-cluster variance and maximizing between-cluster variance) revealed agglomeration statistics that supported a five-cluster solution, instead of the usual four clusters (see Fig. 1). Next, K-means cluster analysis using the parallel threshold method revealed the cluster membership of each target group.

Two statistical tests then substantiated the five-cluster solution. First, a two-way 5 (clusters) $\times$ 2 (stereotype dimensions) ANOVA revealed a main effect of cluster, $F(4, 27) = 17.16$, $p < .001$, $\eta^2 = .72$; a main effect of dimension, $F(1, 27) = 9.61$, $p < .01$, $\eta^2 = .26$; and most importantly, a cluster by dimension interaction, $F(4, 27) = 60.32$, $p < .001$, $\eta^2 = .90$. Follow-up univariate analyses yielded simple effects of cluster on both warmth, $F(4, 27) = 25.79$, $p < .001$, $\eta^2 = .79$, and competence, $F(4, 27) = 42.42$, $p < .001$, $\eta^2 = .86$, supporting both dimensions as necessary to classify our target groups. Cluster analyses results confirmed our first hypothesis: Immigrant groups dispersed into five clusters across the SCM space (Fig. 1).

#### 8.3.2. Immigrant groups receive stereotypes similar to their nationality plus social class

Our second hypothesis was that Asian, Latin American, and Middle Eastern immigrant groups should receive stereotypes similar to ''Asians,'' ''Hispanics,'' and ''Arabs'' in previous SCM research. European immigrant groups should receive stereotypes based on their nationality. In addition, groups associated strongly with particular social classes

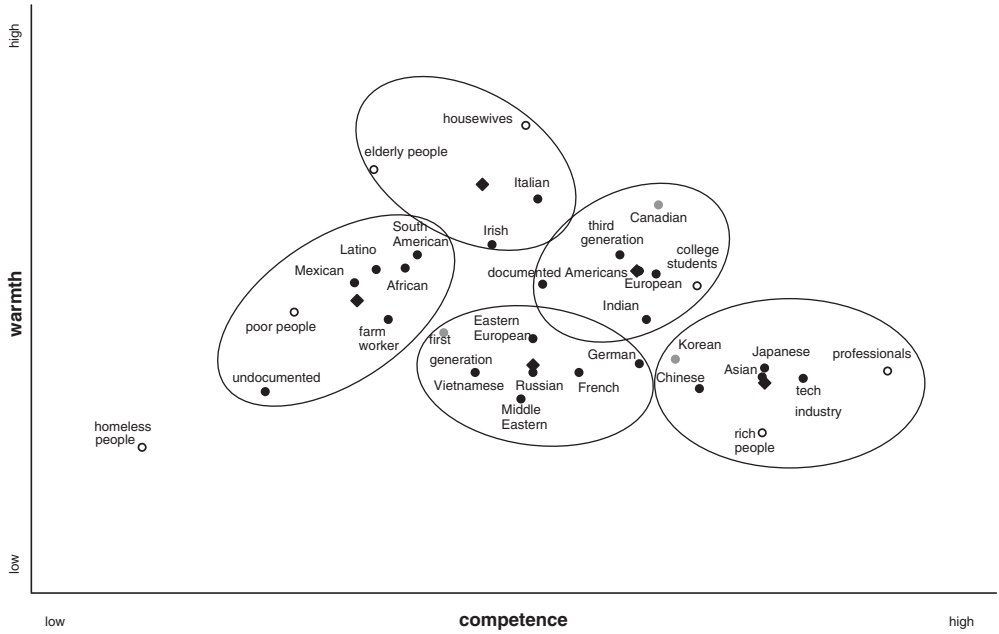


Fig. 1. Five-cluster solution. Note: filled circles indicate immigrant groups; open circles indicate comparison groups; diamonds indicate cluster center. A four-cluster solution combines the ingroup/allies and nondescript clusters and causes unstable groups, indicated by gray circles, to move to an adjacent cluster.

(e.g., Latinos with migrant workers and Asians with rich) should receive stereotypes corresponding to poor or rich people. To test our hypothesis, we investigated how each cluster compared to the ingroup (the American "us"), and where applicable, whether immigrant groups received stereotypes similar to stereotypes of their nationality or social class in previous research. Analyses on the cluster level included paired-sample *t*-tests comparing competence and warmth scores for each cluster and independent-samples *t*-tests differentiating clusters along each stereotype dimension.

The ingroup cluster was relatively high in competence and average in warmth; it included Americans and college students, presumably the predominant ingroups, and Canadian, documented, European, Indian, and third generation immigrants. This cluster comprised the ingroup, as it included Americans and college students, and its allies, groups with greatest perceived similarity to the ingroup. To our surprise, Indian immigrants were included here and not with other Asian groups. Overall, this cluster ranked second highest among all clusters on both dimensions, perhaps suggesting a muted form of ingroup favoritism. We believe this cluster embodied the image of the prototypical American, whom people implicitly use as the standard of comparison to evaluate others. Accordingly, we investigated how other clusters compare.

The least competent and clearly low-warmth cluster embodied the image of the low-status migrant or farm-worker class: poor people, and African, farm-worker, Latino, Mexican, South American, and undocumented immigrants. Though they were nearly as warm as the ingroup/allies cluster, $t(12) = 1.33$, n.s., their real distinguishing feature is their association to their much lower competence, $t(12) = 9.93$, $p < .001$, perhaps due to

their perceived rock-bottom status in American society. These immigrant groups received a stereotype similar to that given to Latino and farm-workers in previous research (Fiske et al., 2002). At least some (undocumented immigrants) were close to contempt/disgust stereotypes directed at homeless people.

The cluster adjacent to the low-competent cluster—but warmer—included elderly people and housewives, and Irish and Italian immigrants. This cluster's most salient characteristic is its top-level warmth: As expected, these groups constituted a high-warmth cluster, scoring higher on warmth than competence, diff = .91, $t(3) = 3.85$, $p < .05$, and higher in warmth than the ingroup/allies, $t(9) = 3.38$, $p < .01$. Though less competent than the ingroup/allies cluster, $t(9) = 4.24$, $p < .01$, they received higher competence scores than in previous research, besting the stereotypically low-status cluster, $t(9) = 3.13$, $p < .05$. The location of Irish and Italian immigrants replicated results of previous research (Cuddy et al., in press-b), especially on the warmth dimension. Because it scored more warm than competent, this group receives what previous work has called a paternalistic or pity stereotype (Fiske et al., 2002).

The fourth cluster was moderate in competence and low in warmth and comprised only immigrant groups: Eastern European, first generation, French, German, Middle Eastern, Russian, and Vietnamese. We believe that groups without a clear stereotype constituted this cluster. Despite lacking a readily available common stereotype, this cluster was still perceived to be both less warm, $t(12) = 5.96$, $p < .001$, and less competent, $t(12) = 3.47$, $p < .01$, than the ingroup/allies. Ratings replicated a finding from previous research for the French (Cuddy et al., in press-b) on both dimensions. Russians fared better on the competence dimension here than in previous research (Phalet & Poppe, 1997), while Germans fared worse (Cuddy et al., in press-b; Poppe & Linssen, 1999).

The fifth cluster was high-competence and low-warmth and comprised two standard SCM groups and five immigrant groups: rich people and professionals, and Asian, Chinese, Japanese, Korean, and tech-industry immigrants. As predicted, these immigrant groups received the stereotype of the model minorities (Kitano & Sue, 1973): more competent than they are nice, diff = 1.61, $t(6) = 12.86$, $p < .001$, and uniquely, more competent than the ingroup/allies cluster, $t(12) = 4.02$, $p < .01$ (but less warm, $t(12) = 6.95$, $p < .001$). Because it was more competent than nice, this cluster received what previous research has called an envious stereotype (Fiske et al., 2002).

Comparisons within and between clusters revealed that most immigrant groups received stereotypes similar to their nationality, ethnicity, or in association to their social class within the United States. Furthermore, most are distinct from the prototypical American.

### *8.3.3. Most immigrant stereotypes are ambivalent*

We hypothesized that immigrants receive ambivalent stereotypes. We tested our hypothesis on two levels: the group level and the cluster level. Groups received ambivalent stereotypes if their competence and warmth scores differed. Paired-sample *t*-tests within groups revealed that all but four of the 33 target groups differed on the competence and warmth dimensions, $p$'s $< .001$ (see Table 1), corroborating people's ambivalent stereotypes of immigrant groups. Most immigrant groups are not seen as uniformly either good (competent and warm) or bad (incompetent and unfriendly). This indicates that people have distinct conceptions of particular immigrant groups, at least on these two dimensions, and they are not all negative.

Table 1
Paired competence-warmth differences, by group

| Group | Difference |
|---|---|
| *Professionals* | 2.04*** |
| *Rich people* | 1.94*** |
| Tech industry | 1.74*** |
| Asian | 1.55*** |
| Japanese | 1.52*** |
| Chinese | 1.38*** |
| Korean | 1.08*** |
| German | .95*** |
| French | .77*** |
| Middle Eastern | .71*** |
| Indian | .68*** |
| *College students* | .66*** |
| Russian | .58*** |
| European | .43*** |
| Eastern European | .35*** |
| Vietnamese | .34*** |
| *Americans* | .32*** |
| Third generation | .14 |
| Documented | .02 |
| Canadian | −.04 |
| First generation | −.05 |
| Farm-worker | −.38*** |
| Undocumented | −.42*** |
| Irish | −.47*** |
| Italian | −.58*** |
| African | −.66*** |
| South American | −.70*** |
| Latino | −.77*** |
| Mexican | −.78*** |
| *Poor people* | −.82*** |
| *Homeless people* | −.88*** |
| *Housewives* | −1.12*** |
| *Elderly people* | −1.47*** |

*Note*: $n = 137$ for first and third generation immigrants; for all other groups, $n = 186$. Matched pair $t$-tests revealed that competence and warmth ratings differed for 29 out of the 33 target groups. Italicized groups are comparison groups; non-italicized groups are immigrant groups. Positive differences refer to greater competence and negative to greater warmth.

***$p < .001$.

Clusters received ambivalent stereotypes if they (a) differed in competence and warmth and (b) were higher on their high dimension than groups low on that dimension and lower on their low dimension than groups high on that dimension (Cuddy et al., in press-b). To see if clusters met the first requirement, we conducted paired-sample $t$-tests within clusters, which revealed that all five clusters differed on the two dimensions, $p$'s $< .05$ (see Table 2). To see if clusters met the second requirement, we conducted ten independent samples $t$-tests comparing clusters on each dimension (four unique pairs of the traditional SCM clusters on each dimension, plus the Nondescript cluster compared to the high-warmth clusters). Nine out of the ten tests were significant ($p$'s $< .05$).

Table 2
Competence and warmth scores, by cluster

| Cluster | Stereotype dimension | | |
|---|---|---|---|
| | Competence | | Warmth |
| Ingroup/Allies cluster (Americans, college students; Canadian, documented, European, Indian, and third generation immigrants) | $3.51_a$ | > | $3.19_a$ |
| Low-status cluster (Poor people; African, farm-worker, Latino, Mexican, South American, and undocumented immigrants) | $2.35_b$ | < | $2.99_a$ |
| Warm cluster (Elderly people, housewives; Irish and Italian immigrants) | $2.87_c$ | < | $3.78_b$ |
| Nondescript cluster (Eastern European, first generation, French, German, Middle Eastern, Russian, and Vietnamese immigrants) | $3.08_c$ | > | $2.55_c$ |
| Competent but not Nice cluster (Rich people, professionals; Asian, Chinese, Japanese, Korean, and tech-industry immigrants) | $4.04_d$ | > | $2.43_c$ |

*Note*: Within each row (cluster), > or < indicate means differ, results from matched pair *t*-tests. Within each column, different subscripts indicate that clusters differ ($p < .05$), results from independent samples *t*-tests.

Table 3
Social structural correlates, by group and by individual

| | Group-level analysis | | Individual-level analysis | |
|---|---|---|---|---|
| | Status | Competition | Status | Competition |
| Competence | .96*** | .16 | .77*** | .06 |
| Warmth | −.29 | −.55** | −.01 | −.14 |

*Note*: df = 31 for group-level analysis and df = 135 for individual-level analysis. Per the procedures in Eckes (2002), we calculated group-level correlations by computing the means for stereotype and social structure ratings across participants for each target group, and then correlating those aggregate measures. We calculated individual-level correlations by computing correlations for each participant, transforming them to Fisher's *Z*-scores, averaging them, and transforming back to correlations.

**$p < .01$.

***$p < .001$.

Analyses confirmed that most groups received ambivalent stereotypes: all clusters met the first criterion, and most met the second for an ambivalent cluster. Overall, findings revealed that people do not think immigrants to be equally as (in)competent as they are (not) warm but that they perceive them at a particular level of competence and another level of warmth.

### *8.3.4. Warmth and competence attributions have social structural correlates*

We hypothesized that competence and warmth would correlate with perceived status and competition. We determined the correlation between stereotype dimensions and social structure (see Table 3), and as predicted, competence and status positively relate ($r = .96$, df = 31, $p < .001$), and warmth and competition negatively relate ($r = -.55$, df = 31,

$p < .01$), in the group-level analysis. Individual-level analysis replicated the result for competence and status ($r = .77$, df = 135, $p < .001$), but not warmth and competition. The more a group seems to have status, the more it receives competence attributions; the more it seems competitive, the less it receives warmth attributions.

## 9. General discussion

Specific immigrant nationalities are distinguishable from each other, in that they mostly differ on competence and warmth, significantly higher on one or the other. Categories (clusters) of immigrants tend to be unique on one dimension: uniquely low competence for undocumented migrants; uniquely high competence for Asians; uniquely high warmth for Italian and Irish. Immigrants are not perceived at the broad generic "immigrants" level; if this were the case, we would have observed only the immigrants hovering around the middle of the SCM space with the known-comparison social groups occupying the periphery. Instead, most immigrant groups receive ambivalent stereotypes, and most of these reflect stereotypes of their nationality or implied socioeconomic status. We found that stereotype content relates to perceived social structure, with perceived status strongly correlating with stereotypic competence and perceived competition inversely correlating with stereotypic warmth.

The current research suggests that people conceptualize immigrants at three levels (at least): the generic immigrant, who is equally low in competence and warmth; clusters of immigrant groups uniquely defined by one attribute, such as low or high competence, or high warmth; and immigrants by specific origin. Consistent with the continuum model of interpersonal perception (Fiske & Neuberg, 1990), the first-cut image of an immigrant may be a low-competence, low-warmth person. Given additional information, people replace this image with a more differentiated one, anchoring on competence and warmth dimensions, compared to the location of the prototypical American on those dimensions. People may also then sort the groups by similarity in national origin or current status in the new country.

A few surprises emerged. The ingroup/allies cluster included Indian immigrants, whom we expected to be in the high-competence, low-warmth cluster. Further research focused on this group may explain this Asian anomaly.

Subgroups may explain the emergence of the nondescript cluster, another surprise. People might have varying images of different subgroups for the immigrants in that cluster. For instance, to some, Middle Eastern immigrants might summon an image of American-friendly immigrants while, to others, they might provoke images of terrorists. Likewise, while some people might think of Vietnamese immigrants in union with the East Asian immigrants (and therefore, also high-competent but low-warmth), others might envision images of war refugees (and therefore, poor and stereotypically low-competence). First-generation immigrants comprise a range of people who vary tremendously in the circumstances under which they arrived: Professionals who moved volitionally mid-career to pursue further advancement, people who work minimum wages and send back money to the rest of their families back in the native land, etc. However, possibly, some immigrant groups just do not receive a clear stereotype: Some (e.g., French) may be in the States long enough over generations that they are not perceived in terms of that nationality.

The nondescript cluster also stands out because it lacks a clear prototype. Prototypes can be either averages or ideals (Fiske & Taylor, 1991). Most clusters contain a group that

represents a clear prototype of that cluster: Americans for the ingroup/allies (note that the mean for Americans is almost identical to the cluster mean); Mexican immigrants (closest to the cluster mean) or undocumented immigrants (an "ideal" extreme) for the low-status cluster; either housewives or elderly people (as extremes) for the warm cluster; and Asian immigrants (closest to the cluster mean) or professionals (an extreme) for the competent cluster. The nondescript cluster lacks an extreme prototype, and though Russians are a central-tendency prototype—statistically, they occupy the space closest to the cluster mean—we do not know how in real terms they might represent a prototype of the groups in that cluster.

One group that received the least favorable stereotype across both dimensions was undocumented immigrants. In contrast, documented immigrants were perceived similarly to an American. Legal status alone determines whether an immigrant is perceived as a regular member of the mainstream society or as an outsider with the lowest status, reflecting an unfortunate equating of official sanction and unofficial status on personal attributes. One possible extension from this study could be the role of media framing of immigration status in perceived competition for finite amounts of societal resources. Perceived competition fosters negative immigration attitudes (Esses, Dovidio, Jackson, & Armstrong, 2001; Esses, Jackson, & Armstrong, 1998); documentation status could instigate or bolster this relation. Another extension would explore what other observable factors (e.g., low linguistic proficiency) can become equated with seemingly unrelated internal traits and attributes—those with accents are perceived as less competent (Ruscher, 2001).

People's differing evaluations of documented and undocumented immigrants suggest that some dimensions (in this case, legal documentation) overwhelmingly bias judgment. We raise the question of which dimensions are most influential in perceiving immigrants when people receive information on multiple dimensions. If Asian immigrants are competent but undocumented immigrants are not, are undocumented Asian immigrants high or low in competence? We suspect that the more salient dimension would guide perception.

A time-based analysis would help clarify whether one dimension (and which) takes priority in evaluating immigrants. While this study centered on content, a complementary research focus should explore the historical development of stereotype content of immigrants. Longitudinal research on stereotypes and prejudice toward various ethnic groups (Bogardus, 1930; Leslie et al., 2006) would tell us how immigrants shed their stereotypes and receive different ones (e.g., originally perceived as quick-tempered, the Irish and Italian are now seen as warm). The process might be as quick as being in the new country for a couple of generations: In the current research, we found that first generation immigrants are relatively low in both competence and warmth, but third generation ones are included with the prototypical Americans.

We did not observe strong ingroup favoritism, also missing in studies conducted with East Asian samples (Cuddy et al., in press-b), but unlike previous studies with Western respondents (Cuddy et al., 2000; Eckes, 2002; Fiske et al., 2002). Before we draw conclusions from this finding, note that the current study's participants included only college students. Following Sears's (1986) advice, future work should use a more diverse sample, varying age, socioeconomic status, and political orientations, whose inclusion might reflect knowledge of more differentiated stereotypes of immigrant groups. In particular, the current sample is more liberal than average, and about half are from

well-to-do backgrounds (Massey et al., 2003); thus they may have been exposed to stereotypes less extreme and more favorable than others.

In explaining similar data that did not reveal strong ingroup favoritism, Cuddy et al. (in press-b) suggested a superordinate category, as per the Common Ingroup Identity Model (Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993). Possibly, in the current study, immigrants were seen more as American subgroups and less as outgroups. If so, it presents an encouraging view of relations between immigrants and majority members; otherwise, immigrants perceived as not belonging to their new country face fervent political opposition from majority members (Pettigrew, 1998). Future research should show when immigrants are perceived as host-country subgroups versus outgroups.

We conclude with anticipations—some optimistic, others not—of host nation members' reactions (emotional, behavioral intentions, acculturation preferences) toward immigrants based on their stereotype content. People respect those with status, who are seen as competent, while they dislike competitors, who are seen as not warm (Cuddy et al., in press-a; Fiske et al., 2002). People admire those who are high in both competence and warmth; they feel contempt toward those who are low-competence and low-warmth; they envy those who are competent but not warm; and they pity those who are incompetent but warm (Cuddy et al., in press-a; Fiske et al., 2002). Each combination of the two trait dimensions thus predicts a distinct emotion toward the target immigrant.

Research also connects perceived location in the SCM space and perceivers' corresponding behavioral intentions, a specific combination of tendencies toward active or passive harm or help (Cuddy et al., in press-a). Regardless of competence, warm people are actively facilitated while not-warm people are actively harmed, and regardless of warmth, competent people are passively facilitated while incompetent people are passively harmed.[1] Passivity refers to lack of action by the perceiver, but still with impact on the target. Passive harm includes knowing that an immigrant receives below-minimum wages but refusing to do anything on behalf of that person. Passive help includes associating or cooperating with a successful immigrant.

Finally, one's SCM location influences majority members' preference for immigrants' acculturation style (integration, separation, assimilation, marginalization; Berry, 1984). Majority members' preferred acculturation style depended on whether the immigrant group is "devalued" or valued" (Montreuil & Bourhis, 2001). Such a status can be derived from their stereotypes. For example, groups perceived as both competent and warm presumably have the most to offer to the host country while groups perceived as neither competent nor warm might be seen as exploiting resources. Majority members' preferences for certain immigrants or particular acculturation styles are not without consequence (Crocker & Quinn, 2001). Often, immigrants are aware of majority members' perceptions of them and in turn, their own acculturation strategies are influenced by the preferences of their perceivers (Bourhis, Moise, Perreault, & Senecal, 1997). Given that stereotypes illuminate perceivers' prejudice and preferred acculturation strategies for immigrants, these stereotypes should be one catalyst for consequences in intergroup relations.

[1]To the extent these associations are automatic, they may be even more insidious. Automatic associations also predict subtle behaviors (Dovidio, Kawakami, & Gaertner, 2002; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; McConnell & Leibold, 2001).

## Acknowledgements

We thank Michelle Gumbrecht, Lasana Harris, Lu Lu Kuang, and Ann Marie Russell for their assistance in data collection for the pilot study. We also thank Amir Goren for his assistance in the first data collection phase of the survey study.

## Appendix A. Social structural items

*Perceived status*

(1) How prestigious are the jobs typically held by members of this group?
(2) How economically successful have members of this group been?
(3) How well educated are members of this group?

*Perceived competition*

(1) If members of this group get special breaks (such as preference in hiring decisions), this is likely to make things more difficult for people like me.
(2) The more power members of this group have, the less power people like me are likely to have.
(3) Resources that go to members of this group are likely to take away from the resources of people like me.

*Note*. All items used a five-point scale (1 = *not at all*; 5 = *extremely*).

## References

Alexander, M. G., Brewer, M. B., & Herrmann, R. K. (1999). Images and affect: A functional analysis of out-group stereotypes. *Journal of Personality and Social Psychology*, *77*, 78–93.

Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.

Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal and Social Psychology*, *41*, 258–290.

Bales, R. F. (1970). *Personality and interpersonal behavior*. New York: Holt, Rinehart and Winston.

Berry, J. W. (1984). Cultural relations in plural societies: Alternatives to segregation and their sociopsychological implications. In N. Miller, & M. Brewer (Eds.), *Groups in contact*. New York: Academic Press.

Bogardus, E. S. (1930). A race-relations cycle. *American Journal of Sociology*, *35*, 612–617.

Bourhis, R. Y., Moise, L. C., Perreault, S., & Senecal, S. (1997). Towards an interactive acculturation model: A social psychological approach. *International Journal of Psychology*, *32*, 369–386.

Clausell, E., & Fiske, S. T. (2005). When do subgroup parts add up to the stereotypic whole? Mixed stereotype content for gay male subgroups explains overall ratings. *Social Cognition*, *23*, 161–181.

Crocker, J., & Quinn, D. M. (2001). Psychological consequences of devalued identities. In R. Brown, & S. L. Gaertner (Eds.), *Blackwell handbook of social psychology: Intergroup processes* (pp. 238–257). Oxford: Blackwell.

Cuddy, A. J. C., Fiske, S. T., Demoulin, S., & Leyens, J.-P. (2000). Stereotype content of social groups, as perceived by Belgian respondents. Unpublished data, Princeton University.

Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2004). When professionals become mothers, warmth doesn't cut the ice. *Journal of Social Issues*, *60*, 701–718.

Cuddy, A. J. C., Fiske, S. T., & Glick, P. (in press-a). Behaviors from intergroup affect and stereotypes: The BIAS map. Journal of Personality and Social Psychology.

Cuddy, A. J. C., Fiske, S. T., Kwan, V. S. Y., Glick, P., Demoulin, S., Leyens, J.-P., et al. (in press-b). Is the stereotype content model culture-bound? A cross-cultural comparison reveals systematic similarities and differences. *British Journal of Social Psychology*.

Cuddy, A. J. C., Norton, M., & Fiske, S. T. (2005). This old stereotype: The pervasiveness and persistence of the elderly stereotype. *Journal of Social Issues*, *61*, 267–285.

Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, *82*, 62–68.

Dovidio, J. F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology*, *33*, 510–540.

Eckes, T. (2002). Paternalistic and envious gender stereotypes: Testing predictions from the stereotype content model. *Sex Roles*, *47*, 99–114.

Esses, V. M., Dovidio, J. F., Jackson, L. M., & Armstrong, T. L. (2001). The immigration dilemma: The role of perceived group competition, ethnic prejudice, and national identity. *Journal of Social Issues*, *57*, 389–412.

Esses, V. M., Jackson, L. M., & Armstrong, T. L. (1998). Intergroup competition and attitudes toward immigrants and immigration: An instrumental model of group conflict. *Journal of Social Issues*, *54*, 699–724.

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*, 878–902.

Fiske, S. T., & Neuberg, S. L. (1990). A continuum model of impression formation: From category-based to individuating processes as a function of information, motivation, and attention. In M. P. Zanna (Ed.), *Advances in experimental psychology*, Vol. 23 (pp. 1–108). San Diego, CA: Academic Press.

Fiske, S. T., Xu, J., Cuddy, A. J. C., & Glick, P. (1999). (Dis)respecting versus (Dis)liking: Status and interdependence predict ambivalent stereotypes of competence and warmth. *Journal of Social Issues*, *55*, 473–489.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York, NY: McGraw-Hill.

Gaertner, S. L., Dovidio, J. F., Anastasio, P. A., Bachman, B. A., & Rust, M. C. (1993). The common ingroup identity model: Recategorization and the reduction of intergroup bias. In W. Stroebe, & M. Hewstone (Eds.), *European review of social psychology*, Vol. 4 (pp. 1–26). London: Wiley.

Gilbert, G. M. (1951). Stereotype persistence and change among college students. *Journal of Abnormal and Social Psychology*, *46*, 245–254.

Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology*, *70*, 491–512.

Glick, P., & Fiske, S. T. (1999). The ambivalence toward men inventory: Differentiating hostile and benevolent beliefs about men. *Psychology of Women Quarterly*, *23*, 519–536.

Glick, P., & Fiske, S. T. (2001). Ambivalent sexism. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, Vol. 33 (pp. 115–188). San Diego, CA: Academic Press.

Hagendoorn, L. (1991). Determinants and dynamics of national stereotypes. *Politics and the Individual*, *1*(2), 13–26.

Karlins, M., Coffman, T. L., & Walters, G. (1969). On the fading of social stereotypes: Studies in three generations of college students. *Journal of Personality and Social Psychology*, *13*, 1–16.

Katz, D., & Braly, K. (1933). Racial stereotypes of one hundred college students. *Journal of Abnormal and Social Psychology*, *28*, 280–290.

Katz, I., & Hass, R. G. (1986). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology*, *55*, 893–905.

Kitano, H. H. L., & Sue, S. (1973). The model minorities. *Journal of Social Issues*, *29*, 1–9.

Leslie, L. M., Constantine, V. S., & Fiske, S. T. (2006). The Princeton quartet: Does private ambivalence moderate modern stereotype content? Unpublished manuscript.

Lin, M. H., Kwan, V. S. Y., Cheung, A., & Fiske, S. T. (2005). Stereotype content model explains prejudice for an envied outgroup: Scale of anti-Asian American stereotypes. *Personality and Social Psychology Bulletin*, *31*, 34–47.

Linssen, H., & Hagendoorn, L. (1994). Social and geographical factors in the explanation of the content of European nationality stereotypes. *British Journal of Social Psychology*, *33*, 165–182.

Massey, D. S., Charles, C. Z., Lundy, G., & Fischer, M. J. (2003). *The source of the river: The social origins of freshmen at America's selective colleges and universities*. Princeton, NJ: Princeton University Press.

McConnell, A. R., & Leibold, J. M. (2001). Relations among the implicit association test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*, *37*, 435–442.

Montreuil, A., & Bourhis, R. Y. (2001). Majority acculturation orientations toward "valued" and "devalued" immigrants. *Journal of Cross-Cultural Psychology*, *32*, 698–719.

Peabody, D. (1985). *National characteristics*. New York: Cambridge University Press.

Peeters, G. (2002). From good and bad to can and must: Subjective necessity of acts associated with positively and negatively valued stimuli. *European Journal of Social Psychology*, *32*, 125–136.

Pettigrew, T. F. (1998). Reactions toward the new minorities of Western Europe. *Annual Review of Sociology*, *24*, 77–103.

Phalet, K., & Poppe, E. (1997). Competence and morality dimensions of national and ethnic stereotypes: A study in six Eastern-European countries. *European Journal of Social Psychology*, *27*, 703–723.

