Mapping Principal Dimensions of Prejudice in the United States

Robin Bergh^{1,2}, & Mark J. Brandt^{3,4}

¹ Department of Psychology, Uppsala University

² Department of Psychology, Harvard University

³ Department of Social Psychology, Tilburg University

⁴ Department of Psychology, Michigan State University

Author Note

Robin Bergh, <https://orcid.org/0000-0002-5041-7723>

Mark J. Brandt, <https://orcid.org/0000-0002-7185-7031>

All data, analytic scripts, and materials will be made available, except potentially identifying information and copy-right protected materials. Study 1a also reported in Brandt (2017). The Swedish Research Council supported this research through a grant to Robin Bergh (#437-2014-231). Address correspondence to Robin Bergh, Department of Psychology, Uppsala University, P.O. Box 1225, SE-751 42, Uppsala, Sweden. E-mail: robin.bergh@psyk.uu.se.

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Abstract

Research is often guided by maps of elementary dimensions, such as core traits, foundations of morality, and principal stereotype dimensions. Yet there is no comprehensive map of prejudice dimensions. A major limiter of developing a prejudice map is the ad hoc sampling of target groups. We used a broad and largely theory-agnostic selection of groups to derive a map of principal dimensions of expressed prejudice in contemporary American society. Across a series of exploratory and confirmatory studies, we found three principal factors: Prejudice against marginalized groups, prejudice against privileged/conservative groups, and prejudice against unconventional groups (with some inverse loadings for conservative groups). We documented distinct correlates for each factor, in terms of social identifications, perceived threats, personality, and behavioral manifestations. We discuss how the current map integrates several lines of research, and point to novel and underexplored insights about prejudice.

Keywords: Prejudice dimensions, value conflicts, status, perceived threats, social identifications.

Introduction

Just like biologists catalog species, psychologists catalog cognitive processes, feelings, and behaviors. Personality psychologists structure trait concepts into a few elementary factors and accompanying sub-factors (e.g., Ashton & Lee, 2001; Goldberg, 1990), while social psychologists propose basic dimensions of morality (Curry et al., 2019; Graham et al., 2011) and stereotypes (Fiske et al., 2002; Koch et al., 2016). Such taxonomies are a backbone for other research. However, for one of the most popular topics in the social psychological literature – prejudice – there is no comprehensive map. A plausible reason for the lack of such a map is that the literature has evolved to focus on specific features of different group attitudes and biases (e.g., Cottrell & Neuberg, 2005; Dovidio et al., 2017; Glick & Fiske, 2001), and their relationships with particular emotions (e.g., Mackie & Smith, 2015) and perceived threats (e.g., Stephan & Stephan, 2000), rather than features that unite different types of prejudice.

The quest for increasingly specific descriptions of different kinds of group evaluations has clearly advanced our understanding of prejudice. Still, more specificity is not always preferable. For a person traveling from New York to Los Angeles it helps to have a rough overview map, in addition to detailed city maps. The same is true if we want to understand the relation between different types of prejudice. A comprehensive understanding of prejudice requires a good overview of how prejudices are connected *and* details on how particular groups are evaluated (see also Leach et al., 2008). Here we aim to provide an overview map of the prejudice landscape in the United States.

An extensive literature documents how commonly studied prejudices are interconnected. A person who is prejudiced against ethnic minorities tends to also be prejudiced against religious and sexual minorities, as well as expressing derogating sentiments about women and older people (e.g., Allport, 1954; Asbrock et al., 2010; Bierly, 1985; Cohrs et al., 2012; Ekehammar &

Akrami, 2003; Hartley, 1946; Zick et al., 2008). However, this so-called generalized prejudice research is not as broad as one might hope for (Crawford & Brandt, 2019). More could be done to scrutinize the boundaries of generalization, what the documented commonalities represent, and whether there are other kinds of prejudice that fall outside the conventional scope of targets.

There are some hints at the boundaries of generalized prejudice. For example, prejudice against marginalized minorities go hand in hand, but such sentiments do not generalize to any and all outgroups (Bergh et al., 2016). This suggests that marginalized minorities may make up the targets of one of several dimensions of generalized prejudice. It is also reasonable to expect that groups associated with liberal and conservative values represent distinct kinds of prejudice, as they are associated with different psychological attributes (e.g., Brandt, 2017; Chambers et al., 2013; Crawford et al., 2017). Thus, in addition to discussing what traditionally studied prejudices (e.g., against Black people and Gay people) have in common (e.g., lower status and societal marginalization) and how they differ (e.g., associated with different emotions), this research points toward multiple higher-order prejudice factors. Instead of expanding existing research by adding more nuances for commonly studied prejudices (the vertical expansion in Figure 1), the aim of this paper is to provide a horizontal expansion, to map prejudices at a higher level of abstraction (Figure 1, top part).

Figure 1. Two approaches for expanding the scope of prejudice research.

Note. Vertical expansion reflects new subtypes of previously examined prejudices. Horizontal expansion extends the gamut of targets.

Defining Prejudice

To provide a comprehensive map of prejudice toward different groups, we first need a capacious definition. We define prejudice as a devaluing sentiment about a group. While many scholars define prejudice as a negative group attitude (see e.g., Allport, 1954; Crandall et al., 2002; Crawford et al., 2017), there is an unspoken assumption that the negativity is *differential* or selective in nature (see Graziano et al., 2007; see also Fazio et al., 1995; Greenwald et al., 1998): A racist tends to dislike Black people while also being positive about White people. A sexually

prejudiced person tends to dislike gay people while favoring heterosexual people. In contrast, a person who explicitly or implicitly expresses *equal* negativity toward White and Black people, heterosexual and gay people, and so on, may be a prototypical misanthrope, but not a prototypical prejudiced individual. The definition guiding this work makes the assumption of differential negativity explicit: A devalued group is viewed more negatively (or equally applicable – less positively) than some relevant comparison. Under *Aims and Overview of Studies*, we elaborate on how this informs our measures and statistical modeling of prejudice.

Delineating Basic Dimensions of Stereotypes and Prejudice

Most research aimed at describing dimensions of group attitudes and stereotypes have done so in a top-down fashion. Researchers have selected target groups or evaluated attributes based on what they expect to find (e.g., Bergh et al., 2016; Cuddy et al., 2007; Duckitt & Sibley, 2007; Fiske et al., 2002). For example, researchers aiming to study prejudice towards competitive and norm-violating groups have chosen a range of groups which they expect to be competitive and norm-violating (Duckitt & Sibley, 2007). This allows for direct hypothesis testing, but the approach is unsuitable to advance claims about “basic” or “principal” dimensions or types of prejudice in a society, such as American society as examined here. In comparison, a study that only aimed to measure neuroticism and extraversion would not identify a conscientiousness factor, and hence it would not provide a basis to conclude that extraversion and neuroticism are the most elementary personality dimensions.

One approach to addressing this limitation is to use a data-driven, bottom-up approach to delineate elementary dimensions among a representative sample of social groups. When such an approach is applied to stereotypes, participants have sorted a representative sample of social groups and researchers have then used multidimensional scaling techniques to identify consistent dimensions. This approach has found a dimension reflecting agency/socio-economic success and

the second focused on unconventional versus conventional beliefs (stereotypic warm groups were those that are average on both dimensions; Koch et al., 2016, cf. Fiske et al., 2002).

A stereotype map could be used as a guide for delineating prejudice dimensions as well. However, there are theoretical and methodological differences between stereotypes and prejudice. First, stereotype maps typically identify and explore *any* perceived similarities between groups. For prejudice, however, we are not searching for just any similarity. By definition we are interested in similarities and differences in *ratings of relative negativity across groups* (e.g. whether Black and Hispanic people are devalued in a similar way compared to White people, or some other reference point; see also Zou & Cheryan, 2017). Another difference is that stereotypes are typically marked by some cultural agreement about what is characteristic of a group (Fiske et al., 2002; Koch et al., 2016). In contrast, prejudice reflects personal judgments. Therefore, we use factor analyses and prejudice expressed towards representative samples of groups to identify basic dimensions of prejudice along which individuals differ systematically.

Prejudice based on Conflicting Values and Status

Prejudice is well-examined for groups that are unconventional and low in status or power (see e.g., Altemeyer, 1998, Asbrock et al., 2010; Bergh et al., 2016; Duckitt & Sibley, 2007; 2017; McFarland, 2010). The psychometric properties of prejudices towards such groups have been examined in a number of studies. Some researchers have aimed for a vertical expansion (see Figure 1) and identifying specific sub-factors (Duckitt, 2006; Duckitt & Sibley, 2007) and others have aimed to identify the overarching construct that ties these prejudices together (i.e. socially marginalized status; Bergh et al., 2016). We therefore expected a factor representative of marginalized groups to also emerge in our work. Beyond this factor, there is reason to believe that there are “undiscovered” prejudice clusters that represent the values of the groups (Brandt & Crawford, 2019). For example, research from a value-conflict perspective uses a broader range of

groups and finds that people with more liberal, progressive, and left-wing values express prejudice towards groups with conventional values. In contrast, people with more conservative, traditional, and right-wing values express prejudice towards groups with unconventional values (e.g., Bizumic et al., 2017; Brandt, 2017; Brandt et al., 2015; Crawford et al., 2015, 2017; Levin et al., 2013; Wetherell et al., 2013; for a review see Brandt & Crawford, 2020).

In contrast to work on marginalized groups, however, work on the value-conflict perspective has not conducted a rigorous psychometric analysis of prejudices towards the groups used as stimuli in their studies. More specifically, the factor structure of prejudice against conservative and privileged groups has not been formally examined. Thus, it remains unclear what the principal dimensions are within a comprehensive gamut of prejudices, and to what extent these are defined by social status and socio-political values.

