



Similarity-attraction across ethnic, religious, and political groups: does celebrating differences or similarities make a difference?

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ABSTRACT

Extensive research supports a positive association between similarity and attraction at the inter-personal level; the very limited research at the intergroup level is also supportive. In the context of increasing diversity in major societies, alternative diversity management approaches give priority to celebrating differences versus celebrating similarities. We tested to see if similarity-attraction at the intergroup level remains robust in conditions of celebrating differences versus similarities in four studies with ethnic (Study 1, N = 231; Study 2, N = 823), religious (Study 3, N = 1,004), and political (Study 4, N = 606) groups. Study 1 confirmed that participants wanted closer contact with others who they see as more similar. Studies 2, 3, and 4 largely replicated this pattern and found no differences across conditions celebrating differences or similarities between groups. In line with similarityattraction theory, most group members preferred contact with similar others, both when intergroup differences and similarities were celebrated. The findings are discussed in the context of debates about diversity management policies.

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More than six decades of research supports the proposition that, at least in Western societies (Heine et al., 2009), people are attracted to others who they perceive to be more similar to themselves (Benbasat et al., 2020; D. Byrne, 1961; Cemalcilar et al., 2018; Hampton et al., 2019; Mallinas et al., 2018; Wetzel & Insko, 1982; Yeong Tan & Singh, 1995). Meta-analyses of similarity-attraction studies, covering important domains of behavior such as attitudes, personality, and values, demonstrate support for the proposition that increased similarity with other(s) is associated with increased attraction to the other(s) (Montoya & Horton, 2013; Montoya et al., 2008).

Empirical research demonstrating the positive association between similarity and attraction has been supported from a variety of theoretical perspectives. First, from the perspective of consistency theories and behaviorism (D. E. Byrne, 1971), people are assumed to be motivated to arrive at a consistent view of the world and to prefer feedback that reinforces the idea that they are consistent. Similar others positively reinforce our worldview, and this results in attraction. A second major theoretical approach to explaining similarity-attraction has been the cognitive perspective (Ajzen, 1974; also see; D. Byrne & Griffitt, 1973, pp. 326–329). The cognitive approach gives importance to the nature of the information we acquire about others: information telling us that a target person is similar to us in values, for example, leads us to infer that she has positive characteristics more broadly. An alternative identity-based explanation of similarity-attraction is that we are more likely to perceive similar others as part of an ingroup and to be more positively disposed toward them (following Tajfel & Turner, 1979). An identity-based interpretation becomes particularly relevant at the collective level, because the social identity tradition has been focused on collectives (Moghaddam, 2008).

However, the vast majority of research studies on similarity-attraction has focused on interpersonal rather than intergroup relations. Consequently, evidence supporting the similarity-attraction paradigm comes from numerous studies with respect to relationships between individuals, but very few studies with respect to relationships between groups. However, a number of studies do provide indirect support for the similarity-attraction hypothesis. In the Canadian context, Berry and Kalin (1979) found that outgroups perceived as more similar and familiar received more positive evaluations. In a direct test of the similarity-attraction paradigm at the intergroup level, Osbeck et al. (1997) conducted a study with six ethnic groups in Canada, each participant being interviewed by a co-ethnic interviewer. Participants were asked how similar they perceived the other groups to be to one's own group, and how much they were willing to have various levels of contact with the members of the other five groups. The pattern of relationships between social distance and similarity supported the similarity-attraction paradigm at the intergroup level and is in line with the assertion that the attraction models of intergroup relations are part of a larger body of research than the repulsion models (Skvoretz, 2013), and that perceived intergroup differences are an important organizer of broader aspects of intergroup relations (van Osch & Breugelmans, 2012). However, although there was some attention to intergroup similarity in earlier research (Brewer, 1979; Brewer & Campbell, 1976), this topic remains neglected.