Poppe, E. (2001). Effects of changes in GNP and perceived group characteristics on national and ethnic stereotypes in Central and Eastern Europe. *Journal of Applied Social Psychology*, *31*, 1689–1708.

Poppe, E., & Linssen, H. (1999). In-group favouritism and the reflection of realistic dimensions of difference between national states in Central and Eastern European nationality stereotypes. *British Journal of Social Psychology*, *38*, 85–102.

Rosenberg, S., Nelson, C., & Vivekananthan, P. S. (1968). A multidimensional approach to the structure of personality impressions. *Journal of Personality and Social Psychology*, *9*, 283–294.

Ruscher, J. B. (2001). *The social psychology of prejudiced communication*. New York: Guilford Press.

Salazar, J., & Marin, G. (1977). National stereotypes as a function of conflict and territorial proximity. *Journal of Social Psychology*, *101*, 13–19.

Schalk-Soekar, S. R. G., van de Vijver, F. J. R., & Hoogsteder, M. (2004). Attitudes toward multiculturalism of immigrants and majority members in the Netherlands. *International Journal of Intercultural Relations*, *28*, 533–550.

Sears, D. (1986). College sophomores in the laboratory: Influences of a narrow data base on social psychology's view of human nature. *Journal of Personality and Social Psychology*, *51*, 515–530.

Sue, S., & Kitano, H. H. L. (1973). Stereotypes as a measure of success. *Journal of Social Issues*, *29*, 83–98.

Van Lange, P. A. M., & Kuhlman, D. M. (1994). Social value orientations and impressions of partner's honesty and intelligence: A test of the might versus morality effect. *Journal of Personality and Social Psychology*, *67*, 126–141.

Vonk, R. (1999). Impression formation and impression management: Motives, traits, and likeability inferred from self-promoting and self-deprecating behavior. *Social Cognition*, *17*, 390–412.

Wojciszke, B. (1994). Multiple meanings of behavior: Construing actions in terms of competence or morality. *Journal of Personality and Social Psychology*, *67*, 222–232.

# INDIVIDUAL CONFORMITY TO ATTITUDES OF CLASSROOM GROUPS[1]

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AN INDIVIDUAL'S attitudes are influenced to some extent by the groups of which he is a member. Evidence for this statement dates back to Moore's experiments in 1921, which demonstrated that people will reverse their judgments if told that they differ from those of the majority of the group. In a similar experiment Marple (7) found, on a measure of attitude toward a number of controversial issues, that his 300 high school seniors, college seniors, and adults made over half of the possible changes of attitude toward the majority attitude as compared with about 15 per cent made by a control group not told the majority attitude. Both of these experiments provide evidence to support the hypothesis that the individual tends to adopt attitudes corresponding to those held by the majority of the group. This tendency has usually been termed "conformity."

*The perceived group norm.* What is the individual conforming to? Most investigations of the relationship of attitudes to group norms have dealt only with conformity to the group norm as perceived by the experimenter (*E*). For example, Marple (7) found that some members of his group changed their attitudes toward those designated as the attitudes of the majority of the group, while other group members did not change their attitudes in this direction or changed away from the attitudes of the majority. Why did some individuals change in one direction, some in another, and some not at all?

We might improve our ability to answer this question if we knew what group members perceived the group norm to be—both at the time of the pretest and at the time of the posttest. It seems probable that even before the opinion of the majority was announced, the group members had some vague perception of the opinion of the majority. We can then explain failure to conform thus: not all members of the group had the same perception of the group norm when the pretest was given. When confronted with what purported to be the group norm, some group members saw that it lay in one direction from their original perception[2] and changed their attitudes accordingly; others saw that it lay in another direction from their original perception and hence changed their attitudes in the opposite direction from the first group. Those who did not change may have found that the announced norm was in accordance with their original guess, or else failed to believe *E* when he announced a different one. Hence, what Marple discovered may not have been the "prestige value" of majority opinion, but rather the effect of a change or lack of change in a perceived group norm.

A study of the factors involved in conformity will, then, be more definite if one studies conformity to the *perceived* group norm, rather than to a norm perceived by *E*. We shall call this relationship between the individual's attitude and his perception of the group norm *congruence*, retaining "conformity" as the term referring to the relationship of attitude to the objective group norm (see Fig. 1).

*The reference group—a matter of degree.* Newcomb (9) has extended our question, "what is the individual conforming to?" by introducing the term "reference group." According to his hypothesis, the individual tends to conform to the norm, not necessarily of the groups of which he is a member at a given

[1] This article is based upon research conducted for a Ph.D. dissertation completed in 1949 and carried out under the direction of Professor Donald G. Marquis. Drs. Harold Guetzkow, Everett Bovard, and Mr. Lee Danielson assisted in various aspects of the research.

[2] This theory assumes that when an invididual takes an attitude test in a group, the group acts as a constraint upon him even if the group norm exists for him in only a vague way. An experiment by F. H. Allport (1) demonstrated that an individual's judgments in a group were less extreme than his judgments alone. This indicates that the group norm exists for individuals, at least in some vague form, even when it has not been made explicit.

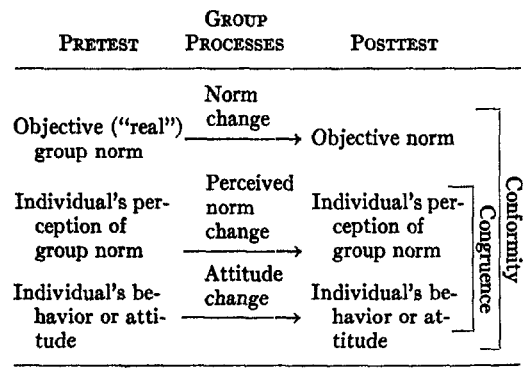


FIG. 1. VARIABLES INVOLVED IN CONFORMITY EXPERIMENTS

moment, but to the norm of a group to which he refers his attitude.

When is a group a reference group? The usual solution is to use an all-or-none classification. Either the individual is a member of the group or he is not a member; either he uses a group as a referent for his attitude or he does not use that group as a referent.

It seems probable, however, that a number of groups may be influencing an individual at any moment in time. Thus, two individuals who refer to the same group may be influenced to a different *degree* or in different directions by that group; therefore, quantitative measures of the individual's group membership are needed. Those who have discussed group identification or similar concepts (e.g., Krech and Crutchfield [5], Festinger [4], and Newcomb [10]) have indicated that group membership, group identification, or group belongingness are not simple all-or-none concepts. Festinger, for example, defines "cohesion" as "attraction of the group," and has evidence that the more cohesive the groups the greater the conformity to the group norms. Does this hold true for norms not directly related to group goals? Do the *individuals* who are most attracted to the group show greater conformity?

*Conformity and group process.* In any discussion of the influence of groups upon the individual's behavior, Lewin's classic group decision experiments (6) inevitably come to mind. Lewin and his associates found that women who had held a discussion and then raised their hands to indicate that they would serve certain desired foods did serve the foods to a much greater extent than women who had simply listened to a lecture inducing them to serve the foods. Other experiments showed that in bringing about changes in behavior, this procedure, which Lewin called group decision, was also superior to discussion without decision or to individual instruction.

Group decision evidently is an effective method of influencing behavior. Conformity to the group norm is high. But even though no norm was announced, conformity to the group norm of not serving the desired foods was even higher in the lecture groups. Obviously more research is needed to isolate the effects of differing group procedures upon conformity. Does the discussion before the group decision promote greater tolerance for deviation from the norm, or does it help in mobilizing group pressures toward uniformity?

## HYPOTHESES

In order to fill some of the gaps in our knowledge about conformity, an experiment was devised to test the following hypotheses:

1. Attitude shifts of group members are positively correlated with changes in their perceptions of the group norms. (A group member's perception of the group norm is defined as his estimate of the attitude of "most of the group.")

It should be pointed out that the confirmation of this hypothesis will not tell us the direction of causation. As we shall see in the discussion section, such a correlation may have two explanations. The purpose of testing this hypothesis is simply to provide evidence that anyone interested in conformity should pay attention to group members' perceptions of group norms.

2. There will be a higher positive correlation between attitudes of group members and their perceptions of the group norms in groups in which there is a greater liking for the group than in groups in which there is less liking for the group by group members. Corollary: The greater an *individual's* liking for a group, the greater the congruence between his attitudes and perceived group norms.

3. The correlation between group members' attitudes and perceptions of the group norm will be lower after participating in a group decision preceded by a group discussion than after listening to a lecture and writing an essay about the problem.

This hypothesis is based on the assumption

that group discussion weakens forces toward congruence, which group decision can only partially restore. It does not contradict Lewin's results. As we stated earlier, congruence was probably high in Lewin's lecture groups. But it does contradict the assumption that discussion contributes to congruence.

## METHOD

In order to test our hypotheses we need to create groups whose members differ between groups in the degree of liking for the group. While this might conceivably be done in groups meeting but once, it seems desirable to have groups meeting over a period of time, especially since we need to subject each group to differing procedures for changing attitudes. For these reasons, and because of their availability, the experiment was carried out in elementary psychology classes at the University of Michigan.

The measures of the attitudes used were Wang and Thurstone's Attitude-toward-the-Treatment-of-Criminals scale scored by Likert's technique, Koch's Attitude-toward-the-Freedom-of-Children scale scored by the Likert technique, and Likert's Attitude-toward-the-Negro scale.

Each of these tests was given as a pretest during the second and third weeks of the semester. Each student was asked to check his own attitude and to indicate by a zero the position on each item which "most of the class will check." Approximately at the end of each month one of the three procedures for arriving at group norms described below was used in each section in accordance with the experimental design (see Table 2). A week after the experimental treatment of each topic, the students took the attitude scale related to the topic, following the same procedure of indicating their own attitudes and the attitude of the class. Thus pre- and posttest scores for the attitudes of students and their perceptions of the attitude of "most of the class" were available.

Students for the six sections involved in the experiment were not especially selected from the total enrollment of the elementary psychology course at the University of Michigan. Each section consisted of 25 to 35 undergraduate students with the largest number coming from the sophomore class of the literary college. Students enrolling for sections at these hours were assigned to these sections alternately, i.e., the first student registering was assigned to one section, the second student to a section taught by the alternative method. Students were not told that they were participating in an experiment. Each section met for one-hour periods three times weekly for a semester.

*Differences in cohesiveness.* Three instructors each agreed to teach their two sections of the elementary psychology course in different ways. In order to build up differences in liking for the group and feeling of membership in the group, they agreed that their techniques should differ in (*a*) opportunity of class members to know other members of the class, (*b*) amount of direct interaction between class members, and (*c*) number of decisions which the class would be allowed to make about its own goals and procedures.

TABLE 1

MEMBERS' LIKING FOR THE GROUP IN CLASSES TAUGHT BY DIFFERENT METHODS

| GROUP | MEAN | *SD* | *N* |
|---|---|---|---|
| Leader-centered classes | 2.0 | 1.51 | 73 |
| Group-centered classes | 3.0 | 1.56 | 64 |

Specific procedures used were as follows:

*a.* Members of the experimental or group-centered class introduced themselves at the first meeting and each member made a seating chart identifying other members of the class. In the control or leader-centered class only the instructor possessed a seating chart and only he introduced himself.

*b.* In group-centered classes the instructor referred as much as possible of the discussion from student to student and refrained from interrupting student exchanges. In control groups he commented upon or answered each student participation, so that interactions between students were mediated through him.

*c.* In group-centered classes the instructor gave direction at the beginning of the semester, but as the semester progressed, he referred more decisions to the group. Thus students in group-centered sections made group decisions on their assignments, the number and dates of tests, and even on having class and breakfast together in an especially reserved lunchroom. The decisions made in the experimental groups about tests and assignments were also carried out in the control groups in which the instructor simply announced the assignments and tests. Thus assignments and tests were the same in both groups.

These procedures were effective in producing the desired differences. On a scale on which students rated from −5 to 5 their dislike or liking for the group, students in the group-centered classes expressed significantly greater liking for their groups ($p < .01$). These results are presented in Table 1.

*Differences in group process of arriving at norm.* The reason for using different techniques in presenting the attitute was to analyze more carefully some of the factors involved in group decision experiments.

The first technique used was that of an open vote. I call this "group decision."[3] Students discussed the problem, preliminary votes were taken on the alternative solutions to the problem presented by the instructor, and compromises made until agreement on a solution could be reached. Observers recorded the facts and arguments used in the discussion, and these formed the content of the lecture given in the groups which used the other two techniques. The order of procedures in each group is indicated in Table 2.

The second procedure was the giving of information and arguments on both sides of a problem in a lecture by the instructor. Following the lecture each student spent 10 to 12 minutes writing an essay on one of the six suggested alternative statements of attitude toward the problem.

[3] It should be pointed out that my group decisions were in reference to attitudes. Usually this term refers to decisions about behavior rather than attitudes.

TABLE 2

DESIGN OF EXPERIMENT

| PROCEDURES | INSTRUCTORS A | B | C |
|---|---|---|---|
| **LEADER-CENTERED SECTIONS** | | | |
| Lecture and secret vote | Attitude toward the freedom of children | Attitude toward the Negro | Attitude toward the treatment of criminals |
| Lecture and result of vote announced | Criminals | Children | Negro |
| Group decision | Negro | Criminals | Children |
| **GROUP-CENTERED SECTIONS** | | | |
| Lecture and secret vote | Children | Negro | Criminals |
| Vote announced | Criminals | Children | Negro |
| Group decision | Negro | Criminals | Children |

TABLE 3

CORRELATION OF SHIFT OF ATTITUDE WITH CHANGE IN PERCEPTION OF GROUP NORM

| TEST | $r$ | $N$ |
|---|---|---|
| Attitude toward the freedom of children | .350 | 121 |
| Attitude toward the treatment of criminals | .422 | 121 |
| Attitude toward Negroes | .391 | 137 |

On the class day following the lecture, students were told, "Most of the students in this class chose the following alternative ...." In all cases the alternative chosen by the group decision was also that chosen by the majority in this, which I shall refer to as the "vote announced," group. This technique was designed to test the effect of making a group norm explicit.

The third technique was identical with the "vote announced" technique except that the results of the vote were not announced. I shall call this the "lecture" group.

Thus, information and arguments about the subject were equivalent for all three methods. The last two methods were equivalent in all respects except announcement of the norm, and the norm announced was the same in the first two procedures.

*Design.* Since it would be inadvisable to treat each attitude by each method in each section, i.e., treat each topic three times in each section, it was not possible to use an ordinary factorial design. In a situation such as this, the latin-square design permits the maximum of sources of variance to be isolated. However, this experiment as blocked out in Table 2 is not a simple latin-square design, but is actually a double latin square with replications.

Hypotheses were tested by computing the significance of differences between the within-groups correlations derived by analysis of covariance.[4]

## RESULTS AND DISCUSSION

Probably the first question one asks, although this was not the primary focus of the experiment, is, "did the variables produce shifts of attitude?" Significant changes in attitude toward the treatment of criminals and in attitude toward Negroes had occurred—a change which may not be startling but is all too rare in the record of the effect of teaching upon attitudes.[5]

*Relationship of shift of attitude to change of perceived group norm.* We have seen that the students liked their groups. In fact, only one student expressed dislike for the group. Thus we have a situation in which we would expect the individual's attitude to be influenced positively by the group norm. In the introduction, I suggested that in such a situation the important variable is the subject's perception of the change in the group norm. If $E$ considers only the objective group norm, he fails to account for many changes in scores while the norm has remained constant, or must invoke genii called "degree of suggestibility" or "contrasuggestibility."

As we predicted, correlations of the shifts in attitude of individuals with changes in perceived group norm were significantly different from zero ($p < .01$). These correlations are given in Table 3.

This finding indicates that our ability to predict attitude shifts is improved by considering group norm perceptions. However, this finding does not show how this relationship is determined. It seems that either or

[4] Formulae for treating this design were developed by Professor Paul S. Dwyer, Consultant in the Statistical Research Laboratory of the University of Michigan.

[5] Another interesting question is this: how is congruence affected by the attitude involved? Taking the correlations between attitude and perceived group norm separately for the three tests used, we find that the correlation is significantly less ($p < .02$) for attitude toward the Negro than for attitude toward the treatment of criminals. The correlation for attitude toward the freedom of children is not significantly different from either of the other two. This result, while peripheral to our main findings, is probably a good illustration of the fact that a given group does not have the same effect on all attitudes. In addition to the relevance of attitude to group functioning, some attitudes are undoubtedly more difficult to change because they were learned in the family or other important reference groups.

both of the following processes are involved: (*a*) An individual who shifts his attitude projects his own attitude shift onto the group and tends to perceive the other group members as having changed similarly. (*b*) An individual whose perception of the group's attitude changes tends to shift his own attitude to maintain a similar relationship to the group norm.

Further experimentation to reveal the exact operation of these processes should give us a clearer understanding of the traditional problem of the "prestige" influence of majority opinion.

The generality of this research is limited by the fact that all but one of the students in this experiment were either neutral or positively oriented toward their groups as indicated by their responses on the liking for the group scale. Nevertheless, in some cases even the individual who is negatively oriented toward the group may shift his attitude in the same direction as he perceives the group's attitude to be changing. Ordinarily we think of the individual who is negatively oriented toward the group as shifting his attitude in the opposite direction from the group norm. Actually the direction of the shift may depend upon the situation. If the change in the perceived group norm increases the distance between the individual and the disliked group, his attitude may not shift. But, if the perceived group norm shifts toward him, he may shift his attitude in the same direction to maintain the same degree of nonconformity.

*Relationship of attraction-to-group and congruence.* Our second hypothesis predicted that in the classes in which there was more liking for the group and feeling of membership in the group there would be a higher correlation between attitudes and perceived group norms. This prediction about congruence on the posttest was not only not verified, but as the data in Table 4 indicate, if I had used a two-tailed test, congruence would have been significantly lower in the group-centered classes.

That congruence is not a simple function of cohesiveness is also indicated by the finding that within the groups the degree of liking for the group was not significantly related to the degree of congruence.

Despite the fact that our hypothesis about congruence was not confirmed, students in group-centered classes actually did conform to the group norm[6] more closely than did students in leader-centered classes. (See Table 5.)[7]

TABLE 4

POSTTEST CONGRUENCE IN LEADER-CENTERED AND GROUP-CENTERED CLASSES

| GROUP | *r* | *N* |
|---|---|---|
| Leader-centered classes | .636 | 180 |
| Group-centered classes | .370 | 207 |

TABLE 5

MEAN DIFFERENCE OF ATTITUDE FROM GROUP NORM

| GROUP | ATTITUDE TESTS | | |
|---|---|---|---|
| | CHILDREN | NEGRO | CRIMINALS |
| Leader-centered | 6.2 | 5.6 | 7.9 |
| Group-centered | 7.3 | 3.6 | 6.5 |

$F = 5.24$ for 1 and 252 *df*.
$p < .05$.

How can these results be explained?

One group of variables is composed of factors affecting one's perception of the group norm. Here we have such factors as objective clarity of the norm, misperceptions due to personality defenses, etc. On the surface it would appear that these variables cannot alone account for our result because our groups were not significantly different in the accuracy of their perception.

Another group of variables is that having to do with the relationship between one's own attitude and the perceived group norm, or congruence. Festinger and his colleagues have shown cohesiveness to be of importance in determining conformity. Because the members of a cohesive group are more strongly motivated to remain members, we would expect greater fear of rejection and, consequently, greater conformity to group norms. Our group-centered classes were more cohesive than our leader-centered classes (using Festin-

[6] "Group norm" here refers to the mean score of the group on an attitude test.

[7] The significance tests for this table and Table 7 should be interpreted with caution. Since Bartlett's test indicated that the assumption of homogeneity was not justified, a log transformation was applied. However, even after this transformation, Bartlett's test was significant at the .05 level.

TABLE 6

CONGRUENCE AFTER DIFFERENT GROUP PROCESSES WERE USED FOR CONSIDERING A PROBLEM

| PROCEDURE | $r$ | $N$ |
|---|---|---|
| Lecture | .577 | 132 |
| Vote announced | .498 | 108 |
| Group decision | .320 | 90 |

ger's definition of cohesion as "attraction of group"). Yet, these group-centered classes showed less congruence than the leader-centered classes. How can we explain this?

We have already suggested that need to be accepted by the group is one of the major motives for conformity. But groups differ in the degree to which nonconformity is punished. In a group such as ours, in which there has been a good deal of interaction between members, the group member should be able to develop a fairly good idea of what behavior the group will reward, what it will ignore, and what it will punish. Perhaps a good deal of his feeling of security in a group depends upon his knowledge of these limits. It seems probable that in most democratic groups the pattern of rewards and punishments is such that the group member will learn to cooperate on issues where uniformity of behavior is necessary to group progress. However, such groups are likely to permit or even reward individual variation on problems which require individual rather than group action. This ability to differentiate between areas where conformity is necessary and where it is not necessary may not only be a measure of the security of the individual group member but also, when summed for the whole group, may be an important dimension related to the group's effectiveness in problem solving.

*Relationship to congruence of procedures used in arriving at norm.* Our third hypothesis stated that congruence will be less after a group decision than after a lecture. As indicated in Table 6, our results showed that congruence was significantly lower ($p = .03$) following group decision than following a lecture.

Again this result may be interpreted in terms of rewards and punishments involved in the group process. If we assume that one of the primary motives for a group member's conformity is his need to gain acceptance or avoid rejection by the group, the function of a discussion becomes more apparent. If the discussion is one in which the group member hears many divergent attitudes expressed and if these deviations are tolerated by the group, the forces toward conformity will be weakened. On the other hand, if conforming statements are rewarded and deviation results in rejection, the forces toward conformity will be increased. Our group discussions preceding group decisions were extremely permissive, and it is not surprising that congruence was reduced.

Let us turn now to the factors which result in a discrepancy between the "real" group norm and the perceived group norm. These, too, help us to understand the effectiveness of group decision.

One of these factors is the ambiguity or "clarity" of the norm. We know from many studies that the individual's needs and past experiences are involved in his perception of a social situation. The more ambiguous the situation the more these individual factors enter into perception. Thus, an ambiguous norm can easily be interpreted differently by each group member. The result is a low degree of conformity.

Too often we have assumed that if $E$ told a group, "the group norm here is so and so," each member would perceive the norm in the same way. Unfortunately, not all subjects trust psychologists, and if their needs to disbelieve in a particular norm are strong, they are likely to dismiss the announcement. Consequently, they maintain conformity to a group norm which is more agreeable to them. This, I think, is one of the explanations for the high degree of congruence in our "lecture" procedure, where the norm was relatively vague and unknown.

Nevertheless, the objective situation is an important factor in perception, and one of the features of group decision is that it makes the group norm clearly perceptible to members of the group. While congruence was low in our "group decision" procedure, students' attitudes in this group were actually significantly closer to the "real" group norm than in the other techniques (see Table 7). These students were more *accurate* in their perception of the group norm as indicated in Table 8. While the discussion had weakened the pressure felt by

the individual to align his attitude with that of the group, the vote had made clear the norm to which he was relating, and the resulting conformity was thus greater than in other groups.

Thus our findings indicate that clarity of the norm is an important factor in conformity and that a permissive discussion weakens tendencies to conform.

With these findings Lewin's "group discussion" experiments may be more clearly interpreted. Lewin describes three phases of group decision—unfreezing, change of level, and freezing at a new level.

The phase of "unfreezing" is accomplished by lessening the forces toward conformity to the old norm. If one of the forces toward conformity is the threat of nonacceptance by the group when one diverges from the norm, letting individuals present varying points of view and accepting these divergent opinions without punishment should remove some of the fear of diverging from the norm.

The step, "change of level" of behavior, requires strengthening forces directed toward the new level or reduction of forces directed away from the new level. In the women's groups in which Lewin was attempting to change food habits, the "unfreezing" discussion was accompanied by dietitians' recipes and information aimed at weakening or removing some of the forces which had been preventing serving of the experimental foods. Thus, forces toward serving the experimental foods became proportionately stronger during the discussion.

"Freezing behavior at the new level" involves reinvoking forces to conformity to the new norm. This is accomplished by a hand vote and in at least one of Lewin's experiments by the knowledge that a check on behavior would be made by *E*. In terms of my emphasis upon the perceived norm, I interpret this as a method of making the new norm clearly perceived and unambiguous. Unanimity in the decision is important, therefore, not only because it makes the norm clearer, but because it re-emphasizes the necessity for conformity if group acceptance is to be obtained.

In the light of this theory, Lewin's lecture groups were unsuccessful in changing behavior because change of level was attempted without unfreezing. As a result, conformity to the old standard of behavior was very high.

TABLE 7

MEAN DIFFERENCE OF ATTITUDE FROM GROUP NORM

| PROCEDURE | ATTITUDE TESTS | | |
|---|---|---|---|
| | CHILDREN | NEGRO | CRIMINALS |
| Lecture | 7.7 | 5.3 | 8.9 |
| Vote announced | 7.0 | 4.1 | 6.3 |
| Group decision | 5.6 | 4.3 | 6.2 |

$F = 2.66$ with 2 and 252 *df*.
$p < .10$.

TABLE 8

MEAN DIFFERENCE OF PERCEIVED GROUP NORM FROM GROUP NORM ATTITUDE TESTS

| PROCEDURE | CHILDREN | NEGRO | CRIMINALS |
|---|---|---|---|
| Lecture | 6.7 | 7.6 | 7.9 |
| Vote announced | 5.9 | 4.4 | 5.1 |
| Group decision | 5.8 | 4.4 | 4.4 |

$F = 5.91$ with 2 and 252 *df*.
$p < .01$.

Lewin's discussion groups were less successful than group decision because although unfreezing and changes of level were carried out, the new group norm was not made clear and perceptions of the norm probably varied. In addition, in both groups the forces for conformity were probably weakened if varying viewpoints were accepted during the discussion.

The group-decision technique was successful because all three phases had been carried out. In addition, it is possible that the discussion before the group decision may actually have increased the attractiveness of the group, which may have helped counteract the effect of lack of punishment of divergent viewpoints.

## SUMMARY

1. To study the relationship of the individual's attitudes to group norms, experimental classroom situations were set up involving three sets of variables: (*a*) The relationship between attitude change and changes in perception of the group norm. (*b*) The relationship between attraction to the group and "congruence" of attitudes and perceived group norms. (*c*) The effect of different group processes used in considering a problem upon congruence.

2. Attitude changes were found to be sig-

nificantly correlated with changes in group norms.

3. Classes taught by a group-centered technique created greater member-liking for the group than leader-centered classes, but congruence was less in group-centered classes.

4. A group-decision technique resulted in less congruence but greater conformity than a lecture.

5. The findings are interpreted in terms of a theory emphasizing the importance of the distribution of rewards and punishments administered by the group for conformity and the discrepancy between the objective group norm and the perceived group norm.

## REFERENCES


1. ALLPORT, F. H. *Social psychology.* Boston: Houghton Mifflin, 1924.
2. BOVARD, E. W., JR. Group structure and perception. *J. abnorm. soc. Psychol.*, 1951, **46**, 398–405.
3. BOVARD, E. W., JR. The experimental production of interpersonal affect. *J. abnorm. soc. Psychol.*, 1951, **46**, 521–528.
4. FESTINGER, L. Informal social communications. *Psychol. Rev.*, 1950, **57**, 271–282.
5. KRECH, D., & CRUTCHFIELD, R. *Theories and problems of social psychology.* New York: McGraw-Hill, 1948.
6. LEWIN, K. Group decisions and social change. In T. Newcomb & E. Hartley (Eds.), *Readings in social psychology.* New York: Henry Holt, 1947. Pp. 330-344.
7. MARPLE, C. H. The comparative suggestibility of three age levels to the suggestion of groups vs. expert opinion. *J. soc. Psychol.*, 1933, **4**, 176–186.
8. MOORE, H. T. The comparative influence of majority and expert opinion. *Amer. J. Psychol.*, 1921, **32**, 16–20.
9. NEWCOMB, T. M. Attitude development as a function of reference groups. In M. Sherif (Ed.), *An outline of social psychology.* New York: Harper, 1948. Pp. 138–155.
10. NEWCOMB, T. M. *Social psychology.* New York: Dryden, 1950.


Received February 12, 1953.

APPLIED COGNITIVE PSYCHOLOGY
*Appl. Cognit. Psychol.* **24**: 1034–1045 (2010)
Published online 20 August 2009 in Wiley Online Library
(wileyonlinelibrary.com) DOI: 10.1002/acp.1604

# Social Anxiety Moderates Memory Conformity in Adolescents

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SUMMARY

When two people view the same event and later try to remember it together, what one person says affects what the other person reports. A model is presented which predicts that this memory conformity effect will be moderated, in different ways, by two components of social anxiety. People with higher fear of negative evaluation should be more influenced by their peers than others, but those with higher social anxiety related to avoiding social situations may be less influenced by their peers than others. Pairs of adolescent-aged participants took part in a face recognition study. For each trial one person responded and then the next person responded. The effect of what the first person said on the second person's response was measured; the size of the effect was moderated by the social anxiety measures as predicted by the model. This is the first study showing the relationship between social anxiety and memory suggestibility. Copyright © 2009 John Wiley & Sons, Ltd.

