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Attribute Affinity: U.S. Natives' Attitudes Toward Immigrants

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Abstract

We examine the extent to which relevant social identity traits shared between two individuals—what we term "attribute affinity"—can moderate out-group hostility. We argue that in-group affinity is a powerful force in shaping preferences over potential immigrants. We focus on two closely related, yet distinct, dimensions of identity: religion and religiosity. Using evidence from three surveys that included two embedded experiments, we show that sharing strength in religious practice can diminish strong aversion to immigrants of different religious affiliations. We find that, among highly religious U.S. natives, anti-Muslim bias is lower toward very religious Muslims, compared to non-religious Muslims. This attenuating effect of attribute affinity with respect to religiosity on anti-Muslim bias presents the strongest evidence supporting our argument.

Keywords Immigration · Public opinion · Religion

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Over the last decade, a burgeoning literature on public opinion toward immigration has sought to understand the factors that shape the willingness of natives to accept newcomers into their midst. There are two main schools of thought in this area. The first argues that economic threats in the labor market drive opposition to immigration (Dancygier and Donnelly 2013; Malhotra et al. 2013; Mayda 2006; Scheve and Slaughter 2001). Such work has been criticized by a second set of scholars who argue that conflict over cultural values—most notably language, religion or ethnicity— not economic competition fuels hostility toward out-groups (Brader et al. 2008; Citrin et al. 1997; Citrin and Wright 2009; Kalkan et al. 2009; Sears et al. 2000; Sniderman and Hagendoorn 2007; Strabac and Listhaug 2008). This body of work differs in its particulars, but like the labor market competition scholarship, it rests on a foundation of threat. Whether the source is economic or cultural, the dominant view in this literature is that natives reject immigrants because they feel threatened by these outsiders.

While the prevailing focus on out-group aversion provides an important understanding of the structure of attitudes toward immigrants, this view is only part of the story. A focus on out-group aversion overlooks the fact that identity is fluid and multidimensional (Chandra 2012). Out-group aversion and in-group attraction are independent forces that can shape attitudes in different ways (Brewer 2007). Under some circumstances, shared attributes can help to counter out-group aversion (Dunning and Harrison 2010).

In this paper, we focus on what we term "attribute affinity," the process by which existing shared characteristics along salient dimensions of identity can engender positive attachments regardless of out-group aversion along other dimensions. As an empirical demonstration of the argument, we examine the interaction between natives' and immigrants' attributes. Consistent with the common in-group identity model (Gaertner and Dovidio 2000), we argue that when natives recognize that they share salient identity characteristics with immigrants, they are more likely to feel affinity toward those immigrants.

We show that attribute affinity on particular dimensions may even reduce out-group bias on other dimensions (Riek et al. 2010). Through a series of experiments, we show that attribute affinity on salient and valued aspects of an individual's identity can moderate negative attitudes toward out-groups. Interestingly, we find that affinity on the dimension of religiosity can diminish strong aversion with respect to specific religious affiliation; among very religious natives, anti-Muslim bias is lower toward very religious Muslims than toward non-religious Muslims. This attenuating effect of attribute affinity with respect to religiosity on anti-Muslim bias represents our strongest evidence of how attribute affinity shapes attitudes towards immigrants.

Attitudes Toward Immigrants

The dominant paradigm that scholars have used to understand the politics of immigration in the United States is Realistic Conflict Theory. Realistic Conflict Theory argues that structural threats in a group's social environment—be they perceived or real—define individual attitudes toward other groups. These threats might arise

from conflict over scarce jobs, territorial boundaries and power (Bobo 1983; Sherif 1966), or conflict over differing cultural values or worldviews (Kinder and Sears 1981; Sears et al. 2000).

One significant thread in the immigration literature focuses on perceived economic threats. Some authors claim that natives feel threatened by immigrants with a similar skill level with whom they might compete in the labor market (Dancygier and Donnelly 2013; Malhotra et al. 2013; Mayda 2006; Scheve and Slaughter 2001). Others argue that current citizens feel economically threatened by low-skilled immigrants whom they anticipate will become a fiscal burden on the country (Hanson et al. 2007; O'Rourke and Sinnott 2006). Regardless of the particulars of the arguments, this body of work posits that a fear of economic consequences—both direct and indirect—drives opposition to immigrants.

Many of these theories have not withstood empirical scrutiny in the United States, Canada, nor Western Europe (Citrin et al. 1997; Ford et al. 2012; Hainmueller and Hiscox 2010; Hainmueller et al. 2015; Harell et al. 2011).[1] The failure to find consistent empirical support for theories based on economic interest has led scholars to focus on other sources of threat. Most notably, a large body of research has focused on sources of cultural threat. This literature is closer to Social Identity Theory (SIT), which posits that an individual's identity is a reflection of the variety of social groups of which she is a member (Tajfel and Turner 1979). However, whereas SIT argues that identity shapes social relations through the positive effect of in-group membership, the political science literature on immigration has overwhelmingly focused on how cultural traits are perceived as threatening. In particular, most of this research has found that threats to the in-group's cultural values—such as an immigrant's inability to speak the language, her religion, or ethnicity—fuel hostility toward out-groups (Brader et al. 2008; Citrin et al. 1997; Citrin and Wright 2009; Sears et al. 2000; Sniderman and Hagendoorn 2007).

While fruitful, this debate has remained narrow in its focus. Scholars argue over the relative importance of economic and cultural threats in determining attitudes toward immigrants, but consistently emphasize out-group aversion. Although exploring the origins of out-group aversions is undoubtedly important, it provides an incomplete picture of the structure of group-based political thinking, including attitudes toward immigrants.

Importance of In-Group Affinity

Moving beyond the prevailing attention to out-group aversion, this paper draws on social psychology theories to highlight the importance of in-group affinity in the formation of attitudes toward immigrants. For instance, Social Identity Theory suggests that threats are not necessary to produce hostility or prejudice (Brewer 1979,

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[1] In fact, irrespective of other abilities, most natives prefer potential immigrants with high skill levels (using level of education as a proxy for skill). These studies find that highly skilled immigrants are preferred to low-skilled immigrants, regardless of a native's own skill level, suggesting that this preference is not driven by different levels of threat perception about one's own job.

1999, 2007; Tajfel 1982). Brewer (1999) argues that out-group hate does not explain in-group bias and inter-group discrimination, which are instead "motivated by preferential treatment of in-group members rather than direct hostility toward out-group members" (p. 429). In other words, in-group and out-group attitudes are independent forces that interact, but are not reciprocal.