Criteria Associations of Broad Prejudice Factors

In addition to mapping the contours of prejudice towards a broad array of target groups, we also explored how broad prejudice factors are associated with distinct personality traits, social identifications, threat perceptions, and behavioral manifestations. The rationale for examining personality is straight-forward, and similar to classic premises in attribution theory (e.g., Kelley, 1973): If some individuals consistently express more prejudice than others, across a range of groups and contexts, then it makes sense to search for explanations that are dispositional in nature. To capture the full scope of potential personality correlates of a broader set of prejudices, we adopt a similarly broad set of personality traits: the HEXACO model (Ashton & Lee, 2001). These variables have also been derived from a data-driven approach, without a goal of predicting prejudice (unlike variables such as right-wing authoritarianism and social dominance orientation; Altemeyer, 1981; Pratto et al., 1994). As such, we avoid definitional “double dipping” for the personality and prejudice measures. Compared to the Big Five, the HEXACO variables also

facilitate distinguishing prejudice factors (devaluing sentiments) from negativity toward all people. In particular, HEXACO distinguishes orientations toward prosociality versus self-enhancement (honesty-humility and altruism) from a wish get along with people (agreeableness; e.g., Hilbig et al., 2014). A general desire to get along is perhaps most relevant for predicting attitudes about all groups (see also Crawford & Brandt, 2019).

Our focus on personality is not a disavowal of contextual explanations for prejudice. Rather, the goal is to explore general features in the social environment that make a variety of groups appear similar to the individual observer, and to understand why certain clusters of groups trigger different evaluations in different individuals. To that end, we also examined social identifications. Generalized prejudice against marginalized groups does not appear to be an “us” versus “them” phenomenon (Bergh et al., 2016), but biases involving unconventional and conservative groups do appear that way (Brandt & Crawford, 2020; Cikara et al., 2017). In other words, rather than assuming that social identifications are fundamental to all prejudice (or not), we examine if they help define some broad forms of prejudice but not others. As such, we examined associations of our prejudice factors with identifications in terms of political values and socio-economic status (i.e. identifications along the two basic stereotype dimensions identified by Koch et al., 2016). In the last study, we also considered threat perceptions (e.g., Stephan & Stephan, 2000, 2017) as social psychological criteria variables. We predicted that perceptions of how different groups threaten the economic standing of most Americans and/or important values in society would provide proximate explanations for why prejudices cluster as they do (see also Study 3 introduction).

Finally, we examined support or opposition to different group causes via donations as behavior manifestations of broad forms of prejudice. Although discrimination may seem like the most natural behavioral outcome to focus on, we focused on charitable giving for two reasons.

First, we wanted a measure of overt behaviors, rather than intentions or hypothetical acts.

Second, we sought an assessment that could be done online, so that the collection of behavioral data would not interfere with our goal of having reasonably large samples for our analyses of the attitude measures. A donation task would satisfy both of those goals. We focused on charitable causes that should map unto broad stereotype attributes (e.g., support for the American Civil Liberties Union and the National Right to Life as indicators of unconventional versus conservative values; Koch et al., 2016), assuming that the prejudice factors would have some correspondence to these.

Aims and Overview of Studies

We aimed to comprehensively chart the prejudice landscape using a selection of groups that is more representative of American society, as compared to previous research. In analogy, the goal was to provide a rough outline of largely unmapped territory (e.g., associations between privileged and conservative prejudice targets) and its association with more familiar areas, rather than providing more details of generally familiar areas (e.g., racism and sexism). This moves beyond investigations of prejudice toward individual target groups (e.g., McConahay, 1986; Swim et al., 1995), but also beyond examinations of commonalities for ad hoc selection of groups (e.g., Crandall et al., 2002; Ekehammar & Akrami, 2003; Duckitt & Sibley, 2007). When interpreting the meaning of the factors, we mainly relied on the features of the highest loadings (i.e. marker items). We further relied on the stereotypic features identified by Koch et al. (2016). For example, if groups like rich people and upper class people had the highest loadings we would interpret the factor as a centered on privilege or high status.

To capture the devaluing aspect of prejudice, we examined people's negativity (lack of warmth) toward a range of groups, net of their negativity toward most any group, especially stereotypically neutral and normative groups (e.g., middle class people). More specifically, we

used bi-factor modeling (see e.g., DeMars, 2013; Rodriguez et al., 2016) to examine prejudice as the residual, “excessive” negativity compared to misanthropic attitudes and response sets (reporting a like or dislike of any evaluated target). In the supplemental materials, we also test models where we operationalized prejudice as preferences for norm groups (e.g., liking middle class people more than rich or poor people).

We derived the outline of a prejudice map from five datasets, described in Studies 1a and 1b, Studies 2a and 2b, and Study 3. First, we report results from exploratory factor analyses in two pilots (Studies 1a and 1b). Second, we describe confirmatory and pre-registered studies in two new samples (Studies 2a and 2b). Here we used parcels to include many targets (around 40) while establishing a reliable structure, overall. In Studies 2a and 2b, we further describe criterion associations of these factors with personality, social identifications, and overt behaviors in terms of support or opposition to different group causes via donations. In Study 3, we examined an item-level (rather than parcel-based) model in a non-Mturk sample. This study also extended the criterion variables to include threat perceptions. Finally, we present omnibus analyses from multiple datasets to further examine the robustness of the prejudice map. In this section, we also show that the prejudice map looks similar overall among ethnic minority and majority respondents as well as liberal and conservative respondents.

Studies 1a and 1b: Exploratory Phase

We conducted two pilot studies to explore possible models. Complete details about methods and results are presented in the supplemental materials. In our first pilot, Study 1a, we used exploratory methods to identify the initial contours of the prejudice map. We measured negativity, operationalized as lack of warmth, toward 42 targets that are representative of salient groups in American society. Specifically, we asked participants to “Please rate the warmth of your feelings toward [each group]” on a seven-point scale (1 = least warm, 7 = most warm). The

groups were taken from Study 5a by Koch et al (2016), derived through minimal instructions (“off the top of your head, what various types of people do you think today’s society categorizes into groups?”).

We first submitted these ratings to an exploratory factor analysis (EFA). The EFA indicated four factors, but the last factor was completely based on double-loadings (see Table 1). The strongest loadings on that factor were for stereotypically neutral and normative groups (e.g., middle class people and White people). The other three factors were more well-defined and captured negativity toward privileged and conservative groups (e.g., rich people; henceforth privileged/conservative), negativity toward underrepresented and historically disadvantaged groups (e.g., poor people; henceforth marginalized), and negativity toward groups defying traditional values (e.g., gay people; henceforth unconventional), respectively.¹

Based on the EFA results, we developed a parcel-based latent variable model that included factors for different forms of prejudice, as well as a general negativity factor marked by attitudes about all group (i.e. a bi-factor model). The purpose was to identify prejudice that is consistent with “selective negativity” (Graziano et al., 2007), net of general negativity toward all groups of people (e.g., misanthropy), as well simplifying the interpretation of the EFA. We suspected that the fourth EFA factor, focused on stereotypically neutral and normative groups, would be fully captured by the general factor. Thus, we only included three specific prejudice factors only. In the supplemental materials we describe empirics speaking against the inclusion of a forth specific factor. Note also that we use the term specific here to follow conventional bi-factor terminology (specific = encompassing select groups), but they are still generalized prejudice factors in the sense that they capture group attitudes that generalizes across targets.

The specific prejudice factors represented privileged, marginalized, and unconventional groups, and they were typically based on the highest loading for each group in the EFA. There

were a few exceptions that were made with the aim of preserving the nature of the first three extracted factors and using the forth factor as broader, general factor. The exceptions and specific rationales for these are presented in the supplemental materials.

For each prejudice factor in the bi-factor model, we created three parcels at random. With the current number of target groups, an item-level model would have too many free parameters to sustain a reliable solution (the participant/parameter ratio would only be around 2:1). For transparency, we report an item-level analysis in the supplemental materials (see Figure S6). In addition to specifying particular factors for the respective parcels, we also included a general bi-factor for which all parcels loaded on. Tied to the general factor, we also attached the stereotypically neutral and normative groups. Like the other targets, these were assigned to three parcels at random. Finally, to achieve a converging model, we fixed the residual variance to zero for one of the privileged/conservative group parcels. The model had satisfactory fit on most indices, except for a mediocre RMSEA: Scaled $\chi^2(43) = 175.12, p < .001, CFI = .95, RMSEA = .10, 90\% \text{ CI } [.08, .11], SRMR = .05$. Prejudice against marginalized groups was strongly correlated with prejudice against unconventional groups, $r = .66, p < .001$. The other factor correlations were weak ($r_s < .23$). The model is presented in its entirety in Figure S5 in the supplemental materials. While we considered this model to be mostly exploratory, we tested it confirmatory in Studies 2a and 2b.

The second pilot, Study 1b, complemented the first in a couple ways. First, we measured prejudice by assessing negativity with both pro-trait (warmth) and con-trait (social distance) items, to reduce acquiescence response sets. Second, we aimed to explore how these prejudice factors were associated with other variables known to be related to prejudice (e.g., social identifications) and generalized prejudice in particular (e.g., openness to experience and empathic concern). Third, we introduced a donation task in which participants could support or oppose

causes conceptually related to the prejudice factors (e.g., support to an anti-poverty charity was assumed to be an inverse behavioral indication of prejudice against marginalized groups).