For over 30 years, research showing that postevent information (PEI) can be incorporated into people's subsequent memories of an event has been applied to errors in an eyewitness context (Loftus, 2005). The findings have been influential in establishing methods for interviewing eyewitnesses (Fisher & Geiselman, 1992) and are part of much expert testimony about the reliability of memory (Loftus, 1979, 1986). Most of the research has involved the PEI being embedded in biased questions or false narratives. However, there is another way in which people encounter PEI. Surveys of real eyewitnesses show that they often receive PEI from other eyewitnesses (Paterson & Kemp, 2006b; Skagerberg and Wright, 2008c). Because of this, several groups have conducted research where the PEI is delivered by another person (e.g. Candel, Memon, & Al-Harazi, 2007; Cuc, Ozuru, Manier, & Hirst, 2006; French, Garry, & Mori, 2008; Gabbert, Memon, & Wright, 2007; Hope, Ost, Gabbert, Healey, & Lenton, 2008; Mori, 2007; Ost, Ghonouei, Cook, & Vrij, 2008; Paterson & Kemp, 2006a; Principe & Ceci, 2002; Reysen, 2005; Skagerberg & Wright, 2008a,b; for a review see Wright, Memon, Skagerberg, & Gabbert, 2009). This type of memory suggestibility is called memory conformity or social contagion of memory (Roediger, Meade, & Bergman, 2001). The goal of this study was to examine whether social anxiety moderates memory conformity among adolescents.

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For several reasons, adolescents are an important group in which to study the moderating effects of social anxiety on memory conformity. Adolescents consistently are among the most common victims and witnesses to participate in the legal system (U.S. Bureau of Justice Statistics, 2007) yet there is little research to guide forensic practice with adolescents. Memory conformity is a particularly interesting paradigm to use with adolescents since this developmental period is when individuals are highly susceptible to peer influence (e.g. Berndt, 1982; Costanzo & Shaw, 1966). However, the influence of peers on adolescents' memory reports has not yet been examined. Adolescence is also the most common age of onset for social anxiety (Rapee & Spence, 2004; Weems & Costa, 2005), and social anxiety affects interactions with peers (La Greca & Lopez, 1998). Therefore, we reasoned this age group would allow adequate response variability on our memory conformity and social anxiety measures. Below, we first present our basic model of memory conformity followed by a discussion of how social anxiety is expected to moderate the memory conformity effects.

## A MODEL OF MEMORY CONFORMITY

Social psychologists often differentiate two reasons why people conform to others. These are informational and normative processes (Deutsch & Gerard, 1955; see also Kelman, 1958). In this section we examine how these processes may operate within a model of memory conformity.

One process that can lead people to conform is trusting the other person's memory more than their own memory. This is informational influence and involves combining beliefs from different sources. People conform for informational reasons when the other person is more confident or when one expects the other person to have a better memory. For example, Wright, Self, and Justice (2000, Exp. 2) showed pairs of participants a set of photographs of a crime. One person in the pair saw the culprit with an accomplice and the other saw the culprit act on her own. Immediately after seeing these photographs participants took a memory test on their own. The test included a question about whether there was an accomplice. Participants also rated their confidence. The pairs were asked to discuss the event and in every pair the existence of an accomplice was mentioned. The people in each pair were separated and asked individually whether there was an accomplice. In 75% of the pairs one of the people had changed their belief to coincide with the other's belief. In almost every case the less confident person in the pair accepted the more confident person's memory.

Another study demonstrating informational influence is by Gabbert, Memon, and Wright (2007). Pairs of participants arrived at the laboratory and were shown several pictures of busy scenes. Half of the participants were told that they viewed the scenes for half as long as the other person and half of the participants were told that they viewed the scenes for twice as long. The participants who thought that they viewed the scenes for less time should think that the other person in the pair has a better memory (all other things being equal). After viewing the scenes participants discussed the scenes together, and were then tested individually. The participants who thought they viewed the scenes for less time showed higher levels of conformity than those who thought they viewed the scenes for longer.

People also conform for normative reasons, which involve individuals comparing the costs of disagreeing with the costs of making an error. When talking with the other



DOI: 10.1002/acp

co-witnesses an eyewitness may not want to disagree with them. There is a social cost associated with disagreeing with others. For example, disagreeing with a romantic partner can carry a high cost. If the costs of making an error are low then people would often agree with the other people if the costs of disagreeing are relatively high. This is why some of the participants in Asch's (1955) conformity studies knowingly gave the wrong answer. Baron, Vandello, and Brunsman (1996, Experiment 1) conducted a study where they manipulated the cost of an error. They presented participants either with a simple or with a difficult identification task. Consider their simple task where participants got to see the culprit and the line-up pictures for several seconds. In the control condition participants were accurate 97% of the time, so empirically the task was easy. Participants in the experimental conditions were faced with a confederate who provided an incorrect response. When participants were told that these data would be used by police and courts, and that the most accurate participants would be given a monetary prize, only 16% of responses conformed. However, when they were told the data would just be used as pilot data 33% conformed. Participants in Baron et al. were reconciling the costs of disagreeing with the other person with the costs of making an error. When the costs of making an error were low, there were twice as many conforming responses.

Figure 1 shows our model of informational and normative influences applied to memory conformity. People combine beliefs of their own with other people's beliefs. There are arrows back from the combined belief to the originals, which allows, for example, people to think someone who always gives a different answer than them has a poor memory. The cost of disagreeing and the cost of making an error are combined to create a payoff matrix for the value of each response. The believed probability of any response being accurate can be multiplied by the appropriate value in the payoff matrix and the person gives the response with the highest utility. While formal mathematical models can be created for this model

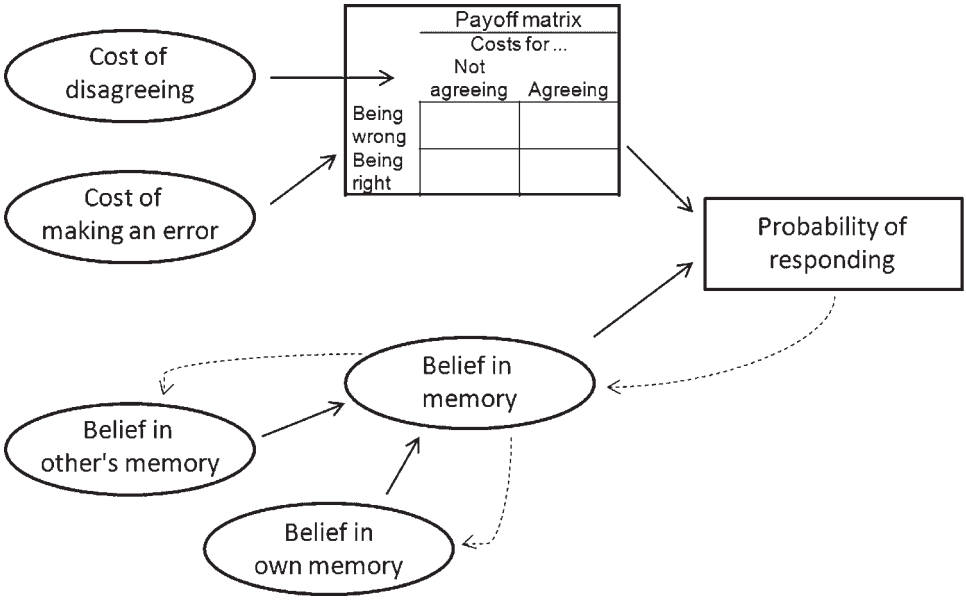


Figure 1. Normative and informational influences model of memory conformity. According to the model people combine their beliefs with others and consider the costs of disagreeing and the costs of making an error



DOI: 10.1002/acp

(and are currently being tested), the focus here is on which individual difference measures should predict memory conformity. Before describing these measures, it is important to stress that the social psychological processes outlined in our model are inter-related to aspects of the belief (i.e. is the belief a recollective memory, is it a false memory, etc.), that memorial processes must be considered (e.g. that people believe their own memories for an event more than they believe their lack of memories for an event), and that the memory conformity procedures can produce false recollective memories (Roediger et al., 2001).

## WHY LEVELS OF SOCIAL ANXIETY MAY RELATE TO MEMORY CONFORMITY

Understanding individual differences in performance is important for understanding any cognitive task. From Figure 1 we predict that if people vary in how important it is to agree with others then this should be positively associated with memory conformity. Our model also predicts that some people may be more attuned to information from others in a social setting. This should affect how people combine their belief with the beliefs of others. Our literature search led us to examine social anxiety.

Historically the concept of social anxiety has been associated with many different labels: Stage fright, social phobia, social withdraw, shyness, introversion, etc. Early versions of the DSM (pre-IV) distinguished social avoidance disorder from social phobia, and while later versions offer many different diagnosis (Kearney, 2005), the research literature continues to find two main components of social anxiety. Consider research on the psychometric properties of one of the main social anxiety self-report scales: The *Social Anxiety Scale for Children* (La Greca, Dandes, Wick, Shaw, & Stone, 1988). With various versions of this scale, researchers consistently show different components of social anxiety for fear of negative evaluation and social avoidance.

The *fear of negative evaluation* component maps onto having a high cost of disagreeing. The model in Figure 1 predicts somebody will knowingly give an errant response if the cost of disagreeing is higher than the cost of being wrong. Thus, if certain people have a higher cost of disagreeing, Figure 1 predicts that they will agree with the other person more than if they have a lower cost of disagreeing.

Figure 1 also predicts that if somebody does not process social information well then they may show less memory conformity. This is because when combining their belief with others, they should pay less attention to information presented from the other person. A second component of social anxiety, called *social avoidance*, may relate to this. The prediction is that people who score high on social avoidance will have lower amounts of memory conformity than people who score high. This second prediction is more tentative because people who avoid social information may still weigh it highly when combining beliefs.

We predict that these two components of social anxiety will be associated with memory suggestibility in different ways. Scores on fear of negative evaluation will be positively associated with memory conformity while social avoidance may be negatively associated with memory conformity. La Greca et al. (1988) and others find these components tend to be positively correlated with each other, so predicting that they will be related to memory conformity in opposite directions is important.

Our target population is adolescents and we use a social anxiety scale specifically designed for adolescents (La Greca and Lopez' [1998] *Social Anxiety Scale for*



DOI: 10.1002/acp

*Adolescents*, SAS-A). There has been a recent upsurge in adolescence research on memorial processes (Melnyk & London, 2009), social information processing (Blakemore & Choudhury, 2006) and the behavioural consequences (Morgan & Banerjee, 2006). Adolescence is a time when there is much variation in social anxiety so we reasoned this was the ideal age period to look for the relationship between social anxiety components and memory conformity.

## MEMORY CONFORMITY METHODS

Three approaches have used to examine memory conformity. First, some researchers have shown small groups of participants an event sequence, had the participants discuss the event, and then examined how each participant's memory was affected by what the other people said during the discussion (e.g. Gabbert, Memon, & Wright, 2006). The second approach is to show participants an event sequence and then provide participants with false information about how other participants performed (e.g. Shaw, Garvin, & Wood, 1997; Skagerberg & Wright, 2009). Both of these approaches can be used to construct situations similar to those involving some eyewitnesses (e.g. showing participants a simulated robbery). However, it is difficult to have more than a couple of discrepant items in the discussion and therefore it is difficult to estimate individual differences in suggestibility unless the expected effect is very large.

The third approach is to present participants with a large number of stimuli and then to test people in small groups where the participant can hear or see other people's responses (e.g. see Allan & Gabbert, 2008; Meade & Roediger, 2002; Schneider & Watkins, 1996; Wright, Mathews, & Skagerberg, 2005). The stimuli are sets of simple unrelated items. Researchers have used words, photographs of faces and photographs of objects. This recognition memory procedure produces a large amount of data for each participant. As the number of stimuli increases so does the reliability of the estimates for memory conformity and therefore this procedure is appropriate for exploring potential moderators of the memory conformity effect. Thus, we use a social recognition memory procedure to test whether the components of social anxiety are associated with memory conformity in a manner consistent with the model in Figure 1. This is the first study examining the relationship between social anxiety and memory suggestibility.

## METHODS

Ninety eight participants were recruited in pairs from local schools and YMCAs in Toledo, US, area. Twelve were dropped because of having more than one missing item on the personality measures. Of the remaining 86 participants, 32 were male. They were between 11 and 18 years old with a mean of 14.72 years ($SD = 1.54$ years). No age trends were found in these data.

Participants were given La Greca and Lopez' (1998) *Social Anxiety Scale for Adolescents* (SAS-A), which is adapted from their child social anxiety scale. The SAS-A is a widely used scale specifically designed to measure social anxiety in adolescents. The SAS-A is a self-administered pen and paper questionnaire composed of 22 items where participants respond on 1–5 scales for how often they feel each statement applies to them. Participants were tested individually. La Greca and Lopez found that the items loaded on



DOI: 10.1002/acp

three correlated ($r$s $> .5$) factors: Fear of negative evaluation (FNE), social avoidance and distress to new situations (SAD-New) and social avoidance and distress generally (SAD-General). They found Cronbach's $\alpha$s of .91, .83 and .76 for these subscales.

Next, a face recognition memory procedure was conducted as follows. Participants were tested in pairs. They sat approximately 1 m from a computer screen and were shown 50 white male faces one at a time for 2 seconds each with no time between faces (stimuli from Wright, Gabbert, Memon, & London, 2008, Experiment 2). To prevent confounding differences among face stimuli with differences among participants, all pairs saw the same set of faces. Next, the experimenter explained they were going to take part in a memory recognition procedure. They were shown a response sheet with two columns. The first column was for the first participant to place their response and the second column was for the second participant. Each column contained 100 rows, with boxes marked 'old' and 'new' on which participants were instructed to mark their responses for each of the 100 faces. They were told that they would see the same 50 photographs interspersed with 50 new photographs and that they should say whether they think the face had been shown before ('old') or not ('new'). During testing, a face was shown on the screen, the first person marked 'old' or 'new', and handed the response sheet to the second person to mark their response. After the second person responded they handed the sheet back to the first person who pressed RETURN on the computer and the next face was shown. This continued for all 100 faces. All participants indicated that they understood the instructions. The experimenter was present throughout to ensure this procedure was followed.

Participants were randomly allocated either always to respond first or always to respond second. Those responding first provide a baseline for accuracy and are the control group. Primary interest is with those responding second: The PEI group. For any of the 100 trials the PEI participants can be in one of four conditions of a $2 \times 2$ within-subject design. The first factor is whether the face was previously shown (old) or not (new). The second is whether the other person said 'old' or 'new'. These factors are correlated because the first person tends to respond accurately, therefore there are not 25 trials per cell per person.[1] The dependent variable is whether the participant says 'old' or 'new'.

## RESULTS

A single missing value on SAS-A was replaced using the missing values procedure in SPSS (EM algorithm). Subscales were calculated and standardized so each subscale had a mean of 0 and a standard deviation of 1. Their reliabilities were: FNE (Cronbach's $\alpha = .88$, 95% CI = [.84, .92]); SAD-new (Cronbach's $\alpha = .86$, 95% CI = [.81, .90]); and SAD-general (Cronbach's $\alpha = .67$, 95% CI = [.54, .77]). The Cronbach's $\alpha$s reported by La Greca and Lopez (1998) are all within our observed confidence limits. These SAS-A subscales were correlated among themselves between .56 and .64, which are also approximately the same as those La Greca and Lopez (1998) report.

For the 43 participants who responded first (i.e. the control group), only six of the 4300 trials had missing values (0.1%). They responded 'old' for 28.9% of new faces (i.e. 'false alarms') and for 59.9% of old faces (i.e. 'hits'). One popular measure of accuracy is the *logit*. This is the natural logarithm of the ratio of the odds of saying 'old' when the face

[1]Some research uses a confederate for responding first (e.g. Wright et al., 2008). A confederate was not used in the current research because it would have been impractical to have confederates of similar ages to the participants.



DOI: 10.1002/acp

is old over the odds of saying 'old' when the face is new. Zero corresponds to chance responding so values above zero show memory. If the variables are scaled properly then the population logit is estimated by the coefficient in a multilevel logistic regression (Wright, Horry, & Skagerberg, 2009; and appendix for details of this approach). For the control group the estimate is: 1.51, se = 0.18, $p < .001$, indicating they performed significantly above chance in accuracy.

For the 43 participants who responded second (i.e. the PEI group), 12 of the 4300 trials (0.3%) were missing due to participants not ticking 'new' or 'old', or responding after the first person did not tick one of these. Analyses are based on the remaining 4288 trials. Table 1 shows the responses broken down by whether the face was old or new and what the first participant said. The memory effect is evident because people said 'old' more to old faces than to new faces, both when the first participant said 'old' and when the first participant said 'new'. The memory conformity effect is evident because people said 'old' more if the other person said 'old' than if the other person said 'new', both for faces that were old and those that were new.

Multilevel logistic regressions were used for inferential statistics. The PEI participant's response was the dependent variable. We allowed the intercept to vary for both participants and faces and allowed the coefficient for accuracy to vary by participant. The units for all the $\beta$ values we report are logits, though for graphing the data we use the probability of responding 'old'. The memory accuracy effect, $\beta = 1.45$, se = 0.18, $p < .001$, and the memory conformity effect, $\beta = 1.05$, se = .08, $p < .001$, are both much larger than zero. The interaction between what the other person said and whether the face was old or new was statistically significant, likelihood ratio $\chi^2(1) = 5.50$, $p = .02$. The conformity effect was larger for new faces, $\beta = 1.26$, than for old faces, $\beta = .90$, replicating Wright et al. (2005).

Next, moderator analyses were conducted to see if any of the social anxiety components moderated the size of the conformity effect. We used a stepwise approach to search for moderator variables. The main effect of each social anxiety component and its interaction with what the other person said were included in the model. We searched for the component with the largest interaction. Because stepwise procedures involve many statistical tests, we required $p < .01$ for including an effect. The interaction between SAS FNE and what the other person said had the largest interaction, $\chi^2(1) = 15.78$, $p < .001$. As predicted, FNE was positively associated with memory conformity. Neither of the other two components had significant interactions at this stage, but we then introduced them into regressions including FNE and its interaction. The SAD-new subscale interaction had the larger improvement, $\chi^2(1) = 10.78$, $p = .001$. As predicted, social avoidance was negatively associated with memory conformity. After including the effects for SAD-new, the interaction between SAD-G and what the first person said was non-significant, $\chi^2(1) = 0.57$, $p = .45$.

Table 1. The frequency and percentage of trials with 'old' responses from the participant responding second when the first person says 'new' or 'old', and when the face is new or old

| | First person says: | | |
|---|---|---|---|
| | New | Old | Row mean |
| New faces | 257/1526 = 16.8% | 306/621 = 49.3% | 563/2147 = 26.2% |
| Old faces | 398/859 = 46.3% | 908/1282 = 70.8% | 1306/2141 = 61.0% |
| Column mean | 655/2385 = 27.5% | 1214/1903 = 63.8% | 1869/4288 = 43.6% |



DOI: 10.1002/acp

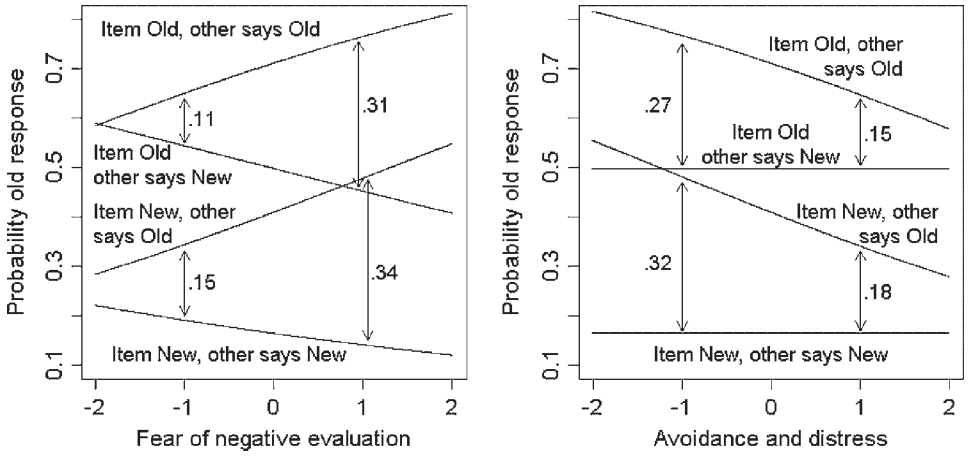


Figure 2. The probabilities of 'old' responses for the FNE and SAD-new subscales of the SAS-A (La Greca & Lopez, 1998). These probabilities are while holding the values of the other subscale constant at 0

Figure 2 shows the final model including the interactions of FNE and SAS-new. The predicted probabilities for responding 'old' are shown, broken down by whether the face was old or new and what the first person said for different values of the two statistically significant social anxiety components holding the value of the other component fixed at 0. These social anxiety variables are standardized, so 0 is the mean of the sample and values of $-1$ and $+1$ are one standard deviation below and above the means for these variables. For FNE, the conformity effect (i.e. the difference between the other person saying 'old' and 'new') is about 13% for people scoring one standard deviation below the mean while it is about 32% for those scoring one standard deviation above the mean. For SAD-new the effect is about 30% for those scoring one standard deviation below the mean and 17% for those scoring one standard deviation above the mean.

## DISCUSSION

This study is the first to show a relationship between social anxiety and memory suggestibility. Most relevant research has differentiated at least two components of social anxiety. We predicted that the two main components would moderate the memory conformity effect, but in opposite directions. We hypothesized that people who think the cost of disagreeing is higher than the cost of making an error would be likely to conform in memory conformity tasks (Figure 1). In the social anxiety literature, the Fear of Negative Evaluation subscale of La Greca and Lopez' SAS-A (1998) measures individual difference in the cost of disagreeing. As we predicted, FNE scores were positively correlated with memory conformity (left panel of Figure 2). A shift from one standard deviation below the mean to one standard deviation above the mean is associated with approximately doubling the size of the memory conformity effect.

Figure 1 also shows that how people combine information from other people and from themselves is important for memory conformity. If someone avoids information from others they should not be susceptible to memory conformity. We thought that people who score high on social avoidance might not process information from other people well. We



DOI: 10.1002/acp

predicted that people with higher scores might show less memory conformity. La Greca and Lopez' SAS-A has two subscales that correspond to this type of social anxiety. The avoidance of new situations subscale was negatively correlated with memory conformity after controlling for fear of negative evaluation. The right panel of Figure 2 suggests the influence is about half the size for people one standard deviation above the mean compared with people one standard deviation below the mean. Because this effect was only found after controlling for FNE and that the effect was observed for only one of the two social avoidance subscales further research is necessary before any definitive conclusions are reached.

In summary, remembering in social situations is a complex task and the current research shows how individual differences in social anxiety are associated with memory conformity among adolescents. To understand the relationship it is necessary to differentiate these types of social anxiety. People who are social avoidant are less influenced, in general, by other people and we show that they also appear less influenced by their memory reports. People who fear negative evaluation are more likely to coalesce with others' memory reports to avoid negative appraisal. The literature on individual differences and PEI is small and in the past has focused on cognitive measures (e.g. Bruck & Melnyk, 2004; Read & Winograd, 1998). Further testing is needed to examine whether the moderating effects of social anxiety on memory conformity extend to other age groups and with other measures of social anxiety. The memory conformity procedures are arguably a more ecologically valid way to examine memory suggestibility than traditional individual tasks because memory conformity tasks are embedded in the social situation in which the suggestion occurs. Here we show personality variables related to social encounters should be considered when examining memory suggestibility.

## ACKNOWLEDGEMENTS

This study was funded by the British Academy to DBW and KL. The authors thank Daniella Villalba, the editor, and the reviewers for comments on the previous draft.

## REFERENCES

Asch, S. E. (1955). Opinions and social pressure. *Scientific American*, *193*, 31–35.

Allan, K., & Gabbert, F. (2008). I still think it was a banana: Memorable 'lies' and forgettable 'truths'. *Acta Psychologica*, *127*, 299–308.

Baayen, R. H., Davidson, D. J., & Bates, D. M. (2008). Mixed-effects modeling with crossed random effects for subjects and items. *Journal of Memory and Language*, *59*, 390–412.

Baron, R. S., Vandello, J. A., & Brunsman, B. (1996). The forgotten variable in conformity research: Impact of task importance on social influence. *Journal of Personality and Social Psychology*, *71*, 915–927.

Bates, D., Maechler, M., & Dai, B. (2008). *lme4: Linear mixed-effects models using S4 classes*. Version 0.999375-20. http://cran.r-project.org/

Berndt, T. J. (1982). The features and effects of friendship during early adolescence. *Child Development*, *53*, 1447–1460.

Blakemore, S. J., & Choudhury, S. (2006). Development of the adolescent brain: Implications for executive function and social cognition. *Journal of Child Psychology and Psychiatry*, *47*, 296–312.

Bruck, M., & Melnyk, L. (2004). Individual differences in children's suggestibility: A review and synthesis. *Applied Cognitive Psychology*, *18*, 947–996.

Bureau of Justice Statistics. (2007). *Crime and victims report*. Retrieved November 30, 2008, from http://www.ojp/usdoj.gov/bjs/



DOI: 10.1002/acp

Candel, I., Memon, A., & Al-Harazi, F. (2007). Peer discussion affects children's memory reports. *Applied Cognitive Psychology*, *21*, 1191–1199.
Clark, H. H. (1973). The language-as-fixed-effect fallacy: A critique of language statistics in psychological research. *Journal of Verbal Learning and Verbal Behavior*, *12*, 335–359.
Costanzo, P., & Shaw, M. (1966). Conformity as a function of age level. *Child Development*, *37*, 967–975.
Cuc, A., Ozuru, Y., Manier, D., & Hirst, W. (2006). On the formation of collective memories: The role of a dominate narrator. *Memory & Cognition*, *34*, 752–762.
Deutsch, M., & Gerard, H. G. (1955). A study of normative and informational social influence upon individual judgment. *Journal of Abnormal and Social Psychology*, *59*, 204–209.
Fisher, R. P., & Geiselman, R. E. (1992). *Memory-enhancing techniques for investigative interviewing: The cognitive interview.* Springfield, IL: C.C. Thomas.
French, L., Garry, M., & Mori, K. (2008). You say tomato? Collaborative remembering leads to more false memories for intimate couples than for strangers. *Memory*, *16*, 262–273.
Gabbert, F., Memon, A., & Wright, D. B. (2006). Memory conformity: Disentangling the steps towards influence during a discussion. *Psychonomic Bulletin & Review*, *13*, 480–485.
Gabbert, F., Memon, A., & Wright, D. B. (2007). I saw it for longer than you: The relationship between perceived encoding duration and memory conformity. *Acta Psychologica*, *124*, 319–331.
Goldstein, H. (2003). *Multilevel statistical methods* (3rd ed.). London: Edward Arnold.
Hope, L., Ost, J., Gabbert, F., Healey, S., & Lenton, E. (2008). ''With a little help from my friends'': The role of co-witness relationship in susceptibility to misinformation. *Acta Psychologica*, *127*, 476–484.
Kearney, C. A. (2005). *Social anxiety and social phobia in youth*. New York: Springer.
Kelman, H. C. (1958). Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, *2*, 51–60.
La Greca, A. M., & Lopez, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*, *26*, 83–94.
La Greca, A. M., Dandes, S. K., Wick, P., Shaw, K., & Stone, W. L. (1988). Development of the Social Anxiety Scale for Children: Reliability and concurrent validity. *Journal of Clinical Child Psychology*, *17*, 84–91.
Loftus, E. F. (1979). *Eyewitness testimony.* Cambridge, MA: Harvard University Press.
Loftus, E. F. (1986). Ten years in the life of an expert witness. *Law & Human Behavior*, *10*, 241–263.
Loftus, E. F. (2005). Planting misinformation in the human mind: A 30-year investigation of the malleability of memory. *Learning & Memory*, *12*, 361–366.
Meade, M. L., & Roediger, H. L. III, (2002). Explorations in the social contagion of memory. *Memory & Cognition*, *30*, 995–1009.
Melnyk, L., & London, K. (2009). Adolescents: The neglected eyewitnesses. Symposium at Society Research in Child Developments, Denver, CO.
Morgan, J., & Banerjee, R. (2006). Social anxiety and self-evaluation of social performance in a nonclinical sample of children. *Journal of Clinical Child and Adolescent Psychology*, *35*, 292–301.
Mori, K. (2007). A revised method for projecting two different movies to two groups of viewers without their noticing the duality. *Behavior Research Methods*, *39*, 574–578.
Ost, J., Ghonouei, H., Cook, L., & Vrij, A. (2008). The effects of confederate influence and confidence on the accuracy of crime judgements. *Acta Psychological*, *128*, 25–32.
Paterson, H. M., & Kemp, R. I. (2006a). Comparing methods of encountering post-event information: The power of co-witness suggestion. *Applied Cognitive Psychology*, *20*, 1083–1099.
Paterson, H. M., & Kemp, R. I. (2006b). Co-witnesses talk: A survey of eyewitness discussion. *Psychology, Crime, & Law*, *12*, 181–191.
Principe, G. F., & Ceci, S. J. (2002). ''I saw it with my own ears'': The effects of peer conversations on preschoolers' reports of nonexperienced events. *Journal of Experimental Child Psychology*, *83*, 1–25.
R Development Core Team. (2008). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org
Rapee, R. M., & Spence, S. H. (2004). The etiology of social phobia: Empirical evidence and an initial model. *Clinical Psychology Review*, *24*, 737–767.
Read, J. D. & Winograd E. (Eds.) (1998). Individual differences and memory suggestibility. *Special Issue of Applied Cognitive Psychology*, *12*, 1–137.