In-group affections can be more powerful than out-group aversion. Studies in social psychology illustrate that manipulating in-group boundaries can make people more helpful toward in-group members (Dovidio et al. 1997) and work harder for those identified as in-groups than out-groups (Worchel et al. 1998). Scholars also find that in-group members are more likely to help fellow in-group members than harm out-group members (Crisp and Hewstone 2007; Kenworthy et al. 2003; Vanman et al. 1997).[2] In this vein, Gaertner and Dovidio (2000) propose the *Common In-group Identity Model*, which argues that out-group bias can be diminished when individuals are recateogrized to be part of the same superordinate in-group. Heightening the salience of in-groups, therefore seems like a promising strategy.

Consistent with this focus on common in-group identity, we turn our focus to in-group affection as an independent contributor to the formation of attitudes toward immigrants. Given ample findings that out-group hostility plays an important role in shaping attitudes toward immigrants, we consider how the two might interact. Can in-group attraction interact with—or even counteract—independently produced out-group bias in preferences over immigrants? Other studies highlight the importance of shared ethnicity, class, gender, and religion as drivers of in-group affection or homophily (Adida et al. 2015; McPherson et al. 2001). Drawing on these studies, we explore the degree to which similarity breeds in-group affection and attribute affinity can decrease out-group aversion on different dimensions.

We propose that shared attributes between natives and immigrants can activate a recategorization of immigrants from out-group members on that dimension to in-group members along another dimension. The positive affect, resulting from shared characteristics along salient dimensions of identity, leads to what we call "attribute affinity"— the process by which the recognition of shared characteristics with the target of evaluation triggers a sense of shared identity and engenders in-group attachments along these dimensions, leading to more favorable judgments of that target.[3]

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[2] Political scientists also incorporate social identity into studies of public opinion. Most notably, Kinder and Kam (2009) focus on what they argue is a tendency to "divide the world into in groups and out groups" or ethnocentrism (76). For instance, the authors argue that high levels of ethnocentrism among U.S. natives drive negative attitudes toward immigrants.

[3] Although drawing from common in-group identity, our argument is not about any aspect of identity becoming superordinate or recategorized – instead we suggest that simply the recognition of shared characteristics on one dimension may override aversion along another.

The Role of Religion and Religiosity

The process of attribute affinity suggests that respondents will evaluate individuals based on their specific traits and that these evaluations will be more positive toward individuals with whom they share key characteristics. Specifically, we aim to test whether natives who share particular attributes with potential immigrants evaluate those immigrants more favorably. We focus on two complementary dimensions of respondents' identities: affiliation with a particular religious tradition (Islam or Judaism, for example) on the one hand and strength of commitment—religiosity—on the other.[4]

Religious affiliation and religious commitment are related but distinct concepts (Green 2007). This is especially true in the contemporary U.S., where differences in the intensity of religious commitment have displaced discord between different religions and religious denominations (Guth and Green 1993). Religion may be particularly important when it comes to attitudes toward immigrants as it is seen "as a socially acceptable form through which U.S. immigrants can articulate, reformulate, and transmit their ethnic culture and identities" (Foner and Alba 2008, p. 378).[5]

Several studies have examined the role of religion and religiosity in influencing general attitudes toward immigration policy. For example, Margolis (2018) posits that U.S. citizens of different religions react to religious and secular messages about immigration differently. Daniels and Von Der Ruhr (2005) find that more religious Christians are more likely to prefer stricter immigration laws (see also Knoll 2009). But little work has been done on the independent and interactive effects of diverse aspects of religious identity on attitudes towards out-groups such as immigrants (though see: Bloom et al. 2015).

The Role of Islam

We place special focus on one denomination, in particular, Islam. Overwhelming evidence suggests that Muslims are the least liked religious group, not just in the U.S., but across the globe (Fetzer and Soper 2003; Kalkan et al. 2009; Strabac and Listhaug 2008). Although the immigration literature has maintained a significant focus on attitudes toward stigmatized immigrants like Muslims (Creighton and Jamal 2015), this literature has mostly considered Muslims as a distinct ethnic group, neglecting the broader power of religion and religiosity in determining attitudes toward immigrants. An exception is Adida et al. (2016) who argue that Senegalese Muslim immigrants are discriminated against not because they are foreign or ethnically distinct, but because they are Muslim.

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[4] In this study, we use frequency of attendance at religious services as a proxy for religiosity. To test its validity, we correlated frequency of attendance with other measures of religiosity. See footnote 19 for details.

[5] Though, as we note below, such a pattern does not hold for individuals from "outsider" religions, such as Muslims in the present day.

Because hostility tends to be strongest toward Muslim immigrants, one might expect any similarities on other identity dimensions to have a null or trivial effect on attitudes toward this immigrant group. Research shows that Americans are averse to Muslims because their religious practices are different from the Judeo-Christian U.S.-native mainstream (Kalkan et al. 2009).[6] In this case, the presence of multiple dimensions of identity, such as religion (Islam) and religiosity (intensity of religious practice), could reinforce in-group boundaries and exacerbate out-group bias (Tajfel and Turner 1979). Thus, religious Muslims may be seen as more prototypically "Muslim" than non-religious Muslims, thereby exacerbating out-group bias.

Alternatively, if we are correct, attribute affinity on one dimension could mitigate even the strongest hostility toward Muslim immigrants. This represents a strong test for our argument: are respondents who do not share religious affiliation with Muslim immigrants but do share the same level of religiosity less hostile toward these potential immigrants?[7]

Research Design and Data Collection

In order to assess the process of attribute affinity, we collected data through three different studies. Each study builds upon the previous one in its complexity and in isolating our key variables of interest, namely religion and religiosity. Table 1 lists the key characteristics of each of the three experiments.

First, we employed a national survey of 1000 respondents conducted by YouGov in May 2013 (in what follows, we refer to this study as "YouGov–religion").[8] We wanted to measure the relevant characteristics that influence U.S. natives' attitudes toward prospective immigrants. To do so, we informed the respondents that the U.S. can only allow into the country a limited number of legal immigrants each year and requested that respondents keep this fact in mind while answering our questions.[9] We asked respondents to tell us what characteristics they would use when deciding

[6] While attitudes toward Muslims tend to differ by political affiliation, Americans on both sides of the aisle support keeping Muslims out of the country or subjecting them to additional surveillance (Sides and Mogahed 2018). The same survey evidence suggests that Americans view Muslims as religious and believe they hold outdated views of women, gays, and lesbians.

