

Supplemental Online Material

A. Study 1

A1. Sample Characteristics

- *Gender*: 57% of the sample identified as men, 43% women, and one respondent did not identify with any gender.
- *Sexuality*: 92% straight, 3% gay/lesbian, 2% bisexual, 2% asexual.
- *Education*: 46% with Bachelor's degree, 36% some college education, 12% high school diploma, 3% professional.
- *Race/Ethnicity*: 81% White, 7% Asian American/Pacific Islander, 6% Latino, 6% Black, 1% Middle Eastern, and two unreported.
- *Age*: ranged between 18 and 68 (M=36, SD=11).
- *Religiosity*: mean reported religiosity (1=not at all religious, 7=very religious) was 2.4 (SD=2), with 56% giving a "1" rating
- *Political orientation*: mean reported political orientation (1=conservative, 7=progressive) was 3.9 (SD=.78).

A2. Randomization and Data Cleaning Procedures

All 31 immigrant groups are listed on Table 1. Rather than overtax participants by asking them to rate all 31 groups, we gave each participant a randomly selected set of 13 intersectional groups. Each intersectional group was presented to at least 20 participants (ranged between 20 and 40). In addition, a sample of 20 participants was asked only to rate the non-intersectional category of immigrant to allow us a clear comparison point in subsequent analyses. Except for the latter subsample, all other participants were sequentially presented with 13 groups (e.g. "Nigerian immigrant") and in each case were given the prompt: "List all the traits, characteristics, and attributes that come to mind when you think of the following immigrant group. Try to list no fewer than 4 or 5 traits, characteristics, and/or attributes for this group." Participants were provided with six text-entry boxes per category. After dropping those participants who did not finish, the average time of completion was 19.07 minutes (SD=7.87 minutes) for those who were assigned 13 random groups (average time of completion for those who received the generic immigrant category was 3.87 minutes, SD=2.75 minutes).

Table 1.

Immigrant groups described by participants

Category	Generic	Gender	Sexual Orientation	Family Role	Language ability	Skill Level	Religion	Nationality or regional ethnicity
1	Immigrant	Female	LGBTQ	Child	English-speaking	Professional	Atheist	Arab
2		Male	Straight	Parent	Non-English-speaking	Skilled	Catholic	British

3	Unskilled	Christian	Canadian
4		Hindu	German
5		Muslim	Irish
6			Polish
7			Mexican
8			Nigerian
9			South Asian
10			Syrian

To prepare the data for analysis, we (1) dropped unintelligible words with typos that could not be identified with certainty (e.g., “loas”); (2) deleted words or phrases that semantically do not qualify as traits, characteristics, or attributes (e.g., “abandon” “not sure”); (3) edited function words and pronouns to eliminate idiosyncratic elaboration (e.g., “are indoctrinated to their parents’ religion” edited as “indoctrinated”); (4) combined synonyms and simplified or truncated phrases to the closest meaning (e.g., “leech” to “welfare-seeker” or “desiring welfare” to “welfare-seeker”). After completing this process on the full set of data, we arrived at a set of 765 unique terms.

Since the number of participants who responded to each category varied widely, we had a wide variation in the number of words generated for each category as well (see Table 2 for the number of participants who responded to each category). In order to have an approximately equal number of words analyzed for each immigrant category, for those categories with a number of participants above 20, data from some participants were randomly dropped.

After random elimination to achieve a dataset with somewhat equal number of words for each category, terms that were generated for fewer than 5% of the categories (fewer than 2) were dropped following standard procedure with the MEM, leaving 310 terms to analyze. The Meaning Extraction Method was then applied to the co-occurrence of terms in a total of 9610 observations (310 terms across 31 categories). The number of participants who responded to each group originally, after randomization, and the number of words in each category are shown in Table 2.

Table 2.