DOI: 10.1002/acp

Reysen, M. B. (2005). The effects of conformity on recognition judgements. *Memory*, *13*, 87–94.
Roediger, H. L., Meade, M. L., & Bergman, E. T. (2001). Social contagion of memory. *Psychonomic Bulletin & Review*, *8*, 365–371.
Schneider, D. M., & Watkins, M. J. (1996). Response conformity in recognition testing. *Psychonomic Bulletin & Review*, *3*, 481–485.
Shaw, J. S., Garven, S., & Wood, J. M. (1997). Co-witness information can have immediate effects on eyewitness memory reports. *Law & Human Behavior*, *21*, 503–523.
Skagerberg, E. M., & Wright, D. B. (2008a). The co-witness misinformation effect: Memory blends or memory compliance? *Memory*, *16*, 436–442.
Skagerberg, E. M., & Wright, D. B. (2008b). Manipulating power can affect memory conformity. *Applied Cognitive Psychology*, *22*, 207–216.
Skagerberg, E. M., & Wright, D. B. (2008c). The prevalence of co-witnesses and co-witness discussions in real eyewitnesses. *Psychology, Crime, & Law*, *14*, 513–521.
Skagerberg, E. M., & Wright, D. B. (2009). Susceptibility to postidentification feedback is affected by source credibility. *Applied Cognitive Psychology*, *23*, 506–523.
Weems, C. F., & Costa, N. M. (2005). Developmental differences in the expression of childhood anxiety symptoms and fears. *Journal of the American Academy of Child and Adolescent Psychiatry*, *44*, 656–663.
Wright, D. B., Gabbert, F., Memon, A., & London, K. (2008). Changing the criterion for memory conformity in free recall and recognition. *Memory*, *16*, 137–148.
Wright, D. B., Horry, R., & Skagerberg, E. M. (2009). Functions for traditional and multilevel approaches to signal detection theory. *Behavior Research Methods*, *41*, 257–267.
Wright, D. B., & London, K. (2009). Multilevel modelling: Beyond the basic applications. *British Journal of Mathematical and Statistical Psychology*, *62*, 439–456.
Wright, D. B., Mathews, S. A., & Skagerberg, E. M. (2005). Social recognition memory: The effect of other people's responses for previously seen and unseen items. *Journal of Experimental Psychology: Applied*, *17*, 200–209.
Wright, D. B., Memon, A., Skagerberg, E. M., & Gabbert, F. (2009) When eyewitnesses talk. *Current Directions in Psychological Science*, *18*, 174–178.
Wright, D. B., Self, G., & Justice, C. (2000). Memory conformity: Exploring misinformation effects when presented by another person. *British Journal of Psychology*, *91*, 189–202.

## APPENDIX

For any individual trial the participant can say 'old' or 'new'. The probability of them saying 'old' should increase if they were previously shown the face, provided their memory is above chance. The probability of them saying 'old' should increase if the other person says 'old' (and should decrease if the other person says 'new'), provided they exhibit at least some memory conformity. The probability of an 'old' response will vary among participants and among the faces. We also expect there to be differences among participants for how good their memories are. Following Clark (1973), the aim is to allow random effects for both participants and stimuli. Recent computing advances allow these random effects to be modelled relatively easily with the following multilevel logistic regression (Baayen, Davidson, & Bates, 2008; Goldstein, 2003; Wright & London, 2009):

$$\ln\left(\frac{\Pr(\text{response}_{ijk}=\text{old})}{1-\Pr(\text{response}_{ijk}=\text{old})}\right)=\beta 0_{jk}+\beta 1_j\text{seen}_{ijk}+\beta 2\,\text{othersays}_{ijk}$$

Let $\text{response}_{ijk}$ be the $i$th trial for the $j$th person to the $k$th face. The $\beta 0_{jk}$ is the intercept and it relates to the response criterion in signal detection theory terminology. It includes the subscripts $j$ and $k$. This means it has different values for each participant and each face. We



DOI: 10.1002/acp

assume there is some grand mean, $\beta 0$, and that values for participants will be normally distributed around this value with some unknown standard deviation to be estimated. Similarly, values for faces are also assumed to be normally distributed around $\beta 0$.

$\beta 1_j$ is related to accuracy. It has the subscript $j$ meaning that the values vary by participant. We assume that these values are normally distributed around $\beta 1$. $\beta 2$ is the parameter that measures conformity. The higher the value is, the greater the conformity is. We examine variation in the size of this effect by the social anxiety measures.

On the basis of past research (e.g. Wright et al., 2005) we expect that there will be large effects for memory ($\beta 1 >> 0$) and for conformity ($\beta 2 >> 0$). Our interest is whether the conformity effect is moderated by the components of social anxiety. 'Moderator analysis' is the phrase used in much social and health psychology when exploring if an effect of one variable depends on the level of another variable. In statistics terminology this is an interaction. To test if a component of social anxiety moderates the conformity effect we first include the main effect of the component, and then test whether adding the interaction between the component and the coefficient for conformity improves the fit of the model. Because of the number of tests, we decided beforehand to set $\alpha = .01$ rather than .05, but for these data none of the observed $p$ values were between these levels.

Multilevel generalized linear models are currently fit with methods that approximate maximum likelihood. The Laplace method is used. This is the default for the package lme4 (Bates, Maechler, & Dai, 2008), which was used. It is part of the software R (R Development Core Team, 2008) and is available for free from the Comprehensive R Archive Network.



DOI: 10.1002/acp

Journal of Personality and Social Psychology
2015, Vol. 108, No. 2, 234–253


0022-3514/15/$12.00 http://dx.doi.org/10.1037/pspa0000020

# Entitativity and Intergroup Bias: How Belonging to a Cohesive Group Allows People to Express Their Prejudices

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We propose that people treat prejudice as more legitimate when it seems rationalistic—that is, linked to a group's pursuit of collective interests. Groups that appear to be coherent and unified wholes (*entitative* groups) are most likely to have such interests. We thus predicted that belonging to an entitative group licenses people to express prejudice against outgroups. Support for this idea came from 3 correlational studies and 5 experiments examining racial, national, and religious prejudice. The first 4 studies found that prejudice and discrimination seemed more socially acceptable to third parties when committed by members of highly entitative groups, because people could more easily explain entitative groups' biases as a defense of collective interests. Moreover, ingroup entitativity only lent legitimacy to outgroup prejudice when an interests-based explanation was plausible—namely, when the outgroup could possibly threaten the ingroup's interests. The last 4 studies found that people were more willing to express private prejudices when they perceived themselves as belonging to an entitative group. Participants' perceptions of their own race's entitativity were associated with a greater tendency to give explicit voice to their implicit prejudice against other races. Furthermore, experimentally raising participants' perceptions of ingroup entitativity increased explicit expressions of outgroup prejudice, particularly among people most likely to privately harbor such prejudices (i.e., highly identified group members). Together, these findings demonstrate that entitativity can lend a veneer of legitimacy to prejudice and disinhibit its expression. We discuss implications for intergroup relations and shifting national demographics.

*Keywords:* entitativity, prejudice, license, legitimacy, psychological standing

*Supplemental materials:* http://dx.doi.org/10.1037/pspa0000020.supp



People draw an intuitive distinction between violence in the service of self-interest and violence that is "senseless." Violence enacted in the name of self-preservation, self-defense, or even self-enrichment can seem more rational and legitimate than violence that lies outside the bounds of logic and justification (Ray, 2011). In the present work, we suggest that prejudice and discrimination are much like violence—that when outgroup bias reflects the pursuit or defense of ingroup interests, it seems more natural, understandable, and acceptable than prejudice that bears no plausible relation to group interests. We refer to such instances of outgroup bias as *rationalistic* to highlight their apparent origin in perpetrators' group-interested calculations.[1]

The present research examines how being in the right sort of social group—namely, the kind most likely to have collective interests—can legitimize the expression of bias against outsiders. We contend that the same acts of prejudice and discrimination will seem more rationalistic when perpetrated by members of tightly knit and unified (i.e., entitative) groups than by members of diffuse and heterogeneous (i.e., nonentitative) groups. As a result, people who perceive their ingroup as entitative, compared with people who do not, will be more likely to give voice to their anti-outgroup prejudices (if they indeed have such prejudices). We describe this phenomenon as a *licensing effect* (Miller & Effron, 2010), indicating that membership in an entitative group grants people permission or legitimacy to express prejudiced attitudes without necessarily changing their private attitudes.[2]

Our theoretical logic rests on two propositions: that the ability to attribute prejudice to the defense or pursuit of collective interests can legitimize outgroup bias, and that entitativity signals that a group has collective interests. We discuss each proposition in turn. We then review previous research connecting entitativity perceptions to intergroup bias. Finally, we present eight studies demon-

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We thank Dale Miller and Rebecca Schaumberg for helpful feedback on a previous draft, and Alexander Ananiadis-Basias, Emily Kelly, Beata Luczywek for research assistance.

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[1] The term *rationalistic* describes instances of prejudice and discrimination that a reasonable person might regard as furthering a group's interests. Rationalistic prejudice is not necessarily rational in the sense of actually being in a group's interests.

[2] The licensing effect we examine is theoretically distinct from the "moral self-licensing effect," whereby securing a moral identity (e.g., by demonstrating a lack of prejudice) makes one willing to act less morally (e.g., by expressing seemingly prejudiced views; Merritt, Effron, & Monin, 2010; Monin & Miller, 2001).

strating (a) that perceivers will judge bias as more socially acceptable when perpetrated by entitative, compared with nonentitative, groups; (b) that this licensing effect stems from the attribution of entitative groups' prejudice to the defense or pursuit of collective interests; and (c) that perceiving their own ingroup as entitative makes people more likely to express their prejudice against outgroups.

## Collective Interests Provide Legitimacy

The defense or pursuit of collective interests can justify actions that might otherwise seem illegitimate. For example, people are more likely to violate social norms concerning equality and fairness when acting on behalf of others than when acting only on behalf of themselves (Diekmann, 1997; Gino, Ayal, & Ariely, 2013; Wiltermuth, 2011). People also feel more comfortable voicing opinions about social and political issues that directly affect their group's interests than issues that do not (Effron & Miller, 2012; Ratner & Miller, 2001)—particularly when their opinions are unpopular (Morrison, 2011). One interpretation of these findings is that the ability to attribute one's behavior to collective interests can grant people a license to do what they would otherwise inhibit themselves from doing.

Collective interests may also legitimize behavior that harms outgroups. Consistent with this idea, a *norm of group interest* permits people to prioritize ingroup interests ahead of outgroup interests (Wildschut, Insko, & Gaertner, 2002). According to this norm, individuals should strive to maximize ingroup benefits, even if doing so negatively affects outgroups. Previous empirical work has emphasized how the norm of group interest can *obligate* individuals to help their group at others' expense: Participants playing a zero-sum economic game made more ingroup-favoring decisions at the expense of an outgroup when decisions were public versus private, presumably because the participants felt pressure to conform publicly to the group-interest norm (Wildschut et al., 2002 Study 3). In our view, this norm can also *license* people to publicly express private prejudices against the outgroup—legitimizing, without necessarily obligating or motivating, outgroup derogation (cf. Miller, 1999; Miller & Effron, 2010). The subjective sense of legitimacy or entitlement to express one's views or to act on one's attitudes has been called *psychological standing* (Miller, 1999; Miller & Effron, 2010; Miller, Effron, & Zak, 2009). Without psychological standing, people tend to inhibit their behavior rather than risk opprobrium. We propose that one source of standing is the ability to point to collective interests.

Research on the effects of "intergroup threat" (e.g., Blumer, 1958; Bobo & Hutchings, 1996) underscores the importance of collective interests in intergroup relations. Indeed, there can be no intergroup threat *without* collective interests, although the mere existence of such interests does not imply that they are threatened. Intergroup threat "occurs when one group's actions, beliefs, or characteristics challenge the goal attainment or well-being of another group" (Riek, Mania, & Gaertner, 2006, p. 336). Thus, one group's actions only become threatening—in the intergroup sense—if they impinge on or conflict with another group's collective interests (i.e., its desire for well-being and goal attainment). Whereas previous work has shown that intergroup threat (and thus concern for collective interests) can provoke prejudiced attitudes (e.g., Bobo, 1988; Kinder & Sears, 1981; Riek et al., 2006; Sherif & Sherif, 1969; Stephan & Stephan, 1996, 2000), we argue that the expression of prejudice seems more legitimate when it can be attributed to a desire to defend collective interests against threat.

## Entitativity Provides Collective Interests

We have argued that outgroup bias seems more legitimate when it can be attributed to group members' concern for their collective interests. But when does prejudice and discrimination seem to stem from collective interests? The most basic prerequisite is the existence of a collective. In this respect, some social aggregates constitute truer collectives than others. For example, Yankees fans attending a game form a more coherent, unified entity—and more clearly have collective interests—than do pedestrians outside the stadium. In other words, the former social group is more entitative than the latter (Campbell, 1958; Hamilton & Sherman, 1996). Entitative groups are characterized by high similarity, proximity, and interdependence among members who share information and have strong interpersonal bonds (Brewer, Hong, & Li, 2004; Campbell, 1958; Crump, Hamilton, Sherman, Lickel, & Thakkar, 2010; Ip, Chiu, & Wan, 2006). Of particular relevance to the present analysis, the pursuit of common goals—and thus the existence of collective interests—is a central characteristic of entitative-group members (Denson, Lickel, Curtis, Stenstrom, & Ames, 2006; Lickel et al., 2000).

If, as we suggest, prejudice seems more legitimate when motivated by collective interests, then membership in an entitative group—the only kind that can possess such interests—should license bias against outgroups. Hence, outside observers should tolerate a group's bias to the extent they regard the group as entitative. Moreover, to the degree that group members themselves see the ingroup as entitative, they should feel liberated to express their own biases against outgroups.

## A Plausibility Constraint

We do not expect that entitativity will always give a group psychological standing to discriminate against outgroups. Entitativity provides collective interests, but these interests should only legitimize prejudice that they could reasonably have engendered. In this respect, bias against outgroups that could not plausibly interfere with ingroup interests should seem illegitimate—even when the ingroup's entitativity makes those interests seem particularly strong. For example, perceiving Palestinians as a cohesive group with clear collective interests might lead a person to grant Palestinians greater license to express bias against Israeli Jews, because Israeli Jews could be perceived as interfering with the pursuit of those interests. By contrast, we would predict that clear collective interests would not give Palestinians a license to be prejudiced against African Americans, as it is difficult to argue that such prejudice could be motivated by those interests. Thus, we theorize that the standing to express bias depends not only on the existence of ingroup interests but also on the plausibility that the outgroup might threaten such interests. Prejudice or discrimination that does not meet this plausibility constraint is not rationalistic.

## Prior Research on Entitativity and Intergroup Bias

Prior research has examined the role of entitativity in intergroup bias, but has not considered how membership in an entitative

group gives one license to express prejudice. Perceiving outgroups as homogeneous—a correlate of perceiving them as entitative—has long been associated with stereotyping (Allport, 1954; Brewer & Harasty, 1996; Hamilton, Sherman, & Rodgers, 2004), and people who perceive an outgroup as entitative are more likely to endorse and apply stereotypes about that group (Levy, Plaks, Hong, Chiu, & Dweck, 2001; Levy, Stroessner, & Dweck, 1998; Ryan, Bogart, & Vender, 2000; Rydell, Hugenberg, Ray, & Mackie, 2007; Spencer-Rodgers, Hamilton, & Sherman, 2007; Spencer-Rodgers, Williams, Hamilton, Peng, & Wang, 2007). Compared with less-entitative outgroups, highly entitative outgroups tend to elicit greater suspicion (Newheiser, Sawaoka, & Dovidio, 2012) and more negative evaluations (Abelson, Dasgupta, Park, & Banaji, 1998; Dasgupta, Banaji, & Abelson, 1999). Increasing a disliked group's apparent entitativity reduces people's willingness to help its members (R. W. Smith, Faro, & Burson, 2013). In short, people tend to have stereotyped beliefs and prejudiced feelings toward more entitative outgroups (see also Newheiser, Tausch, Dovidio, & Hewstone, 2009). We make the novel claim that people whose *ingroup* is entitative feel more licensed (and are perceived by others as being more licensed) to express prejudice against outgroups.

Our work builds on three prior investigations that establish a connection between perceived ingroup entitativity and bias, but that do not share our focus on the legitimization of anti-outgroup prejudice and discrimination. First, Insko, Wildschut, and Cohen (2013) found that laboratory-created groups made more competitive choices in a prisoner's dilemma game when they were induced to view their own group as more (vs. less) entitative. Competition could arise from intergroup prejudice, but Insko and colleagues instead emphasized the role of greed. Moreover, these researchers did not examine whether ingroup entitativity licensed people to act on extant competitive motives (as our account would predict) or instead strengthened the motives themselves. Second, Gaertner and Schopler (1998) manipulated impressions of ingroup entitativity by varying the level of interpersonal interaction within experimenter-created three-person groups. Members of the more entitative groups allocated more money to the ingroup at the expense of the outgroup, and rated ingroup solutions to a problem more favorably than outgroup solutions. In contrast to our focus on anti-outgroup prejudice, these findings were entirely explained by increased positivity toward the ingroup (see also Gaertner, Iuzzini, Witt, & Oriña, 2006) and not by increased negativity toward the outgroup—perhaps because dislike had little opportunity to develop between minimal three-person groups. Third, Castano, Yzerbyt, Paladino, and Sacchi (2002) found that priming thoughts of death led to more favorable ratings of ingroup members (Italians)—an effect mediated by perceptions of the ingroup's entitativity—but did not influence ratings of an outgroup (Germans). Thus, although this study suggests a relationship between ingroup entitativity and intergroup bias, it did not show our predicted relationship between ingroup entitativity and the expression of anti-outgroup prejudice—perhaps because derogating the outgroup was a less appealing strategy than affirming the ingroup for dealing with death-related anxiety.

Whereas these three prior investigations argued that perceived ingroup entitativity can *motivate ingroup favoritism*, ours is the first to show that perceived ingroup entitativity can *license anti-outgroup prejudice*. Motivation impels people to act; a license, by contrast, allows people to act if they wish (Miller & Effron, 2010). In other words, we propose that perceived ingroup entitativity seems to legitimize prejudice, and gives people standing to express prejudiced views if they already hold them. Our claims are particularly important to test because scholars have advanced (but not tested) a conflicting hypothesis: that perceived ingroup entitativity will predict *less* outgroup derogation (Yzerbyt, Castano, Leyens, & Paladino, 2000, p. 287), because the esteem afforded by membership in a cohesive group could obviate the need to derogate outsiders (cf. Lickel et al., 2000).

## The Present Research

We tested two hypotheses related to the proposed licensing effect of ingroup entitativity. First, if membership in an entitative group legitimizes prejudice, then observers should expect entitative-group members to be granted greater standing to express prejudice than non-entitative-group members (cf. Effron & Miller, 2012; Ratner & Miller, 2001). Specifically,

> *Hypothesis 1 [H1]:* People will think prejudice and discrimination are more socially acceptable when committed by members of more- versus less-entitative groups.

We use the term *socially acceptable* to refer to people's beliefs about what others find acceptable.

Our second hypothesis examines a potential behavioral consequence of the entitativity–legitimacy link. If people are aware that expressing prejudice is more socially acceptable for members of entitative groups, then perceiving their own group as entitative should make them feel that they have psychological standing to express prejudice against outgroups. Thus,

> *Hypothesis 2 [H2]:* Perceiving one's own group as more versus less entitative will disinhibit the expression of prejudice against outgroups.

In other words, belonging to an entitative group makes people feel licensed to express prejudice.

We tested H1 in four studies. In Study 1, participants rated the entitativity of the largest racial groups in the United States and estimated how socially acceptable it would be for a member of one such group to discriminate against a member of another. Studies 2A and 2B manipulated the entitativity of novel groups, assessed the social acceptability of intergroup bias, and tested for mediation by the attribution of prejudice to the defense or pursuit of collective interests. Study 3 used the same paradigm to test a boundary condition: Whereas our other studies examined intergroup contexts in which an outgroup could plausibly threaten an ingroup's interests, Study 3 tested whether rendering such threat implausible would eliminate the licensing effect of entitativity.

Studies 4 through 7 tested H2. Study 4 examined the association between non-Blacks' perceptions of ingroup entitativity and their willingness to express prejudice against Blacks. Study 5 tested our licensing account by examining whether perceiving one's ingroup as entitative predicts non-Blacks' tendency to give explicit voice to their implicit anti-Black prejudice. Finally, Studies 6 and 7 tested whether perceiving a racial or religious ingroup as entitative could *cause* greater expressions of, respectively, racial or religious prejudice.

Our hypotheses apply specifically to prejudice expressed *by* entitative (vs. nonentitative) groups, but we also examined how legitimate it seems to express prejudice *against* entitative (vs. nonentitative) groups. We were unsure what to predict. On the one hand, entitative groups seem more dislikeable (e.g., Dasgupta et al., 1999; Newheiser et al., 2009), which could legitimize prejudice against them. On the other hand, positively regarded victims seem to elicit greater sympathy when they are members of entitative groups (R. W. Smith et al., 2013), and prejudice directed at an individual could seem to harm more people when the individual belongs to a tightly knit, interdependent group—possibilities that both suggest that a group's entitativity could delegitimize prejudice against it. Our examination of this issue was thus exploratory.

## Study 1: Measured Entitativity Is Associated With a License to Be Biased

As a first test of H1, Study 1 examined whether members of entitative groups are seen as having greater standing to be prejudiced and discriminate against outgroups. We measured participants' perceptions of several racial groups' entitativity, and then assessed their beliefs about how socially acceptable it would be for each group to express bias against the other.

### Participants

American participants on Amazon's Mechanical Turk (MTurk) service received $.51 to complete the study. Data collected from MTurk have shown reliability at least as high as data collected from traditional sources (Buhrmester, Kwang, & Gosling, 2011; Horton, Rand, & Zeckhauser, 2011; Paolacci, Chandler, & Ipeirotis, 2010). In advance of data collection, we decided to request 250 complete responses. Two hundred sixty participants began the study, and 253 provided responses that were complete enough to analyze. After excluding participants who failed an attention check (described subsequently $n = 4$) and anyone who submitted their responses faster than an a priori cutoff of 2 min ($n = 1$), the final sample contained 248 participants (136 females, 111 males, and one of unknown gender; $M_{age} = 32.85$, $SD = 12.40$; 80% White, 6% Black, 6% Asian, 3% multiracial, and 3% Latino, 2% other races). Results were identical in direction and significance when we analyzed all 253 participants' data.

### Overview

We asked participants to consider a racial group, randomly selected from the following list: White Americans, Black Americans, Asian Americans, and Hispanic Americans. Participants indicated how entitative they found this group, responded to several control measures, and then completed the same items for a second group randomly selected from the same list. Next, participants indicated how socially acceptable it would be for the first group to discriminate against the second, and vice versa. Finally, they completed an attention-check question and a measure of social dominance orientation (SDO—another control variable), and they provided demographics.

### Materials

**Independent variable: Perceived entitativity.** A six-item scale used in previous research measured perceptions of each group's entitativity (Denson et al., 2006). Each item assesses a different facet of entitativity: the extent to which group members interact with each other, can influence each other, have shared norms, have strong interpersonal bonds, share knowledge, and have common goals ($\alpha > .84$ for each group). Responses were made on scales from 1 to 7 anchored at *not at all* and *very much so*.

**Dependent variable: Social acceptability of bias.** Participants read about seven prejudiced or discriminatory behaviors and estimated the social acceptability of each (e.g., "How socially acceptable is it for a [Black/White/Hispanic/Asian] American to avoid shopping at stores owned by [Asian/Hispanic/White/Black] Americans?"). Because we wanted to measure beliefs about what *others* think is legitimate (i.e., perceived *social* acceptability), the instructions explained, "We are not interested in whether you personally think it is ok to perform these behaviors," and said that responses should reflect what the "average American" thinks is acceptable. Appendix A of the online supplemental materials shows the seven items, which we averaged for analysis ($\alpha > .88$ for the first- and second-group participants considered). Response options, coded 1 to 6, were *completely unacceptable*, *somewhat unacceptable*, *slightly unacceptable*, *slightly acceptable*, *somewhat acceptable*, and *completely acceptable*. This measure thus captures psychological standing, or the perceived legitimacy to express a view or commit an action (Miller & Effron, 2010).

**Control variables.** We assessed several additional variables to control for possible confounds in the relationship between entitativity and the social acceptability of bias.

***Victimization.*** Three items controlled for the possibility that groups typically victimized by discrimination would be more likely to be perceived as entitative: Participants estimated how common it is for people to be prejudiced against each group, the extent to which the group is currently victimized by prejudice in American society, and the extent to which it has historically been victimized (7-point scales anchored at *not at all* and *very much so*). We averaged these items into a single measure ($\alpha > .82$).

***Perceived social status.*** To control for the possibility that perceived entitativity would act as a proxy for social status, we administered a modified version of the MacArthur Scale of Subjective Social Status (e.g., Adler, Epel, Castellazzo, & Ickovics, 2000). Participants indicated each group's social status by clicking on one of 10 rungs of a ladder, said to represent "where people stand in the United States." Higher rungs represented higher status.

***Feelings toward the group.*** To ensure that perceptions of a group's entitativity were not merely a proxy for participants' feelings toward the group, we administered a "feeling thermometer" measure (Abelson, Kinder, Peters, & Fiske, 1982; Gawronski & Bodenhausen, 2006). Participants viewed a picture of a thermometer and chose a temperature ranging from 0° (*cold*) to 100° (*warm*) that best represented their feelings toward the relevant group. Then they used the same scale to indicate how they thought the average American feels about the group.

***Subjective group size.*** Because the perceived size of an outgroup is potentially related to the threat seemingly posed by it (Allport, 1954; Craig & Richeson, 2014a; Danbold & Huo, 2014), we also asked participants them to estimate the percentage of people who identify as a member of the relevant group.

***Social dominance orientation.*** Generalized anti-egalitarian sentiment, or the desire to uphold and bolster intergroup inequal-

ity, has proven one of the most robust predictors of intergroup and political attitudes (Sidanius, Pratto, Van Laar, & Levin, 2004). To ensure that our results did not reflect differences in individuals' levels of anti-egalitarianism, we administered the 16-item SDO scale ($\alpha = .94$; Pratto, Sidanius, Stallworth, & Malle, 1994).

**Demographics.** We also controlled for participants' own race and their political conservatism. Participants used a 7-point scale to identify themselves as very, moderately, or slightly liberal; neither liberal nor conservative; or slightly, moderately, or very conservative.

**Attention check.** For the attention check (adapted from Oppenheimer, Meyvis, & Davidenko, 2009), participants read a short filler paragraph and viewed a list of four racial groups; the last sentence in the paragraph instructed them to click on an option labeled "other" and write the word "group" in the blank provided. As noted, we excluded those who did not follow these instructions.

## Results

We hypothesized that participants would judge prejudice as more socially acceptable when perpetrated by groups high (vs. low) in entitativity (H1). As an exploratory step, we also examined the social acceptability of prejudice targeted *against* groups high (vs. low) in entitativity. Because each participant made two judgments for the dependent variable (i.e., the social acceptability of bias perpetrated by a first group against a second group, and vice versa), we used a multilevel linear regression analysis with a random intercept to analyze the social acceptability measure, specifying that pairs of judgments were nested within participants.

First, we entered ratings of the perpetrator and target groups' entitativity as fixed effects. Table 1 displays the results. Consistent with hypothesis H1, participants judged prejudice and discrimination as more socially acceptable when they perceived the perpetrator group as more entitative, $b = .14$, $z = 2.54$, $p = .01$. Interestingly, participants showed a marginally significant tendency to rate discrimination as less socially acceptable when they perceived the target group as more entitative, $b = -.09$, $z = 1.69$, $p = .09$.

Next, we tested the robustness of these effects by adding the control variables as fixed effects. As shown in Table 1, the positive relationship between the perpetrator group's perceived entitativity and the social acceptability of bias remained significant with these control variables in the model, $p < .01$; the negative relationship between the victim group's entitativity and the social acceptability of bias did not, $p = .21$.[3]

## Discussion

Study 1 found robust evidence that entitative groups are given greater license to be prejudiced and discriminate than are nonentitative groups. Consistent with H1, observers thought that, according to the average American, bias committed by members of entitative groups is more acceptable than bias committed by members of less-entitative groups. Importantly, this relationship cannot be explained in terms of a confound between perceived group entitativity and groups' history as targets of bias, their social status, their perceived size, participants' affect toward them, or participants' levels of social dominance orientation or political conservatism, as we controlled for these variables.