[7] Attitudes toward Muslims have likely been influenced by the September 11, 2001 events and the resulting portrayal of Muslims in the media, where they are frequently associated with threatening images of terrorists (Cimino 2005; Oswald 2005; Putnam 2002; Schildkraut 2002; Shaheen 2003). It should be noted that Creighton and Jamal (2015) find that U.S. natives are equally opposed to Muslim and Christian immigrants. While U.S. Christians are explicitly biased against Muslim immigrants, they also hold implicit biases against Christian immigrants of specific nationalities and ethnicities.

[8] YouGov interviewed 1089 respondents from May 2 to May 6, 2013. Then, respondents were matched down to a sample of 1000 to produce the final dataset. The respondents were matched on gender, age, race, education, party identification, ideology, and political interest. Using the 2010 American Community Survey, YouGov then weighted the matched set of survey respondents to known characteristics of the general population of the U.S.

[9] We emphasized that we were solely concerned with *legal* immigrants to rule out natives' attitudes toward illegal immigrants, which may be driven by other socially undesirable characteristics (Wright et al. 2015).

Table 1 Research design

	Date of study	Sample size	Sampling strategy (US citizens)	Treatment	Outcome	Main results
YouGov-religion	May 2013	1000	National	Immigrant's religion	Choose immigrant to admit into US	Respondents prefer immigrants of their own religion over others
MTurk- religion/religiosity	May 2013	530	Oversampled religious respondents on MTurk	Immigrant's religion (Christian/Muslim); Immigrant's religiosity (attends services: at least once a week/at most once or twice per year)	Choose immigrant to admit and rate both (1–7 scale)	Religious Catholic respondents prefer religious Muslim immigrants to non-religious Muslim immigrants
SSI-conjoint	January 2014	1571	Diverse national sample	Conjoint design–6 immigrant attributes	Choose immigrant to admit and rate both (1–7 scale)	Religious respondents prefer religious Muslim immigrants to non-religious Muslim immigrants

which immigrants they would admit. We also presented a choice task related to selecting immigrants for entrance into the United States, providing them only with immigrants' religion. The purpose of the *YouGov–religion* survey experiment was to observe how shared traits between natives and immigrants correlated with attitudes toward immigrants.

Second, we implemented an experiment using subjects collected through Amazon's Mechanical Turk (MTurk) in May 2013 (we call this study "MTurk–religion/religiosity"). In this experiment, we elicited preferences from 530 respondents over what type of immigrants they would prefer to admit into the United States.[10] After reminding respondents that each year the United States allows into the country a limited number of immigrants, we asked them to indicate their preference over types of immigrants on the basis of the immigrants' religion and religiosity. Respondents were shown two immigrant profiles, each of which were randomly assigned to be either Catholic or Muslim and either religious (attends religious services "at least once a week") or non-religious (attends religious services "at most once or twice a year"). Two immigrant profiles were randomly selected without replacement from the four treatment conditions displayed in Table 2. Respondents viewed these two profiles sequentially and were asked whether they would prefer to admit or not to admit the immigrant into the U.S. They answered on a seven point scale from "strongly prefer not to admit" to "strongly prefer to admit." This *MTurk–religion/religiosity* experiment was specifically designed to test whether religiosity played a role in preference over Muslim immigrants.

Finally, we conducted a survey of 1571 respondents in January 2014, using samples collected by Survey Sampling International (SSI), an Internet survey company.[11] In this study, we employed a paired profile conjoint experiment in which two profiles were presented simultaneously to respondents (Hainmueller et al. 2014). We refer to this study as "SSI–conjoint" in the text.

As shown below in Fig. 1, each respondent received two randomly created profiles at the same time, which varied on six characteristics or attributes. The experimental design asked respondents to act as an immigration official who would choose to allow into the country one of the two applicants. We included two outcome measures. First, the respondent was forced to select one of the two immigrant profiles for entry into the United States. Second, individuals were asked to rate each immigrant

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[10] We oversampled religious respondents on MTurk using contacts from previous studies on religion because, in general, respondents on MTurk are less likely to be affiliated with a religion than the overall United States population (Berinsky et al. 2012).

[11] SSI recruits participants through various online communities, social networks, and website advertisements. SSI makes efforts to recruit hard-to-reach groups, such as ethnic minorities and seniors. These potential participants are then screened and invited into the panel. When deploying a particular survey, SSI randomly selects panel participants for survey invitations. We did not employ quotas but asked SSI to recruit a target population that matched the (18 and over) 2010 census population on education, gender, age, geography, and income (based on the premeasured profile characteristics of the respondents). The resulting sample is not a probability sample but a diverse national sample. SSI samples have been used in a number of recent publications in political science.

on a scale from one to seven, where one indicated they would "absolutely not admit the immigrant" and seven indicated they would "absolutely admit the immigrant."[12]

Table 3 lists all attributes of the potential immigrants and the possible levels attributes could take. On our key attributes of interest, religion and religiosity, we included the following levels. For religious affiliation, we employed: Catholic, Hindu, Jewish, Muslim, Protestant, and atheist.[13] To proxy for an immigrant's religiosity, we used frequency of attendance at religious services ("More than once a week", "Once a week", "Once or twice a month", "A few times a year", "Seldom", "Never").[14]

Most respondents evaluated seven pairs of immigrants. However, if respondents indicated they were Mormon, Eastern or Greek Orthodox, Jewish, Muslim, Buddhist, Hindu, atheist, or agnostic (each of which comprise between 1 and 5% of the U.S. population), we presented them with ten pairs, as we anticipated a very small sample size and wanted to maximize inferential power for these smaller subsamples of the population.

In selecting the attributes that influence respondents' attitudes toward immigrants, it was important to consider a potential trade-off identified by Hainmueller et al. (2014). On the one hand, too few attributes might induce respondents to infer an immigrant's omitted characteristics from the included ones. For instance, respondents might use the country of origin to infer an immigrant's religion. On the other hand, including too many attributes would risk overwhelming respondents and might induce them to disregard all but a couple of key attributes when evaluating immigrants. For these reasons, in addition to our two attributes of interest (religion and religiosity), we included characteristics commonly identified as important predictors of attitudes toward immigrants, namely gender, country of origin, language skills or ability to speak English, and education level. Including these attributes would also allow us to benchmark the substantive size of the attribute affinity effect against well-established effects in the literature.