A key reason for attending to the role of similarity in intergroup behavior in the twenty-first century is that the context for testing intergroup similarity-attraction has been changing in important ways. First, there has been an increase in diversity: the probability that two people randomly chosen will belong to different ethnic groups increased to 61.1% according to the latest U.S. Census in 2020 (Jensen et al., 2021). Second, the early twenty-first century also saw a resurgence in protests against intergroup discrimination (Jones et al., 2013). Related to this, critical attention has been given to the merits of diversity management policies based on assimilation and multiculturalism (Berray, 2019; Calderon-Berumen, 2019; Callens et al., 2019; Moghaddam, 2012; Morrison et al., 2010; Osborn et al., 2020; Verkuyten et al., 2020; Watters et al., 2020). Third, multiculturalism has become the most influential diversity management approach in both public and private sectors (Moghaddam, 2008); the Canadian government was the first to implement multiculturalism as official government policy, in 1972 (Fleras & Elliot, 1992). Fourth, a focus in multiculturalism remains the celebration of group differences. We should add that multiculturalism involves more than a celebration of differences (Berry, 2013; Moghaddam, 2008), but this is the main aspect we focus on in this study. Although there are some variations in the types of multiculturalism practiced in different societies, as far as we know, in no version of multiculturalism has the celebration of similarities been a priority. Thus, in the changed context of intergroup relations, diversity is increasing, justice for minorities is given more attention, multiculturalism is given high prominence, and priority is given to the celebration of group differences.

In addition to ethnicity, religion and political ideologies are important sources of diversity. The United States has a rich history of religious diversity, attracting early immigrants with promises of religious freedom (Patel, 2018; Smith, 2002). In the twenty-first century, religion is considered a vital aspect of American identity, prompting calls to incorporate it into education (Aronson et al., 2016). Despite declining religiosity (Voas & Chaves, 2016), the U.S. still stands as an exception to secularization trends in the West. However, evidence shows that religious minorities often face discrimination, particularly from "Christian nationalists" asserting the U.S. as a Christian nation (Merino, 2010). Notably, individuals in religiously diverse areas report lower happiness and trust levels (Bennett et al., 2021; Okulicz-Kozaryn, 2011). This highlights the need to explore whether people are more inclined to interact with those of similar faith and how this varies in contexts emphasizing intergroup differences over commonalities.

Diversity in political orientation is also important in contemporary societies. While there are two major parties in the United States, there is considerable diversity within both the Democratic and Republican political Parties (Samuels, 2023a, 2023b). Finkel et al. (2020) suggest that political differences between members of the Left and the Right have surpassed the ideological domain; they

also differ on moral grounds. Extreme political rifts raise the need to investigate whether people are more likely to interact with those who share similar political ideologies and how this varies in contexts that emphasize differences rather than commonalities between groups.

In summary, our first goal was to replicate the positive relationship between similarity and attraction at the intergroup level in the changed context of the twenty-first century, given the critical importance of replications in psychological science (Earp & Trafimow, 2015). To this end, in Study 1 we tested the association between Perceived Similarity Index (PSI) and social distance (SD) across ethnic groups (replication of Osbeck et al., 1997). Studies 2, 3, and 4 tested intergroup similarity and attraction in three different conditions, where: condition 1 was a replication of Study 1; condition 2, intergroup similarities were celebrated; condition 3, intergroup differences were celebrated. Based on previous research, we expected similarity-attraction to have a positive association in conditions 1 and 2. Our research question was: would the positive association between similarity and attraction hold in condition 3, where intergroup differences are celebrated (as practiced in multiculturalism)?

Study 1

In a test of similarity-attraction at the intergroup level, Black/African Americans, Hispanic/Latin Americans, and White Americans responded to measures assessing their perceived similarity and social distance to an ethnic outgroup in the United States. We examined participants from these three groups because they are major ethnic groups in the United States (all three groups have high participation on Prolific Academic, the website used for recruitment). Previous research on similarityattraction at the intergroup level (Osbeck et al., 1997), leads to the prediction that participants would prefer closer contact with members of outgroups they perceived to be more similar to their ethnic ingroup.

Method

Participants and procedure

Black/African, Hispanic/Latin, and White U.S. citizens (N = 231; 43% female; $M_{age} = 34.86$, $SD_{age} =$ 11.94) were recruited from the Prolific Academic online participant recruitment database according to their self-identified ethnicity over a two-week time period in April 2021 (see Appendix 1 for complete participant demographics). The participant sample size was determined using power analysis for multivariate regression, with an effect size (f^2) of 0.2, 6 predictors, p-level of .05, and a power (1- β) of .80. G*Power statistical software indicated an adequate number of at least 75 participants per group. A total of 231 participants originally completed the measures, but we excluded eight participants who self-identified as multiracial/multiethnic, such as White and Hispanic/Latin American, or who identified with a different ethnicity than expected, such as Native American. Additionally, we restricted participant recruitment by age (18-100 years old), country of residence (the United States), access to a computer, and U.S. political ideology, recruiting equal numbers of liberal, moderate, and conservative participants. Participants were paid \$0.98 or \$1.20 to complete the study. The higher payment was used as an incentive to recruit participants when the response rate was low. Average participation time was 12 minutes.