Table 1
*Fixed Effects in a Stepwise Mixed-Effect Linear Regression Analysis in Study 1*

| Step | Predictor | *b* | *SE* (*b*) | *z* | *p* |
|---|---|---|---|---|---|
| 1 | Perpetrator group | | | | |
| | entitativity | 0.14 | 0.06 | 2.54 | .01* |
| | Victim group | | | | |
| | entitativity | –0.09 | 0.06 | –1.69 | .09 |
| | (constant) | 2.55 | 0.44 | 5.74 | .00*** |
| 2 | Perpetrator group | | | | |
| | entitativity | 0.15 | 0.06 | 2.64 | .01** |
| | race_black | –0.22 | 0.27 | –0.80 | .43 |
| | race_asian | –0.06 | 0.26 | –0.22 | .83 |
| | race_hispanic | –0.15 | 0.29 | –0.51 | .61 |
| | participant_ingroup | 0.09 | 0.22 | 0.42 | .68 |
| | warmth_self | 0.00 | 0.00 | 0.55 | .58 |
| | warmth_others | 0.01 | 0.00 | 2.05 | .04* |
| | victimized | 0.04 | 0.04 | 0.93 | .35 |
| | status | –0.02 | 0.03 | –0.88 | .38 |
| | size | 0.00 | 0.00 | –0.37 | .71 |
| | Victim group | | | | |
| | entitativity | –0.07 | 0.06 | –1.16 | .24 |
| | race_black | –0.54 | 0.27 | –2.00 | .05* |
| | race_asian | 0.11 | 0.26 | 0.43 | .67 |
| | race_hispanic | –0.29 | 0.29 | –1.00 | .32 |
| | participant_ingroup | 0.44 | 0.22 | 1.95 | .05† |
| | warmth_self | 0.00 | 0.00 | 0.60 | .55 |
| | warmth_others | –0.01 | 0.00 | –2.43 | .02* |
| | victimized | 0.14 | 0.04 | 3.36 | .00** |
| | status | 0.00 | 0.03 | –0.18 | .86 |
| | size | 0.00 | 0.00 | 1.56 | .12 |
| | Participant | | | | |
| | SDO | 0.27 | 0.07 | 4.09 | .00*** |
| | conservatism | 0.00 | 0.04 | 0.04 | .97 |
| | (constant) | 2.07 | 0.71 | 2.93 | .00** |

*Note.* The dependent variable was the social acceptability of bias. Predictors are sorted by whether they apply to the perpetrator group, victim group, or participants themselves. Predictors are abbreviated as follows. Variables with "*race_*" prefix are dummy codes for the relevant group's race, with Whites as the reference group; *participant_ingroup* was coded 1 if participants were a member of the relevant group, and 0 if they were not; *warmth_self* = warmth of participants' own feelings towards the relevant group; *warmth_other* = perceptions of others' warmth towards the group; *victimized* = perceived contemporary and historical victimization of the group; *status* = perceived social status; *size* = perceived group size; *SDO* = participants' social dominance orientation; *conservatism* = participants' political conservatism.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Although the results were consistent with the idea that perceiving a group as entitative increases the social acceptability of prejudice committed by its members, Study 1's correlational design allows other causal interpretations. To examine causality, Studies 2A and 2B manipulated the entitativity of novel groups and measured the social acceptability of bias perpetrated by them. Study 2B also assessed a potential mediator: perceptions that anti-outgroup bias is more likely to stem from group interests in entitative (vs. less-entitative) groups.

[3] To address potential concerns about multicollinearity among control variables, we also ran separate models that each contained only one of the control variables. The coefficient for perpetrator group entitativity remained significant in each model; the coefficient for victim group entitativity was marginally significant in some models and not significant in others.

## Studies 2A and 2B: Manipulated Entitativity Licenses Bias

### Participants

American MTurk users were paid $.51 each. In these and in all subsequent MTurk studies, we took precautions to prevent sign-ups from people in our previous studies (Peer, Paolacci, Chandler, & Mueller, 2012).

In advance of data collection, we chose to request 120 complete responses for Study 2A. Of the 120 participants we obtained, we dropped 12 for failing an attention check (described subsequently) and two who took less than an a priori cutoff of 2 min to complete the study, leaving a final sample of 106 participants (73 males, 33 females; $M_{age} = 27.84$, $SD = 8.32$).

We collected data for Study 2B in two waves. For the first wave, we requested 120 complete responses. The effects from Study 2A replicated, and the hypothesized mediation effect received some support without reaching significance. To increase statistical power, we requested 360 complete responses in a second wave. We report analyses collapsed across both waves, but results were identical in direction and significance when we analyzed the second wave separately. Across waves, a total of 490 participants began the study; we dropped participants who failed an attention check ($n = 17$) or who took less than 2 min to complete the study ($n = 13$), and one person with missing data on the dependent variables, leaving a final sample of 459 people (279 males, 179 females, and one of unknown gender; $M_{age} = 32.23$, $SD = 10.93$). In both studies, the direction and significance of the results were identical when no participants were dropped.

### Overview

Participants in Study 2A read about a pair of groups whose members differed in their degree of interdependence. After completing a measure of perceived entitativity, participants completed the dependent measure—the social acceptability of each group discriminating against outgroups—and responded to an attention check. Participants also completed the same tasks for a different pair of groups whose members differed in their degree of similarity. Interdependence and similarity are both cues that a group is entitative (Campbell, 1958; Crump et al., 2010; Lickel et al., 2000; McConnell, Sherman, & Hamilton, 1997; Rothbart & Park, 2004).

Participants in Study 2B followed the same procedure, except that we assessed a hypothesized mediator (attributions of prejudice to collective interests) between the entitativity measure and the dependent measure. Additionally, to reduce the length of the study, Study 2B only asked participants about one pair of groups, employing only the interdependence manipulation.

### Materials

**Interdependence manipulation (religious groups).** Participants in both studies read about a pair of (fictional) religious groups: the "Ebbites" and the "Hentites":

> Both groups are relatively obscure denominations of Protestantism, and each has a similar number of followers. The beliefs of each group are fairly traditional and conservative, and although they disagree on some specific doctrines, their religious beliefs are quite similar to each other.

The remainder of the description used an entitativity manipulation by Crump and colleagues (2010) that varied whether the individuals within each group pursue its objectives independently versus interdependently. Participants read that members of the interdependent (more-entitative) religion

> pursue a common set of goals. Since the members of this religious group are concerned with achieving their common goals, they depend upon each other to a large extent. For the most part, this group is described as a tightly structured group.

In contrast, members of the independent (less-entitative) religion

> pursue a variety of goals that are relevant to completing their group's objectives. Since the members of this religious group are primarily concerned with pursuing these goals independently, group members do not depend on each other a great deal. For the most part, this group is described as a loosely structured group.

We counterbalanced which group, Ebbites or Hentites, was interdependent; Ebbites were always described first.

**Similarity manipulation (national groups).** To increase the generalizability of our findings, participants in Study 2A also read about a second pair of groups: "two neighboring nations in Eastern Europe" that "have similar populations, levels of economic development, and forms of government." We used a different entitativity manipulation that varied the similarity among group members (McConnell et al., 1997). Members of the high-similarity (more entitative) nation

> are very similar to each other and do not differ in many ways from each other. The people of this nation come from similar backgrounds and have the same opinions, similar important beliefs, and similar personalities. Across a variety of situations, people of this nation will act in a similar manner.

Members of the low-similarity (less entitative) nation, by contrast,

> are very diverse and differ in many ways from each other. The people of this nation come from different backgrounds, have different opinions, different important beliefs, and different personalities. Across a variety of situations, people of this nation will act in a different manner.

Once again, we counterbalanced whether the group described first was the entitative one. We also counterbalanced which pair of groups (national or religious) was presented first.

**Entitativity measure (manipulation check).** To evaluate the extent to which each manipulation affected perceptions of entitativity, we administered the entitativity scale from Study 1 ($\alpha > .92$ for each pair of groups).

**Hypothesized mediator: Attributions of prejudice to collective interests.** Participants in Study 2B read about a member of each group who felt and acted negatively toward members of other groups. The specific feelings and actions were the same as those referenced in our measure of the social acceptability of bias (e.g., making "prejudicial remarks," preferring "not to hire members of other groups"; see Appendix A of the online supplemental mate-

rials). Participants indicated their agreement with each of four explanations for this individual's feelings and actions he: (a) thinks that other religious groups threaten his group's interests, (b) thinks that other groups will try to take his group's resources, (c) worries that other groups will interfere with his group's goals, and (d) thinks that his behavior toward other groups is helpful to his own group. Response options ranged from *strongly disagree* (−3) to *strongly agree* (+3). We averaged these four items into a single scale for each group ($\alpha$s > .71), measuring the extent to which participants attributed an individual's prejudice to a motivation to defend or promote his group's collective interests.

**Dependent variable: Social acceptability of bias.** The dependent measure was adapted from Study 1. Specifically, participants indicated how socially acceptable it would be for a member of each of the religious groups to discriminate "against members of other religious groups," and for a member of each of the two national groups to discriminate and express prejudice "against members of other national groups." We provided five response options: *not at all*, *slightly*, *somewhat*, *mostly*, and *entirely*. Participants were told that their responses should reflect their judgments of what the average participant in the study finds acceptable (rather than the average American, as in Study 1). For each group, responses to the seven items were averaged into a single composite ($\alpha$s > .92).

**Attention check.** For the pair of religious groups, participants were asked to recall "which religion's members are more likely to pursue common goals, depend on each other, and form a tightly structured group." For the pair of national groups, participants were asked to recall "which nation's citizens are more likely to come from similar backgrounds, have the same opinions and similar personalities, and act in a similar way across a variety of situations." These questions were multiple choice and listed the two relevant groups as options.

## Results

**Manipulation check.** The interdependence and similarity manipulations each had the intended effect on perceptions of entitativity (see Table 2). Participants perceived the interdependent group as more entitative than the independent group in both Study 2A, paired $t(105) = 28.25$, $p < .0001$, $d = 3.77$, and Study 2B, paired $t(458) = 47.28$, $p < .0001$, $d = 3.33$. Likewise, they thought the high-similarity group was more entitative than the low-similarity group in Study 2A, paired $t(105) = 20.66$, $p < .0001$, $d = 2.92$ (the similarity manipulation was not administered in Study 2B).

Because our theorizing focuses on collective interests, we separately analyzed the item from the manipulation check that captures this dimension of entitativity (i.e., the extent to which group members "have common goals"). As expected, participants thought group members were more likely to share common goals in the interdependent group than in the independent group in both Study 2A (respectively, *M*s = 6.56 and 3.63, *SD*s = .86 and 1.67) and Study 2B (*M*s = 6.50 and 3.79, *SD*s = .88 and 1.70), *t*s > 17.00, *p*s < .0001, *d*s > 2.00. Likewise, they thought that the highly similar group members were more likely to share common goals than the less-similar group members in Study 2A (respectively, *M*s = 6.25 and 2.97, *SD*s = .90 and 1.27), $t(105) = 20.08$, $p < .0001$, $d = 2.98$.

**Social acceptability of bias.** Both manipulations also had the hypothesized effect on perceptions of the social acceptability of bias (see Table 2). Specifically, participants thought that their peers would find bias more socially acceptable if committed by a member of an interdependent versus an independent religious group in Study 2A, paired $t(105) = 7.09$, $p < .0001$, $d = .79$, and in Study 2B, paired $t(458) = 5.63$, $p < .0001$, $d = .17$.[4] Likewise, participants thought that it would be more socially acceptable for someone to enact bias if members of his national group were similar to each other than if they were not, paired $t(105) = 7.82$, $p < .0001$, $d = 1.17$, in Study 2A.

**Mediation analysis.** Why did manipulating entitativity affect the perceived social acceptability of bias? The manipulation check showed that participants perceived entitative groups as having clearer collective interests (common goals) than less-entitative groups; Study 2B allowed us to test whether participants were more likely infer that such interests explained bias committed by entitative versus less-entitative groups. We tested for mediation by estimating a multilevel structural equation model (SEM) using Stata 13's *gsem* (i.e., generalized SEM) command, which accounted for the within-participant nature of the experimental design. The hypothesized model, depicted in Figure 1, received strong support: As predicted, the interdependence manipulation significantly increased the attribution of the actor's behavior to collective interests, $b = .32$, $SE(b) = .04$, $z = 8.10$, $p < .001$, which, in turn, was associated with perceiving prejudice as more socially acceptable, $b = 0.20$, $SE(b) = .03$, $z = 3.73$, $p < .001$. Using Stata 13's *nlcom* (i.e., nonlinear combination) command, we found that collective interests mediated a significant indirect effect of the entitativity manipulation on social acceptability, $b = 0.06$, $SE(b) = .01$, $z = 4.96$, $p < .01$; this indirect effect accounted for 33% of the manipulation's total effect on acceptability.[5]

## Discussion

Studies 2A and 2B provide causal evidence that belonging to an entitative group makes the expression of bias seem more socially acceptable. This appears to be because bias seems more rationalistic—that is, plausibly connected to the ingroup's collective interests—when committed by members of entitative groups. Compared with nonentitative groups, entitative groups more clearly have collective interests with which outgroups can interfere. Study 2B demonstrated that prejudiced acts committed by individual members of entitative groups were more readily attributed to the defense or promotion of such interests, which made prejudiced acts seem more legitimate.

These results support our prediction that a group's entitativity grants it psychological standing to be biased to the extent that (a) ingroup entitativity provides collective interests, and (b) the out-

[4] We computed within-participant effects sizes from means and pooled standard deviations; calculating them from the *t* statistic would have inflated the results (Dunlap, Cortina, Vaslow, & Burke, 1996).

[5] We also tested an alternative mediation model, in which the social acceptability of prejudice mediated the effect of the entitativity manipulation on attributions to collective interests. Although significant, $b = .03$, $\beta = .01$, $z = 3.99$, $p < .01$, this indirect effect explained substantially less of the manipulation's total effect (11%) that in our preferred model (33%). Thus, collective interests better explain the effect of entitativity on social acceptability of bias than social acceptability does entitativity's effect on collective interests.

Table 2
*Means and Standard Deviations for Studies 2A and 2B*

| | Religious groups | | National groups | |
|---|---|---|---|---|
| | Independent | Interdependent | Low similarity | High similarity |
| Entitativity perceptions | | | | |
| Study 2A | 3.36 | 6.28 | 3.52 | 5.94 |
| | (.89) | (.64) | (.90) | (.75) |
| Study 2B | 3.31 | 6.22 | — | — |
| | (1.02) | (.71) | — | — |
| Social acceptability of bias | | | | |
| Study 2A | 2.30 | 3.02 | 2.00 | 3.17 |
| | (.81) | (1.00) | (.90) | (1.09) |
| Study 2B | 2.51 | 2.70 | — | — |
| | (1.08) | (1.20) | — | — |
| Attribution of prejudice to collective interests | | | | |
| Study 2B | 5.16 | 5.48 | — | — |
| | (.99) | (1.02) | — | — |

*Note.* Values in parentheses are *SD*s.

group could plausibly interfere with those interests. Our next study sought further support for the second of these criteria by orthogonally manipulating ingroup entitativity and the likelihood that outgroup actions could threaten ingroup interests. We expected that the licensing effect of ingroup entitativity on prejudice would be attenuated or even eliminated when the outgroup was unlikely to interfere with the ingroup's collective interests.

## Study 3: A Plausibility Constraint on the Licensing of Bias

Participants indicated how socially acceptable it would be for an entitative or a nonentitative group to perpetrate acts of prejudice. (Unlike Studies 2A and 2B, Study 3 manipulated entitativity between participants). This time, we also manipulated (within participants) the type of group targeted by the prejudice: It was either the same type as the perpetrator group (i.e., both were religious groups or both were ethnic groups) or a different type (i.e., one was a religious group and the other was an ethnic group). We reasoned that collective interests could more plausibly conflict when the two groups were of the same type than when they were not. Thus, we expected that the perpetrator group's entitativity would provide psychological standing to commit prejudiced acts against only groups of the same type.

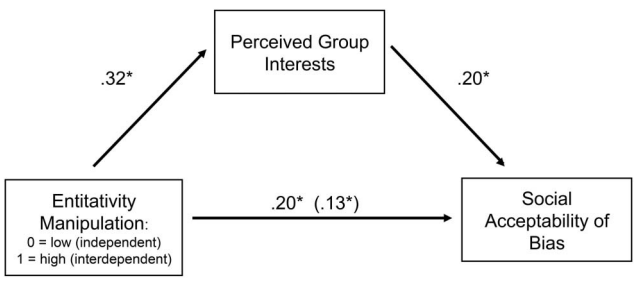


*Figure 1.* Mediation analysis in Study 2B. Coefficients are unstandardized. $N = 459$. Path in parentheses is the direct effect of entitativity on expressed prejudice (i.e., controlling for perceived group interests). * $p < .001$.

## Method

**Participants.** We posted sign-ups for 150 MTurk participants (paid $.41 each) because pretesting suggested that this sample size would provide sufficient statistical power; 154 began the study, and 151 provided responses to the dependent measure. We dropped the nine participants who failed at least one of two attention checks (described subsequently) and the two who took less than 1.5 min to complete the study (this a priori cutoff was shorter than in our prior studies because Study 3 contained fewer questions). The final sample size was 140 people (93 males, 46 females, 1 unknown gender; $M_{age} = 31.06$, $SD = 9.27$). Without excluding any participants, the direction and significance of the results were identical.

**Procedure.** We used the interdependence manipulation from Studies 2A and 2B to vary the entitativity of a fictional group (the "Ebbites") between participants. We also manipulated, between participants, whether the Ebbites were a religious group that "contains people from a variety of different ethnic backgrounds" or an ethnic group that "contains people from a variety of different religious backgrounds." Participants responded to the entitativity manipulation check from Studies 2A and 2B ($\alpha = .95$), and answered a multiple-choice attention-check question that asked them to identify whether the Ebbites were an ethnic, religious, or national group, or none of those options.

The dependent measure was the perceived social acceptability of prejudice. Seven items administered in Studies 2A and 2B asked how acceptable the "average participant in this study" would find acts of prejudice committed by "Ed," an individual member of the Ebbites. Participants completed the scale twice ($\alpha > .91$ for each): once to rate prejudice that targeted "ethnic groups" and once to rate prejudice that targeted "religious groups" other than Ed's own—a within-participants manipulation. Before responding to these items, participants were reminded about the Ebbites' religious and ethnic composition. After the dependent measure, participants answered a second attention-check question: If the Ebbites were a religious group, it asked whether being an Ebbite signaled anything about ethnicity; if the Ebbites were an ethnic

group, it asked whether being an Ebbite signaled anything about religion. Finally, participants provided demographics.

In sum, the design was a 2 (entitativity: low vs. high; between subjects) × 2 (group type: same vs. different; within subjects) factorial design. The results were not significantly moderated by whether the Ebbites were a religious or ethnic group ($p = .88$), so we do not discuss this factor further. A pilot study confirmed our expectation that two groups of the same type could more plausibly have conflicting interests than two groups of a different type (see Appendix B of the online supplemental materials).

## Results and Discussion

As in Studies 2A and 2B, the manipulation check showed that the perpetrator group seemed more entitative when its members were interdependent than when they were independent (respectively, *M*s = 6.24 and 3.27, *SD*s = .68 and .75, *n*s = 69 and 71), $t(138) = 24.42$, $p < .0001$, $d = 4.16$. An individual item in this scale showed that the interdependent group seemed to have "common goals" to a greater extent than the independent group (respectively, *M*s = 6.55 and 4.32, *SD*s = .88 and 1.53), $t(138) = 10.51$, $p < .0001$, $d = 1.79$.

Our manipulations affected the perceived social acceptability of prejudice, as expected (see Figure 2). We analyzed this measure with a Group Type × Entitativity mixed ANOVA. Only the main effect of group type and the hypothesized interaction were significant, $F(1, 138) = 47.17$, $\eta_p^2 = .25$, $p < .0001$, and $F(1, 138) = 17.54$, $p < .0001$, $\eta_p^2 = .11$, respectively. To better understand the interaction, we computed simple main effects using the pooled error term from the ANOVA (Howell, 2002). We replicated the effect from Studies 2A and 2B in the same-group-type condition: Prejudice was seen as more socially acceptable when committed by a member of a more-versus less-entitative group (respectively, *M*s = 2.45 and 2.12, *SD*s = 1.13 and .90), $F(1, 225) = 4.45$, $p = .04$, $d = .32$. Adding to these prior studies, and as predicted, no such effect emerged in the different-group-type condition; in fact, unexpectedly, prejudice was seen as *less* socially acceptable when committed by a more entitative versus less-entitative group (respectively, *M*s = 1.58 and 1.91, *SD*s = .66 and .89), $F(1, 225) = 4.76$, $p = .03$, $d = -.42$. Perhaps in this condition, in which prejudice could not plausibly be attributed to collective interests even in highly entitative groups, people were more suspicious of the high-entitativity group than the low-entitativity group, which made them judge the former group more harshly (Newheiser et al., 2012).

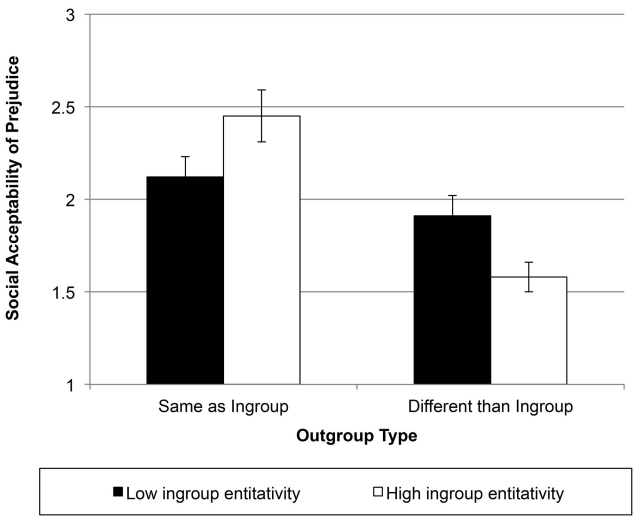


*Figure 2.* Mean social acceptability of perpetrating prejudice (±*SE*) in Study 3, as a function of the entitativity of the perpetrator's ingroup and the type of outgroup. The *y*-axis plots a scale of 1 to 5, ranging from *not at all* to *entirely* socially acceptable.

These results further support our contention that entitativity grants standing to be prejudiced by making prejudice attributable to collective interests. Two criteria are necessary for observers to make such an attribution: (a) the prejudice must be perpetrated by a group with clear collective interests, and (b) the group targeted by prejudice must have the potential to interfere with those interests. The entitativity of a perpetrator's ingroup satisfies the first criterion, as our manipulation check showed. The second criterion is satisfied when two groups are of the same type (e.g., they are two religious groups, as opposed to one religious group and one ethnic group), as our pilot study demonstrated (see Appendix B of the online supplemental materials). Accordingly, people in Study 3 thought that it was most socially acceptable for an individual to express prejudice when his ingroup was entitative and of the same type as the group against which he directed his prejudice. Thus, whereas Study 2A used a measurement-of-mediation approach to demonstrate the role of collective interests in the licensing effect of entitativity, Study 3 found convergent support using a moderation approach, providing evidence that competing collective interests must plausibly explain prejudice for licensing to occur.

Studies 1 through 3 established that observers believe members of entitative groups to have greater psychological standing to commit prejudice than members of less-entitative groups. In Studies 4 through 7, we examined a potential consequence of this belief: Membership in an entitative group increases willing to express prejudice (H2). Rather than asking participants to assess the entitativity of various target groups, as we did in our previous studies, we measured (in Studies 4 and 5) and manipulated (in Studies 6 and 7) how entitative they perceived their ingroup to be, and subsequently assessed their expression of outgroup prejudice.

# Study 4: Ingroup Entitativity Predicts Expressions of Prejudice

Study 4 tested whether perceptions of ingroup entitativity would be associated with expressing more prejudice.

## Participants

Participants ($N = 1{,}035$ American MTurk users) completed Study 4 online, embedded in a series of other surveys, for $.75. The other surveys were prescreening instruments for an unrelated research project, which dictated the sample size. Because our measure of outgroup bias assessed anti-Black prejudice, we did not analyze data from participants who identified as Black ($n = 49$). Of the remaining responses, 89 were insufficiently complete to analyze, and we excluded people who failed an attention check (described subsequently $n = 29$), but the results were identical in direction and significance without this exclusion. No one completed the series of surveys faster than our a priori cutoff of 3 min. (The cutoff was higher than in our previous studies because the series of surveys required longer to

complete.) The final sample size was 868 (466 females, 401 males, 1 unknown gender; $M_{age}$ = 33.25, $SD$ = 11.87).

## Materials

Participants completed the measures of interest for this study in the middle of a larger series of surveys.[6]

**Independent variable: Perceived entitativity.** Using the scale from Studies 1 through 3 (Denson et al., 2006), we measured participants' perceptions of the entitativity of "African Americans" ($\alpha$ = .82) and "your own racial or ethnic group" ($\alpha$ = .86).

**Dependent variable: Expressed prejudice.** To measure expressed prejudice, we administered the Attitudes Toward Blacks scale (ATB; Brigham, 1993; sample item: "I would rather not have Blacks live in the same apartment building I live in"; $\alpha$ = .94). Response options on a 7-point scale ranged from *strongly disagree* to *strongly agree*, coded so that higher numbers indicated greater anti-Black prejudice. We varied the order in which participants completed the entitativity measure and the ATB scale, and this did not affect the results.

**Attention check.** An attention-check item showed a Likert-type scale and instructed participants not to respond; those who did respond were excluded from analysis.

## Results

We predicted that perceiving one's own group as entitative would be associated with a greater willingness to express negative attitudes toward Blacks, and that perceiving Blacks as entitative would not be.

A regression model, using expressed prejudice as the dependent variable and the perceived entitativity of Blacks and participants' own racial group as predictors, confirmed these hypotheses. The more entitative participants perceived their own racial group to be, the more prejudice they expressed, $b$ = .10, $SE(b)$ = .04, $\beta$ = .10, $t(865)$ = 2.53, $p$ = .01. The same relationship was not observed between Blacks' perceived entitativity and prejudice. In fact, the more entitative participants thought Blacks were, the *less* prejudice they expressed, $b$ = −.13, $SE(b)$ = .05, $\beta$ = −.11, $t(865)$ = 2.70, $p$ = .007.[7]

## Discussion

The results of Study 4 are consistent with the idea that perceived ingroup entitativity licenses people to express prejudiced attitudes that they would otherwise keep to themselves. Nonetheless, an alternative explanation is that individuals who perceive their own racial group as entitative simply have more prejudiced attitudes to begin with.

These two explanations make different predictions about the relationship between implicitly measured prejudice and the explicit expression of prejudice. Implicit measures of prejudice are less susceptible to self-presentational efforts than self-report measures (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). It follows that when people are motivated to suppress or hide their biases, self-report and implicit measures should be only weakly associated, because even the strongest implicit prejudice will not be explicitly expressed; when people instead feel licensed to express their biases, the implicit–explicit association should be stronger (Fazio & Olson, 2003). Our licensing account thus predicts that the more entitative people perceive their group as being (i.e., the more licensed they feel), the stronger the positive association between implicit and self-reported prejudice will be; people who do not feel licensed because they think their group is not entitative should explicitly express little prejudice regardless of their implicitly measured prejudice. This pattern should not emerge if entitativity perceptions are merely a proxy for prejudicial feelings. Study 5 tested these predictions.

# Study 5: Ingroup Entitativity Predicts the Explicit Expression of Implicit Prejudice

## Participants

In exchange for $5.00, 98 White students at a large, Midwestern university participated in the present study. The sample size was determined by the number of subjects we were able to run before the end of the academic term. We only recruited White participants because the participant pool gave us access to a smaller sample than MTurk, and we wanted to avoid error variance from any differences in racial attitudes among different racial groups. Data from nine participants could not be analyzed because of missing responses, and we excluded three participants who failed an attention check (described subsequently), two with an error rate of greater than 30% on the measure of implicit prejudice (Nosek et al., 2007), and one who took the study despite not meeting our recruitment criteria (i.e., did not identify as White). No observations exceeded a speed cutoff on the implicit prejudice measure (Greenwald, Nosek, & Banaji, 2003). The final sample size was 83 people (58 females, 22 males, and 3 of unknown gender). Results were identical in direction and significance when no participants were excluded, except where indicated.

## Procedure

Participants, recruited for a "decision-making study," came to the lab several at a time and were seated at computer terminals in private cubicles by a White female experimenter. They completed an entitativity measure about Blacks and Whites, filler items (i.e., a self-esteem measure), a measured of explicitly expressed prejudice, and an implicit measure of prejudice.[8] Participants were then paid, debriefed, and dismissed.