An EFA in Study 1b replicated factors for unconventional, marginalized, and privileged/conservative groups. A factor for stereotypically neutral groups was borderline substantiated compared to a fourth factor expected by chance, based on a parallel test. Again, however, once we introduced a general factor for negativity toward all groups, using bi-factor modeling, there was no evidence of a fourth specific factor capturing prejudice against normative groups (see additional analyses in the supplemental materials). In other words, the fourth EFA factor seemed redundant with general negativity in the bi-factor model, rather than capturing a unique form of prejudice. As reported in the supplemental materials, we also made some initial explorations of personality and behavioral (donations) associations for these factors.

Table 1

Geomin factor loadings from exploratory factor analysis in Study 1a.

Group	Factor			
	1	2	3	4
Rich people	.93	-.04	-.25	.06
Upper class people	.87	-.02	-.18	.09
Athletes	.60	.04	-.01	.13
White-collar people	.55	.11	-.04	.34
Politicians	.70	-.01	.03	-.26
Jocks	.70	-.01	.03	.04
Hipsters	.41	.22	.25	-.22
Celebrities	.59	.14	.03	-.15
Democrats	.23	.45	.08	-.01
Gays	-.05	.77	.26	.05
Lesbians	.01	.78	.18	.04
Homosexuals	.00	.79	.20	.03
Transgender people	-.02	.69	.35	-.13
Atheists	.08	.67	-.02	.05
Goths	.15	.40	.35	-.17
Liberals	.14	.53	.11	.03
Christians	.40	-.54	.49	.01
Conservatives	.53	-.46	.15	.05
Republicans	.58	-.46	.09	.05
Poor people	-.16	.03	.90	.08
Homeless people	-.03	-.01	.83	-.14
Lower Class people	-.17	-.01	.88	.18
Immigrants	-.05	.26	.67	-.02
Blacks	.05	.28	.57	.12
Hispanics	-.05	.27	.61	.11
Asians	.08	.29	.35	.25
Students	.04	.05	.59	.28
Elderly	.07	-.05	.55	.31
Drug addicts	.22	.09	.46	-.38
Hippies	.23	.35	.33	-.22
Muslims	.1	.38	.51	-.15
Jews	.21	.19	.41	.18
Religious people	.40	-.54	.50	-.08
Teenagers	.33	-.01	.49	.01
Men	.39	.05	.06	.51
Working class people	-.03	-.05	.54	.50
Women	.00	.12	.41	.46
Parents	.11	-.18	.50	.38
Blue-collar people	.02	-.01	.55	.40
Middle class people	.15	.01	.33	.60
Whites	.33	.05	.02	.63
Nerds	.04	.28	.29	.28

Note. Loadings of $\geq .60$ are marked in dark grey, .30-.59 in light grey. Groups are labeled here as they were shown to participants, following Koch et al. (2016). In our writing, we have otherwise followed recommendations for group terminologies from the American Psychological Association.

Study 2a and 2b: Confirmatory Tests

Studies 2a and 2b provided confirmatory, preregistered tests (see <http://aspredicted.org/blind.php/?x=4qm4q7> and <http://aspredicted.org/blind.php/?x=a5eb2v>) of the overall structure of prejudiced attitudes, based on our exploratory results in Studies 1a and 1b. We expected to find one factor primarily consisting of privileged and conservative groups, another factor for marginalized groups, and a third factor primarily consisting of unconventional groups.

Method

Participants

For Studies 2a and 2b, we collected 416 and 414 surveys, respectively, from Amazon Mechanical Turk. We excluded participants if they did not pass two simple attention checks (e.g., “to monitor quality, please respond with a seven for this item”). This left us with 386 and 383 respondents. In the two samples, the median age was 34 and 33 years ($SDs = 11.38$ and 11.12). The proportions of women were 50 and 53%. The ethnic composition was as follows (Study 2a/2b): 77/75% identified as White, 8/7% as Asian, 8/9% as Black, and 3/5% as Latino. The remaining participants identified as Pacific Islanders, Native Americans, mixed or other ethnicity, or provided no response. In Study 2a, 54% were liberal-leaning, 28% were conservative-leaning, and 18% were neutral. In Study 2b, the corresponding percentages were 52, 27, and 21%. In each study, completed surveys were rewarded \$2.00.

Instruments

For most parts, the instruments were identical in Studies 2a and 2b and largely similar to Study 1a. Aside from negativity toward 42 groups (warmth ratings), the studies included the 60-

item version of the HEXACO-PI-R (Ashton & Lee, 2009) to assess six broad personality characteristics: Honesty-humility (H; $\alpha = .80/.80$ in studies 2a/2b), emotionality (E; $\alpha = .80/.83$), extraversion (X; $\alpha = .88/.86$), agreeableness (A; $\alpha = .82/.81$), conscientiousness (C; $\alpha = .78/.79$), and openness to experience (O; $\alpha = .84/.83$). We also included four items from the 100-item inventory (Lee & Ashton, 2004) to assess an interstitial facet termed altruism (positioned between agreeableness, emotionality, and honesty-humility; Ashton & Lee, 2007, $\alpha = .52/.62$ in the respective samples). We included this facet because it is practically synonymous to empathic concern (Bergh & Akrami, 2016) – a variable displaying strong negative associations with prejudice against marginalized groups (e.g., McFarland, 2010).

Next, we asked about the perceived status and conventional values for marker items (i.e. groups) on the stereotypic dimensions from Koch et al.'s (2016) work (see supplemental materials for details). In the fifth section, participants answered questions about demographics and social identifications. For example, we asked whether the person identified as having progressive or traditional values ("When it comes to social values, would you describe yourself as progressive, traditional, or neither progressive nor traditional?", answered on a scale from 1 [very progressive] to 7 [very traditional], and 4 being neutral [neither progressive nor traditional]). We also asked about self-perceived social status using a MacArthur ladder (with ten rungs from lowest to highest status in society; Adler et al., 2000).² Other demographics included age, gender, education, household income, political orientation, ethnic identification, and previous MTurk experiences.

In Study 2a, we finally asked participants to divide \$1 between the self and four charities associated with groups from each of the prejudice factors: American Civil Liberties Union Foundation (liberal values); National Right to Life Committee (conservative values); Feeding America (low power/status); Club for Growth (high power/status). The charities were the same as

in Study 1b (see supplemental materials for details). Study 2b only included support American Civil Liberties Union and National Right to Life, as these were the charities most strongly associated with our prejudice factors in Study 2a.

Participants could choose between a bonus of \$1 for themselves, or alternatively to add or remove money to each of the above charities. In Study 2b, the response scale ranged of -\$1 to \$1 (see supplemental materials for details). The rationale for using “negative” donations was to make a more direct connection between negative group attitudes and punitive behaviors (e.g., disliking conservatives → undermine conservative charity work through National Right to Life). The decisions were consequential in both studies: Donated amounts were subtracted from a completion bonus and given to the respective charities.

Results

Factor Analyses

In both samples, we first ran a direct replication of the final bi-factor model in Study 1a. This model included three factors for different forms of prejudice, net of a general (misanthropic) attitude about all groups. The three prejudice factors centered on (1) marginalized groups, (2) privileged/conservative groups, and (3) unconventional groups. For each factor, we created three parcels at random (see e.g., Little et al., 2002). With the current number of target groups, item-level models would have too many free parameters to sustain reliable solutions (the participant/parameter ratio would be as low as 2:1). Item-level models are presented later based on aggregate data from the different studies (see *Omnibus, Cross-Study Analyses*). The hypothesized attitude factors and model specifications were preregistered (see <http://aspredicted.org/blind.php/?x=4qm4q7> and <http://aspredicted.org/blind.php/?x=a5eb2v>).

As conceptual replications, we further tested new parcel randomizations in each sample (also preregistered). The fit of all models are presented in Table 2, including the initial test in

Study 1a, for comparison. All models had significant X^2 estimates, but indices assessing degrees of fit indicated mostly acceptable values. The exception was *RMSEA* with mediocre values.

Modification suggestions indicated that an addition of two residual correlations or cross-loadings would bring the *RMSEA* to $\leq .08$ in all cases. However, the specific modifications were different for various parcel randomizations. This suggests that a principal source of misfit lies in unaccounted correlations between specific groups (e.g., between Christians and atheists). As our focus was on the broader factor structure, we refrained from any modifications in the model. We further address the question of fit, and specific sources of misfit, in the general discussion (see also *Omnibus, Cross-Study Analyses*, presented after Study 3).

Table 2
Fit statistics for confirmatory factor analyses.

	Scaled X^2 (<i>df</i>)	<i>CFI</i>	<i>RMSEA</i> [90% <i>CI</i>]	<i>SRMR</i>
Study 1a				
Random parcels set 1	175.12 (43)	.95	.10 [.08, .11]	.05
Study 2a				
* Random parcels set 1	196.28 (42)	.95	.10 [.08, .11]	.04
Random parcels set 2	234.15 (42)	.94	.11 [.10, .12]	.07
Study 2b				
* Random parcels set 1	156.58 (42)	.96	.08 [.07, .10]	.05
Random parcels set 3	221.95 (43) ^a	.94	.10 [.09, .12]	.06

Note. * = Direct replication of Study 1a

^a The last model has one more degree of freedom due to a small, negative residual variance that was fixed to 0.

The loadings and factor correlations were fairly robust across parcel specifications (see Figure 2, showing results with first parcel set in each dataset). We consistently found strong correlations between negative attitudes toward unconventional and marginalized groups, $r_s > .63$, $p_s < .001$. A weaker negative association was also evident between attitudes about unconventional and privileged/conservative groups, $r = -.25$ in both studies, $p_s \leq .01$. The supplemental materials include further analyses to evaluate bi-factor models in greater detail

(e.g., additional fit indices; see Rodriguez et al., 2016), as well as alternative models proposed in reviews of this manuscript. Overall, the results support the idea of modeling both a general negativity factor, as well as residual negativity toward our three clusters of groups.