During recruitment, the names of the study on Prolific Academic were kept intentionally vague (e.g., "Social Issues" or "Your opinion about society"); participants were not made aware of the true nature of the study, other than that they would be responding to an opinion survey on social issues. The study description detailed what the study was about ("In this study you will be asked to respond to a few surveys on social issues and to provide demographic information"), that participation was voluntary, and that we would not collect personally-identifying information.

After recruitment, participants were provided with a link to the Qualtrics study on the Prolific site page. Participants were first asked to sign the consent form approved by the Institutional Review Board. Next, based on participants' self-identified ethnic group (Black/African American, Hispanic/Latin American, and White American), participants were randomly assigned to complete two measures assessing their perceived similarity to an ethnic outgroup (either Black/African Americans, Hispanic/Latin Americans, or White Americans) and perceived social distance to this outgroup. For example, if a participant identified as Black/African American, they would be assigned to respond to questions about Hispanic/Latin Americans or White Americans. Following this, all participants responded to political orientation, political ideology, and demographic questions, including age, gender, education, and ethnicity. Political orientation and ideology were used as controls in our statistical analyses. Demographic questions asking about participants' ethnicity were used as confirmation checks to ensure participants belonged to the ethnic group prescreened in their Prolific profile.

We additionally controlled for attention by including an attention-testing question in the social distance measure ("Please choose nine here") and reverse scoring some items. Participants who did not answer with the correct response for these questions were not permitted to continue with the study and did not receive payment for their time. All participants were debriefed following their completion of the measures. The study materials, data files, and program code used in the analysis for Study 1 (as well as Study 2, 3, and 4) can be found at https://osf.io/4vzuy/?view_only=77e8a36c82fb49b7a145df915015c00d

Materials

Perceived similarity index (PSI)

Following Osbeck et al. (1997) participants rated how similar or different they perceived themselves to members of an outgroup (the focus here was on group and not individual characteristics), in terms of seven group characteristics: (1) hard-working, (2) friendliness, (3) family life, (4) trustworthiness, (5) dependability, (6) values, and (7) culture. All items were initially measured on a scale from 1 (Very Similar) to 9 (Very Different). These scales were recoded such that higher scores on PSI indicate a higher perception of similarities. The regression analysis used a normalized total score of the recoded items. Regression analysis used a normalized total score of the items ($\alpha = .93$).

Social distance (SD)

The seven items in this measure were adapted from Bogardus (1926) and Osbeck et al. (1997). Responding in a specific order, participants rated the extent to which they would be willing to associate with a member of the represented outgroup as a: (1) family member through marriage, (2) close personal friend, (3) neighbor, (4) co-worker, (5) acquaintance, (6) consider them un-American, and (7) exclude as a citizen of the United States. Items 6 and 7 were reverse-scored. All items were measured on a scale from 1 (Strongly Agree) to 9 (Strongly Disagree). Regression analysis used a normalized score from an intensity scale following Mather et al. (2017). Higher scores on the Social Distance intensity scale mean higher social distance ($\alpha = .93$).

Data analytic strategy

We used OLS regressions to estimate changes in the association between PSI (key independent variable) and SD (dependent variable) in each sample. In addition, we used dummy variables to account for the changes produced by the target group – finally, the regression model controlled for the participants' demographic characteristics (i.e., socioeconomic status, gender, and religiosity). Using the model, we expected that replicating the similarity-attraction paradigm would yield a negative PSI coefficient for each sampled ethnic group.



Table 1. OLS regression models for social distance in study 1.

	Sample		
	Black/African American	Hispanic/Latin American	White American
PSI Outgroup	-0.15 (0.15)	-0.38 (0.11)***	-0.30 (0.11)**
Black Hispanic	0.44 (0.26)	0.31 (0.20)	-0.17 (0.22)
N R ²	72 .10	66 .24	72 .20

Note. The model included controls for the outgroup condition, gender, socioeconomic status, and importance of religion. Standardized coefficients are reported. *p < .05; **p < .01; ***p < .001.

Table 2. Experimental manipulations.

	Celebration of Differences	Celebration of Commonalities
Paragraph	and each ethnic group is special and different. Celebrating ethnic group differences and treating each ethnic group as distinct is the right way to go. In schools, at work, in our social lives, we should always celebrate and give priority to ethnic differences and	Human beings are far more similar to one another than they are different. Sometimes we forget about our huge similarities as humans, and get distracted by what are actually small ethnic group differences. In schools, at work, in our social lives, we should always celebrate and give priority to human commonalities
Prompt	how each group is distinct We should always celebrate and give priority to ethnic	and how we are all alike We should always celebrate and give priority to human
	differences and how each group is distinct.	commonalities and how we are all alike.