[6] The other surveys, included to prescreen participants for an unrelated study, contained measures that are known to correlate with racial prejudice: the Outgroup Orientation scale (Phinney, 1992), the Implicit Theories of Prejudice scale (Carr, Dweck, & Pauker, 2012), the Internal and External Motivation to Respond Without Prejudice scales (Plant & Devine, 1998), and a measure of orientation toward interracial interactions (Migacheva & Tropp, 2013). Including these measures in our analyses as covariates did not alter the results. Measures of self-esteem (Rosenberg, 1989) and behavioral inhibition/activation (Carver & White, 1994) were also administered.

[7] Because of eight outliers on the ATB scale (defined as >3.29 *SD*s away from the mean; Tabachnick & Fidell, 2007), we reran the analyses with a robust regression procedure (implemented using the *rreg* command in StataCorp, 2013). It produced identical results.

[8] The only other measure was the Internal and External Motivation to Respond Without Prejudice scales (Plant & Devine, 1998), which we administered after the entitativity measure as an exploratory step. Neither the Internal Motivation nor the External Motivation Scale significantly moderated the hypothesized Implicit Prejudice × Entitativity interaction.

## Materials

**Independent variables.**

***Perceived entitativity.*** Participants completed the entitativity measure used in the previous studies for each of four groups (order randomized), ostensibly chosen randomly from a longer list of groups: "your own racial or ethnic group" (i.e., Whites; $\alpha = .84$), "African Americans" ($\alpha = .81$), and two filler groups (i.e., "teachers" and "people from your hometown").

***Implicit prejudice.*** We administered the Implicit Association Test (IAT) as the implicit measure of prejudice (Greenwald, McGhee, & Schwartz, 1998). This task requires using a keyboard to rapidly categorize words as "good" or "bad," and faces as "Black" or "White." By assigning the same keys to prejudice-consistent (e.g., Black and bad) and prejudice-inconsistent (e.g., Black and good) combinations of stimuli, the researcher can compute a score that reflects the relative ease with which participants complete the prejudice-consistent (vs. inconsistent) trials—thus implicitly gauging prejudice.

**Dependent variable: Expressed prejudice.** As in Study 4, we administered the ATB scale to measure explicitly expressed anti-Black prejudice ($\alpha = .85$). Higher numbers indicate greater expressed prejudice.

**Attention check.** Participants read a paragraph and viewed a list of 11 groups. The last sentence instructed them to click on an option labeled "none of the above" and write the word "groups" in the corresponding blank. As noted, we dropped participants who did not follow these instructions (Oppenheimer et al., 2009).

## Results and Discussion

We hypothesized that perceptions of White entitativity would predict a higher positive association between implicitly measured and explicitly expressed prejudice (respectively, IAT and ATB scores). To test this hypothesis, we first scored the IAT using the algorithm suggested by Greenwald and colleagues (2003), which computes the *D* statistic; higher values represent a stronger implicit association between Black (vs. White) faces and negative (vs. positive) words. We then regressed explicit prejudice scores on implicit prejudice scores (*D*), perceptions of Whites' entitativity, perceptions of Blacks' entitativity (all three of these predictors were standardized), and the interaction between implicit prejudice and Whites' entitativity. (The interaction between perceived implicit prejudice and Blacks' entitativity was not significant when added to the model, $p = .60$.)

Table 3 displays the results. Consistent with Study 4, there was a trend for perceived White entitativity to predict greater explicitly expressed prejudice and for perceived Black entitativity to predict *less* explicitly expressed prejudice, but with the smaller sample in the present study neither effect was significant, *p*s = .12. (The positive association between White entitativity and expressed prejudiced was significant when no participants were excluded from analysis, $p = .04$.)

Confirming our main prediction, perceived White entitativity significantly moderated the relationship between the implicit and explicit measures of prejudice, $p = .03$, for the Ingroup Entitativity × Implicit Prejudice interaction (see Figure 3). Simple slopes analysis revealed the hypothesized pattern: Among Whites who perceived their racial group as relatively entitative (i.e., 1 *SD* above the scale mean), those with higher implicit prejudice scores expressed more prejudice on the explicit measure, $b = .19$, $SE(b) = .08$, $t(78) = 2.31$, $p = .02$. By contrast, Whites who did not perceive their racial group as particularly entitative (i.e., 1 *SD* below the mean) tended to express relatively little prejudice on the explicit measure regardless of their implicit prejudice scores, $b = -.08$, $SE(b) = .09$, $t(78) = .87$, $p = .39$. This pattern suggests that perceived ingroup entitativity was associated with feeling licensed to explicitly express biases revealed by the implicit measure.

Table 3
*Study 5: Regression Results*

| Predictor | *b* | *SE* (*b*) | β | *t* | *p* |
|---|---|---|---|---|---|
| White entitativity | 0.14 | 0.09 | 0.25 | 1.59 | 0.12 |
| Black entitativity | −0.14 | 0.09 | −0.24 | −1.57 | 0.12 |
| Implicit prejudice | 0.06 | 0.06 | 0.10 | 0.92 | 0.36 |
| White entitativity × implicit prejudice | 0.13 | 0.06 | 0.25 | 2.25 | 0.03* |
| (constant) | 2.00 | 0.06 | — | 32.69 | 0.00 |

*Note.* The dependent variable was explicitly expressed prejudice (scores on the Attitudes Towards Blacks scale). Ingroup entitativity, outgroup entitativity, and implicit prejudice were standardized before computing the interaction. Implicit prejudice was operationalized as the *D* score from the Implicit Association Test. All participants were White.
* $p < .05$.

Decomposing the interaction the other way yielded further support for this interpretation. Among individuals with high implicit prejudice scores (1 *SD* above the mean), the more entitative they perceived their group, the more prejudice they explicitly expressed, $b = .28$, $SE(b) = .10$, $t(78) = 2.68$, $p = .009$. In contrast, individuals with low implicit prejudice scores tended not to explicitly express prejudice, regardless of how entitative they perceived their group as being, $b = .01$, $SE(b) = .11$, $t(78) = .06$, $p = .95$. This pattern fits with the idea that when people feel licensed to explicitly express bias, only individuals who privately feel such bias will give voice to it.[9]

We also tested whether perceived Black entitativity significantly moderated the Ingroup Entitativity × Implicit Prejudice interaction. It did not, $b = .08$, $SE(b) = .05$, $t(75) = 1.50$, $p = .14$.

Together, these results provide strong support for the hypothesis that perceived ingroup entitativity licenses people to express outgroup bias (H2). Perceiving their racial group as entitative apparently gave White participants the psychological standing needed to give explicit voice to their implicitly measured prejudices. This pattern supports our argument that the positive correlation between perceived ingroup entitativity and expressed prejudice in Study 4 reflected a licensing effect, and casts doubt on the alternative explanation that perceived ingroup entitativity is merely a proxy for felt prejudice. Casting further doubt on this alternative, perceived White entitativity did not significantly correlate with implicit prejudice scores in Study 5, $r(83) = -.06$, $p = .60$.

The correlational nature of Studies 4 and 5 limits strong causal conclusions. Study 6 sought to address this limitation by manipulating the entitativity of participants' ingroup. We hypothesized

[9] As in Study 4, because of an outlier on the ATB scale, we reran the analyses using a robust regression procedure (see Footnote 7). It produced identical results.

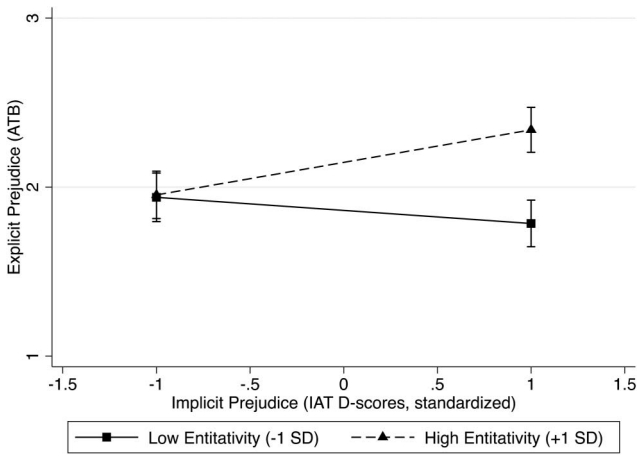


*Figure 3.* Relationship between implicit and explicit prejudice as a function of perceived ingroup entitativity in Study 4. The values shown were derived from the regression model at ±1 *SD* away from the mean implicit prejudice score and entitativity scores. Error bars indicate ±1 *SE*. Explicit prejudice scores could range from 1 to 7.

that reading an article that characterized White Americans as a cohesive group would increase Whites' perceptions of their racial group's entitativity, which would, in turn, increase their expression of anti-Black prejudice.

## Study 6: Manipulating Ingroup Entitativity Affects the Expression of Prejudice

### Participants

We paid American MTurk users $.51 each to complete the study online. Based on the results of a rough power calculation conducted after running 60 subjects, we chose to request 600 complete responses. Six hundred thirty-nine people began the study, and 608 provided sufficient responses for analysis. Because our manipulation targeted perceptions of White Americans' entitativity, and because our hypothesis is about perceived ingroup entitativity, we discarded data from non-Whites ($n$ = 89).[10] We also excluded people who identified as both Black and White ($n$ = 4), because the dependent variable was expressed anti-Black prejudice, as well as people who failed at least one of two attention checks ($n$ = 11; described below) or who had completed a pilot study ($n$ = 1), but the results were identical in direction and significance without these exclusions. No one took less than our a priori cutoff time of 2 min. The final sample contained 503 White participants (278 males, 225 females; $M_{age}$ = 30.87, $SD$ = 10.02).

### Materials

**Manipulation.** Participants read a (bogus) *Washington Post* article, ostensibly as part of a study on media coverage of social science research (see Appendix C of the online supplemental materials). In the high-entitativity condition ($n$ = 244), the article described a supposed American Sociological Association study revealing that White Americans are cohesive, similar, and share a common fate—key features of entitativity (Campbell, 1958; Hamilton & Sherman, 1996). In the control condition ($n$ = 259), the article instead described how the American Sociological Association planned to launch a new study examining similarities and differences among Americans. The articles were approximately the same length and had the same structure in both conditions.

As a manipulation check, participants used the six-item entitativity measure from our prior studies to rate the four target groups used in Study 5: "your own racial or ethnic group" (i.e., Whites, because we retained only White participants; α = .87), "African Americans" (α = .85), and two filler groups (i.e., teachers and people from their hometown).

**Dependent variable: Expressed prejudice.** As in Studies 4 and 5, we assessed expressed anti-Black prejudice with the ATB scale.

### Procedure

Participants completed the ingroup entitativity measure, filler items (i.e., whether they had read the article before, whether they wanted to learn more about the research it described, and how they would rate the quality of the writing), and responded to a multiple-choice attention check asking them to identify the main point of the article. Next, participants completed the entitativity ratings for the four groups (which we said were randomly selected from a longer list) in randomized order. Then they completed the ATB scale, responded to a second attention check (adapted from Oppenheimer et al., 2009), provided demographics, and read a debriefing form.

### Results and Discussion

The manipulation check showed that, as expected, reading a characterization of Whites as cohesive, similar, and sharing common fate significantly increased perceptions of White entitativity ($M$s = 5.17 and 4.78 in the entitativity and control conditions, respectively, $SD$s = 1.07 and 1.09), $t(501) = 4.06$, $p = .0001$, $d = .36$. Likewise, an individual item in the manipulation-check scale showed that reading this characterization significantly increased perceptions that Whites pursue common goals ($M$s = 4.88 and 4.47, $SD$s both = 1.47), $t(501) = 3.06$, $p = .0001$, $d = .27$. The manipulation had no significant effect on the perceived entitativity of Blacks, $t(501) = .78$, $p = .44$, $d = .07$.

As predicted, people in the entitativity condition tended to express greater anti-Black prejudice than people in the control condition, but this difference was not significant in our initial analyses ($M_{ent}$ = 2.70, $SD$ = .94; $M_{control}$ = 2.57, $SD$ = .95), $t(497) = 1.52$, $p = .13$, $d = .13$. However, as in Studies 4 and 5 (see Footnotes 7 and 9), we observed outliers on the ATB scale (i.e., four scores >3.29 $SD$s above the mean; Tabachnick & Fidell, 2007), which could mask real condition differences. To address this issue, we compared trimmed means between conditions using Yuen's test, which is less biased by outliers than the Student $t$ test, and can thus have higher statistical power, and does not suffer from the limitations of dropping outliers (Wilcox, 2003; Wilcox & Keselman, 2003; Yuen, 1974). We implemented the calculations using the *yuen* function in the S-Plus software with 5,000 bootstrap

[10] As expected, the manipulation of White entitativity did not affect non-Whites' perceptions of their own group's entitativity.

resamples and 20% trimming (see Wilcox, 2003). Using this more robust statistical approach revealed that people expressed marginally greater anti-Black prejudice in the entitativity condition than in the control condition (trimmed *M*s = 2.65 and 2.47, respectively), $T_{yuen}(302.11) = 1.95$, $p < .052$.

Study 6's results suggest that perceiving Whites as entitative can cause Whites to express more prejudice against a racial outgroup. This finding addresses a limitation of Studies 4 and 5, whose correlational designs limited causal inferences. Although the condition difference in expressed prejudice was only marginally significant by a two-tailed test, $p = .052$, the fact that the manipulation had only a small effect on perceptions of White entitativity, $d = .36$, indicates that the test of the manipulation's more distal effect on expressed prejudice was highly conservative. Moreover, it is impressive that even a weak manipulation of entitativity had a measurable effect despite strong norms proscribing racial prejudice.

## Study 7

Our final study had two goals. First, we wanted to replicate the causal effect of entitativity on the expression of prejudice in a different intergroup context. Thus, Study 7 examined anti-Muslim prejudice among Christians. Second, we sought to distinguish the effect of ingroup entitativity from the effect of another key variable in intergroup research: ingroup identification (Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987).

As we emphasized earlier, our claim is not that membership in an entitative group *motivates* prejudice and discrimination against outgroups. Instead, we posit that ingroup entitativity *licenses*, or increases people's willingness to express, biases that they already hold. If this is correct, then ingroup entitativity should only predict expressions of outgroup bias in the presence of factors that do motivate bias. One such factor is ingroup identification. From our perspective, ingroup identification provides the "fuel" for bias, whereas perceived ingroup entitativity opens a "valve" through which bias can escape.[11]

Ingroup identification need not motivate hostility toward outgroups (Brewer, 1999), but under some conditions it does. For instance, identification with a group defined by claims of moral superiority or righteousness may stoke prejudice (Brown & Zagefka, 2005). We surmised that religious groups fit this description (Ysseldyk, Matheson, & Anisman, 2010). Thus, the present study examined the interactive effect of Christians' identification and perceived entitativity on prejudice against Muslims. If we are correct that ingroup entitativity plays a licensing role in the expression of outgroup bias, then ingroup entitativity should increase the expression of anti-Muslim prejudice among highly identified more than weakly identified Christians. High-identifiers are likely to privately harbor some prejudice, but inhibit themselves from expressing it without a license; low-identifiers should harbor less prejudice and thus express little bias regardless of whether they have a license to do so.

### Participants

We hired a survey company to recruit a panel of American Christians whose age, race, and geographical location mirrored the distribution of these variables in the American population. Based on the results of Study 6, we expected a small effect, so we requested 1,000 complete responses from American Christians who passed attention-check questions (described subsequently).[12] The company oversampled to allow for exclusions. Of the 2,178 people who completed the study, 768 failed the attention checks, and we dropped one additional participant for not completing the measure of Muslim entitativity. No one took less than our a priori cutoff of 2 min to complete the study. The final sample was thus 1,409 American Christians (65% Protestant, 21% Catholic, 14% other; 917 females and 492 males; 78% White, 10% Black, 6% Asian, 6% Hispanic, <1% other racial group; 22% from the Northeast United States, 36% from the South, 22% from the Midwest, and 20% from the West; $M_{age} = 46.41$ years, $SD = 15.44$, range = 18 to 91). Without exclusions, the key results showed the same patterns but were not significant.

### Materials

**Manipulation.** The present study adapted the manipulation from Study 6: Participants read either about how sociological research had revealed American Christians to be highly entitative ($n = 716$), or about how sociologists would soon launch a survey of Americans (control condition, $n = 693$). As a manipulation check, participants rated the entitativity of American Christians ($\alpha = .84$) and Muslims ($\alpha = .89$) using the measure from our prior studies.

**Group identification.** We adapted the eight-item Black Identity Centrality scale (Sellers, Rowley, Chavous, Shelton, & Smith, 1997) to measure the degree to which participants identified with their "religious group" (sample item: "In general, being a member of my religious group is an important part of my self-image"; $\alpha = .89$).

**Religiosity.** Group identification is conceptually distinct from the construct of religiosity, although the two could be expected to correlate positively. To test the unique effect of group identification above and beyond religiosity, we asked participants to indicate how religious they considered themselves to be (*not at all*, *slightly*, *moderately*, or *very*, coded 1 to 4), how often they attend religious services, and how often they pray (nine response options ranging from *never* to *several times per week*; T. W. Smith, Marsden, Hout, & Kim, 2013). We standardized and averaged these three items into a single religiosity measure ($\alpha = .79$).

**Islamophobia.** As a measure of prejudice expression, participants completed the 16-item Islamophobia scale (Lee et al., 2013; $\alpha = .98$). Participants used 7-point scales (−3 = *strongly disagree* to 3 = *strongly agree*) to indicate agreement with statements describing negative feelings toward Muslims (e.g., "If I could, I would avoid contact with Muslims") and negative beliefs about Islam (e.g., "Islam is a dangerous religion").

**Attention checks.** We administered the same two attention checks from Study 6. We also administered a third check midway through the Islamophobia scale, instructing participants to select

[11] We thank Brian Lickel for suggesting that ingroup identification might play this role.

[12] To reduce error variance from religious diversity, we requested only Protestants. However, the survey company oversampled Protestants but also ran non-Protestant Christians.

the highest point on a 7-point scale if they were paying attention. Failure to follow this instruction would indicate inattentive or random responding.

## Procedure

After providing basic demographics and indicating their religious affiliation, participants completed the religiosity measure, the article manipulation, the filler items from Study 6, the group identification measure, and the Islamophobia measure. (We counterbalanced the order in which participants completed the manipulation checks and group identification measure.) They then provided additional demographics, including political conservatism (Likert scale from 1 = *very liberal* to 7 = *very conservative*), and read a debriefing form.

## Results

**Manipulation check.** As expected, reading a characterization of American Christians as cohesive, similar, and sharing common fate significantly increased participants' perception of their group's entitativity (*M*s = 5.68 and 5.25 in the entitativity and control conditions, respectively, *SD*s = .86 and .97), $t(1407) = 8.82$, $p = .0001$, $d = .47$. Likewise, it significantly increased perceptions that their group's members pursued common goals, as shown by an individual item from the manipulation-check scale (*M*s = 6.05 and 5.44, *SD*s = .99 and 1.22), $t(1407) = 10.36$, $p = .0001$, $d = .55$. As in Study 6, these effects were modest in size, indicating that the test of the manipulation's more distal effect on the dependent measure was particularly conservative. (Compare this effect size to the Cohen's *d* of 4.16 observed for the manipulation check in Study 3.) Although the manipulation-check effects were significant among both low- and high-identifiers, *p*s < .0001, they were somewhat stronger among low-identifiers. This result also makes our hypothesis test conservative because we predicted a larger effect of the manipulation on Islamophobia among high-identifiers.

The manipulation had a much smaller and marginally significant effect on the entitativity of Muslims (*M*s = 5.69 and 5.58 in the entitativity and control conditions, respectively), $t(1407) = 1.82$, $p = .07$, $d = .10$, but our analyses of the Islamophobia measure were identical in direction and significance when we controlled for this variable.

The entitativity manipulation also slightly but significantly increased group identification, $t(1407) = 2.81$, $p = .005$, $d = .15$. Because this effect was small (equivalent to a correlation of $r = .07$), we could test group identification as a moderator of the manipulation's effect on Islamophobia without concerns about multicollinearity. In the regression analyses presented next, the variance inflation factor for all coefficients was less than 1.02—well below the cutoff of 10 that indicates multicollinearity problems (Hair, Anderson, Tatham, & Black, 1998).

**Islamophobia.** To test whether the entitativity manipulation increased the expression of prejudice for high-identifiers more than low-identifiers, we regressed the Islamophobia scale on the manipulation (−1 = control, 1 = entitativity condition), group identification (standardized), and their interaction. We observed no outliers. The regression results (plotted in Figure 4) showed a main effect of group identification, $b = .24$, $SE(b) = .05$, $\beta = .14$, $t(1405) = 5.18$, $p < .001$, no main effect of entitativity, $b = .03$, $SE(b) = .05$, $\beta = .02$, $t(1405) = .64$, $p = .52$, and the predicted interaction, $b = .10$, $SE(b) = .05$, $\beta = .05$, $t(1405) = 2.07$, $p = .04$. Testing simple slopes revealed that the manipulation marginally increased the expression of Islamophobia among high-identifiers (i.e., 1 *SD* above the mean), $b = .13$, $SE(b) = .07$, $t(1405) = 1.92$, $p = .056$. No such effect was found among low-identifiers, $b = -.07$, $SE(b) = .07$, $t(1405) = 1.01$, $p = .31$; the slightly negative but nonsignificant slope explains why the main effect of the manipulation was not significant. Decomposing the interaction the other way showed that the relationship between group identification and expressed Islamophobia had a steeper slope in the entitativity condition, $b = .34$, $SE(b) = .07$, $t(1405) = 5.07$, $p < .0001$, than in the control condition, $b = .14$, $SE(b) = .06$, $t(1405) = 2.23$, $p = .03$. This pattern fits with the idea that group identification can provide the motivation for prejudice, but that this prejudice is more likely to get explicitly expressed in entitative groups.

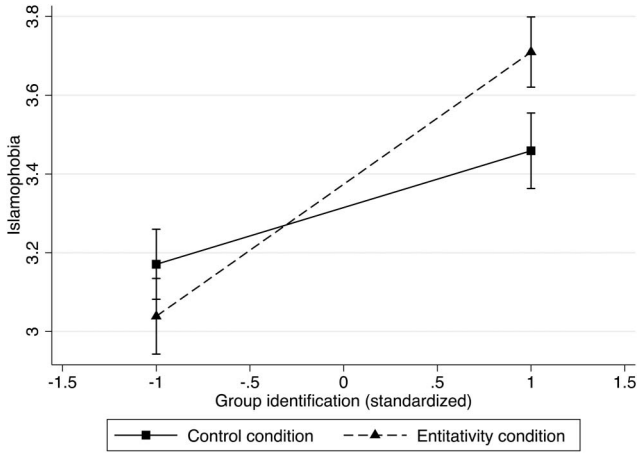


*Figure 4.* Mean Islamophobia (±*SE*) by group identification and entitativity manipulation in Study 7. Islamophobia scores could range from 1 to 7.

These results are not easily explained by positing that group identification is a proxy for religiosity or conservatism. The Identification × Entitativity interaction remained significant when we added religiosity and its interaction with the manipulation to the model, $p = .02$, as well as when we instead added conservatism and its interaction with the manipulation, $p = .04$ (Yzerbyt, Muller, & Judd, 2004).[13] Moreover, the simple effect of the manipulation among high-identifiers became significant in each of the new models, *p*s = .02 and .04, respectively. (The effect among low-identifiers was not significant in either model, *p*s > .14.)

## Discussion

Study 7 reveals how ingroup identification can play a role in the expression of outgroup bias. Magnifying perceptions of ingroup entitativity increased Christians' expression of anti-Muslim prejudice, but only among Christians whose religious group member-

[13] We did not have data on conservatism for 95 participants.

ship was central to their identity. This finding fits with our reasoning that high-identifiers privately harbor more prejudice than low-identifiers, and that entitativity licenses its explicit expression. Opening a valve (i.e., by signaling an entitative ingroup) releases more prejudice when prejudice has been stoked by the fuel of ingroup identification.

## General Discussion

Because intergroup prejudice is widely proscribed, people inhibit themselves from expressing their prejudices in many contexts. The present research reveals how membership in an entitative group can make anti-outgroup prejudice seem more legitimate to observers (H1) and can increase actors' willingness to express it themselves (H2). H1 received support in a correlational study examining the perceived entitativity of the main racial groups in the United States (Study 1) and in three experimental studies with fictional religious and national groups (Studies 2A, 2B, and 3): People thought that others would find it more socially acceptable for members of more-entitative versus less-entitative groups to enact prejudice and discrimination—but only if outgroup bias could plausibly be explained by group members' concern for their collective interests. Supporting H2 with both correlational and experimental methods, Studies 4 through 7 demonstrated that perceiving their racial or religious ingroup as entitative led people to express more prejudice against, respectively, racial or religious outgroups. These studies also revealed boundary conditions that supported our theorizing. Specifically, the more that White participants in Study 5 perceived Whites as entitative, the more anti-Black prejudice they expressed, but only if they had high levels of implicit anti-Black bias to begin with. This finding suggests that perceptions of entitativity can disinhibit people to give explicit voice to their implicit biases. Similarly, a manipulation of entitativity in Study 7 increased the explicit expression of anti-Muslim prejudice among Christians, but only those whose high identification with their religious ingroup suggested that they would privately have higher levels of prejudice to express in the first place (Brown & Zagefka, 2005). Together, these findings suggest that membership in an entitative group can provide a license to express bias against outgroups.

### Rationalistic Prejudice Seems More Legitimate

The results support our broader contention that prejudice is more socially acceptable when it seems "rationalistic"—plausibly connected to a group's interests. We suggest that membership in an entitative group makes prejudice seem more legitimate by invoking the possibility that prejudice could be motivated by the defense or pursuit of collective interests. Study 2B produced direct, mediational evidence for this claim: Participants more readily attributed prejudiced acts to collective interests when the perpetrator was a member of an entitative group, which led them to perceive these acts as more socially acceptable. Study 3 also supported this claim by demonstrating that entitative-group membership only increased the social acceptability of prejudice against outgroups that could plausibly threaten the ingroup's collective interests. Much like people have greater standing to express an unpopular view when it relates to their group's interests (Morrison, 2011), people have greater standing to express a prejudiced view when they belong to the kind of group that is likely to have collective interests.

### Addressing Alternative Explanations

Our results allow us to rule out several alternative explanations for the relationship between perceived ingroup entitativity and a license to express outgroup bias.

**Sharp intergroup boundaries justify prejudice.** Perhaps entitativity makes divisions between groups seem sharper, which may appear to justify prejudice (Rothbart & Park, 2004; Yzerbyt, Rocher, & Schadron, 1997). If this were the case, however, then higher entitativity of both the group perpetrating the prejudice and the group targeted by it should be associated with greater license to express prejudice. Instead, we found only that the entitativity of the perpetrator group was associated with such license.

**Ingroup entitativity is a proxy for felt prejudice.** Four findings make it difficult to explain our results by positing that people who perceive their group as entitative simply hold more prejudiced attitudes (rather than feeling more licensed to *express* prejudiced attitudes). First, the stronger association between implicit and explicit measures of prejudice among Whites who viewed their racial ingroup as entitative casts doubt on this possibility; second, entitativity perceptions did not significantly predict implicitly measured prejudice (Study 5). If perceived ingroup entitativity were merely a proxy for felt prejudice, then entitativity perceptions should have been associated with both implicit and explicit measures of prejudice, but not have magnified these measures' association with one another. Instead, these results support our view that perceived ingroup entitativity grants people license to explicitly express their implicit biases. Third, if perceived ingroup entitativity is merely a proxy for felt prejudice, then a manipulation of entitativity should not have been causally related to prejudice, as it was in Studies 6 and 7. Fourth, it is unclear how this alternative explanation would explain why manipulating the entitativity of a novel group in Studies 2A through 3 would have led participants to rate prejudice committed by that group as more socially acceptable.

**Other explanations.** Other alternative explanations for our findings based on the possible association between a group's entitativity and its size, social status, or tendency to face discrimination currently or historically have difficulty accounting for our findings, as we controlled for these variables in Study 1.

### The Role of Ingroup Identification

In certain contexts, identifying with an ingroup can lead to prejudice against outgroups (Brown & Zagefka, 2005). Our theoretical analysis and the results of Study 7 suggest that group identification can provide prejudiced attitudes, while entitativity provides a license to explicitly express them. This does not preclude the possibility that ingroup identification also plays another role in the connection between entitativity and prejudice: Perceiving an ingroup as entitative could lead to greater identification (Castano, Yzerbyt, & Bourguignon, 2003; Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007; Yzerbyt et al., 2000), which, in turn, could produce greater intergroup bias (Castano et al., 2002; Feather, 1994). In fact, Study 7 found some evidence for this possibility: The entitativity manipulation had a small but

significant effect on group identification, which, in turn, was positively correlated with prejudiced expressions. However, these effects were not sufficient to explain the effect of entitativity: We found that the entitativity manipulation increased prejudiced expressions when we held identification constant at one standard deviation above its mean. Moreover, prior research on ingroup identification and prejudice would not clearly predict that identification would be associated with a stronger positive association between implicit and explicit attitudes (Study 5), or that observers would be more tolerant of prejudice committed by an actor who does versus does not strongly identify with his or her ingroup (Studies 1 through 3).