Conjoint analysis is especially useful for our purposes because it allows us to randomly assign at once multiple attributes to hypothetical immigrant profiles. Thus, we provide respondents with several social categories along which

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[12] Hainmueller et al. (2015) test several vignette experimental designs and find advantages to both measures, both in terms of their accuracy in calculating effects and predicting real life outcomes.

[13] We selected major world religions: Christianity (Catholic and Protestant denominations), Islam, and Hinduism. We also included atheists and Jews because we wanted enough variation in our variable of interest and, particularly, enough variation in religious affiliation for each country of origin in our experiment.

[14] Although we assigned the attribute-levels at random, we included one restriction over the possible profiles that the respondents saw. "Atheist" is one of the levels of the religion attribute and it is unrealistic to present respondents with atheist immigrants who attended religious services. Therefore, we restricted the possible combinations of immigrants such that atheist immigrants would always "Never" attend religious services. Hainmueller et al. (2014) state that the randomization of profiles (an identification assumption in conjoint analysis), requires that the randomization scheme assign a non-zero probability to all the possible attribute combinations for which the potential outcomes are defined. Because the control observation for each attribute-level is all other attribute-levels, removing theoretically problematic combinations makes it impossible to analyze causal quantities for these attribute-levels. We are not particularly concerned, as these combinations are not crucial for our results.

Table 2 Treatment conditions for MTurk–religion/religiosity experiment

	Religion	
Religiosity	Non-religious Muslim	Non-religious Catholic
	Religious Muslim	Religious Catholic

Non-Religious immigrants were presented to respondents as attending religious services "at most once or twice a year." Religious immigrants were said to attend religious services "at least once a week"

	Immigrant 1	Immigrant 2
Gender	Male	Male
Country of Origin	Nigeria	France
Education Level	Equivalent to completing two years of college in the US	Equivalent to completing two years of college in the US
Language Skills	During admission interview, this applicant spoke broken English	During admission interview, this applicant spoke through an interpreter
Religion	Atheist	Catholic
Attends Religious Services	Never	More than once a week

Please choose one:

Immigrant 1	Immigrant 2
○	○

On a scale from 1 to 7, where 1 indicates that the United States should absolutely not admit the immigrant and 7 indicates that the United States should definitely admit the immigrant, how would you rate Immigrant 1 and Immigrant 2?

	Absolutely not admit the immigrant	2	3	4	5	6	Definitely admit the immigrant
Immigrant 1	○	○	○	○	○	○	○
Immigrant 2	○	○	○	○	○	○	○

Fig. 1 Sample immigrant profiles from SSI–conjoint study

they might be similar to, or different from, immigrants. Not only can we measure the marginal impact of different attributes on respondents' decision whether to admit the immigrant and respondents' rating evaluations, but we can also observe which social identities are most and least preferred by different respondents. Furthermore, our design allows us to test our theory of attribute affinity by exploring the interactions between attributes—in this case religion and religiosity.

Table 3 Immigrant attributes and their levels (SSI–conjoint study)

Gender
  Female
  Male
Country of Origin
  Mexico
  France
  Germany
  India
  Iraq
  Nigeria
  Philippines
  Russia
Education Level
  No formal education
  Equivalent to completing fourth grade in the US
  Equivalent to completing eighth grade in the US
  Equivalent to completing high school in the US
  Equivalent to completing two years of college in the US
  Equivalent to completing a college degree in the US
  Equivalent to completing a graduate degree in the US
Language skills
  During admission interview, this applicant spoke through an interpreter
  During admission interview, this applicant tried to speak English but was unable
  During admission interview, this applicant spoke broken English
  During admission interview, this applicant spoke fluent English
Religion
  Atheist
  Catholic
  Hindu
  Jewish
  Muslim
  Protestant
Attends religious services
  More than once a week
  Once a week
  Once or twice a month
  A few times a year
  Seldom
  Never

Does Religion Matter?

Do respondents consider religion to be an important characteristic when evaluating which immigrants to allow into the United States? To answer this question, we asked respondents in the YouGov–religion survey: "If you had to decide if a person should be allowed to immigrate into the U.S., how important would each of the following characteristics be in informing your choice?" The characteristics included the immigrant's level of education, religion, marital status, and number of children. Respondents rated each characteristic simultaneously. Since we know education plays an important role in shaping attitudes toward immigrants (Hainmueller and Hiscox 2010), we can observe the relative self-reported importance of religion using education as a benchmark.

Similarly to previously cited studies, Table 4 shows that respondents report education as the most important dimension, while religion seems to play a relatively small role.

However, to more directly tap preferences, later in the same survey, we asked respondents to complete the following task: "Imagine the following individuals are applying to emigrate in the United States. They are all from the same country but have different religions. If it were up to you to decide and you could only admit three applicants, who would you be most likely to admit?" We showed respondents eight immigrants from different religions[15] and asked them to select three to admit.

Our results demonstrate that, notwithstanding the relatively low aggregate rating of the stated importance of religion, respondents' own religion greatly influenced their preferences. Specifically, we find that 90% of all respondents across all religions selected an immigrant of their own religion to admit into the United States.[16] This overwhelming preference for one's own religion over others strongly suggests that religion does play an important role in the absence of other cues.

Among these respondents, we find that attribute affinity with respect to religion operates even at the denominational level. In particular, Catholic and Protestant respondents discern and differentiate between immigrants from these two denominations, as shown in Fig. 2. Catholic respondents significantly prefer immigrants of their own religion over all others. They also significantly prefer Catholics to Protestants. Approximately 91% of Catholic respondents chose to admit a Catholic immigrant, while only 57% of Catholic respondents chose to admit a Protestant immigrant. The difference in these means is highly significant (p-value less than 0.001). Similarly, 87% of Protestants admitted Protestant immigrants, while only 68% of Protestant respondents chose to admit a Catholic immigrant. The difference in these means is also highly significant (p-value less than 0.001). This finding is especially

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[15] Immigrants' religions were: Protestant, Catholic, Mormon, Jewish, Muslim, atheist/agnostic, Hindu or Buddhist, and Eastern or Greek Orthodox.