Note. The control condition did not include any paragraph.

Results

Multivariate OLS regression analysis showed that PSI had a negative relationship with SD in most cases. In other words, as perceived similarity increases, participants want closer contact with outgroup members. In Table 1, columns 2 to 4 show multivariate regression for each ethnic group sample. Although the general trends are in support of H1, the regression for the Black/African sample (see Table 1, column 2) did not reach a significance level. The regression analysis for the Hispanic/Latino sample (see Table 2, column 3) produced a model that was statistically significant and accounted for a moderate proportion of variance. The PSI coefficient is statistically significant and negative. The model for the White sample (see Table 1, column 4) was statistically significant and accounted for a moderate proportion of variance. PSI is statistically significant and negative.

Discussion

The results replicated the expected relationship between PSI and social distance with respect to Hispanic/Latin and White participants. Hispanic/Latin and White participants wanted closer contact with outgroup members perceived as more similar. This showed support for the similarity attraction paradigm (H1). In addition, these same groups showed no differences in social distance between targeted outgroups. However, there are three possible shortcomings in Study 1. First, although the relationship between similarity and social distance was in the expected direction (i.e., a negative PSI coefficient) for the Black/African sample, this relationship was not significant and needs further testing. It is possible that a significance level would be achieved with a larger sample of African-American participants. Second, alternative diversity management policies call for a highlighting of intergroup differences versus a highlighting of intergroup similarities, and the inclusion of these conditions might change the relationship between PSI and SD. Specifically, in a condition where intergroup differences are celebrated, people might seek closer contact – reducing their social



distance – with others who are different (rather than similar). We tested this possibility in three further studies.

Study 2

The objective of Study 2 was to further examine similarity-attraction at the intergroup level in three different conditions: first, a control condition, replicating Study 1; second, a "celebration of similarities" (what all humans and all human groups have in common) condition; and third, a condition where the "celebration of differences" takes place. Also, we increased the number of participants so as to increase the power of Study 2. On the basis of the similarity-attraction paradigm, we expected participants to reduce their social distance when interacting with others they see to be more similar to themselves in conditions 1 and 2. In condition 3, where group differences were celebrated, the similarity-attraction paradigm predicts that similar others would also be preferred for closer relationships. The competing prediction is that when group differences are celebrated, participants would want to have closer contact with others who are different.

Method

Participants and procedure

Study 2 recruited participants of similar demographic profile to Study 1; Black/African, Hispanic/ Latin, and White U.S. citizens (N = 823; 48% female; $M_{age} = 30.17$, $SD_{age} = 10.95$) were recruited from Prolific Academic according to their self-identified ethnicity over a three-week time period (see Appendix 2 for complete participant demographics). The sample size was determined using power with effect size (f^2) of 0.1, p-level of .05, 10 predictors, and a power $(1-\beta)$ of .80. G*Power statistical software indicated an adequate number of at least 172 participants per group. However, given the low achieved power in Study 1, we decided to increase the sample size. Thus, a total of 823 participants originally completed the measures, but we excluded 14 participants who again identified themselves as members of a different ethnic group or self-identified as multiracial/multiethnic. We restricted participant recruitment by age (18-100 years old), country of birth and residence (the United States), access to a computer, and U.S. political ideology, recruiting equal numbers of liberal, moderate, and conservative participants. Additionally, we restricted the recruitment of participants who had participated in Study 1. Participants were paid \$0.98 for completing the study. The average participation time was 12 minutes.

The recruitment and procedure for Study 2 largely followed Study 1 with notable differences in the experimental conditions. Participants were randomly assigned to one of the three experimental conditions, either reading a short paragraph that emphasized the celebration of ethnic differences (celebration of differences condition) or the celebration of human commonalities (celebration of commonalities condition), or participants did not read any paragraph (control condition). Table 2 shows the paragraph and text that the participants read in each condition. Next, as in Study 1, participants were randomly assigned to complete two measures assessing their perceived similarity or differences - using PSI - to an ethnic outgroup (either Black/African Americans, Hispanic/Latin Americans, or White Americans) and SD to this outgroup. All other aspects of the procedures and measures were as in Study 1.

Materials

Participants responded to the PSI ($\alpha = .95$) and SD ($\alpha = .86$) measures as in Study 1. No variations were observed in each measure's reliability across the control, "celebration of commonalities," and "celebration of differences" conditions.