Thus, it may be that identification facilitates the effect of entitativity in two complementary ways. First, by increasing ingroup identification, entitativity may stoke private feelings of prejudice against outgroups. Second, entitativity may license the public expression of this prejudice by granting psychological standing—a process that will have the greatest effect among high-identifiers and others who have the most prejudice to express.

## Theoretical Advances

The present findings should be of interest to scholars working in multiple literatures. First, our results provide a novel perspective on how prejudice gets expressed in societies that generally proscribe it. People appear to relax such proscriptions for individuals whose group seems like a cohesive unit composed of similar, interdependent individuals. And members of such groups seem to be more willing to express prejudices that they would otherwise keep to themselves. These findings fit with the idea that people generally try to suppress their prejudices, but will express them given the appropriate justification (Crandall & Eshleman, 2003; Norton, Vandello, & Darley, 2004; Pearson, Dovidio, & Gaertner, 2009). For example, research on *moral credentials* has shown that the ability to point to nonprejudiced behaviors one has enacted in the past can provide a license to commit potentially prejudiced behaviors in the future (Effron, Cameron, & Monin, 2009; Effron, Miller, & Monin, 2012; Merritt et al., 2010; Monin & Miller, 2001). Our work highlights ingroup entitativity as a novel source of bias license.

Our results also contribute to the literatures on group perceptions and intergroup relations. Although scholars have previously noted the connection between perceived outgroup entitativity and stereotyping (Brewer & Harasty, 1996; Spencer-Rodgers, Hamilton, et al., 2007), a paucity of work has examined the connection between perceived ingroup entitativity and intergroup bias. The studies that did examine this connection focused on how entitativity can increase positive evaluations of the ingroup (Castano et al., 2002; Gaertner & Schopler, 1998), whereas our results are the first to show how perceived ingroup entitativity legitimizes and increases expressed prejudice against outgroups. This is a particularly important finding because it contradicts an untested assumption in the literature: that because members of entitative (vs. less-entitative) groups tend to feel more secure about their group identity, they will be less likely to enhance their group identity through outgroup derogation (Yzerbyt et al., 2000). Although our studies do not rule out the possibility that members of entitative groups are *less motivated* to derogate outgroups, our results do suggest the members of entitative groups are *more licensed* to express the prejudices they have. At least in our studies, the net effect was a greater expression of prejudice among members of entitative groups.

Finally, our results shed new light on how group membership can provide psychological standing—a subjective sense of legitimacy or entitlement—to express one's attitudes. Prior research on this topic focused mainly on how belonging to a group affected by an injustice entitles one to protest that injustice (Effron & Miller, 2012; Miller, 1999; Miller & Effron, 2010; Miller et al., 2009; Morrison, 2011; Ratner & Miller, 2001). The present study not only identifies group entitativity as a novel source of standing but also reveals how standing may regulate the expression of intergroup bias.

## Prejudice *Against* Entitative Groups

Our hypotheses focused on prejudice expressed *by* entitative groups, but we conducted exploratory analyses to examine prejudice expressed *against* entitative groups. We did not find a reliable relationship across our studies. Perhaps conflicting processes operating simultaneously explain these inconsistent results. The more entitative the relevant groups appeared, the more dislikable they may have seemed (Abelson et al., 1998; Dasgupta et al., 1999; Newheiser et al., 2009), but the more sympathy they may have elicited as well (R. W. Smith et al., 2013). Future research should explore this idea.

We also explored whether a particular combination of ingroup and outgroup entitativity would license prejudice. On the one hand, a group's lack of entitativity may make it seem less threatening to others' interests. Consistent with this idea, Dasgupta et al. (1999) found that alien creatures seemed less threatening when they looked different than each other (i.e., were less-entitative) than when they looked similar (i.e., were more-entitative). If an outgroup's lack of entitativity meant that it could not plausibly threaten the ingroup's interests, then our theory would predict that ingroup entitativity would license prejudice against only entitative outgroups (see Study 3). On the other hand, when the relevant groups are nations, religions, or races (as they were in our studies), rather than novel creatures, even groups that are low in entitativity could be seen as plausibly threatening others' interests. In that case, ingroup entitativity should license prejudice regardless of outgroup entitativity. For example, a person could perceive Whites as interfering with racial minorities' political and economic goals and thus grant minorities a license to express anti-White prejudice, even though she also views Whites as heterogeneous, lacking cohesion, and uncoordinated in performing the behavior that causes such interference.

Consistent with the second possibility, we did not find consistent evidence that the licensing effect of ingroup entitativity depends on outgroup entitativity. Study 1 and Studies 4 through 7 allowed us to test a statistical interaction between each group's entitativity. A significant interaction in Study 4 indicated that the positive correlation between perceived ingroup entitativity and prejudice was significantly weaker among participants who viewed the outgroup as *more* entitative, $\beta = -.64$, $p = .02$. However, this result did not replicate in Study 5, $\beta = .16$, $p = .85$, and the relevant interaction did not approach significance in any other study.

## Limitations and Future Directions

Why do people seem to feel more comfortable expressing their prejudices when they belong to entitative groups? Given that prejudice seems more socially acceptable when committed by members of entitative groups (Studies 1 through 3), people may expect less opprobrium and punishment for prejudice when they belong to such a group. Another possibility is that people have internalized the belief that belonging to an entitative group legitimizes prejudice, and they thus feel less compunction about their prejudice when they perceive their ingroup as entitative. Distinguishing between these possibilities is a task for future research.

Our studies focused on prejudice among racial groups, national groups, and religious groups. Future research should examine whether entitativity can license bias in other types of groups. For example, are highly cohesive organizations given greater license to disparage their competitors? Do academics feel more justified denigrating their colleagues in other departments when members of their own department occupy proximate offices, research similar topics, and depend on each other for resources?

It will also be important to test what forms of prejudice can be licensed by entitativity. When contrasted against the extremes of discrimination and violence perpetrated against outgroups throughout history, the prejudiced behaviors that participants considered in our studies could be considered mild (e.g., refusing to shop at stores owned by outgroup members). It remains to be seen whether more severe forms of outgroup bias can be licensed by entitativity.

Future research should investigate the interplay between collective blame and the bias license granted to members of entitative groups. One implication of our research is that an individual may receive less blame for prejudice (from others and from herself) when her ingroup is more entitative. The group as a whole, however, may receive *more* blame for her acts when it is more entitative, in part because entitative groups may be assumed to have desired and implicitly encouraged these acts (Denson et al., 2006; Lickel, Hamilton, & Sherman, 2001; Lickel, Schmader, & Hamilton, 2003). Our research suggests that entitative groups do bear more responsibility for an individual's prejudiced acts, in the sense that entitativity allows an individual to more easily point to collective interests or desires as a license. This shifting of blame from the individual to the group could further embolden individuals to express prejudice (cf. Darley & Latané, 1968).

## Implications for the Effects of Demographic Changes

An ongoing demographic shift will render non-Hispanic Whites a minority of Americans by 2042 (Ortman & Guarneri, 2009). Whites may associate their new minority status with economic and psychological threat, which could increase feelings of intergroup hostility (Blumer, 1958; Bobo & Hutchings, 1996; Craig & Richeson, 2014a, 2014b; Fossett & Kiecolt, 1989; Giles & Evans, 1985; Outten, Schmitt, Miller, & Garcia, 2012; Quillian, 1995, 1996). And as the proportion of non-Whites in their social environment grows, they may also come to see their own racial group as more distinctive, concrete, and, thus, entitative (Voci, 2006). Our research therefore raises the concern that as the nation continues to diversify, Whites not only may develop greater hostility toward other racial groups but also may increasingly regard themselves as possessing a license to express it.

## Conclusion

The present research identifies a novel way in which perceptions of ingroup entitativity can stoke intergroup conflict: by providing a license to express and act on private prejudices. We may not only tolerate the biases of a group that seems highly cohesive, but also be more willing to express our personal prejudices when that cohesive group is our own.

## References


Abelson, R. P., Dasgupta, N., Park, J., & Banaji, M. R. (1998). Perceptions of the collective other. *Personality and Social Psychology Review, 2,* 243–250.

Abelson, R. P., Kinder, D. R., Peters, M. D., & Fiske, S. T. (1982). Affective and semantic components in political person perception. *Journal of Personality and Social Psychology, 42,* 619–630.

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology, 19,* 586–592.

Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison Wesley.

Blumer, H. (1958). Race prejudice as a sense of group position. *Pacific Sociological Review, 1,* 3–7.

Bobo, L. (1988). Group conflict, prejudice, and the paradox of contemporary racial attitudes. In P. A. Katz & D. A. Taylor (Eds.), *Eliminating racism: Profiles in controversy* (pp. 85–114). New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4899-0818-6_5

Bobo, L., & Hutchings, V. L. (1996). Perceptions of racial group competition: Extending Blumer's theory of group position to a multiracial social context. *American Sociological Review, 61,* 951–972.

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love and outgroup hate? *Journal of Social Issues, 55,* 429–444.

Brewer, M. B., & Harasty, A. S. (1996). Seeing groups as entities: The role of perceiver motivation. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition, Vol. 3: The interpersonal context* (pp. 347–370). New York, NY: Guilford Press.

Brewer, M. B., Hong, Y.-Y., & Li, Q. (2004). Dynamic entitativity: Perceiving groups as actors. In V. Yzerbyt, C. M. Judd, & O. Corneille (Eds.), *The psychology of group perception: Perceived variability, entitativity, and essentialism* (pp. 25–38). New York, NY: Psychology Press.

Brigham, J. C. (1993). College students' racial attitudes. *Journal of Applied Social Psychology, 23,* 1933–1967.

Brown, R., & Zagefka, H. (2005). Ingroup affiliations and prejudice. In J. F. Dovidio, P. Glick, & L. Rudman (Eds.), *On the nature of prejudice: Fifty years after Allport* (pp. 54–70). Malden, MA: Wiley-Blackwell.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6,* 3–5.

Campbell, D. T. (1958). Common fate, similarity, and other indices of the status of aggregates of person as social entities. *Behavioral Science, 3,* 14–25.

Carr, P. B., Dweck, C. S., & Pauker, K. (2012). "Prejudiced" behavior without prejudice? Beliefs about the malleability of prejudice affect interracial interactions. *Journal of Personality and Social Psychology, 103,* 452–471.

Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment:

The BIS/BAS Scales. *Journal of Personality and Social Psychology, 67,* 319–333.

Castano, E., Yzerbyt, V., & Bourguignon, D. (2003). We are one and I like it: The impact of ingroup entitativity on ingroup identification. *European Journal of Social Psychology, 33,* 735–754.

Castano, E., Yzerbyt, V., Paladino, M.-P., & Sacchi, S. (2002). I belong, therefore, I exist: Ingroup identification, ingroup entitativity, and ingroup bias. *Personality and Social Psychology Bulletin, 28,* 135–143.

Craig, M. A., & Richeson, J. A. (2014a). More diverse yet less tolerant? How the increasingly diverse racial landscape affects White Americans' racial attitudes. *Personality and Social Psychology Bulletin, 40,* 750–761.

Craig, M. A., & Richeson, J. A. (2014b). On the precipice of a "majority-minority" America: Perceived status threat from the racial demographic shift affects White Americans' political ideology. *Psychological Science, 25,* 1189–1197. http://dx.doi.org/10.1177/0956797614527113

Crandall, C. S., & Eshleman, A. (2003). A justification-suppression model of the expression and experience of prejudice. *Psychological Bulletin, 129,* 414–446. http://dx.doi.org/10.1037/0033-2909.129.3.414

Crump, S. A., Hamilton, D. L., Sherman, S. J., Lickel, B., & Thakkar, V. (2010). Group entitativity and similarity: Their differing patterns in perceptions of groups. *European Journal of Social Psychology, 40,* 1212–1230.

Danbold, F., & Huo, Y. J. (2014). No longer "All-American"? Whites' defensive reactions to their numerical decline. *Social Psychological & Personality Science.* Advance online publication.

Darley, J. M., & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology, 8,* 377–383. http://dx.doi.org/10.1037/h0025589

Dasgupta, N., Banaji, M. R., & Abelson, R. P. (1999). Group entitativity and group perception: Associations between physical features and psychological judgment. *Journal of Personality and Social Psychology, 77,* 991–1003.

Denson, T. F., Lickel, B., Curtis, M., Stenstrom, D. M., & Ames, D. R. (2006). The roles of entitativity and essentiality in judgments of collective responsibility. *Group Processes & Intergroup Relations, 9,* 43–61.

Diekmann, K. A. (1997). "Implicit justifications" and self-serving group allocations. *Journal of Organizational Behavior, 18,* 3–16.

Dunlap, W. P., Cortina, J. M., Vaslow, J. B., & Burke, M. J. (1996). Meta-analysis of experiments with matched groups or repeated measures designs. *Psychological Methods, 1,* 170–177.

Effron, D. A., Cameron, J. S., & Monin, B. (2009). Endorsing Obama licenses favoring Whites. *Journal of Experimental Social Psychology, 45,* 590–593. http://dx.doi.org/10.1016/j.jesp.2009.02.001

Effron, D. A., & Miller, D. T. (2012). How the moralization of issues grants social legitimacy to act on one's attitudes. *Personality and Social Psychology Bulletin, 38,* 690–701. http://dx.doi.org/10.1177/0146167211435982

Effron, D. A., Miller, D. T., & Monin, B. (2012). Inventing racist roads not taken: The licensing effect of immoral counterfactual behaviors. *Journal of Personality and Social Psychology, 103,* 916–932. http://dx.doi.org/10.1037/a0030008

Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition. research: Their meaning and use. *Annual Review of Psychology, 54,* 297–327.

Feather, N. T. (1994). Values, national identification and favouritism towards the in-group. *British Journal of Social Psychology, 33,* 467–476.

Fossett, M. A., & Kiecolt, K. J. (1989). The relative size of minority populations and white racial attitudes. *Social Science Quarterly, 70,* 820–835.

Gaertner, L., Iuzzini, J., Witt, M. G., & Oriña, M. M. (2006). Us without them: Evidence for an intragroup origin of positive in-group regard. *Journal of Personality and Social Psychology, 90,* 426–439.

Gaertner, L., & Schopler, J. (1998). Perceived ingroup entitativity and intergroup bias: An interconnection of self and others. *European Journal of Social Psychology, 28,* 963–980.

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin, 132,* 692–731.

Giles, M. W., & Evans, A. S. (1985). External threat, perceived threat, and group identity. *Social Science Quarterly, 66,* 50–66.

Gino, F., Ayal, S., & Ariely, D. (2013). Self-serving altruism? The lure of unethical actions that benefit others. *Journal of Economic Behavior & Organization, 93,* 285–292.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74,* 1464–1480.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology, 85,* 197–216.

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hamilton, D. L., & Sherman, S. J. (1996). Perceiving persons and groups. *Psychological Review, 103,* 336–355.

Hamilton, D. L., Sherman, S. J., & Rodgers, J. S. (2004). Perceiving the groupness of groups: Entitativity, homogeneity, essentialism, and stereotypes. In V. Yzerbyt, C. M. Judd, & O. Coneille (Eds.), *The psychology of group perception: Perceived variability, entitativity, and essentialism* (pp. 39–60). New York, NY: Psychology Press.

Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the implicit association test and explicit self-report measures. *Personality and Social Psychology Bulletin, 31,* 1369–1385.

Hogg, M. A., Sherman, D. K., Dierselhuis, J., Maitner, A. T., & Moffitt, G. (2007). Uncertainty, entitativity, and group identification. *Journal of Experimental Social Psychology, 43,* 135–142. http://dx.doi.org/10.1016/j.jesp.2005.12.008

Horton, J. J., Rand, D. G., & Zeckhauser, R. J. (2011). The online laboratory: Conducting experiments in a real labor market. *Experimental Economics, 14,* 399–425. http://dx.doi.org/10.1007/s10683-011-9273-9

Howell, D. C. (2002). *Statistical methods for psychology*. Pacific Grove, CA: Duxbury.

Insko, C. A., Wildschut, T., & Cohen, T. R. (2013). Interindividual-intergroup discontinuity in the prisoner's dilemma game: How common fate, proximity, and similarity affect intergroup competition. *Organizational Behavior and Human Decision Processes, 120,* 168–180. http://dx.doi.org/10.1016/j.obhdp.2012.07.004

Ip, G. W., Chiu, C. Y., & Wan, C. (2006). Birds of a feather and birds flocking together: Physical versus behavioral cues may lead to trait- versus goal-based group perception. *Journal of Personality and Social Psychology, 90,* 368–381.

Kinder, D. R., & Sears, D. O. (1981). Prejudice and politics: Symbolic racism versus racial threats to the good life. *Journal of Personality and Social Psychology, 40,* 414–431.

Lee, S. A., Reid, C. A., Short, S. D., Gibbons, J. A., Yeh, R., & Campbell, M. L. (2013). Fear of Muslims: Psychometric evaluation of the Islamophobia Scale. *Psychology of Religion and Spirituality, 5,* 157–171. http://dx.doi.org/10.1037/a0032117

Levy, S. R., Plaks, J. E., Hong, Y.-Y., Chiu, C.-Y., & Dweck, C. S. (2001). Static versus dynamic theories and the perception of groups: Different routes to different destinations. *Personality and Social Psychology Review, 5,* 156–168. http://dx.doi.org/10.1207/S15327957PSPR0502_6

Levy, S. R., Stroessner, S. J., & Dweck, C. S. (1998). Stereotype formation and endorsement: The role of implicit theories. *Journal of Personality and Social Psychology, 74,* 1421–1436. http://dx.doi.org/10.1037/0022-3514.74.6.1421

Lickel, B., Hamilton, D. L., & Sherman, S. J. (2001). Elements of a lay theory of groups: Types of groups, relational styles, and the perception of group entitativity. *Personality and Social Psychology Review, 5,* 129–140. http://dx.doi.org/10.1207/S15327957PSPR0502_4

Lickel, B., Hamilton, D. L., Wieczorkowska, G., Lewis, A., Sherman, S. J., & Uhles, A. N. (2000). Varieties of groups and the perception of group entitativity. *Journal of Personality and Social Psychology, 78,* 223–246.

Lickel, B., Schmader, T., & Hamilton, D. L. (2003). A case of collective responsibility: Who else was to blame for the Columbine high school shootings? *Personality and Social Psychology Bulletin, 29,* 194–204.

McConnell, A. R., Sherman, S. J., & Hamilton, D. L. (1997). Target entitativity: Implications for information processing about individual and group targets. *Journal of Personality and Social Psychology, 72,* 750–762.

Merritt, A. C., Effron, D. A., & Monin, B. (2010). Moral self-licensing: When being good frees us to be bad. *Social and Personality Psychology Compass, 4,* 344–357. http://dx.doi.org/10.1111/j.1751-9004.2010.00263.x

Migacheva, K., & Tropp, L. R. (2013). Learning orientation as a predictor of positive intergroup contact. *Group Processes & Intergroup Relations, 16,* 426–444.

Miller, D. T. (1999). The norm of self-interest. *American Psychologist, 54,* 1053–1060. http://dx.doi.org/10.1037/0003-066X.54.12.1053

Miller, D. T., & Effron, D. A. (2010). Psychological license: When it is needed and how it functions. In M. P. Zanna & J. M. Olson (Eds.), *Advances in experimental social psychology* (Vol. 43, pp. 115–158). San Diego, CA: Academic Press/Elsevier. http://dx.doi.org/10.1016/S0065-2601(10)43003-8

Miller, D. T., Effron, D. A., & Zak, S. V. (2009). From moral outrage to social protest: The role of psychological standing. In A. C. Kay, D. R. Bobocel, M. P. Zanna, & J. M. Olson (Eds.), *The psychology of justice and legitimacy: The Ontario symposium* (Vol. 11, pp. 103–123). New York, NY: Psychological Press.

Monin, B., & Miller, D. T. (2001). Moral credentials and the expression of prejudice. *Journal of Personality and Social Psychology, 81,* 33–43.

Morrison, K. R. (2011). A license to speak up: Outgroup minorities and opinion expression. *Journal of Experimental Social Psychology, 47,* 756–766.

Newheiser, A.-K., Sawaoka, T., & Dovidio, J. F. (2012). Why do we punish groups? High entitativity promotes moral suspicion. *Journal of Experimental Social Psychology, 48,* 931–936.

Newheiser, A.-K., Tausch, N., Dovidio, J. F., & Hewstone, M. (2009). Entitativity and prejudice: Examining their relationship and the moderating effect of attitude certainty. *Journal of Experimental Social Psychology, 45,* 920–926.

Norton, M. I., Vandello, J. A., & Darley, J. M. (2004). Casuistry and social category bias. *Journal of Personality and Social Psychology, 87,* 817–831.

Nosek, B. A., Smyth, F. L., Hansen, J. J., Devos, T., Lindner, N. M., Ranganath, K. A., . . . Greenwald, A. G. (2007). Pervasiveness and correlates of implicit attitudes and stereotypes. *European Review of Social Psychology, 18,* 36–88.

Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology, 45,* 867–872.

Ortman, J. M., & Guarneri, C. E. (2009). *United States population projections: 2000 to 2050*. Washington, DC: United States Census Bureau.

Outten, H. R., Schmitt, M. T., Miller, D. A., & Garcia, A. L. (2012). Feeling threatened about the future: Whites' emotional reactions to anticipated ethnic demographic changes. *Personality and Social Psychology Bulletin, 38,* 14–25.

Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on Amazon Mechanical Turk. *Judgment and Decision Making, 5,* 411–419.

Pearson, A. R., Dovidio, J. F., & Gaertner, S. L. (2009). The nature of contemporary prejudice: Insights from aversive racism. *Social and Personality Psychology Compass, 3,* 1–25.

Peer, E., Paolacci, G., Chandler, J., & Mueller, P. (2012). *Screening participants from previous studies on Amazon Mechanical Turk and Qualtrics*. Unpublished manuscript. Retrieved from http://experimentalturk.files.wordpress.com/2012/02/screening-amt-workers-on-qualtrics-5-2.pdf

Phinney, J. S. (1992). The multigroup ethnic identity measure a new scale for use with diverse groups. *Journal of Adolescent Research, 7,* 156–176.

Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology, 75,* 811–832.

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology, 67,* 741–763.

Quillian, L. (1995). Prejudice as a response to perceived group threat: Population composition and anti-immigrant and racial prejudice in Europe. *American Sociological Review, 60,* 586–611.

Quillian, L. (1996). Group threat and regional change in attitudes toward African-Americans. *American Journal of Sociology, 102,* 816–860.

Ratner, R. K., & Miller, D. T. (2001). The norm of self-interest and its effects on social action. *Journal of Personality and Social Psychology, 81,* 5–16.

Ray, L. J. (2011). *Violence in society*. London, UK: Sage.

Riek, B. M., Mania, E. W., & Gaertner, S. L. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review, 10,* 336–353.

Rosenberg, M. (1989). *Society and the adolescent self-image* (rev. ed.). Middletown, CT: Wesleyan University Press.

Rothbart, M., & Park, B. (2004). The mental representation of social categories: Category boundaries, entitativity and stereotype change. In V. Yzerbyt, C. M. Judd, & O. Corneille (Eds.), *The psychology of group perception: Perceived variability, entitativity, and essentialism* (pp. 79–100). New York, NY: Psychology Press.

Ryan, C. S., Bogart, L. M., & Vender, J. P. (2000). Effects of perceived group variability on the gathering of information about individual group members. *Journal of Experimental Social Psychology, 36,* 90–101.

Rydell, R. J., Hugenberg, K., Ray, D., & Mackie, D. M. (2007). Implicit theories about groups and stereotyping: The role of group entitativity. *Personality and Social Psychology Bulletin, 33,* 549–558.

Sellers, R. M., Rowley, S. A., Chavous, T. M., Shelton, J. N., & Smith, M. A. (1997). Multidimensional Inventory of Black identity: A preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology, 73,* 805–815.

Sherif, M., & Sherif, C. W. (1969). Ingroup and intergroup relations: Experimental analysis. In M. Sherif & C. W. Sherif (Eds.), *Social psychology* (pp. 221–266). New York, NY: Harper & Row.

Sidanius, J., Pratto, F., Van Laar, C., & Levin, S. (2004). Social dominance theory: Its agenda and method. *Political Psychology, 25,* 845–880.

Smith, R. W., Faro, D., & Burson, K. A. (2013). More for the many: The influence of entitativity on charitable giving. *Journal of Consumer Research, 39,* 961–976.

Smith, T. W., Marsden, P., Hout, M., & Kim, J. (2013). *General social surveys, 1972–2012: Cumulative Codebook*. Chicago, IL: National Opinion Research Center.

Spencer-Rodgers, J., Hamilton, D. L., & Sherman, S. J. (2007). The central role of entitativity in stereotypes of social categories and task groups. *Journal of Personality and Social Psychology, 92,* 369–388.

Spencer-Rodgers, J., Williams, M. J., Hamilton, D. L., Peng, K., & Wang, L. (2007). Culture and group perception: Dispositional and stereotypic

inferences about novel and national groups. *Journal of Personality and Social Psychology, 93,* 525–543.

StataCorp. (2013). *Stata base reference manual–Release 13*. College Station, TX: Stata Press.

Stephan, W. G., & Stephan, C. W. (1996). Predicting prejudice. *International Journal of Intercultural Relations, 20,* 409–426.

Stephan, W. G., & Stephan, C. W. (2000). An integrated threat theory of prejudice: The Claremont Symposium on applied social psychology. In S. Oskamp (Ed.), *Reducing prejudice and discrimination* (pp. 23–45). Mahwah, NJ: Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston, MA: Pearson Education.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worschel & W. G. Austin (Eds.), *The social psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Cambridge, MA: Basil Blackwell, Inc.

Voci, A. (2006). Relevance of social categories, depersonalization and group processes: Two field tests of self-categorization theory. *European Journal of Social Psychology, 36,* 73–90.

Wilcox, R. R. (2003). *Applying contemporary statistical techniques*. Los Angeles, CA: Academic Press.

Wilcox, R. R., & Keselman, H. J. (2003). Modern robust data analysis methods: Measures of central tendency. *Psychological Methods, 8,* 254–274.

Wildschut, T., Insko, C. A., & Gaertner, L. (2002). Intragroup social influence and intergroup competition. *Journal of Personality and Social Psychology, 82,* 975–992.

Wiltermuth, S. S. (2011). Cheating more when the spoils are split. *Organizational Behavior and Human Decision Processes, 115,* 157–168.

Ysseldyk, R., Matheson, K., & Anisman, H. (2010). Religiosity as identity: Toward an understanding of religion from a social identity perspective. *Personality and Social Psychology Review, 14,* 60–71.

Yuen, K. K. (1974). The two-sample trimmed *t* for unequal population variances. *Biometrika, 61,* 165–170.

Yzerbyt, V., Castano, E., Leyens, J.-P., & Paladino, M.-P. (2000). The primacy of the ingroup: The interplay of entitativity and identification. *European Review of Social Psychology, 11,* 257–295.

Yzerbyt, V., Muller, D., & Judd, C. M. (2004). Adjusting researchers' approach to adjustment: On the use of covariates when testing interactions. *Journal of Experimental Social Psychology, 40,* 424–431. http://dx.doi.org/10.1016/j.jesp.2003.10.001

Yzerbyt, V., Rocher, S., & Schadron, G. (1997). Stereotypes as explanations: A subjective essentialistic view of group perception. In R. Spears, P. J. Oakes, N. Ellemers, & S. A. Haslam (Eds.), *The social psychology of stereotyping and group life* (pp. 20–50). Malden, MA: Blackwell.

Received May 4, 2014
Revision received December 2, 2014
Accepted December 3, 2014 ■

Journal of Experimental Social Psychology **37,** 150–157 (2001)
doi:10.1006/jesp.2000.1443, available online at http://www.idealibrary.com on IDEAL®

# Level of Prejudice in Relation to Knowledge of Cultural Stereotypes

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Received November 12, 1999; revised July 11, 2000; accepted July 11, 2000

The major aim of the present research was to examine if knowledge of cultural stereotypes about minority groups within society is virtually universal (Devine, 1989) or whether such knowledge is influenced by the perceiver's level of prejudice (cf. Krueger, 1996). In three studies, in which multiple measures of racial prejudice were used, it was shown that level of prejudice does relate to perception of cultural stereotypes. High-prejudiced people believed that the cultural stereotypes of Moroccan and Surinamese people in The Netherlands are more negative and less positive in content than low-prejudiced people did. It is argued that previous research may have failed, at least in part, to detect clear differences between low- and high-prejudiced people because it relied on the relatively insensitive Modern Racism questionnaire in order to measure prejudice. 

Is knowledge of cultural stereotypes about minority groups within society virtually universal, or is such knowledge dependent on the perceiver's own level of prejudice? This question is the concern of the present research.

According to Devine (1989) people do share knowledge of cultural stereotypes. She argued that stereotypes of social groups are well known by all members of society, regardless of the individual's level of prejudice concerning these groups. Through exposure and social learning stereotypes become strongly associated with their target group. As a consequence, stereotypes will be automatically activated upon encountering group members, independent of the level of prejudice of the individual. In order to test whether low- and high-prejudiced people have equal knowledge of the cultural stereotype, Devine (1989: Experiment 1) asked participants to freely list stereotypes toward African Americans, regardless of their personal beliefs. To measure their level of prejudice, participants also completed the Modern Racism questionnaire (McConahay, Hardee, & Batts, 1981). In line with her model, Devine's conclusion was that "high- and low-prejudiced persons are indeed equally knowledgeable of the cultural stereotype" (p. 8).