Figure 2. Results from confirmatory factor analysis of negativity ratings in Studies 2a and 2b.

Note. Loadings are standardized. Groups are labeled here as they were shown to participants, following Koch et al. (2016).

Criteria Associations

Next we extracted factor scores from the bi-factor model (e.g., Krantzler et al., 2015) and correlated them with personality, self-identifications in terms of values and socio-economic status, and donation behaviors. We did these analyses based on the first parcel model in each

sample. We also examined unique/indirect contributions of the personality and identification variables, as well as unique behavioral effects of the prejudice factors. However, we focus on the bivariate associations here to simplify the result presentation, as suggested by reviewers.

Structural equation models and regression analyses are presented in the supplemental materials.

The criteria correlations from Study 2a and 2b are presented in Table 3. In line with previous research (e.g., Bergh et al., 2016; Sibley & Duckitt, 2008), we found that openness to experience and altruism were robustly, negatively correlated with prejudice against marginalized and unconventional groups. We also found a negative association between extraversion and prejudice against privileged/conservative groups. Self-identified values were strongly associated with all forms of prejudice, unlike general negativity. Self-identified social status appeared orthogonal to all group attitudes in these data.

The general factor of negativity toward all targets was unrelated to the identification measures in both studies, but it was negatively correlated with all personality variables. Possibly, this reflects social desirability concerns. Such variability has been modeled as a higher-order factor in Big Five personality research (e.g., Bäckström et al., 2009) and it is reasonable that social desirability would also generate more positive ratings of all groups. If so, our bi-factor modeling would effectively reduce social desirability variability in the prejudice factors, as they are extracted net of the general factor.

The behavioral correlates differed somewhat from Study 2a to 2b. In Study 2a, prejudices against marginalized and unconventional groups were negatively associated with donation behaviors, overall, and especially support to a civil rights charity. In contrast, those who were more negative toward privileged/conservative groups were more likely to support civil rights charities, and less likely to support conservative causes. In Study 2b, only a small proportion of the participants chose to donate (9%, $n = 33$) and we therefore considered results for the specific

charities too unreliable. In this sample, the effects were also weaker and non-significant when considering making any donation. The difference between the studies might be due to chance, but might also depend on design differences in the donation task (see method section).

Table 3

Criteria Correlations for Negativity Factors with Personality, Social Identifications, and Overt Behaviors in Studies 2a and 2b.

Criteria	Study 2a				Study 2b			
	Prejudice privileged groups	Prejudice marginalized groups	Prejudice unconventional groups ^a	Negativity all groups	Prejudice privileged groups	Prejudice marginalized groups	Prejudice unconventional groups ^a	Negativity all groups
<i><u>Personality</u></i>								
Honesty-Humility	.07 (.15)	-.15 (.00)	-.01 (.88)	-.21 (.00)	-.06 (.28)	-.04 (.45)	.11 (.03)	-.12 (.02)
Emotionality	.07 (.15)	-.06 (.23)	-.07 (.16)	-.05 (.31)	.06 (.23)	-.17 (.00)	-.20 (.00)	-.14 (.01)
Extraversion	-.25 (.00)	-.05 (.35)	-.02 (.77)	-.30 (.00)	-.29 (.00)	.07 (.16)	.17 (.00)	-.16 (.00)
Agreeableness	-.10 (.06)	-.18 (.00)	-.11 (.03)	-.28 (.00)	-.16 (.00)	-.09 (.08)	.05 (.32)	-.15 (.00)
Conscientiousness	.07 (.16)	.04 (.42)	.03 (.62)	-.19 (.00)	-.08 (.11)	.16 (.00)	.17 (.00)	-.11 (.03)
Openness to exp.	.29 (.00)	-.24 (.00)	-.29 (.00)	-.19 (.00)	.24 (.00)	-.24 (.00)	-.32 (.00)	-.21 (.00)
Altruism	.12 (.02)	-.25 (.00)	-.18 (.00)	-.32 (.00)	-.06 (.24)	-.22 (.00)	-.06 (.23)	-.30 (.00)
<i><u>Social ID</u></i>								
Status	.03 (.61)	.00 (.95)	.04 (.42)	.00 (.99)	.01 (.91)	.05 (.31)	.05 (.35)	.01 (.81)
Values	-.39 (.00)	.47 (.00)	.69 (.00)	-.03 (.56)	-.41 (.00)	.38 (.00)	.66 (.00)	-.03 (.53)
<i><u>Behaviors</u></i>								
Donation (no/yes) ^b	.07 (.18)	-.17 (.00)	-.17 (.00)	-.10 (.05)	-.01 (.81)	-.08 (.14)	-.04 (.46)	-.07 (.16)
Support ACLU	.15 (.00)	-.32 (.00)	-.38 (.00)	-.13 (.01)				
Support NRL	-.20 (.00)	-.03 (.57)	.08 (.12)	-.13 (.01)				
Support FA	.02 (.76)	-.08 (.11)	-.10 (.05)	-.10 (.05)				
Support CB	-.13 (.01)	-.03 (.58)	-.03 (.54)	-.16 (.00)				

Note. Openness to Exp. = Openness to Experience; ID = identification; ACLU = American Civil Liberties Union; NRL = National Right to Life Committee; FA = Feeding America; CB = Club for Growth. P-values in parentheses are rounded to two decimals (i.e., .00 means < .005). Boldface indicates $p \leq .05$.

^a These factor included negative loadings for conventional groups, implying that both factors were politically bipolar. In other words, positive personality associations can also be interpreted as more positivity toward conventional groups.

^b Dichotomous (Donation: no [0]/yes [1]) outcome. See text for differences in donation tasks in Study 2a and 2b.

^c Too few participants for meaningful estimates.

Study 3: Specific Prejudice Indicators

Study 3 had three main objectives. First, we used specific prejudices as manifest variables, rather than parcels. Second, we tested our models outside the Amazon Mechanical Turk worker pool. Third, we examined a classic social psychological explanation for prejudice – threat perceptions – in addition to the personality and social identification variables.

We captured perceptions of realistic and symbolic threat (Stephan & Stephan, 2000) by asking participants about the degree to which they perceive each of the groups to threaten the economic standing of most Americans, as well as whether they threaten important values in a good society. Importantly, our contextual reference point gives these a different meaning compared to most work on group threats. The existing literature is largely framed around perceptions of outgroups threatening some particular ingroup (e.g. perceived threats to a domestic population by immigrants; Stephan & Stephan, 2000). Our focus was instead on perceived threats to *society*, irrespective of whether it stems from within (e.g., atheists) or the outside (e.g., immigrants). We tested the hypothesis that the reason why many prejudices go hand in hand is because the respective targets are all perceived to threaten the existing order in society, either in terms of norms and values or the distribution of resources (Bergh & Akrami, 2017; see also Zou & Cheryan, 2017).

We expected to find a bipolar symbolic threat factor for political and religious groups (i.e. some individuals perceive unconventional groups as symbolic threats, whereas others associate the same threat with traditional groups) and a strong association between this factor and negativity toward the same groups. We further anticipated a factor involving marginalized groups in the realistic threat ratings (i.e. groups perceived as an “economic burden,” especially among individuals being prejudiced against them). We predicted an association between this factor and negative evaluations of the same groups. Finally, we expected a second factor involving

privileged/conservative groups in the realistic threat ratings and that it would be associated with negative evaluations of the same groups. These predictions were preregistered (see <http://aspredicted.org/blind.php?x=4m53mz>).

Method

Participants

We recruited participants from the Harvard Digital Lab for the Social Sciences (DLABSS; <http://dlabss.harvard.edu/>). Compared to MTurk workers, DLABSS respondents are older, have higher incomes, and do not earn money through their participation (although they are entered into a raffle for \$50 Amazon gift cards; for more information about the sample characteristics, see Strange et al., 2019).

559 participants completed all parts of the survey. We excluded inattentive respondents based on the same criteria as in Studies 1b, 2a, and 2b, which left us with a sample size of 527. The median age was 58 years ($SD = 16.80$), and 59% were women. 77% identified as White, 2% as Asian, 1% as Black. Less than one percent identified as Native-American and the remaining participants either provided no response or answered “other.” In terms of political identity, 58% were liberal-leaning, 33% were conservative-leaning, and 9% were neutral.

Procedures and Instruments

We measured prejudice with the same negativity ratings as in the previous studies, but we included fewer target groups. We reduced the number of targets in order to limit free parameters in our models with specific group ratings as manifest variables (instead of parcels). To select targets, we adopted a combination of criteria used by Koch et al. (2016) to generate lists of groups commonly thought of in American society: (1) groups commonly mentioned when participants were given minimal instructions to generate lists of groups, and (2) groups commonly appearing in the American English section of the Google Books Corpus (Koch et al.,

2016, Study 5a). With a goal of having 20-25 groups, we first identified 26 groups that appeared frequently according to both methods. We subsequently searched for groups we perceived to be largely interchangeable for the purposes of our study (e.g., Republicans and conservatives). Removing potential redundant groups puts a premium on breadth among the selected groups. Thus, we identified pairs of groups with minimal dissimilarity in multi-dimensional scaling (see Koch et al., 2016, Study 5b), marked by values $<.10$ where 0 means maximum similarity and 1.00 means maximum dissimilarity. Based on this criterion, we removed Republicans and Democrats (keeping conservatives and liberals) as well as lesbians, transgender, and homosexual people (but keeping gays; note also that some terms here is outdated and not optimal, but we wanted to use the same target stimuli as described by Koch et al., 2016). For clarity, we are not suggesting that all sexual minorities are the same or that conservative/liberal always translates to Republican/Democrat. However, our goal was to uncover broad patterns of prejudice rather than examining specific differences between groups. Finally, we added “average Americans” to the warmth ratings to test if those attitudes are indeed similar to those of the Middle class (indeed they were; $r = .66, p < .001$). This was primarily relevant for the auxiliary analyses of preference ratings (see supplemental materials).