Table 3. OLS regression	models for socia	distance in study 2.	

	Black/Africar	n Americans	Hispanic/Lat	tin American	White A	mericans
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
PSI	-0.27 (0.06)***	-0.32 (0.11)**	-0.38 (0.06)***	-0.59 (0.09)***	-0.34 (.07)***	-0.46 (0.11)***
Conditions						
Differences	-0.07 (0.15)	-0.06 (0.16)	0.10 (0.14)	0.09 (0.14)	0.13 (0.14)	0.12 (0.14)
Commonalities Interactions	0.14 (0.15)	0.17 (0.16)	-0.07 (0.13)	-0.16 (0.14)	0.06 (0.14)	-0.03 (0.14)
PSI x Differences		0.01 (0.15)		0.24 (0.13)		0.00 (0.15)
PSI x Commonalities		0.12 (0.15)		0.48 (0.15)**		0.38 (0.16)*
N	272	272	255	255	228	228
R^2	.10	.11	.18	.22	.25	.28

Note. The regression model also includes the participant's demographic characteristics (i.e., socioeconomic status, gender, and political ideology) and the target outgroup. Standardized coefficients are reported. *p < .05; **p < .01; ***p < .001.

Data analytic strategy

We used a similar OLS multivariate regression strategy as in Study 1. To determine whether the experimental conditions influenced PSI and SD, we conducted ANOVA tests to compare PSI and SD across the experimental conditions. Study 2 incorporated a dummy variable to account for the additional control and experimental conditions. Similar to Study 1, the positive coefficients of PSI indicate support for the similarity-attraction paradigm. Significant coefficients of the experimental conditions will indicate their influence on social distance.

Results

Results from the control condition of Study 2 in large part replicated similarity-attraction at the intergroup level. The ANOVA tests between PSI or SD and the experimental conditions found no significant results for Blacks/Africans, Hispanic/Latin, and White samples. For Black/Africans, PSI is statistically significant and negative in regression models with and without interactions (see Table 3, columns 2 and 3). Thus, an increase in the perception of similarity with the outgroup is associated with the desire for closer contact.

For Hispanic/Latin, our key variable – PSI – is statistically significant and negative in all regression models (see Table 3, columns 4 and 5). Holding all else equal, perceived similarity is associated with desiring closer social distance. This regression model found no significant differences between the "celebration of differences" or "celebration of commonalities" with the control conditions regarding social distance. When PSI and the commonality condition interact, the desire for closer contact with similar others decreases. However, it still supports the similarity-attraction paradigm (H1).

For White Americans regression models show that PSI is statistically significant and negative (see Table 3, columns 6 and 7). PSI is associated with a desire for closer social contact. Similar to Hispanic/Latin Americans, the White regression model shows that a desire for contact with similar others decreases yet endorses the similarity-attraction paradigm (H1) when interacting with PSI and the commonality condition.

Discussion

The results of Study 2 strongly support the similarity-attraction paradigm (H1) at the intergroup level, across all three ethnic groups and across the three conditions. Irrespective of whether participants were in the control condition, or the conditions where intergroup differences or intergroup commonalities were celebrated, they preferred to have closer social contact with others they perceived to be more similar. The interaction term showed significance for Hispanic/Latin and White Americans, supporting the similarity attraction paradigm. While the results of Study 1 replicate the results of the very few earlier studies that



examined similarity-attraction at the intergroup level (Osbeck et al., 1997), the results of Study 2 extend these earlier findings by testing intergroup similarity-attraction under different conditions, and specifically under "celebration of similarities" and "celebrating differences" conditions stemming from alternative diversity management policies (Moghaddam, 2008, 2012).

But diversity in twenty-first century societies is far more than ethnicity. Among the most important basis for group formation is religion, and Study 3 tested intergroup similarity-attraction across religious groups.

Study 3

Study 3 tested the similarity-attraction relationship using Christian religious groups, following the same procedures and including the same three conditions as in Study 2. Religious groups are among those becoming increasingly diversified in the United States, and it is consequently important to evaluate if similarity and attraction is upheld in this demographic as well (Smith, 2002). Because religion can also be an ethnic identity marker (Soehl, 2020), we centered our study on traditional western religions (i.e., Christian religions) to reduce the possibility of ethnicity as a confounding factor. The similarity-attraction paradigm predicts an association between similarity and attraction in all three conditions, including when group differences are celebrated.