Most researchers agree with Devine (1989) that stereotypes of minority groups are well known by all members of society, regardless of the individual's own beliefs. For example, Lepore and Brown (1997) replicated her findings within the British context by examining whether low- and high-prejudiced people have similar knowledge about the cultural stereotype of Black people in the United Kingdom. Prejudice was measured with a scale that combined the Modern Racism questionnaire with a few items from the Subtle/blatant Racism questionnaire (Pettigrew & Meertens, 1995) and a few items from the Resistance to Affirmative Action questionnaire (Jacobson, 1985). In line with Devine's predictions concerning cultural stereotypes, it was shown that "high- and low-prejudice people substantially share the same knowledge of such stereotypes" (p. 278). Augustinos, Ahrens, and Innes (1994) replicated the findings of Devine within the Australian context. They measured prejudice with a version of the Modern Racism questionnaire that was adapted for use in the Australian context. On the basis of their findings they argued that "knowledge of the aboriginal stereotype is largely independent of prejudicial beliefs" (p. 129).

On the basis of these findings many researchers have concluded that low- and high-prejudiced people have relatively equal knowledge of cultural stereotypes of minority groups within their country. However, there is another perspective that predicts different outcomes, that is Krueger's (1996) model of social projection. According to this model, "people tend to believe that others feel, think, and act as they themselves do" (p. 536). Social perceivers are therefore likely to use their personal beliefs as a basis for their

This research was supported by a Dutch National Science Foundation Grant (NWO 575-31-013). Diederik Stapel is now at the University of Groningen, The Netherlands.

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0022-1031/01 $35.00

estimates about cultural stereotypes. In line with this model, Krueger showed that people's personal beliefs about group characteristics predicted what they believed to be the cultural stereotype of that group. They overestimated the extent to which others shared their personal beliefs. Thus, self-reported personal beliefs about stereotypes and perceived cultural stereotypes are related. When also considering the fact that level of prejudice is predictive of self-reported *personal* beliefs, as Devine (1989: Experiment 3) showed, it could be inferred that prejudice and perception of cultural stereotypes are associated as well. If so, why did Devine (1989), Lepore and Brown (1997), and Augustinos et al. (1994) not find such a relation?

Perhaps no influence of prejudice level has been found due to the way it was measured. That is, all these studies relied on the Modern Racism questionnaire in order to measure level of prejudice. Although this questionnaire is the most widely used measure of self-reported prejudice, it has also been criticized with respect to its validity (Guglielmi, 1999; see also Kunda, 1999). For example, Fazio, Jackson, Dunton, and Williams (1995; see also Sniderman & Tetlock, 1986) argued that prejudice and political conservatism are confounded in the questionnaire. As a result, individuals who are not prejudiced will appear to be so because they have conservative views. Moreover, Fazio et al. (1995) showed that the scale is reactive, as it is subject to social desirability concerns. One reason for this might be that the Modern Racism questionnaire is outdated (see also Biernat & Crandall, 1999; Kunda, 1999; Swim, Aikin, Hall, & Hunter, 1995).

Taking these considerations into account, the aim of the current research was to test again whether knowledge of cultural stereotypes is dependent on one's level of prejudice. However, in comparison to former studies that have tested this relationship by measuring prejudice with the Modern Racism questionnaire, we also measured prejudice using other recently developed racism questionnaires. For example, we included the Subtle/Blatant Racism questionnaire by Pettigrew and Meertens (1995), who developed this questionnaire in order to combine different aspects of prejudice. The more covert aspects of prejudice are (1) the defense of traditional values, (2) the exaggeration of cultural differences, and (3) the denial of positive emotions. The more blatant aspects of prejudice are perceived threat from and rejection of the out-group and the opposition of intimate contact with the out-group.

We also included a recently published questionnaire that was developed in order to measure prejudice-related discrepancies (Monteith & Voils, 1998). This questionnaire comprises of two separate scales, which measure two different aspects of prejudice: The Prejudiced Standard scale assesses the individuals' personal standards with respect to how one should feel and behave towards the minority group within different situations. The Prejudiced Behavior scale assesses the individuals' self-reported actual behavior and feelings with respect to the minority group within different situations. Instead of looking at discrepancies, we used these two scales as independent measures of prejudice, and examined their predictive power with respect to the perception of cultural stereotypes.

In Study 1, we replicated Devine's study (1989: Experiment 1) within the Dutch context by examining whether low- and high-prejudiced people have similar knowledge about the cultural stereotype of Moroccan people in The Netherlands. In Studies 2 and 3, it was examined whether low- and high-prejudiced people have similar knowledge about the cultural stereotype of Surinamese people in The Netherlands. We chose these two minority groups because we expect that the content of cultural stereotypes about them will be quite distinct (cf. Dijker, Koomen, van den Heuvel, & Frijda, 1996). Dijker et al. (1996) argued that this might be the consequence of the different position Moroccans and Surinamese have in Dutch society. Moroccans were originally recruited as guest workers in The Netherlands in the 1970s for low-wage jobs that Dutch people did not want to do. However, many of them settled down with their families, especially in bigger cities such as Rotterdam and Amsterdam. Moroccans form a quite isolated but salient Islamic minority, of which many do not speak Dutch. Surinamese people, of which the most salient group is Black, are a more integrated minority within Dutch society. Surinam is a former colony of The Netherlands. Therefore, Surinamese people speak Dutch and share to a large extent the same culture, although their skin color and social economical background is different. Showing a similar influence of prejudice on the perception of cultural stereotypes for such different minority groups will strengthen our findings.

## STUDY 1

### *Method*

Fifty Dutch students of the University of Amsterdam (18 males and 32 females; mean age = 20.88, $SD = 2.60$) participated in the study, for which they received 15 guilders (about $U.S. 7.5). Participants were invited to the laboratory, where they were seated in front of personal computers in separate rooms. Because the experiment was carried out via the computer, all instructions, experimental information and questions appeared on the screen. Answers were given via the keyboard. First, instructions were given about using the computer and participants were asked to type their age and their gender. For the first task, Devine's instructions (1989: Experiment 1) were translated and made relevant to the Dutch context: Participants were told that the purpose was to better understand stereotypes. They were asked to list the content of the cultural stereotypes of Moroccan people. It was emphasized that the researchers were

TABLE 1
Findings of Study 1 ($N = 50$)

| | Correlations between prejudice scales | | | Correlations between prejudice scales and listed stereotypes*** | | |
|---|---|---|---|---|---|---|
| | Subtle/ Blatant | Prejudiced Standard | Prejudiced Behavior | Positive Stereotype | Negative Stereotype | Negative–Positive |
| Modern Racism | .48** | .38** | .43** | −.25 | .04 | .25 |
| Subtle/ Blatant | | .75** | .78** | −.26 | .22 | .35* |
| Prejudiced Standard | | | .78** | −.16 | .32* | .32* |
| Prejudiced Behavior | | | | −.15 | .32* | .31* |

* $p < .05$.
** $p < .01$.
*** A positive correlation implies that higher prejudiced participants are more likely to believe that these categories are part of the cultural stereotype than lower prejudiced people.

not interested in their personal views, but in the views they think Dutch people have of Moroccan people.

After this task, participants filled in several prejudice questionnaires that were presented in random order. The questionnaires were Dutch translations of the Modern Racism questionnaire (McConahay, 1986: reported in Jones, 1997),[1] the Subtle/Blatant Racism questionnaire (Pettigrew & Meertens, 1995), and the Prejudiced Standard and Prejudiced Behavior questionnaires (Monteith & Voils, 1998). Of course, all questionnaires concerned Moroccans in the Netherlands. All answers were given on 9-point Likert scales (1 = *absolutely disagree* to 9 = *absolutely agree*).

### *Results*

All prejudice questionnaires were reliable (Modern Racism questionnaire: $\alpha = .72$; Subtle/Blatant Racism questionnaire: $\alpha = .85$; Prejudiced Standard questionnaire: $\alpha = .87$; Prejudiced Behavior questionnaire: $\alpha = .88$). As shown in Table 1, all scales significantly correlate with each other. However, the correlations between the Modern Racism questionnaire and the other questionnaires are somewhat lower than the correlations between the other three questionnaires.

Two independent judges coded individual responses in relevant categories. Multiple responses in one category were counted only once. If the same concept was mentioned using different words, it was coded only once in that category. The judges agreed on 83% of their responses; disagreement was solved through discussion. Because the focus of the current research was to study the shared perception of cultural stereotypes, it was decided to carry out analyses on categories that were mentioned by at least 20% of the participants (i.e., criminal, 70%; unadjusted, 52%; lazy, 42%; sexist, 32%; hardworking, 25%; family-oriented, 24%; aggressive, 20%).

To examine the relation between the mentioned categories and the prejudice questionnaires, categories which were positive (measured on 9-point Likert scales; 1 = *negative* to 9 = *positive*) according to a post hoc test with 60 other participants (family-oriented, $M = 6.78$, and hardworking, $M = 6.43$) were combined into a positive cultural stereotype scale. The negative categories (criminal, $M = 1.68$; unadjusted, $M = 3.52$; lazy, $M = 3.08$; sexist, $M = 1.62$; and aggressive, $M = 2.27$) were combined into a negative cultural stereotype scale. Correlational analyses were carried out to examine whether higher prejudiced participants have a different conception of the Moroccan cultural stereotype with respect to valence compared to lower prejudiced participants. Results revealed positive correlations for all prejudice questionnaires between level of prejudice and the difference between negative and positive stereotypic categories indicating that higher prejudiced participants reported more negative than positive stereotypic categories compared to lower prejudiced participants (see Table 1). However, this correlation was not significantly different from zero when level of prejudice was measured by the Modern Racism questionnaire.

### *Discussion*

Study 1 showed that higher prejudiced persons mentioned more negative and less positive categories than lower prejudiced persons did. This indicates that knowledge of cul-

[1] Devine (1989: Exp. 1), Augustinos et al. (1994), and Lepore and Brown (1996) used an earlier version of the Modern Racism questionnaire (i.e., McConahay, Hardee, & Batts, 1981), which included a seventh item concerning school desegregation. However, we used a later version of the Modern Racism questionnaire (McConahay, 1986, as reported in Jones, 1997), which does not include this item. This item was not used in the translation because it is not relevant to the Dutch context and also because it has been argued that this item is outdated (Biernat & Crandall, 1999).

TABLE 2
Findings of Study 2 ($N = 58$)

| | Correlations between prejudice scales | | | Correlations between prejudice scales and listed stereotypes*** | | |
|---|---|---|---|---|---|---|
| | Subtle/ Blatant | Prejudiced Standard | Prejudiced Behavior | Positive Stereotype | Negative Stereotype | Negative–Positive |
| Modern Racism | .44** | .38** | .38** | .04 | .10 | .11 |
| Subtle/ Blatant | | .63** | .72** | −.11 | .36* | .36* |
| Prejudiced Standard | | | .87** | −.16 | .33* | .37* |
| Prejudiced Behavior | | | | −.24 | .33* | .42* |

* $p < .05$.
** $p < .01$.
*** A positive correlation implies that higher prejudiced participants are more likely to believe that these categories are part of the cultural stereotype than lower prejudiced people.

tural stereotypes is dependent on one's level of prejudice. This conclusion is not in line with previous research by Devine (1989), Augustinos et al. (1994), as well as Lepore and Brown (1997), who showed that high- and low-prejudiced persons appeared to be relatively equally knowledgeable of the cultural stereotype of minority groups within society.

Perhaps former research was not able to detect differences between low- and high-prejudiced people with respect to their knowledge of stereotypes because the Modern Racism questionnaire was used. In the current research, this questionnaire did not reveal significant differences in knowledge of cultural stereotypes, while the other questionnaires did. This may suggest that the Modern Racism questionnaire is a less sensitive prejudice measure. Still, some people might argue that the Modern Racism questionnaire fails to discriminate solely because its items are not applicable to the Moroccan situation in The Netherlands. However, the correlations between the Modern Racism questionnaire and the Prejudiced Standard and Prejudiced Behavior questionnaires (.38 and .43, respectively) are almost equal to correlations that were found between these questionnaires (.38 and .41, respectively) by Monteith (1996) in the United States. Moreover, the Prejudiced Standard and Prejudiced Behavior questionnaires are strongly correlated with the Subtle/Blatant questionnaire (.75 and .78, respectively) that was developed in The Netherlands by Pettigrew and Meertens (1995). Together, this suggests that the Modern Racism questionnaire is as appropriate for the Dutch context as it is for the American context.

In order to find more evidence for the conclusions of Study 1 regarding knowledge of cultural stereotypes and level of prejudice, Study 2 was carried out to seek to replicate these results with respect to the cultural stereotype of Surinamese people.

## STUDY 2

### *Method*

Fifty-eight Dutch students of the University of Amsterdam (21 males and 37 females; mean age = 21.14, $SD = 2.37$) participated in the study, for which they received 15 guilders (about $U.S. 7.5). Procedures were similar to Study 1. However, this time participants were asked to list the content of the cultural stereotypes of Surinamese people. As in Study 1, it was emphasized that the researchers were not interested in the personal views of participants, but in the views they think Dutch people have of Surinamese people.

### *Results*

All prejudice questionnaires were reliable (Modern Racism questionnaire, $\alpha = .62$; Subtle/Blatant Racism questionnaire, $\alpha = .81$; Prejudiced Standard questionnaire, $\alpha = .89$; Prejudiced Behavior questionnaire, $\alpha = .89$). As shown in Table 2, and in line with Study 1, all scales significantly correlate with each other. However, also in line with Study 1, the correlations between the Modern Racism questionnaire and the other questionnaires are somewhat lower than the correlations between the other three questionnaires.

The same coding procedure was carried out as in Study 1. The two independent judges agreed on 89% of their responses; disagreement was solved through discussion. Correlational analyses were carried out on categories that were mentioned by at least 20% of all participants (i.e., lazy, 59%; criminal, 43%; happy, 43%; good food, 38%; loud, 31%; "gezellig,"[2] 31%; family-oriented, 24%; hospitable, 21%).

[2] *Gezellig* is a Dutch word that has no direct translation in English, although "cozy" captures part of the meaning. This word refers to (being

To examine the relation between the mentioned categories and the prejudice questionnaires, categories which are positive (measured on 9-point Likert scales; 1 = *negative* to 9 = *positive*) according to a post hoc test with 60 other participants (happy, $M = 7.50$; good food, $M = 6.35$; "gezellig" (see footnote 2), $M = 7.40$; family-oriented, $M = 6.78$; and hospitable, $M = 7.38$) are combined into a positive cultural stereotype scale. The negative categories (criminal, $M = 1.68$; loud, $M = 3.92$; and lazy, $M = 3.08$) are combined into a negative cultural stereotype scale. Correlational analyses were carried out to examine whether higher prejudiced participants have a different conception of the Surinamese cultural stereotype with respect to valence compared to lower prejudiced participants. Results revealed that higher prejudiced participants reported more negative and less positive stereotypic categories compared to lower prejudiced participants (see Table 2). However, this appeared not to be true when the Modern Racism questionnaire was used to measure prejudice. In this case, no significant correlations were found between level of prejudice and valence of the categories. Moreover, *t* tests for examining the differences between dependent correlations (see Steiger, 1980) revealed that the correlation between level of prejudice and the valence of the mentioned categories obtained with the Modern Racism questionnaire is significantly lower than the correlations obtained with the Subtle/Blatant questionnaire [$t(58) = 1.86$; $p < .05$], the Prejudiced Standard questionnaire [$t(58) = 1.82$; $p < .05$], or the Prejudiced Behavior questionnaire [$t(58) = 2.23$; $p < .05$].

### *Discussion*

In line with Study 1, it was shown that most prejudice questionnaires do show differences in knowledge of the cultural stereotype between low- and high-prejudiced people. That is, higher prejudiced people think that the cultural stereotype of Surinamese people is more negative than positive in content compared to lower prejudiced people. This finding disconfirms again earlier findings that knowledge of cultural stereotypes is not dependent on one's level of prejudice (e.g., Devine, 1989; Augustinos et al., 1994; Lepore & Brown, 1997). Moreover, it appears that the Modern Racism questionnaire is a less sensitive measure of prejudice than the other questionnaires we used because it is less able to detect differences between low- and high-prejudiced people.

One important feature of the first two studies is that, in line with research by Devine (1989), Augustinos et al. (1994), and Lepore and Brown (1997), they used a free response task in order to assess knowledge of cultural stereotypes. According to Devine (1989), this can be seen as a rather sensitive way of assessing stereotypes because no cues, such as a list of possible characteristics, are provided. As a result, people may be less likely to control their beliefs regarding stereotypes. On the other, hand, people may be more hesitant to reveal their thoughts when they are specifically asked to list the content of the cultural stereotype. If people are indeed motivated to respond in a less prejudiced manner, it will be more difficult to find differences as a function of level of prejudice with the Modern Racism questionnaire, which has been shown to be a reactive measure (Fazio et al., 1995).

In Study 3 it is therefore examined whether it is possible to detect differences in knowledge of the cultural stereotype as a function of prejudice level when the categories, which were listed in Study 2, are presented as items.

## STUDY 3

### *Method*

Fifty-seven Dutch students of the University of Amsterdam (24 males and 33 females; mean age = 21.84, $SD = 3.27$) participated in the study, for which they received 15 guilders (about $U.S. 7.5). Procedures were largely similar to those used in Studies 1 and 2. However, this time participants were asked to judge to what extent they think that Dutch people associate several traits with Surinamese people on 9-point Likert scales (1 = *Dutch people absolutely do not associate this trait with Surinamese people* to 9 = *Dutch people absolutely do associate this trait with Surinamese people*). As in Studies 1 and 2, it was emphasized that the researchers were not interested in the personal views of participants, but in the views they think Dutch people have of Surinamese people. Participants had to judge the five positive and three negative categories that were mentioned in Study 2 as well as 28 filler categories.

### *Results*

All prejudice questionnaires were reliable (Modern Racism questionnaire, $\alpha = .71$; Subtle/Blatant Racism questionnaire, $\alpha = .81$; Prejudiced Standard questionnaire, $\alpha = .83$; Prejudiced Behavior questionnaire, $\alpha = .86$). As shown in Table 3, and in line with Studies 1 and 2, all questionnaires significantly correlate with each other. However, also in line with Studies 1 and 2, the correlations between the Modern Racism questionnaire and the other questionnaires are somewhat lower than the correlations between the other three questionnaires.

Comparable to Study 2 a positive cultural stereotype scale and a negative cultural stereotype scale were computed. Correlational analyses were carried out to examine whether higher prejudiced participants have a different conception of the Surinamese cultural stereotype with respect to

able to create) a good atmosphere between people. Both people and situations or places can be *gezellig.*

TABLE 3
Findings of Study 3 ($N = 57$)

| | Correlations between prejudice scales | | | Correlations between prejudice scales and listed stereotypes*** | | |
|---|---|---|---|---|---|---|
| | Subtle/ Blatant | Prejudiced Standard | Prejudiced Behavior | Positive Stereotype | Negative Stereotype | Negative–Positive |
| Modern Racism | .39** | .28** | .33** | −.34 | .07 | .37* |
| Subtle/ Blatant | | .60** | .64** | −.04 | .38* | .43* |
| Prejudiced Standard | | | .77** | −.26* | .06 | .28* |
| Prejudiced Behavior | | | | −.22 | .07 | .26* |

* $p < .05$.
** $p < .01$.
*** A positive correlation implies that higher prejudiced participants are more likely to believe that these categories are part of the cultural stereotype than lower prejudiced people.

valence compared to lower prejudiced participants. Results, which are reported in Table 3, revealed that higher prejudiced participants compared to lower prejudiced participants believed that negative cultural stereotypic categories are more strongly associated with Surinamese people than positive cultural stereotypic categories. Interestingly, this pattern of results was obtained for all prejudice questionnaires, including the Modern Racism questionnaire.

### *Discussion*

Findings of Study 3 largely replicated the results of the former studies. Higher prejudiced people believe that negative cultural stereotypes compared to positive cultural stereotypes are more strongly associated with Surinamese people than do lower prejudiced people. In contrast to the first two studies, this pattern of apparent influence of prejudice level on knowledge of cultural stereotypes was also clearly found with the Modern Racism questionnaire. The main difference between the first two studies and Study 3 is that in Study 3 the cultural stereotypic categories were presented to the participants rather than having them spontaneously list the stereotypic attributes. This method of assessing cultural stereotypes may have accounted for the fact that the Modern Racism questionnaire was capable of detecting significant differences between lower and higher prejudiced people. For any case, this finding strengthens our conclusion that the perception of cultural stereotypes is dependent on the perceiver's own level of prejudice.

## GENERAL DISCUSSION

The major aim of the present research was to examine to what extent knowledge of cultural stereotypes about minority groups within society is virtually universal. It was tested whether people who are prejudiced with respect to a certain minority group perceive the cultural stereotype about this group in a different way than people who are less prejudiced. In contrast to findings by Devine (1989), Augustinos et al. (1994), and Lepore and Brown (1997), we argued that prejudice might have an influence on one's knowledge of cultural stereotypes. We based this argument on several considerations. For one, Krueger (1996) has shown that personal beliefs are predictive of beliefs regarding cultural stereotypes. When also considering the fact that level of prejudice predicts one's personal beliefs concerning the stereotyped group (Devine, 1989: Experiment 3), it seems likely that prejudice level and knowledge of cultural stereotypes are also related to some extent. In line with this reasoning, the three current studies showed that high-prejudiced people believed that the cultural stereotypes of Moroccan and Surinamese people in The Netherlands are more negative and less positive in content than low-prejudiced people did. These findings were obtained both with a free response method (Study 1 and Study 2) and with close-ended questions (Study 3).

Importantly, these findings do contradict the argument that there should be no influence of one's prejudices with respect to knowledge of cultural stereotypes because they are well known by all members of society due to exposure and social learning (Devine, 1989). In line with this argument, Devine found no effects of prejudice level on knowledge of cultural stereotypes, nor did several other researchers testing this hypothesis (Augustinos et al., 1994; Lepore & Brown, 1997). What may have accounted for these divergent findings? One possible explanation could be that the Dutch situation is different from that in other countries. That is, one may argue that Americans are more aware of the

cultural stereotype of African Americans, and Australians are more aware of the cultural stereotype of Aboriginals, than the Dutch are with respect to the cultural stereotypes of Moroccans and Surinamese. There has been a long history of intergroup relations between European Americans and African Americans in the United States and between Aboriginals and European immigrants in Australia. However, Surinamese and Moroccan people only immigrated to The Netherlands after World War II, and therefore, knowledge of cultural stereotypes may be similar to a lesser extent by the members of society.

There are, however, at least two arguments against this line of reasoning. First, Lepore and Brown (1997) obtained similar results as Devine (1989) regarding the knowledge of cultural stereotypes of West Indians in the United Kingdom. The position of West Indians in Britain is quite similar to the position of Surinamese people in The Netherlands. The Netherlands and the United Kingdom both had colonies in South and Central America, and they both used African people as slaves in these colonies during the 19th century. After World War II, many people who lived in these former colonies emigrated to the countries that had colonized their countries. The history of intergroup relations between immigrants from the former colonies and the inhabitants of The Netherlands and the United Kingdom is therefore likely to be quite similar, and consequently, also the development of cultural stereotypes with respect to the immigrants. As such, it is difficult to maintain that different findings are the result of different kinds of stereotypes. Second, it should be noted that the current research showed a similar pattern of results with respect to knowledge of cultural stereotypes of two very different minority groups in The Netherlands. Although the history of intergroup relations with Dutch people is very different for these two groups, as well as the content of the cultural stereotypes, influence of prejudice level on knowledge of these stereotypes is quite similar.

Another explanation for the divergent research findings may be found in the way in which prejudice is measured. Previous research which showed that prejudice does not moderate knowledge of cultural stereotypes questionnaire (Devine, 1989; Augustinos et al., 1994; Lepore & Brown, 1997) has measured prejudice with the Modern Racism questionnaire. However, in the current research prejudice is measured with several questionnaires. In addition to the Modern Racism questionnaire, the Subtle/Blatant Racism questionnaire by Pettigrew and Meertens (1995) and the Prejudiced Behavior and Prejudiced Standard questionnaires by Monteith and Voils (1998) also were included. In line with former research, the first two studies, which were replications of Study 1 by Devine (1989), showed no significant influence of level of prejudice with respect to knowledge of the cultural stereotype when prejudice was measured with the Modern Racism questionnaire. However, when the other prejudice questionnaires were used a significant moderating effect of prejudice was found. Moreover, in Study 2 the correlation between level of prejudice and valence of the cultural stereotype was significantly lower for the Modern Racism questionnaire than for the other questionnaires. Only when positive and negative words had to be rated with respect to the extent that people believed that they were part of the cultural stereotype did the Modern Racism questionnaire show a significant relation between level of prejudice and knowledge of cultural stereotypes.

When considering the fact that the Modern Racism questionnaire has been criticized with respect to its validity (Fazio et al., 1995; Sniderman & Tetlock, 1986), it could be argued that this questionnaire may not be sensitive enough to detect clear differences in knowledge of cultural stereotypes as a function of level of prejudice when the free response method is used. Only when knowledge of cultural stereotypes was measured by presenting people a list of possible characteristics was the Modern Racism questionnaire clearly capable of detecting differences between lower and higher prejudiced people. Perhaps in this case the Modern Racism questionnaire is able to clearly differentiate as a function of prejudice because this rating method is a less reactive method than the free response method. The free response method may be a rather reactive method of assessing knowledge of cultural stereotypes, as people may be hesitant to spontaneously (without being prompted by specific traits such as “lazy” or “criminal”) reveal their thoughts. In this latter case, it could be more difficult to find differences as a function of level of prejudice with a questionnaire that is subject to social desirability effects, such as the Modern Racism questionnaire (cf. Fazio et al., 1995). Future research could further examine this issue.

For now, the most important conclusion of this research is that level of prejudice does relate to people’s people’s perceptions of cultural stereotypes about minority groups within society. This has been shown by assessing knowledge of two different cultural stereotypes both via open-ended responses and rating scales and by including multiple racial prejudice measures.

## REFERENCES

Augustinos, M., Ahrens, C., & Innes, J. M. (1994). Stereotypes and prejudice: The Australian experience. *British Journal of Social Psychology,* **33,** 125–141.

Biernat, M., & Crandall, C. S. (1999). Racial attitudes. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of political attitudes* (Vol. 2). San Diego, CA: Academic Press.

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology,* **56,** 5–18.

Dijker, A. J., Koomen, W., van den Heuvel, H., & Frijda, N. H. (1996). Perceived antecedents of emotional reactions in inter-ethnic relations. *British Journal of Social Psychology,* **35,** 313–329.

Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995).

Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology,* **69,** 877–889.

Guglielmi, R. S. (1999). Psychophysiological assessment of prejudice: Past research, current status, and future directions. *Personality and Social Psychology Review,* **3,** 123–157.

Jacobson, C. K. (1985). Resistance to affirmative action: Self-interest or racism? *Journal of Conflict Resolution,* **29,** 306–329.

Jones, J. M. (1997). *Prejudice and racism* (2nd ed). New York: McGraw–Hill.

Krueger, J. (1996). Personal beliefs and cultural stereotypes about racial characteristics. *Journal of Personality and Social Psychology,* **71,** 536–548.

Kunda, Z. (1999). *Social cognition: Making sense of people*. Cambridge, MA: MIT Press.

Lepore, L., & Brown, R. (1997). Category and stereotype activation: Is prejudice inevitable. *Journal of Personality and Social Psychology,* **72,** 275–287.

McConahay, J. B. (1986). Modern racism, ambivalence, and the modern racism scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism.* Orlando, FL: Academic Press.

McConahay, J. B., Hardee, B. B., & Batts, V. (1981). Has racism declined in America? It depends on who is asking and what is asked. *Journal of Conflict Resolution,* **25,** 563–579.

Monteith, M. J. (1996). Contemporary forms of prejudice related conflict: In search of a nutshell. *Personality and Social Psychology Bulletin,* **22,** 461–473.

Monteith, M. J., & Voils, C. I. (1998). Proneness to prejudiced responses: Toward understanding the authenticity of self-reported discrepancies. *Journal of Personality and Social Psychology,* **75,** 901–916.

Pettigrew, T. F., & Meertens, R. W. (1995). Subtle and blatant racism in Western Europe. *European Journal of Social Psychology,* **25,** 57–76.

Sniderman, P. M., & Tetlock, P. E. (1986). Reflections on American racism. *Journal of Social Issues,* **42,** 173–187.

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin,* **87,** 245–251.

Swim, J. K., Aikin, K. J., Hall, W. S., & Hunter, B. A. (1995). Sexism and racism: Old-fashioned and modern prejudices. *Journal of Personality and Social Psychology,* **68,** 199–214.