[16] Psychologists have long known that individuals often fail to accurately report their underlying mental processes (Nisbett and Wilson 1977). When individuals are asked to report their cognitive processes, they often do so on the basis of a priori judgments. Our results demonstrate that irrespective of the stated importance of religion, respondents' own religion greatly influenced their preferences.

surprising because scholars of religion have argued that previous tensions between Catholics and Protestants that arose from denominational differences largely dissipated toward the end of the twentieth century (Layman 1997; Green 2007).

Clearly, although respondents might believe they do not consider religion in determining their preferences over immigrants, they do (Creighton and Jamal 2015). Admittedly, this is a somewhat stylized example because we provided respondents only with information on the immigrants' religion. However, as we will demonstrate in the next section, we uncover comparable patterns in the multidimensional SSI—conjoint experiment.

Attribute Affinity for Religious Denominations

Having established that religion is a relevant trait in deciding admission of immigrants, we next sought to calculate the *relative* effect of the immigrant's attributes over preferences. To do this, we use a conjoint experiment where we randomly assign six attributes to immigrant profiles. To look at the effect of an individual level of an attribute, we calculate the marginal effect of an attribute averaged over the joint distribution of the remaining attributes (Hainmueller et al. 2014), also known as the average marginal component effect (AMCE). We calculate the AMCE with a linear regression estimator by regressing our outcome variable on the six sets of dummy variables that compose the attributes that we study.[17] Figure 3 shows the change in probability of an immigrant being preferred for admission into the United States when they possess a particular attribute level relative to the base reference category (centered at zero). Positive effects suggest that respondents prefer to admit an immigrant with that trait to immigrants who have the base category. Negative effects imply the reverse. The results presented here focus on our immigrant characteristic of interest and are a subset of the full results of all immigrant characteristics, which are presented in the Supporting Information.

We have argued that attribute affinity predicts preference; respondents will prefer to admit immigrants like themselves. Affinity should determine preference regardless of out-group aversion. Indeed, this is the case. As Fig. 3 illustrates, respondents prefer to admit immigrants with whom they share a religious affiliation compared to all other religions.[18] Catholic respondents prefer Catholic immigrants, Protestants prefer Protestant immigrants, Jewish respondents prefer Jewish immigrants, and atheists prefer atheist immigrants—by margins ranging from 5 to 21 percentage points—holding all other attributes constant. The point estimates, although at times noisy, are comparable to the effect of education and language ability in shaping preferences over immigrants (see Fig. 8 in the Supporting Information).

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[17] Because our treatment and outcome variables are binary (either an immigrant has or does not have an attribute and a respondent either accepts one or the other immigrant), the linear regression estimator is fully nonparametric.

[18] The relatively small sample size of United States respondents identifying with the smaller religions randomly assigned to the immigrant profiles (Hinduism, Islam) prevent us from drawing inferences about these groups.

Table 4 Importance of each dimension in evaluating immigrants—scale from 0 to 100 (YouGov-religion study)

Category	Mean
Education	56.67
Number of kids	38.99
Religion	26.15
Marital status	25.57

In the rating task, the slider mark was originally set at 50, in the middle of the 0–100 scale
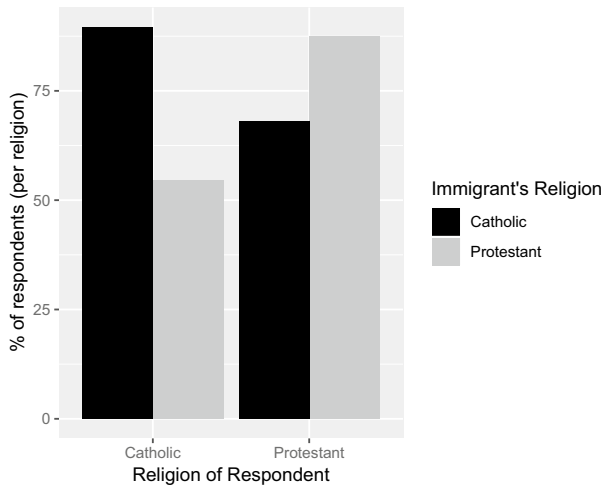
Fig. 2 Protestant and Catholic respondent preferences over immigrants of each religion (YouGov-religion Study)

As we found in the YouGov–religion survey described above, the conjoint analysis presented in Fig. 3 demonstrates that both Catholic and Protestant respondents significantly prefer to admit immigrants of their own denomination. With our conjoint data, we regressed all attributes on our outcome variable and found that Catholic respondents were approximately 7.5 percentage points less likely to allow a Protestant immigrant into the United States than a fellow Catholic. For Protestant respondents, the likelihood that they will allow a Catholic immigrant into the United States decreases by approximately 5 percentage points, compared to a Protestant immigrant. These differences are significant at the 5% level. Taken together, these results suggest that individuals do discern between specific attributes, preferring their own to others, to formulate an opinion on particular immigrants.

These findings strongly suggest that in-group affinity on the dimension of religion plays an important role in shaping preferences toward immigrants. In line with previous research, our results show that attribute affinity influences attitudes regardless of the existence of other out-group biases. When grouped
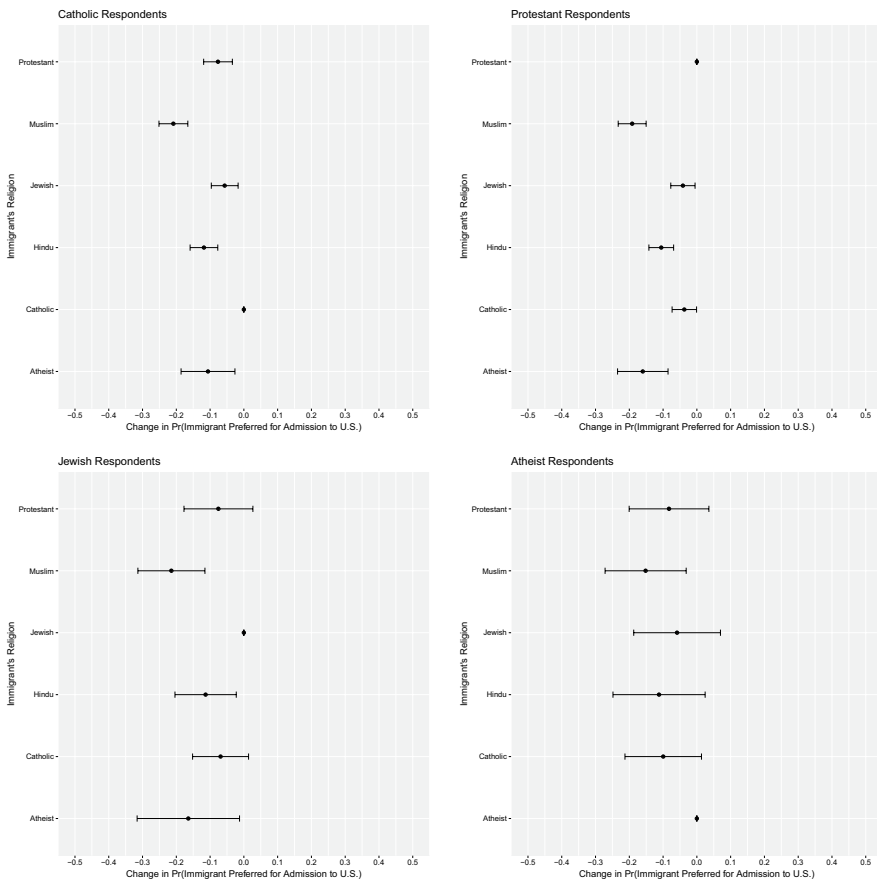
Fig. 3 Respondent preferences over immigrants of the same and different religions (SSI–conjoint Study). *Note* This plot shows estimates of the effects of the immigrant's religion on the probability of being preferred for admission to the United States, broken down by respondents of different religions. The estimates are based on the regression estimators with standard errors clustered by respondent; bars represent 95% confidence intervals. The points without horizontal bars denote the reference category for each attribute. In the Catholic, Protestant, and Jewish respondent plots, confidence intervals for atheist immigrants are wider because some combinations of atheist immigrant profiles were restricted, limiting the sample size of the profiles with an atheist immigrant