We also reduced the battery of personality questions in favor of social psychological predictor variables. We kept openness items ($\alpha = .74$) to further replicate their predictive role for prejudice against unconventional and marginalized targets, and we kept extraversion items ($\alpha = .80$) to further document its association with attitudes about privileged/conservative targets. As before, we measured the personality variables with the 60-item version of the HEXACO-PI-R (Ashton & Lee, 2009) and we embedded two attention checks in this part of the survey (e.g., “to monitor quality, please respond with a seven for this item”).

After the personality items, we introduced measures of perceived realistic (economic) and symbolic (value-based) threats posed by each target group. For the economic threat perceptions, we asked the following: “If [group] had more of a say in public debates, do you think that would be good or bad for the economic standing and well-being of most Americans?” (1 = Really bad, 7 = Really good). For assessing value threats, we asked: “If [group] had more of a say in public debates, do you think that would undermine or promote social values that are important for a good society?” (1 = Clearly undermine important values, 7 = Clearly promote important values). Finally, the survey included the same measures as before for political and socio-economic identifications and demographics. The DLABSS team also asked participants who were new to the pool to fill out additional demographics in a short, separate survey.

Factor Analytic Results

The preregistered model used negativity toward each group as indicators. We postulated factors for privileged/conservative and marginalized groups, as well as conventional versus unconventional values. Based on insights from the previous studies we specified certain double-loadings a priori. Most of these double-loadings involved generally well-liked, socially normative groups, which were still associated with a status or value orientation (e.g., attitudes about women being associated with both marginalized groups and a factor centered on average/middle class Americans). Another way to describe the model is that we trimmed loadings for the general factor (fixing them to 0) for group attitudes not expected to be strongly associated with all-encompassing negativity (e.g., attitudes about liberals and conservatives had little to do with general negativity in the previous studies; see supplemental materials). The full model specification is given in the preregistration (<http://aspredicted.org/blind.php?x=4m53mz>). Detailed results are provided in the supplemental materials.

The preregistered model had tolerable fit according to *RMSEA* and *SRMR*, but less so according to *CFI*; scaled $\chi^2(174) = 804.92, p < .001, CFI = .87, RMSEA = .08, 90\% CI [.08, .09], SRMR = .09$. Moving beyond the pre-registered model, we subsequently tested if evaluations of neutral groups would be better modeled as indicative of a general attitude about most any group (as opposed to the assumption that a trimmed bi-factor model, with some double-loadings, would represent the data equally well).

A bi-factor model with all groups loading on a general negativity factor improved the fit; scaled $\chi^2(163) = 592.26, p < .001, CFI = .91, RMSEA = .07, 90\% CI [.06, .08], SRMR = .05$.³ Christians were only associated with the privileged/conservative factor, not (inversely) with the unconventional factor. Similarly, Muslim people only loaded with the unconventional groups, and not with the marginalized groups. Except for those cases, all groups loaded on the three prejudice factors in line with a priori expectations, although some coefficients were stronger or weaker than anticipated. For example, conservatives dominated the factor for privileged and conservative groups and liberals had very strong loadings on both the unconventional and marginalized factor. The loadings for liberals appear to be suppressor effects, given their opposite signs. These loadings should also be interpreted with reference to a very strong correlation between the unconventional and marginalized factors in this sample (strongly correlated predictors make for “extreme” standardized regression coefficients and this also applies to regressing indicators on factors; Jöreskog, 1999). This model is presented in Figure 3 and it provided the basis for examining associations with threat perceptions, personality, and identifications.

Figure 3. Results from confirmatory factor analysis of negativity ratings in Study 3.

Note. Loadings are standardized. Dashed lines indicate non-significant associations. Groups are labeled here as they were shown to participants, following Koch et al. (2016).

Criteria Associations

We first ran exploratory analysis on the factor structure for perceived threats from all groups. We expected to derive separate measures for economic and value-based threats, but such differences were hard to substantiate in the data (see supplemental materials). As such, we instead extracted four factors combining economic and value-based threats. One factor centered perceived threats from ethnic and religious minorities (e.g., Black and Jewish people), another centered on unconventional and marginalized groups (e.g., liberals and teenagers), a third centered on privileged/conservative groups (e.g., rich people and men), and a fourth factor centered on the stereotypically neutral groups (average Americans and Middle class people).

For the main analysis, we again extracted factor scores from the prejudice bi-factor model and correlated the factor scores with the personality, social identifications, and threat perception variables. The criteria variables were manifest (mean-score) to keep the result presentation simpler and more consistent with the previous studies, as well as to avoid models with many parameters. Results are presented in Table 4. Additional analyses, based on structural equation modelling are presented in the supplemental materials.

The prejudice factors were strongly correlated with threat perceptions, in expected directions (e.g., perceived threats from unconventional groups $\leftrightarrow$ prejudice unconventional groups). However, the relative strength of the associations was somewhat surprising. For example, perceived threats from privileged/conservative groups were correlated with all prejudice factors at roughly the same level of strength.

Table 4

Criteria Correlations for Negativity Factors with Personality, Social Identifications, and Overt Behaviors in Study 3

Criteria	Prejudice privileged groups	Prejudice marginalized groups	Prejudice unconventional groups	Negativity all groups
<i>Personality</i>				
Extraversion	-.10 (.02)	-.03 (.51)	.03 (.47)	- .33 (.00)
Openness to experience	.19 (.00)	-.27 (.00)	-.27 (.00)	- .02 (.66)
<i>Social ID</i>				
Status	.08 (.07)	-.03 (.49)	-.04 (.42)	.10 (.03)
Values (progressive -> conservative)	-.71 (.00)	.44 (.00)	.60 (.00)	-.25 (.00)
<i>Threat Perceptions</i>				
Privileged/conservative groups	-.54 (.00)	.43 (.00)	.50 (.00)	-.49 (.00)
Ethnic groups	.48 (.00)	-.67 (.00)	-.70 (.00)	.03 (.56)
Unconventional/marginalized groups	.75 (.00)	-.63 (.00)	-.78 (.00)	.15 (.00)
Normative groups	-.01 (.76)	.06 (.17)	.08 (.07)	-.27 (.00)

Note.

^a P-values in parentheses are rounded to two decimals (i.e., .00 means < .005). Boldface indicates $p \leq .05$.

^b These factor included negative loadings for conventional groups, implying that both factors were politically bipolar. In other words, positive personality associations can also be interpreted as more positivity toward conventional groups.

Identifying with progressive or traditional values was a strong correlate of all prejudice, as before. However, here we found the strongest associations with privileged/conservative groups. This may seem less surprising when considering that the loading for conservatives dominated the factor in this study (see Figure 3). This could also explain the stronger negative association here for this factor and openness to experience. As before, we found negative associations between extraversion and prejudice against privileged/conservative groups, but the association was weak in this study. The association between extraversion and all-encompassing negativity was also consistent with the findings from the previous studies. Finally, participants' socio-economic identification did not predict any group biases, as in the other studies.

Discussion

The models with the specific group evaluations as indicators suggest that we could reliably predict the overall structure of prejudices, based on our three previously documented factors, using a non-MTurk sample with a different demographic makeup. However, we were not able to account for all specific inter-relations between prejudices, as indicated by the need for some modifications in the item-level models. Taken together, the findings suggest that specific attributes of the groups generate particular kinds of prejudice, net of the commonalities in the broad factors, which in turn represents a source of misfit in our models. This issue is not unique to prejudice research and it does not necessarily signify that the broader picture is fundamentally wrong (see general discussion).

Other important findings concerned the threat perceptions. We found that threat perceptions clustered groups together in a way that somewhat resembled the structure of prejudice factors. Overall, the threat perceptions were strongly associated with all factors of prejudice and did not display clear discriminant validity. It was also surprising that we did not observe any substantial differences between economic and value-based threats. This could have methodological explanations (e.g., shared method variance), but it could also be of theoretical value for discussing different explanations of prejudice at different levels of specificity.

Omnibus, Cross-Study Analyses

To help generalize across the studies and identify the most consistent relationships across studies, we tested the robustness of our models in a series of multi-group (group = study) confirmatory factor analyses. First, we fit the final negativity rating (item-level) model from Study 3 to all the other studies as well (except study 1b, which involved different groups and instruments), assuming that the same attitude structure would fit all the datasets. Here we included the originally specified loading for conservatives on both the privileged and

unconventional (versus conservative) factor (as modeled in Studies 2a and 2b). As Study 1a had a different response scale, we also standardized the responses within each study. We then examined a model with equal loadings across all studies to test metric measurement invariance across studies (intercepts were kept equal too, but the standardization would limit variability in these anyway). We further set the factor correlations to be equal across studies.

This model had adequate fit; scaled $\chi^2(840) = 2193.19$, $p < .001$, $CFI = .90$, $RMSEA = .06$, 90% CI [.06, .07], $SRMR = .07$. In fact, it fit better in all cross-validation samples (χ^2 was 446.04, 464.10, and 516.36, in Study 1a, 2a, and 2b, respectively) than the sample it was originally tested in ($\chi^2 = 766.69$ in Study 3). This suggests that the bi-factor structure that we re-introduced after testing the (trimmed) preregistered model was not just overfitting the data in Study 3, but rather represents a reasonable structure across all the studies. More detailed results can be found in the supplemental materials (see Figure S12).