The number of participants who responded to each category before and after randomization, and the number of words

Category	Number of participants responded	Number of participants after randomization	Number of participant-generated words after randomization
Arab	25	20	92
Asylum seekers	21	21	92
Atheist	39	20	92
British	38	20	93
Canadian	22	20	92
Catholic	37	20	93
Child	40	20	90
Christian	39	20	90
Documented	39	20	91
English-speaking	22	20	89
Female	21	21	93
German	22	20	85
Hindu	22	20	92
Irish	21	21	96
LGBTQ	23	20	93
Male	38	21	94
Mexican	23	20	93
Muslim	40	20	94
Nigerian	37	20	89
Non-English speaking	22	20	87
Parent	23	20	94
Polish	40	20	88
Professional	23	20	93
Refugee	21	21	89
Skilled	38	20	88
South Asian	23	20	96
Straight	36	20	89
Syrian	21	21	92
Undocumented	24	20	96
Unskilled	23	20	91
Immigrant	21	21	98
Total			2844

A3. Most Frequent Terms Used in Describing Immigrants

Table 3 shows the 20 most frequent terms participants generated to describe immigrant groups. We have listed our consensual judgments (5 coauthors) of the pleasantness of these terms. Of the 20 terms, 17 were also included in an updated study of valence ratings of terms presented by Bradley and Lang (1999). Results of our ratings and the valence ratings are presented in Table 5. Twelve of the 20 most frequently used terms were rated as having positive valence. Two more (hardworking and determined) were not rated in terms of valence, but we judged them as positive. Two were rated by us as neutral (religious and family-oriented) and were not rated for valence. Three were rated by us and valence ratings as negative (lazy, scared, and poor) and one more (for a total of 4) was viewed by us as negative but unrated.

Table 3.

Most frequently used terms to describe immigrants across groups

Term	Frequency	Valence	Valence Mean (SD)*
hardworking	173	+	-
smart	67	+	7.93
intelligent	49	+	7.71
friendly	48	+	8.43 (1.08)
religious	45	neutral	-
family-oriented	40	neutral	-
lazy	36	-	4.38 (2.02)
caring	32	+	6.84
strong	30	+	7.111 (1.48)
determined	28	+	-
educated	28	+	6.69
hopeful	28	+	7.100 (1.46)
ambitious	27	+	7.62
brave	26	+	7.15 (1.64)
poor	25	-	2.28
different	24	+	5.57
skilled	23	+	7.00
uneducated	22	-	-
kind	22	+	7.59 (1.67)
scared	22	-	2.78 (1.99)

Note: Valence means on 9-point scale provided by request from authors of Bradley & Lang (1999), per website instructions: <https://csea.phhp.ufl.edu/media/anewmessage.html>

Bradley, M. M. & Lang, P. J. (1999). Affective norms for English words (ANEW): Instruction manual and affective ratings. Technical Report C-1, The Center for Research in Psychophysiology, University of Florida.

*The means and standard deviations for valence scores are from Affective Norms for English Words (ANEW) created by Bradley and Lang (1999) for those words that overlap with the words our participants generated. The

mean and SD scores provided by Bradley and Lang (1999) are based on participant ratings of the words for pleasantness on a scale from 1 to 9.

A4. Assessing the Results of the PCA on Random Subsamples

The original sample of words submitted to principal components analysis was 310. When we created two random halves of the participants’ original generated words (in which of course there had been duplicates and synonyms which had been removed to create the 310), we ended up with subsamples of 210 and 192 words—each sample about 1/3 smaller, so with many words now not appearing in one of the samples of words. We note that this difference is from PCAs in which the total N is of respondents, and it is a random half of the respondents who are included. In this case it’s the words generated by a random half of the respondents.

Using the identical procedures (PCA with varimax rotation), and the same criteria (unique loading on a single factor above .4) as the ones we used for the full sample, we ended up assessing the five factors for themes. The first two factors appeared to be substantially similar to the full sample, but the next 3 were very hard to interpret. For that reason we decided not to pursue those 3 factors (which of course mirrors our decisions in Study 1 and 2).