together, all out-groups are evaluated worse than a respondent's in-group. However, when we disaggregate these groups, we find variation across out-groups—a finding that a generalized notion of out-group bias cannot fully explain. Specifically, consistent with previous findings on the relationship between religion and immigration, all respondents tend to view Muslims more negatively than other religious groups.

However, the variation across out-groups suggests that general out-group aversion is not the sole driving force of preferences. These findings motivate our hypothesis

that the interaction between shared traits and out-group identities plays an important role in moderating people's negative reactions to immigrants. We move to a separate set of analyses to distinguish between the strength of attribute affinity and out-group bias.

Religion and Religiosity

As we discussed above, a person's religious identity is composed of two dimensions: the type of religious beliefs held and the strength of those beliefs. These dimensions are not independent of each other, but they are distinct (see Guth and Green 1993; Green 2007). For instance, Layman (1997) argues that as tensions between Christians and Jews and Catholics and Protestants diminished during the past century, a "new religious cleavage [arose] that pits individuals who remain committed to orthodox religious beliefs and practices against individuals who have abandoned traditional orthodox in favor of more modern views" (p. 289).

This new religious cleavage provides inspiration for an interesting test of our argument. In a context where religiosity is a relevant dimension of identity that influences attitudes, we aim to test the extent to which affinity may foster positive reactions based on in-group membership on one dimension (religiosity) when out-group bias dominates over another (religion).

We argue that, irrespective of subscription to a specific religion, affinity can also take hold in an individual's strength of religiosity. In our analysis, we measure religiosity using a single variable—frequency of attendance to religious services. Religious service attendance is useful because it stands out as a behavior practiced and viewed as normative across many traditions (Mockabee et al. 2001) unlike reading scripture or holding specific beliefs, which are more associated with certain religious denominations than others. Religious service attendance, therefore, measures religiosity in a manner that is applicable to many religious faiths.[19] This variable is measured the same way for hypothetical immigrants and respondents. We define "non-religious respondents" as those who attend religious services "never" or "seldom." We code "very religious" respondents as those who reported going to religious services "more than once a week" or "once a week."[20]

Figure 4 uses the same SSI–conjoint data employed in the last section and shows that *religious* respondents have a strong preference for immigrants who are *more* religious—attending religious services more often— compared to those who attend religious services less frequently. That is, regardless of the potential immigrant's religion, religious respondents prefer religious immigrants over non-religious

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[19] We additionally tested whether our measure of religiosity (attendance at religious services) corresponds to the salience of religiosity as an identity. In our YouGov—religion survey, we asked respondents how important religion is in their lives ("Extremely important","Very important","Somewhat important","Not very important","Not at all important"). Figure 1 in the Supporting Information shows that our measure of religiosity is highly correlated with self-reported levels of importance of religion, suggesting that our measure is capturing both the strength and salience of religiosity.

[20] We exclude atheists from both the respondent sample and immigrant profiles since they are not considered religious people. However, the results do not change if atheists are included.

immigrants. Not surprisingly, non-religious respondents do not have preferences over an immigrant's level of religiosity. Our survey provides evidence that for non-religious respondents, religiosity is simply not a salient dimension of identity (see Supporting Information).

This finding suggests that, among those individuals for whom religiosity is a salient identity dimension, the out-group bias against Muslims described in the previous section could potentially be moderated by the immigrant's degree of religiosity. In other words, at least for some respondents, one element of religious identity could temper the other.

We find that this is indeed the case. In line with our theory of attribute affinity, we find that affinity in a trait like religiosity increases in-group preference, and more surprisingly, can moderate anti-Muslim bias. More importantly, we are able to replicate this finding with two different experiments conducted with different samples more than half a year apart from each other.[21] The first comes from our 2013 MTurk–religion/religiosity study, the design of which is described above (as presented in Table 2). Recall that this experiment is a fully crossed 2×2 design, where respondents are asked to rate potential immigrants who are either Catholic or Muslim and either religious or non-religious. Thus, respondents were exposed to one of four hypothetical immigrant types each of the two times they were asked to rate potential immigrants. Table 5 displays our respondents' mean evaluations for each of these four types. We present these results separately for Catholic respondents with different levels of religiosity: consistent with our previous analysis, we define non-religious Catholic respondents as those who answered that they attend religious services "seldom" or "never." Religious Catholic respondents are those who reported that they attend religious services "once a week" or "more than once a week."