In additional analyses we further explored the notion that associations between stereotypically similar groups represent one important source of misfit in our models (as opposed to major misspecifications in the factor structure). If that was the case, we could expect models with aggregate scores for stereotypically similar targets (e.g., rich and upper class people) to fit the data reasonable well. For these analyses, we again consulted research providing multi-dimensional scaling of stereotype similarities (Koch et al. 2016, Study 5b). Among the 42 groups examined in Study 1a, we aggregated the ratings for groups with dissimilarity $\leq .10$, where 0 means maximum similarity and 1.00 means maximum dissimilarity (see also Study 3). This reduced the number of targets to 30.

For the multi-group analysis, we adopted a model building/model testing strategy that was similar to our strategy for the separate studies: We first conducted an EFA on Study 1a on negativity toward the 30 targets and construed a bi-factor model based on it (see supplemental

materials for details). In this case we also allowed cross-loadings, as indicated by the exploratory structure, and we added three suggested modifications (residual correlations for jocks $\leftrightarrow$ athletes, White people $\leftrightarrow$ men, and poor people $\leftrightarrow$ drug addicts). We subsequently tested this model in a multi-group confirmatory factor analysis, assuming an identical factor structure across studies 1a, 2a and 2b (all studies including these targets). The degree of model fit was acceptable according to all indices, except *CFI*; scaled $\chi^2(1282) = 3341.56, p < .001, CFI = .85, RMSEA = .07, 90\% CI [.06, .07], SRMR = .08$. We return to the problem with *CFI* in item-level models in the general discussion. Compared to the item-based model in Study 3, and the multi-group analyses replicating it, the factor structure with more groups was not dominated by the targets of liberals and conservatives. In this model, all the specific factors were also more distinct. The model is presented in Figure 4.

Figure 4. Results from multigroup analysis for negativity ratings in studies 1b, 2a and 2b.

Note. Loadings based on standardized ratings and constrained to be equal across studies. Groups are labeled here as they were shown to participants, following Koch et al. (2016).

Finally, we conducted a multi-group, bi-factor ESEM analysis (Morin et al., 2016) for the 30 targets discussed above. The purpose of this analysis was to compare our CFA results with a model allowing all groups to be indicative of all three prejudice factors (i.e. taking all possible cross-loadings into account). It would allow us to examine to what extent the misfit in our models stem from missing cross-loadings, and to what extent the overall structure is robust to such potential misspecifications. As before, we estimated a model assuming an identical factor structure across Studies 1a, 2a and 2b. We used middle class people as a marker item of the general negativity factor, and loadings were not estimated for the other factors (see Study 1a results and discussion). The fit of the model was a bit better than our CFA, but not drastically so: scaled $\chi^2(1231) = 2815.79, p < .001, CFI = .88, RMSEA = .06, 90\% CI [.06, .06], SRMR = .06$. More specifically, the addition of around 50 cross-loadings only lowered the *RMSEA* from .066 to .059, for instance. This suggests that additional fit improvements, beyond sampling variability across studies, should be traced to (many) residual correlations. Perhaps more important, the additional loadings did not change the meaning of the factors drastically. If anything, it made our central features (privileged, marginalized, unconventional versus conservative) appear clearer in terms of items primarily defining the factor. Standardized loadings are presented in Table 5.

Table 5

Standardized factor loadings from multi-group, bi-factor exploratory structural equation model in studies 1a, 2a, and 2b.

	Prejudice, privileged	Prejudice, unconventional vs. conservative	Prejudice, marginalized	General negativity
Rich people/Upper class people	0.70	0.00	-0.19	0.43
Politicians	0.63	-0.05	-0.01	0.22
Jocks	0.61	0.02	0.01	0.40
Celebrities	0.51	0.18	0.06	0.26
Conservatives/Republicans	0.50	-0.39	-0.28	0.33
Athletes	0.50	0.03	0.03	0.43
Christians/Religious people	0.44	-0.59	0.01	0.44
White collar people	0.42	0.05	-0.15	0.53
Teenagers	0.30	-0.12	0.31	0.50
Hippies/Hipsters	0.26	0.19	0.51	0.32
Drug addicts	0.25	-0.02	0.45	0.05
Muslims	0.13	0.02	0.72	0.26
Jews	0.12	0.01	0.40	0.54
Students	0.07	-0.01	0.37	0.59
Liberals/Democrats	0.03	0.38	0.40	0.21
Black people	0.03	-0.11	0.67	0.46
Atheists	0.02	0.64	0.28	0.19
Hispanic people	0.00	-0.05	0.63	0.44
Asian people	0.00	0.08	0.39	0.53
Poor people	0.00	-0.20	0.64	0.53
Immigrants	-0.01	0.02	0.72	0.35
Sexual minorities ^a	-0.07	0.37	0.61	0.31
White people	0.16	0.06	-0.29	0.75
Men	0.22	-0.03	-0.12	0.72
Women	-0.13	0.06	0.24	0.65
Old people	-0.01	-0.28	0.29	0.61
Nerds	-0.03	0.21	0.27	0.45
Working class/Blue collar people	-0.07	-0.16	0.21	0.77
Parents	0.03	-0.24	0.08	0.65
Middle class people ^b				0.81

Note. Loadings of ≥ 0.60 are marked in dark grey, 0.30-0.59 in light grey. Groups are labeled here as they were shown to participants, following Koch et al. (2016).

^a Includes evaluations of gay, lesbian, homosexual, and transgender people.

^b Middle class people were used to define the general negativity factor and loadings were not estimated for the other factors.

Comparison of White People and People of Color

We also used aggregate data across studies 1a, 2a, and 2b to examine whether interrelations of prejudices are overall similar for different ethnicities (we did not include study 3 here due to its smaller sample of rated groups). Across all studies, most participants identified as White and it is possible that prejudices cluster in a different way among people of color. To examine this, we tested the item-based model for 30 non-redundant groups (see Figure 4) separately among White people and people of color. We compared the structure in a multigroup analysis where we first constrained all loadings and intercepts to equality. This model had borderline adequate fit, except for CFI; scaled $\chi^2(824) = 2689.76$, $p < .001$, $CFI = .82$, $RMSEA = .08$, 90% CI [.07, .08], $SRMR = .09$. In fact, variation stemming from ethnic differences was only marginally larger than the variation across studies (the latter presumably being largely random; see previous heading). The biggest difference, according to modification indices, was a stronger negative correlation between prejudice towards liberals and conservatives among White participants. Among White participants, anti-White negativity was also rated more as an inverse to prejudice against marginalized groups. In this group, there was also a stronger connection between negativity toward celebrities and the prejudice factor for unconventional targets. These modifications led to some improvements in the model fit, scaled $\chi^2(821) = 2479.73$, $p < .001$, $CFI = .84$, $RMSEA = .07$, 90% CI [.07, .08], $SRMR = .08$. There were several other differences that were theoretically meaningful (e.g., mean differences in ratings of White people), but they had no noticeable impact on the model fit.

Taken together, these analyses indicated that the general structure of prejudice was reasonably similar between White people and people of color in the United States. Studying the more specific differences in structure could be a valuable contribution of future work. It is also possible that there are differences between the ethnic minorities analyzed jointly here because of

the unique histories and experiences of the people in those groups. We refrained from exploring such differences because of concerns about too small sample sizes, but that too is an area worth of further exploration. Again, our models were not perfectly accurate for outlining all specific interrelations of prejudices, but seem to adequately convey the overall structure.

Political (Liberal-Conservative) Comparison

We further examined to what extent the factor structure was similar among liberal- and conservative-leaning respondents (those scoring above versus below 4 on our 7-point measure of political orientation). The analysis mirrored the multigroup comparison for ethnic groups, except we replaced ethnic majority versus minority with Liberal versus Conservative. The degree of fit for this model was borderline adequate, except for a poor CFI value (as before); scaled $\chi^2(824) = 2396.82, p < .001, CFI = .79, RMSEA = .08, 90\% CI [.07, .08], SRMR = .10$. Judging by the modification indices, both liberals and conservatives displayed a negative residual association between Christians and atheists. We added such a parameter and kept it equal across the two groups. A difference between the groups was that conservatives associated celebrities with unconventional groups in their evaluations. These modifications improved the fit a bit; scaled $\chi^2(821) = 2088.42, p < .001, CFI = .83, RMSEA = .07, 90\% CI [.07, .08], SRMR = .09$. Overall, this model fit the data almost as well as the cross-study examination, suggesting that differences liberals and conservatives are fairly small in terms of the overall structure of prejudiced attitudes.

General Discussion

Prejudice research has focused on generalized attitudes about salient targets (e.g., ethnic, religious and sexual minorities; Allport, 1954; Ekehammar & Akrami, 2003), or alternatively, variations of prejudice expressions within the same cluster of groups (e.g., Cottrell & Neuberg, 2005; Dovidio et al., 2016; Glick & Fiske, 2001; Mackie & Smith, 2015). In this paper, we shifted focus from the vertical delineation of prejudice against stigmatized groups, to a horizontal

expansion at a higher level of abstraction (Figure 1) – to map basic dimensions of prejudice across a wider gamut of groups in the United States.

Across studies, of which several were confirmatory and preregistered, we found three broad factors: Prejudice against marginalized groups, prejudice against privileged/conservative groups, and prejudice against unconventional groups. The last kind of prejudice was also associated with positivity toward conservative groups (or vice versa). Although the models did not fit excellent, there are good statistical and theoretical reasons to believe that the main issues are more specific rather than fundamental problems with the overall structure (see *Limitations, Caveats and Future Directions*). As far as the three overarching factors go, they have implications for advancing the current understanding of prejudice.