In Table 4 below we present the factor loadings on the first two factors for both subsamples for terms that were present in the analysis of the full sample of words. As can be seen there for Sub-sample 1, 6 terms (needy, sad, fragile, weak, scared and hardworking) load uniquely on factor 1 and the factor is bipolar as in Study 1 which includes the full sample. Similarly, 6 of the original terms occur in Sub-sample 2, some overlapping and some not (humble, fearful, desperate, sad, scared and needy). Although the bipolarity is not affirmed in Sub-sample 2, we note that hardworking has its highest loading on this factor at .344.

In terms of the second factor, 6 terms from the initial factor occur for Sub-sample 1 (ignorant, not wanted, lower class, lazy, poor and smart). Again, the bipolarity is present. Five terms occur on both for Sub-sample 2 (not wanted, similar, educated, assimilates and skilled), again preserving the bipolarity with slightly different terms. Overall, we viewed these results as supporting the relative consistency of the interpretability of the two factors across random subsamples of the data, despite the reduction in the total number of terms and the actual absence of some terms in each subset’s analysis.

Table 4.

Factor loadings for total sample and split-half groups

Adjective	Factor I: Vulnerable vs. Hardworking		
	Total sample	Sub-sample 1	Sub-sample 2
fearful	.83	.42	.66
fragile	.76	.81	-

needy	.75	.82	.41
desperate	.70	.34	.55
scared	.68	.75	.49
sad	.65	.81	.55
weak	.65	.78	.30
humble	.59	-	.69
hardworking	-.43	-.47	-.34

Factor II: National Drain vs. Asset

lower-class	.71	.58	—
educated	-.64	-.21	-.78
criminal	.61	.20	.20
funny	-.56	-.31	-.20
not wanted	.54	.64	.47
welfare seeker	.54	-.06	.14
similar	-.50	.30	-.55
dumb	.48	.23	—
poor	.47	.43	.20
ignorant	.45	.70	—
lazy	.45	.48	.16
annoying	.44	—	-.11
unskilled	.43	-.28	—
smart	-.43	-.40	-.28
illegal	.42	.07	—
assimilates	-.42	.29	-.49
skilled	-.42	.07	-.65
dangerous	.42	.36	.42
untrustworthy	.42	.35	.25
has kids	.41	—	.25

Notes: For the total sample and each subset, the terms are included in this table if their frequency was above 5 and they loaded on the factor at $\pm .40$ or above. A dash (—) indicates fewer than 5 occurrences in the group. Double-loading terms are not included in this table. Words with minus signs (indicating negative loadings) were subtracted in calculating factor scores. In describing some categories of immigrants, some participants used national, religious, racial, or ethnic markers that define groups or categories, rather than traits; these were excluded from the calculation of factors, as were terms that were not traits, characteristics, or attributes. Terms that were synonyms or near-synonyms were not combined.

Table 5.

Total variance explained by factors in total sample and split-half groups

Factor	Rotated Sums of Squared Loadings								
	Total sample			Subset 1			Subset 2		
	Total	% variance explained	cumulative % variance explained	Total	% variance explained	cumulative % variance explained	Total	% variance explained	cumulative % variance explained
I. Vulnerable vs. Hardworking	20.50	6.61	6.61	13.45	6.86	6.86	13.02	6.93	6.93
II. National Drain vs. Asset	19.97	6.44	13.06	11.88	6.06	12.93	12.83	6.82	13.75
III.	17.11	5.52	18.58	11.30	5.77	18.69	12.73	6.77	20.52
IV.	16.96	5.47	24.05	10.96	5.59	24.29	11.34	6.03	26.55
V.	15.06	4.86	28.90	10.91	5.56	29.85	9.79	5.21	31.75

Table 5 above shows the variance explained for the 5-factor solution for the full sample and split-half samples. A comparable percentage of variance in the words is accounted for by the 5 factors in the full sample and in both groups.