Methods

Participants and procedure

In Study 3, participants were recruited from Christian religious groups, Baptist, Catholic, and Protestant U.S. citizens (N = 1,004; 68% female; $M_{\rm age} = 37.75$, $SD_{\rm age} = 15.01$), through Prolific according to their self-identified religious orientation over a five-week time period (see Appendix 3 for complete participant demographics). The sample size was determined using power with effect size (f^2) of 0.1, p-level of .05, and a power (1- β) of .80. G*Power statistical software indicated an adequate number of at least 174 participants per group. However, we recruited a higher number of participants than Study 2 for increasing robustness. A total of 1004 participants completed the measures. Participant recruitment was restricted by age (18-100 years old), country of birth and residence (the United States), race/ethnicity (White), access to a computer, as well as their Christian affiliation (Baptist, Catholic, or Protestant). Participants received \$0.55 for completing the study.

Following a similar recruitment and procedure used in Study 2, participants were randomly assigned to one of the three experimental conditions in Qualtrics, this time reading a short paragraph that emphasized the celebration of religious differences (celebration of differences condition) or the celebration of religious commonalities (celebration of commonalities condition), or participants did not read any paragraph (control condition). Table 4 four shows the corresponding paragraph and prompt for the experimental conditions. Next, as in Studies 1 and 2, participants were asked to complete the PSI ($\alpha = .95$), and SD ($\alpha = .92$) measures to a randomly

Table 4. Experimental conditions in study 3.

	Celebration of Differences	Celebration of Commonalities
Paragraph	Major societies are made up of different religious groups, and each religious group is special and different. Celebrating religious group differences and treating each religious group as distinct is the right way to go. In schools, at work, in our social lives, we should always celebrate and give priority to religious differences and how each group is distinct	Human beings are far more similar to one another than they are different. Sometimes we forget about our huge similarities as humans, and get distracted by what are actually small religious group differences. In schools, at work, in our social lives, we should always celebrate and give priority to human commonalities and how we are all alike
Prompt	We should always celebrate and give priority to religious differences and how each group is distinct.	We should always celebrate and give priority to human commonalities and how we are all alike.

Note. The control condition did not include any paragraph.



Table 5. OLS regression models for social distance in study 3.

	Baptists	Catholics	Protestants
PSI	-0.45 (0.05)***	-0.52 (0.05)***	-0.35 (0.05)***
Condition			
Differences	-0.08 (0.12)	-0.00 (0.12)	0.00 (0.12)
Commonalities	0.29 (0.12)*	-0.06 (0.12)	0.01 (0.12)
N	361	356	279
R^2	.22	.22	.17

Note. The regression model also includes the participant's demographic characteristics (i.e., socioeconomic status, gender, and political ideology) and the target outgroup. Standardized coefficients are reported. *p<.05; **p<.01; ***p<.001.

assigned religious outgroup (either Baptists, Protestants, or Catholics). All participants responded to demographic questions following these psychological measures. The rest of the procedures followed that of Study 2.

Data analytic strategy

We used the same ANOVA and multivariate regression strategies as in Study 2. As in Study 2, we expected negative PSI coefficients to indicate support for the similarity-attraction paradigm. We also tested for interactions between the PSI and the experimental conditions.

Results

Results from Study 3 indicated a strong association between PSI and SD across all conditions and religious samples. Analysis of Variance (ANOVA) showed that PSI differs across experimental conditions for Protestants (F(2, 276) = 6.31, p = .002; $\eta^2 = .04$, 95% CI [.01, 1.00]). For Baptists, the main effect of PSI is statistically significant and negative (see Table 5, columns 2, row 2). The commonalities condition is statistically significant and positive (see Table 5, column 2). Thus, in Baptist participants, manipulating the perception of similarity is associated with the desire for closer social contact. For Catholics, the PSI was also found to be statistically significant and negative (see Table 5, column 3). Thus, holding all else equal, Catholic participants desired closer social contact with members of the outgroup perceived as more similar. Lastly, for Protestants, PSI is statistically significant and negative (see Table 5, column 4). Holding all else equal, protestant participants desired closer contact with outgroup members they saw as more similar.

In contrast to Study 2, the interaction terms were not found to be statistically significant. However, the main effect of PSI was found to be significant and negative.