Table 5 presents the average ratings of religious and non-religious Catholic respondents by immigrant religious affiliation and levels of religiosity. Comparing the top and bottom panels, we observe that, in the aggregate, all Catholics prefer Catholics over Muslims on average. However, religious and non-religious Catholic individuals respond differently. Looking first at non-religious Catholics (left hand column), we see that these respondents do not make a distinction between Muslims and Catholics based on the immigrant's level of religiosity (the difference in means is 0.01 for Catholic immigrants and 0.03 for Muslim immigrants, neither is statistically significant). This result is consistent with our theory of attribute affinity since

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[21] We ran another similar experiment in 2015 where we included an additional treatment arm that presented respondents with a Muslim immigrant without any information about religiosity. The experiment presented respondents with two immigrant profiles sequentially. We managed to replicate our results as we did with the conjoint analysis only in the first period, not the second. We find that, in line with our theory of attribute affinity, religious respondents prefer religious over non-religious Muslims. However, we are careful in interpreting these results because of their instability (see Supporting Information for details). Although we cannot explain this instability, we suspect that events relating to Islamic extremism that occurred between our experiments, such as the Charlie Hebdo attacks and the increased media coverage of the Islamic State, may have influenced our respondents' answers in ways we did not anticipate. However, given the strong findings from our first two experiments—conducted using different methods on different samples—we are confident that the initial results we report in this paper are not simply statistical flukes.
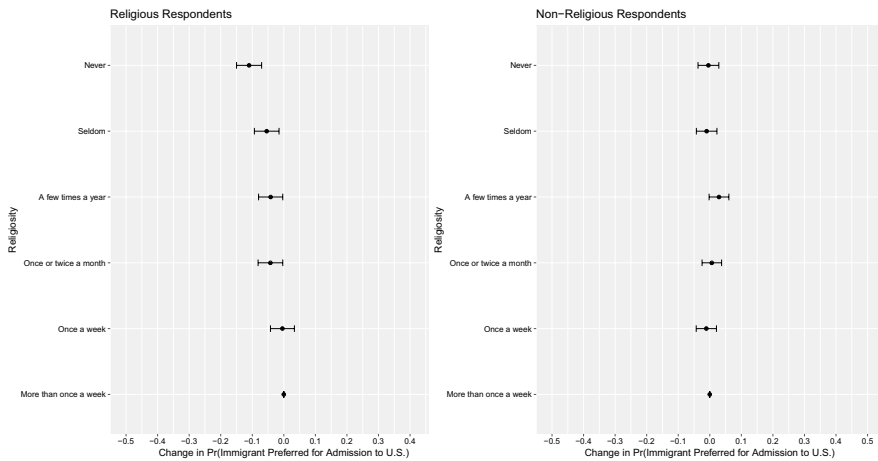
Fig. 4 Attribute affinity and religiosity (SSI–conjoint study). *Note* This plot shows estimates of the effects of the immigrant's religiosity on the probability of being preferred for admission to the United States. Here we see estimates for religious and non-religious respondents. The estimates are based on the regression estimators with standard errors clustered by respondent; bars represent 95% confidence intervals. The points without horizontal bars denote the reference category for each attribute. Atheists immigrants were removed from the sample

it seems that religiosity is not as salient a trait for non-religious Catholics as would be the case for religious Catholics.

Among religious Catholic respondents, however, the picture is very different. If we compare attitudes towards Catholic immigrants shown in the first and second row of the top panel on the right hand side, we observe a negligible difference in averages (0.03, with a p-value < 0.55). That is, religious Catholics evaluate both religious and non-religious Catholic potential immigrants equally. However, religious Catholics change their attitudes towards Muslims according to the religiosity of potential immigrants. The top two rows of the bottom panel of Table 5 (bolded) demonstrate that the difference in attitudes towards religious and non-religious Muslims is significantly and substantively large among religious Catholic respondents in favor of religious Muslim immigrants—about 1.2 standard deviation change (difference of 0.25, p-value of < 0.02). In other words, religious Catholic respondents differentiate between religious and non-religious Muslims in a way that non-religious Catholics do not — and are more positive towards religious Muslims. The right hand side of the lower panel in Table 5, bolded, shows that the mean rating between religious and non-religious immigrants is only significantly different and positive when religious Catholics evaluate Muslims. The difference in mean preference is significant at conventional levels (p-value < 0.02), clustering standard errors by respondent.

Table 5 Mean ratings of immigrants (Mturk–religion/religiosity study)

	Non religious Catholic respondent	Religious Catholic Respondent
Non religious Catholic immigrant	0.71	0.76
Religious Catholic immigrant	0.72	0.79
Diff. in means	0.01	0.03
P-value (N)	0.97 (N: 37)	0.55 (N: 18)
Non religious Muslim immigrant	0.52	**0.43**
Religious Muslim immigrant	0.55	**0.68**
Diff. in means	0.03	**0.25**
P-value (N)	0.61 (N: 36)	**0.02 (N: 15)**

Averages are normalized to fit a scale of (0,1) based on the rating given to each immigrant on a 7 point scale: Absolutely not admit the immigrant to the United States (1), Definitely admit the immigrant to the United States (7). Standard errors are clustered by respondent. Averages calculated using the MTurk 2013 data. In parentheses is the total number of unique respondents in each cell (N)

The MTurk–religion/religiosity experiment was designed to test our hypothesis on Catholics.[22] However, our finding extends beyond this particular sample; we replicate the results using our SSI–conjoint data.

It is important to note that we replicate the MTurk–religion/religiosity findings using a very different design that incorporates a much more realistic profile of immigrants. Furthermore, the SSI–conjoint study was fielded more than half a year after we conducted the first study, and we do so among a broader and more diverse group of respondents. Specifically, we used our conjoint data collected in 2014 and conducted an analysis similar to the MTurk experiment, but examined all respondents who identify with a religion (i.e. everyone except atheists).[23]

To mimic the analytical strategy of our MTurk–religion/religiosity study, we aggregated respondents into one group who identify with any religion but are non-religious (those who "never" or "seldom" attend religious services) and religious respondents (those who reported they attend religious services "more than once a week" or "once a week") who practice any religion into a second group. As with our MTurk experiment, we present ratings separately for religious respondents and for non-religious respondents. Similarly, for the purposes of analysis, we categorize immigrant profiles along two dimensions: (1) those that are Muslim versus any other religion (excluding atheists) and (2) those that are non-religious versus religious.

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[22] The findings in this sample cannot rule out that this pattern is particular to religious Catholic respondents because in the full sample of religious respondents there is a slight preference for religious Muslims over non-religious Muslim immigrants (difference in means of 0.06, p-value = 0.86), but the difference is not statistically distinguishable from zero.

[23] Similar to the MTurk–religion/religiosity experiment, we asked respondents to rate each immigrant on a 7-point scale (see Fig. 1). Including atheists that report attending religious services does not change the results.