B. Study 2

B1. Sample characteristics

Three hundred and eight MTurk workers were given the online survey; and 271 of them completed it. The participants who did not finish taking the survey (N=37) were dropped from the analysis. Sample characteristics are:

- *Gender*: 63% women, 35% men, plus one unidentified participant.
- *Sexual orientation*: 84% straight, 3% gay/lesbian, 12% bisexual, 2% non-identified.
- *Education*: 26% with Bachelor's degree, 34% some college education, 30% masters or professional/doctoral degree, 10% graduated from secondary school.
- *Race/ethnicity*: 99% White, 1% Black.
- *Age*: ranged between 18 and 54 (M=26, SD=10).
- *Religiosity*: M=2.60 (SD=1.85), with 43% giving a "1" rating (1=not at all religious, 7=very religious).
- *Political orientation*: M=3.00 (SD=1.31), (1=conservative, 7=progressive)
- *Region*: Participants were dispersed across the U.S. 22.9% (N=60) living in the West, 21.4% (N=56) in the Midwest, 33.6% (N=88) in the South, and 22.1% (N=58) in the Northeast.

B2. Randomization and Data Cleaning Procedures

After dropping those who did not complete the survey, the average time of completion was 28.21 minutes (SD=13.15). In order to ensure data quality, we checked for people who finished the survey in less than two standard deviations below the mean time to finish. There were no such cases and thus no one's data was excluded on this basis. As an additional step to ensure data quality we examined multiple outliers by calculating Mahalanobis Distance (MD) on the two key dependent variables. According to MD statistics, there were three multiple outliers on two variables of interest. The significance of the results did not change after the exclusion of these cases. Thus, we kept them in the dataset. Finally, as one more quality control, we dropped those who did not answer a question about their level of knowledge about the immigrant categories they responded to. There were five such cases (by four different participants). One participant who had two such cases was entirely dropped; the remaining three cases were also dropped, but the participants were retained in the dataset since they had rated three other categories. After the completion of these quality checks, we had 270 participants who provided 714 ratings of immigrant categories.

There were broadly two different types of random sets of immigrant categories (see type A and B in the last column of the Table 6 below). Type A included two mixed (privileged + marginalized) status, one marginalized (marginalized + marginalized), and one privileged (privileged + privileged) intersections of immigrant categories. Type B included two mixed status and two marginalized immigrant categories. In total, there were nine sets with six of them Type A and three of them Type B.

Table 6.

Randomized Set Contents and Types

Random Set	Intersectional Immigrant Categories	Category privilege	Random Set Type
Set 1	Arab male immigrant Straight female immigrant Unskilled Mexican immigrant Documented Canadian immigrant	pm pm mm pp	A
Set 2	Syrian male refugee Lesbian Canadian immigrant Arab female immigrant Christian male immigrant	pm pm mm pp	A
Set 3	Heterosexual Arab immigrant Christian female immigrant Unskilled Syrian refugee Canadian male immigrant	pm pm mm pp	A
Set 4	Christian Syrian refugee Mexican male immigrant Lesbian Arab immigrant Skilled Canadian immigrant	pm pm mm pp	A
Set 5	Muslim male immigrant Skilled Mexican immigrant Lesbian female immigrant Heterosexual Canadian immigrant	pm pm mm pp	A
Set 6	Gay Canadian immigrant Christian Arab immigrant Muslim female immigrant Heterosexual male immigrant	pm pm mm pp	A
Set 7	Skilled Syrian refugee Canadian female immigrant Undocumented Mexican immigrant Muslim Arab immigrant	pm pm mm mm	B
Set 8	Unskilled Canadian immigrant Documented Mexican immigrant Syrian female refugee Gay Arab immigrant	pm pm mm mm	B
Set 9	Gay male immigrant	pm	B

Undocumented Canadian immigrant	pm
Mexican female immigrant	mm
Muslim Syrian refugee	mm

Notes:

pm = privileged + marginalized (mixed status)

pp = privilege + privilege (privileged status)

mm = marginalized + marginalized (marginalized status).

Set content also differed between the immigrant categories within the same randomized set to minimize participants' tendency to compare similar groups to each other. We created the randomized sets based on three rules:

1. No one kind of intersectional category dominated one random set (e.g. not more than one "Canadian" group within a random set).
2. Wide representation of different categories within each randomized group (e.g. nationality/ethnicity, gender, sexuality, skill-level, religion, legal status).
3. Within the same randomized set, we did not repeat combinations of the same primary categories with variations of the secondary categories (e.g. Arab male immigrant and Arab female immigrant never co-occurred within the same set; however, Arab male immigrant and Canadian male immigrant could co-occur).