Toward a New Map of Individual Prejudice

The current work integrates several strands of prejudice research. In line with the dual-process model of ideology and prejudice, we observed a difference between negativity against normatively dissident (unconventional) groups and negativity against marginalized groups (e.g., Duckitt & Sibley, 2007). The difference was relatively subtle, however, as indicated by the strong correlations between these factors. In line with a value conflict perspective (e.g., Brandt & Crawford, 2020), we further found that biases against conventional groups were negatively associated with prejudice against unconventional groups, and showed opposite sign personality associations. In line with the BIAS map model (Cuddy et al., 2007), we also account for attitudes toward privileged groups.

Beyond findings aligning with previous research, however, we can also draw a number of distinct conclusions and outline new research questions, based on examining a more diverse selection of groups. As one example, Duckitt's (2001) dual process model is silent about prejudice against privileged and conservative groups, and so is classic generalized prejudice

research. The value conflict literature does include such targets (e.g., Chambers et al., 2013; Crawford et al., 2015), but it has not explored how negativity against conservative groups relates to negativity against privileged groups. Just like there were strong commonalities between evaluations of marginalized and unconventional groups, there were also clear connections between evaluations of conservatives and privileged groups.

These findings bring up questions about whether conservative values or status/power is “primary” for defining patterns of these group evaluations. With around 20 groups in Study 3, attitudes about conservatives dominated the common factor with privileged/conservative groups. With more targets, however, a factor with similar targets seemed most clearly marked by sentiments about privileged/conservative groups (e.g., rich people being the marker item in the multi-study analysis with 30 targets). This does not show that attitudes about privilege precede attitudes about conservative groups, but it does suggest that status and power define patterns of prejudice across a broader set of groups than conservative versus unconventional values. Also, the inverse relation between liking unconventional and conservative groups can be traced to a few groups alone – most notably conservatives/republicans versus liberals/democrats, as well as Christians/religious people versus atheists and sexual minorities.

Our findings about privileged groups should also have some implications for work inspired by the BIAS map and the stereotype content model (e.g., Fiske et al., 2007). The BIAS map might seem to suggest, at least at face value, that a person’s treatment of Jewish people will also predict how they treat rich people (see Cuddy et al., 2007). However, the BIAS map model does not provide a direct demonstration of such associations. Rather, that model extrapolates types of biases from cultural stereotype clusters (i.e. *average* perceptions in society and not an individual’s prejudice). At an inter-individual level of analysis, we found that that a person’s prejudice against Jewish people is more similar to his/her prejudice against homeless people than

their prejudice against rich people.⁴ An explanation for these patterns – that those who denigrate homeless and unemployed people also denigrate religious and sexual minorities – is a concern that more rights, power or resources to any of these groups is viewed as a threat to the majority and/or themselves. Indeed, Study 3 suggests that people who perceive Jewish people as threatening also have similar perceptions of other, historically marginalized ethnicities. Further, groups that are similarly stereotyped as competent and cold (see Fiske et al., 2002) were nevertheless associated with different kinds of prejudice in our studies, depending on whether they are perceived as challenging existing social hierarchies or not. For example, men and rich people seem to face similar biases as other powerful groups, whereas Jewish and Asian people are targeted by prejudice that is generally directed toward unconventional and marginalized groups. Overall, this suggests that there is no perfect correspondence between cultural stereotype clusters and commonalities in peoples’ prejudices.

New Prejudice Factors → New Insights about Personality, Identity, Threats, and Behaviors

Most research on personality and prejudice has focused on effects of agreeableness and openness to experience (and the mediating role of authoritarian and socially dominant values; see Sibley & Duckitt, 2008). Recent research suggests, however, that trait empathy and honesty-humility are more predictive than agreeableness of prejudice against marginalized groups (Bergh & Akrami, 2016; McFarland, 2010; Sibley et al., 2010). The openness to experience effect has also been reevaluated recently, with findings showing that those high on the trait also express prejudice, but against different (conservative) targets (Brandt et al., 2015; Crawford & Brandt, 2019). Our findings strengthen these recent claims, but also suggest that another “low prejudice trait” – altruism/empathy – might be associated with *more* negativity toward conservative groups. Another novel personality finding was a negative relation between extraversion and prejudice against privileged/conservative. There is a substantial relation between having high status and

being extroverted (Anderson et al., 2001), and extroverted individuals may also have less negativity toward privileged/conservative people because they have more contact with people from those groups.

The current findings further provide some new insights about the “us versus them” aspects of prejudice. The antagonism between conservatives and liberals is often studied as an example of ingroup-outgroup dynamics (e.g., Cikara et al., 2017), where a dislike of the “others” produce symmetric intolerance and prejudice in both groups (e.g., Brandt et al., 2014). We found that people’s self-identification in terms of values were strongly associated with prejudice against conventional versus unconventional (out-) groups. In contrast, prejudice against privileged/conservative and marginalized groups seemed largely disconnected from a person’s self-identified social status (class identity). In other words, “us and “them” does not seem like a major factor in prejudice based on social status (see also Bergh et al., 2016), but it is critical for explaining value-based prejudice. These results also fit with other arguments that individuals vary systematically in terms of their support group inequalities, independent of their own identification with high or low status groups (e.g., Ho et al., 2015; Sidanius et al., 2017).

In terms of threat perceptions, previous research has primarily linked symbolic and realistic outgroup threats to racist and xenophobic attitudes (Stephan & Stephan 2000, 2016), while we showed that broader societal threat perceptions are also strongly predictive of generalized forms of prejudice, including targets that are no strangers (e.g., women and teenagers). This suggests that threat perceptions might be hierarchically organized, from highly generalized to very specific, and that intergroup dynamics might be more important for specific forms of prejudice.

Finally, these studies indicate distinct behavioral correlates of different broad forms of prejudice. This is important because there is a lack of behavioral validation of generalized

prejudice findings. To the best of our knowledge, there are no studies on the relation between broad prejudice factors and directly observed behavior. Prejudice against unconventional as well as prejudice against low status groups was associated with not donating at all (i.e. keeping more money for oneself). Several of the donation findings should be interpreted with caution, however, as the sample sizes were occasionally very small in these analyses.

Limitations, Caveats and Future Directions

Potential limitations of this work concern the fit of our models, the measurement of prejudice, behavioral and practical significance, and cultural variation. We discuss each in turn, and also outline their implications for future work.

First, several of the models had less than ideal fit. Some might therefore argue that we should not put much faith in our three broad prejudice factors. However, the current observations align with mathematical expectations for the specific indices. Most models tested with sample sizes in the hundreds tend to fail the X^2 test (e.g., Gerbing & Anderson, 1992) and this test is especially biased against models with many measured variables (Kenny & McCoach, 2003). *CFI* also penalizes greater number of variables (as in our item-level models), whereas *RMSEA* shows the opposite trend (Fan & Sivo, 2007; Kenny & McCoach, 2003). As such, Kenny and McCoach (2003) concluded: “we suggest that researchers simultaneously examine the *RMSEA* and the *CFI* or *TLI* in models with a large number of variables. If the *TLI* and *CFI* seem slightly lower than hoped, but the *RMSEA* seems a bit better, then there may be no real cause for concern” (p. 349). Indeed, we believe it is most telling that the degree of fit was reasonable in our confirmatory omnibus (item-based) models, according to the indices known to perform better in such cases.

We also know one principal source of misfit: There seems to be many unique residual interrelations and minor cross-loadings. It is perhaps an unrealistic expectation, however, to account for any and all specific associations between prejudices in factor analytic models like

these. Comprehensive personality models have the same problem – they reliably outline a higher-order factor structure, but they are notoriously noisy at the item level (e.g., Marsh et al., 2013). Just like specific traits, which do not obey a simple structure with single loadings and homogenous correlations between items of a factor, we are not overly surprised to find a similar complexity with prejudice.

From a theoretical viewpoint it is important to bear in mind that our goal was to provide a bird's eye view on the broadest commonalities in different prejudices. As such, local misspecifications in the model are mainly relevant to our aims to the extent that they change the substantive meaning of the factors (e.g., if added cross-loadings or residual correlations also change the marker loadings and the overall meaning of each factor). We have tried to be diligent about noting such shifts and we have examined the reliability of the overall structure in various ways. For instance, it is telling that the addition of all possible cross-loadings improved the fit a bit in our cross-study analyses, but they did not drastically change the interpretation of what the factors represents. Also, those results suggest that the models would need to become a lot more intricate to achieve even small improvements in fit. That additional precision may not do much good in practice. A person driving on highways would not benefit from more details on backroads and wood trails, and the same is true for some applications of our prejudice map. For instance, broad distinctions between value- and status-based prejudices matter for understanding when we are likely to see symmetric or asymmetric biases across groups (see e.g., Bergh et al., 2016; Brandt & Crawford, 2020). The fact that we can improve the models by specifying residual associations between Christians and atheists, for instance, does not have any direct bearing on those broader predictions.

Overall, the discrepancy between our map and reality was typically borderline acceptable and failing tests of exact (non-significant X^2) or close fit ($RMSEA < .05$). In the analogy of a road

atlas, that means it is not precise enough for all turn-by-turn navigation. Yet, that does not mean that our prejudice map is useless. A rough map is often better than no map at all. Indeed, the null model that our models are tested against represents the notion that prejudices are independent and can be understood in isolation. Clearly, that is not the case and our models underscore the need to understand both the specifics and broader connections of different prejudices (see also Bergh & Akrami, 2017). While our models are rudimentary, they could guide better and more detailed maps in the future. For example, previous research has pointed out common themes in commonly expressed prejudices (e.g., Crandall, 1994; Swim et al., 1995) and this work could help delineate specific prejudices that are more likely to be close neighbors than others.