Table 6 Mean ratings of immigrants (SSI–conjoint study)

	Non religious respondent	Religious respondent
Non religious immigrant (non-Muslim)	0.54	0.56
Religious immigrant (non-Muslim)	0.55	0.61
Diff. in means	0.01	0.05
P-value (N)	0.13 (N: 621)	<0.001 (N: 473)
Non religious Muslim immigrant	0.52	**0.49**
Religious Muslim immigrant	0.49	**0.54**
Diff. in means	-0.03	**0.05**
P-value (N)	0.05 (N: 583)	**0.03 (N: 447)**

Averages are normalized to fit a scale of (0,1) based on the rating given to each immigrant on a 7 point scale: Absolutely not admit the immigrant to the United States (1), Definitely admit the immigrant to the United States (7). Standard Errors are clustered by respondent. Averages calculated using the SSI 2014 data. In parentheses is the total number of unique respondents in each cell (N)

Table 6 shows the mean rating normalized to fit a scale from 0 to 1 using the same scale used in Table 5. We asked respondents to provide a rating for every different type of immigrant they saw—Muslim or non-Muslim—broken down by the religiosity of the respondent. Replicating our main result from the previous study, looking at the bottom right corner of the table, we find that religious respondents rate religious Muslim immigrants significantly higher than non-religious Muslim immigrants. At the same time and in contrast to the MTurk experiment, non-religious respondents significantly prefer non-religious Muslims. This difference can be seen on the left column of the bottom panel. This difference aside, the difference in means in how religious respondents evaluate Muslim immigrants remains and—albeit smaller in magnitude than the one presented in Table 4—it represents 17% of a standard deviation change. The difference in means between evaluations of religious and non-religious Muslims for religious respondents—both measured by rating evaluation and choice task[24]—is significantly different from zero and substantively important.[25] These results provide additional evidence that similarity in religiosity can moderate strong out-group aversion to Muslims.

Our results in this section are especially important. Although we find that Muslim immigrants are by far the least preferred immigrant group in our data, in-group affinity with respect to religiosity does attenuate the stigma toward Muslims. As we mentioned before, highly religious Muslims are commonly seen as more threatening

[24] The difference in means between religious respondents' evaluations of religious and non-religious Muslims is practically the same size as when measured using a 7 point scale rating dependent variable and is significant at $p < 0.08$.

[25] Instead of seven pairs, we showed 10 pairs of profiles to respondents of minority religions such as Mormons, Greek Orthodox, Jews, Muslims, Buddhists, Hindus, and atheists. Therefore, when we pool all religious respondents, we are in fact over-representing these religions relative to their population size. We ran the analyses both with all profiles and as well as with just the first seven that each respondent saw. The results do not change with the modification in the sample size.

than secular ones. If explanations of attitudes toward immigrants were driven by out-group bias alone, then we would expect strongly religious non-Muslim U.S. natives to feel even more threatened by immigrants who strongly practice Islam. Strikingly, this is not what we find. Attribute affinity on one dimension of identity can moderate out-group bias produced by another dimension. Taken together, the results from the three experiments suggest that in-group affinity not only shapes preferences among group identity labels such as religion, but affinity is also borne out of other shared attributes, including religiosity. Indeed, the effect of shared attributes on preferences is so strong that it can even attenuate the most strongly held out-group prejudice.[26]

Conclusion

There is little debate that out-group aversion influences public opinion and political behavior. But out-group aversion is not the whole story. The literature on anti-immigrant sentiment overwhelmingly characterizes immigrant identities as unidimensional in their "otherness" or "foreignness." However, an important literature in comparative politics emphasizes the multidimensionality of identity as it relates to the formation of attitudes and behaviors toward out-groups. Shared traits between in- and out-groups can be conduits for collaboration: cross-cutting cleavages may lessen ethnic mistrust. This study focuses on religious identities, which are particularly important in diverse contexts (Adida et al. 2013). We draw on existing literature on social identity and immigration, as well as a growing literature on the role of religion in shaping attitudes toward out-groups, and apply it to the increasingly salient case of attitudes toward immigrants in the United States. We find that shared attributes, or attribute affinity, goes beyond promoting homophily and can also lessen out-group aversion.

In particular, we show that aversion may be blunted by in-group affection induced by attribute affinity. Such affinity can abate feelings of out-group hostility and can be quite powerful under certain circumstances. Indeed, our studies suggest that attribute affinity may even attenuate out-group bias of highly stigmatized groups, such as Muslim immigrants. Our findings support a new, more nuanced, understanding of how inter-group relations can shape public opinion.

Such findings have important relevance for today's politics. Increasing international conflicts are creating acute immigration crises across the globe. Many countries are experiencing huge influxes of immigrants searching for new homes. As immigration becomes an increasingly salient political issue, policy makers need to understand how natives perceive immigrants. In a context where immigration law is

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[26] We designed the SSI–conjoint experiment in 2014 to specifically test our theory on religion and religiosity, but we also use the data to test the relevance of attribute affinity with respect to other interactive aspects of identity-specifically, between race on the one hand and language skills on the other. We find that although the statistical significance fails to reach standard levels, attribute affinity mitigates negative reactions in these cases. Although only suggestive, this evidence further strengthens our theory and emphasizes the importance of studying the effect of the interaction of different identity attributes on attitudes toward out-groups.

being regulated based on the type and practice of religions, this study is of particular relevance. Efforts to integrate newcomers into society should not only consider the role of differences between natives and immigrants, but also their similarities. Future research should focus on the relative importance of other traits that can be shared by different individuals such as race or language and the degree to which these interact and moderate out-group biases. Our findings suggest that policy makers seeking to engender public support for pro-immigration policies may find it fruitful to highlight shared attributes between immigrants and natives.

It is beyond the scope of this paper to explore all the possible mechanisms that may explain exactly how attribute affinity determines or shapes public opinion. Our findings, however, highlight the need to investigate more closely the effect of inter-group relations on public opinion through the lens of in-group attachment. Future work should investigate the *relative* strength of different aspects of an individual's identity over attitudes and opinion formation toward outsiders. Furthermore, country specific contexts may determine the traits that might engender affinity. Extrapolating these findings beyond the United States context may be unwise due to the differing degree of salience that religion has in other contexts. However, this paper highlights the importance of moving beyond prejudice and out-group analyses when studying attitudes in other contexts as a fruitful future direction of the literature.

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