In the Table 7 below all nine random sets, their contents and types are displayed. If participants responded to two of the same type of categories from the entirely privileged, entirely marginalized or mixed statuses, we randomly selected one of their responses from the same type of category and kept their responses from all different types of categories. For example, someone who received the random set of Arab male (mixed), straight female (mixed), unskilled Mexican (marginalized) and documented Canadian (privileged) responded to two mixed status, one entirely marginalized, and one entirely privileged categories. In this case, one of the two same category type (mixed status) was randomly selected and kept in the final dataset along with one privileged and one marginalized category types this participant responded to. Thus, the final dataset included a randomly selected two or three cases each with different status markers provided by each participant (drawn randomly from the four groups each participant rated).

Table 7.

Combinations of Intersectional Social Categories Assessed in Study 2

Primary social categories	Secondary social categories				Documentation	Privilege ^d
<i>Nationality/Ethnicity^a</i>	<i>Gender</i>	<i>Skill-level^b</i>	<i>Religion^c</i>	<i>Sexuality^c</i>		
Canadian	male	skilled		straight	documented	pp
	female	unskilled		gay	undocumented	pm
				lesbian		pm
Syrian	male	skilled	Christian			pp
	female	unskilled	Muslim			mm
Arab	male		Christian	straight		pm
	female		Muslim	gay		mm
				lesbian		mm
Mexican	male	skilled			documented	pm
	female	unskilled			undocumented	mm
<i>Sexuality^c</i>						
Gay	male					pm
Lesbian	female					mm
straight	male					pp
	female					pm
<i>Religion^c</i>						
Muslim	male					pm
	female					mm
Christian	male					pp
	female					pm

Notes. ^aWe used the term refugee for all six intersectional social categories about Syrians in Study 2 because there was such a close connection between Syrians, refugees and asylum seekers in Study 1; We used immigrant for all the other groups. ^bWe presented these categories to the participants as “immigrants/refugees with skilled/unskilled work background.” ^cSexuality and Religion were the only two social categories that we combined with other categories either as a primary or a secondary category depending on the context. ^dAll the categories in a row have the same privilege level: pp represents combination of two privileged social categories, mm represents two marginalized categories, and pm represents one privileged one marginalized (or, mixed) categ

B3. Additional Analyses

Please see Table 8 for descriptive statistics and correlations between the variables. Here we examined the correlations between the scales of our study (i.e., Vulnerable vs. Hardworking and Drain vs. Asset) as well as their correlations with other constructs in the literature (i.e. Warmth and Competence by Fiske and Colleagues (2002) and Threat). There was a strong correlation between the participants' perceptions of immigrants as Hardworking and their perception of them as an Asset to the nation. Groups that were viewed more Hardworking (and less Vulnerable) and more like an Asset (less like a Drain) were also more likely to be viewed as Warm and Competent, and less likely to be viewed as posing a Threat to the dominant majority.

Since the correlations between our inductively created constructs and the existing constructs were high, we repeated the analyses in the original paper by controlling for Warmth, Competence, and Threat. Here we are reporting the results of the covariance analyses, the results reported in the original paper does not include the covariates. The effect of immigrant group status remained statistically significant after controlling for our Threat indicator, and Fiske et al.'s Warmth and Competence dimensions (Pillai's trace = .07, $F(4, 1416) = 12.32, p < .001$; with a between group difference for Vulnerable vs. Hardworking, $F(2, 708) = 13.36, p < .001$; and for Drain vs. Asset, $F(2, 708) = 23.94, p < .001$).

Table 8.

Means, Standard Deviations and Correlations

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Vulnerable vs. Hardworking	3.63	.85					
2. National Drain vs. Asset	3.52	.76	.77**				
3. Warmth	3.44	.84	.54**	.77**			
4. Competence	3.35	.76	.56**	.71**	.74**		
5. Threat	2.15	1.32	-.50**	-.61**	-.47**	-.38**	