Discussion

The relationship between similarity and attraction (H1) was upheld in all religious groups. The models show that Baptist, Catholic, and Protestant backgrounds desired increased interaction with those perceived as similar, regardless of the experimental conditions. The findings of Study 3 provide additional evidence supporting similarity-attraction within religious groups. Consistent with the Study 2 findings, participants preferred closer contact with "similar" others irrespective of experimental conditions that highlight similarities or differences in experimental conditions. Contrary to previous research, when we manipulated the perception of similarity (i.e., the commonalities condition), it led to an increase in desire for social contact. Yet, the interaction term (PSI × Commonalities condition) proved to be non-significant. However, further studies could examine the support of similarity-attraction to non-Western religions.

Table 6. Experimental conditions of study 4.

	Celebration of Differences	Celebration of Commonalities
Paragraph	People have different political beliefs, and the 'politically left' and the 'politically right' parts of America are very far apart. But we should celebrate political differences and enjoy political diversity in our population. The two sides being far apart is a positive thing."	highlight political differences between Americans, but
Prompt	We should celebrate political differences and enjoy political diversity in our population.	similarities and that is a good thing. We should celebrate the many similarities between the different sides of American politics.

Note. The control condition did not include any paragraph.

Study 4

Study 4 tested the similarity-attraction relationship using political orientation as the basis for group formation, following the same procedures and including the same three conditions as in studies 2 and 3. Again, the similarity-attraction paradigm predicts that participants would prefer contact with similar others in all three conditions.

Methods

Participants and procedure

In Study 4, we recruited about 606 Left and Right U.S. citizens (48% female; $M_{\rm age} = 42.69$, SD_{age} = 14.21) from Prolific Academic over a five-week period based on their self-identified political orientation (see Appendix 4 for complete participant demographics). A total of 626 participants completed the measures. Participants were excluded if they showed an intentional lack of effort (e.g., answering all measures with 5) and failed attention checks. These participants did not receive payment for their time. Participant recruitment was restricted by age (18-100 years old), country of birth and residence (the United States), access to a computer, as well as their Political Spectrum (Conservative and Liberal). Participants received \$1.2 for completing the study.

The procedures and conditions were the same as studies 2 and 3. Table 6 shows the experimental texts used in Study 4. In this study, participants were asked to complete the PSI (α = .95) and SD (α = .91) measures to a randomly assigned political group (either from the Left or Right).

Data analytic strategy

We used the same ANOVA and multivariate regression strategy as in the previous studies. We expected positive coefficients of PSI to indicate support for the similarity-attraction paradigm.

Results

Results from Study 4 indicated a strong association between PSI and SD across all conditions and political groups. ANOVA tests showed no significant differences between across the experimental conditions with respect to PSI or SD. For Conservatives, PSI is statistically significant and negative (see Table 7, column 2). In Conservative participants, an increase in the perception of similarity is associated with a desire for closer social contact. No other covariate was found significant at the 5% level of confidence. In Liberals, PSI was also found to be statistically significant and negative (see Table 7, column 3). When everything else is held constant, Liberals tend to have more social contact with outgroup members whom they perceive as more similar. In line with Study 3, the interaction term between PSI and the experimental conditions showed to be non-significant.

Table 7. OLS regression models for social distance in study 4.

	Conservatives	Liberals
PSI	-0.44 (0.06)***	-0.47 (0.05)***
Condition		
Differences	-0.19 (0.13)	0.01 (0.11)
Commonalities	-0.10 (0.13)	0.09 (0.11)
Num. Obs.	291	301
R2	.25	.36

Note. The regression model also includes the participant's demographic characteristics (i.e., socioeconomic status, gender, and political ideology). Standardized coefficients are reported. *p<.05; **p<.01; ***p<.001.

Discussion

Study 4 supports the similarity-attraction paradigm at the intergroup level in a political domain. US Conservatives and Liberals showed less social distance toward those they perceived to be more similar. The experimental conditions showed no significant effect on social distance, either alone or through the interaction with PSI.

Study 4 further extends the importance of perceiving similarities across the political spectrum in a polarized society. In a highly divided political landscape, where people often identify strongly with their respective parties, recognizing common ground can bridge the gap between differing ideologies. It allows individuals to engage in constructive dialogue, find areas of compromise, and work toward collective solutions. However, our experimental manipulation was not able to significantly decrease the social distance. Further research could investigate ways of promoting increased similarity and decreased social distance.