A final caveat on our model testing is that factors are typically assumed to represent a common source of variability in the measured variables, but such assumptions may rarely apply in psychology (Borsboom et al., 2003). We recognize that the correlational patterns we examine may arise from reinforcing links between specific prejudices rather than having a latent common cause (for analogous arguments for other concepts, see e.g., Borsboom & Cramer, 2013; Van Der Maas et al., 2006). If findings of broad prejudice factors are the result of specific causal processes, rather than uniform, common causes, then most any simple factor structure (without cross-loadings or residual associations) is likely to be ill-fitting. Nevertheless, factor analysis can be a useful descriptive tool for identifying broad commonalities across many manifest variables (Jonas & Markon, 2016), such as prejudice against a wide array of groups.

In terms of measurement issues, the warmth ratings are admittedly not capturing all relevant features of particular prejudices. For example, sexism and ageism are not marked by pure antipathy, but include a mix of both positive and negative justifications (Glick & Fiske, 2001; Fiske et al., 2007). As such, it is unsurprising that evaluations of women and elderly do not fit the most neatly in our models. We have also received comments that the crudeness of the

measures could mask nuances in how groups are evaluated, which might be better captured by measures of discrete emotions. Discrete emotion measures would likely provide more nuances, but we believe they are most valuable for explaining evaluative similarities for groups that are stereotyped as similar. This is an independent issue compared to the aims of this work.

Another potential concern is that we did not have balanced, multi-item measures for each type of prejudice, and we solely relied on self-reports. Still, Study 1b produced similar results with balanced, two-item scales. A combination of negativity and preference ratings further served to document similarities and differences across different types of prejudice measures (see supplemental materials for a full presentation of the preference ratings results). Our findings for personality and prejudice against marginalized groups were also consistent with previous work, which has focused fewer targets but more reliable and extensively validated measures, including peer ratings (e.g., Cohrs et al., 2012; Ekehammar et al., 2004; Ekehammar & Akrami, 2003). Nevertheless, it would be relevant to further explore other parts of the prejudice map, as well as other predictor variables, with more elaborate measures.

Although we provided initial behavioral validation of our factors, a comprehensive behavioral inquiry (e.g., examining generalized patterns of discrimination) was also beyond the scope of this manuscript. This is another limitation, but also a broader issue in the literature: studies on overt, behavioral consequences of prejudice are relatively uncommon and typically narrow in scope (e.g., Oswald et al., 2013; Talaska et al., 2008), both in terms of types of behaviors and target groups. The outline of a comprehensive prejudice map could inspire behavioral studies for a wider range of targets, as well as predictions for what target behaviors that are likely to resemble each other (see also Koch et al., 2020).

Finally, the targets of prejudice we used here should be reasonable representative of what people think are salient groups in American society, but it is an open question if these factors

would be found elsewhere. Koch and colleagues (2016) found the same stereotype dimensions in the United States and Germany, and political attitudes have been examined along economic and social value dimensions in numerous Western countries (e.g., Jost et al., 2003; Roccato & Ricolfi, 2010). Given the correspondence between those dimensions and expressions of prejudice (Duckitt, 2001), we suspect that our factors would hold up well in other Western contexts too. Similar stereotype dimensions have also been found in India (Koch et al., 2020b). There are also indications that prejudice against unconventional (dissident) and low status (marginalized) groups can be distinguished in non-Western cultures as well (Cantal et al., 2015). Status and power differences between groups are further argued to be ubiquitous features of human societies (e.g., Sidanius et al., 2017).

A cross-cultural examination of our perspective would naturally involve different targets that are salient in that particular context. Salience also implies that our focus is on groups that many people find important, and easily comes to mind. Of course then, there are groups that will not figure in this kind of inquiry. For example, Duckitt and Sibley (2007) dedicated special attention on mapping attitudes about dangerous groups (e.g., violent criminals, terrorists), and it is interesting that these are not what people spontaneously think define the group landscape in society (see Fiske et al., 2002; Koch et al., 2016). This further illustrates the limitations of ad hoc selections of targets in prejudice research – the most important group attitudes for researchers might be more peripheral in the minds of others in everyday contexts.

The current finding should direct attention toward more ecological choices of target groups and more ecological clustering features, such as unconventional versus conservative values, social status, and power. Future studies on predictors and/or outcomes of prejudice as studied across group contexts would benefit from considering how typical or atypical different targets are in relation to the factors we have identified. Composite prejudice indices that mix

groups from the different factors, or rely heavily on cross-loading groups, could lead to researchers to confound alternative explanations for their findings. For example, a mix of targets groups chosen to study xenophobic attitudes could make it difficult to identify why they are denigrated (e.g., due to being unfamiliar, due to threatening cherished values, or due to introducing power struggles). Composite prejudice measures that instead premier strongly and cleanly loading targets should be easier to interpret. This will further help scholars broaden the understanding of prejudice towards different types of groups.

Concluding Remarks

Identifying distinct, broad domains of prejudice is important for the same reason as differentiating bacteria and viruses. While diseases may require very specific treatments, it is still helpful to know which broad category they fall in. Virtually all prejudice interventions to date are based on generic methods for changing mindsets based on “us” versus “them ” (Paluck & Green, 2009). While value-based prejudice might fit with this kind of thinking (Cikara et al., 2017), that seems more questionable for biases based on status and power differences (Bergh et al., 2016). For that reason, it would seem relevant to outline basic kinds of prejudice, and here we propose that there are three such factors, at least in the American context: Prejudice against privileged/conservative groups, prejudice against marginalized groups, and prejudice expressed toward either conventional or unconventional groups (inversely related).

With this research, we are not challenging research programs aimed to identify specific explanations for specific group evaluations (e.g., Cottrell & Neuberg, 2005; Mackie et al., 2000; Mackie & Smith, 2015). Yet, we believe it is important to also recognize that there are – in addition – clear and broad commonalities between prejudices toward different groups. Studying racism, sexism, and ageism as isolated phenomena, for instance, is missing a bigger picture – especially when the common features account for more than half of the individual variability in

these attitudes (e.g., Bergh et al., 2012; Ekehammar & Akrami, 2003). In the current studies, we also showed that such commonalities are associated with broad patterns of behaviors: Those who were prejudiced against marginalized and unconventional groups were less likely to donate to in general, regardless if charity would benefit a conservative, unconventional or marginalized group cause. In other words, people who are generally prejudiced in the classic sense seem more self-serving (versus prosocial) in a fairly broad sense. Such findings are clearly complementary to specific, emotion-driven biases for understanding human behavior.

Broad prejudice commonalities were declared a “fact” already sixty-five years ago (Allport, 1954), yet the theoretical understanding thereof has been rudimentary and guided by several oversimplified assumptions (for reviews, see Bergh et al., 2016; Crawford & Brandt, 2019; Duckitt, 2001). In the end, serious attempts to understand prejudice should build on insights about both general and specific features. Just like the general differences between parasites, bacteria, and viruses lead to separate, broad types of interventions so could the general differences between prejudices based on status and value conflicts. Prejudice interventions appear the most successful in contexts where groups could be described as holding different values and when they are more unfamiliar with each other (see e.g., Pettigrew & Tropp, 2006). However, they may be less successful where groups are more familiar (e.g., older adults) or distinguished on the basis of status or power (e.g., poor people). In the latter contexts, the existing strategies could be akin to treating virus infections with antibiotics. Mapping similarities and differences of various prejudices represents an important step toward more comprehensive and effective interventions.

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Footnotes

¹ Throughout the paper, we refer to these factors as prejudice against groups that are privileged /conservative, marginalized, and unconventional. We are also aware that the factor labels may not seem perfectly accurate for all included targets, but we have tried to use terms that describe most of them, and especially the highest loading ones. Another note about labeling is that some group names, especially in the tables and figures, may seem insensitive and/or not following the recommendations by the American Psychological Association. The labels are from previous work that we relied on for our target selections (Koch et al., 2016). When we mention any of the specific targets that we asked participants about (e.g., when describing our methods or specific results), we use the original labels that were used in the study. This makes it precise what stimuli/wording participants were responding to. Otherwise, we have sought to use terms following recommendations from the American Psychological Association.

² We further asked whether participants felt attached to others with similar values, and considered them a central part of their self-image (adapted from Huddy et al., 2015). Similarly, for status, we also asked about self-image importance, as well as attachment with others at the same status level (parallel to the value identification measures). Based on these questions about self-image and attachment to similar others we created more elaborate measures of class identification and socio-political identification. For socio-political identification we rescaled the self-placement as progressive/liberal to give a neutral rating a score of zero (i.e. -3 to +3 range for most progressive to most traditional), and then we multiplied these scores with the average score of self-image and attachment (i.e. producing a self-perception weighted by self-concept importance, such that large positive values imply strong traditional identity and large negative values indicate strong progressive identity). However, this elaborate measure added minimal additional predictability of

prejudice, above and beyond the simple self-placement scores, and so we focus on these for simplicity.

³ The bi-factor model was associated with a negative residual variance for conservatives, and to make the model converge we removed the loading of conservatives on the unconventional (vs conservative) factor, while keeping the stronger loading on the privileged/conservative factor.

⁴ Aside from the factor analytic results, the zero-order correlations also show a stronger association between prejudice against Jewish and homeless people than Jewish and rich people in 7 of 8 cases (warmth and preference ratings in Study 1a, 2a, 2b, and 3).