General discussion

Almost all similarity-attraction research has examined inter-personal and not intergroup relations. But similarity between groups, particularly ethnic, religious, and political groups, is arguably even more important in the twenty-first century. This is because diversity is increasing, the struggle to end intergroup discrimination has received more attention, multiculturalism has gained more prominence, and integral to multiculturalism is the celebration of group differences. In this changed context, where group differences are highlighted and celebrated, we tested the relationship between similarity and attraction at the intergroup level. First, we replicated the finding that similarity and attraction are positively associated across ethnic groups. Second, we demonstrated that the positive relationship between similarity and attraction remains stable for ethnic, religious, and political groups across conditions where similarity is celebrated, differences are celebrated, and also in a control condition absent the highlighting of intergroup similarities and differences. Across all four studies examining ethnic, religious, and political groups, the general pattern of results endorsed similarity-attraction at the intergroup level.

We investigated the overall effect of PSI by conducting a mini meta-analysis. A random-effects meta-analysis was conducted on the regression coefficients of the models of the four studies, revealing a significant average effect size of PSI of -0.39 (95% CI: -0.44 to -0.34, p < .001) (see Appendix 5). Only the Black/African American sample in Study 1 showed a non-significant coefficient of perceived similarity on social distance, and this result (which was in the similarity-attraction direction) also reached significance when the number of Black/African-American participants was increased in Study 2 (as part of an increase in the total participant sample).

The results of our studies, which show a high endorsement of the similarity attraction paradigm at the intergroup level, could lead to further reflections on policies for managing diversity. The dominant policy at present is multiculturalism, which is generally assumed to be beneficial to ethnic minorities

because they are supported to "stand out" and maintain, celebrate, and share their distinct identities and differences. A nationally representative sample of Americans showed that minorities supported multiculturalism and the celebration of differences, rather than an alternative policy of celebrating similarities (Moghaddam & Breckenridge, 2010). However, events related to security concerns, national identity, and a lack of societal integration have created "a general backlash against multiculturalism, the pendulum has swung back from celebrating diversity to insisting on forms of 'civic integration' and assimilation based on often rather unclear ideas about national values" (de Haas et al., 2020, p. 327).

The multicultural approach – which includes (but is not exclusive to, Berry, 2013; Moghaddam, 2008) the highlighting, celebration, and sharing of group differences – stands in contrast to an alternative omniculturalism approach, where similarities across groups are given priority and celebrated (Moghaddam, 2012; Moghaddam, 2024). Related to this similarity-based approach is the common ingroup identity model (Gaertner & Dovidio, 2005), which proposes that intergroup relations can be improved by changing the perceptions people have of "us" (ingroup) and "them" (outgroup), so that both ingroup and outgroup become perceived as members of a common category, "we." Evidence (Lemay & Ryan, 2021) supports the proposition that the adoption of a broader, common category could be influenced by perceived similarity, so that outgroup members perceived as similar are recategorized in a common category, as one of "us" (following self-categorization theory, Turner et al., 1987).

However, the consistency of similarity-attraction across the three conditions suggests that the celebration of differences and the celebration of commonalities did not affect the outcome in most cases. Only in Baptists (Study 3) does the celebration of commonalities lead to closer contact with the other. However, the celebration of commonalities did not show an interaction with similarities (PSI). This suggests that the celebration of commonalities may operate differently from the perception of similarity. Moreover, Study 2 showed significant interaction terms between similarities and the celebration of commonalities. In these cases, while the interaction between these variables endorses the similarity attraction paradigm, it decreases the influence of similarity (PSI) on social distance. Future research is needed to validate these findings, explore alternative ways in which the celebration of commonalities leads to closer contact, and investigate pushback reactions.

The implication is that the power of similarity-attraction at the intergroup level is considerable. A related interpretation is that the manipulations we introduced were not strong enough to overcome the influence of similarity-attraction. Future studies should be designed to incorporate even stronger contexts to test similarity-attraction in conditions where intergroup differences and similarities are celebrated.

A strength of our findings is the repeated replication of similarity-attraction at the intergroup level under different conditions (we see this as important, given the replication controversy in psychological science, Earp & Trafimow, 2015). However, a number of possible weaknesses are also relevant. First, despite the replication of findings across the four studies, all the studies involve online surveys and this is a possible limitation. Second, our measures of perceived similarity (although they are very similar to the measures used in the previous research in this area) are still fairly limited and could be supplemented with measures that provide a more in-depth understanding of the meaning of different types of intergroup similarity. Third, although the reliability scores for our measures were very high, and these measures are repeatedly used and are "standards" in the research literature, we did not test their validity in these three studies. Fourth, we followed a procedure where participants estimated their level of similarity with others. Our findings might not extend to conditions where participants are told how similar they are to others (as in Ioannou et al., 2017). Fifth, the four studies were conducted with participants in the United States, which is a polarized society, particularly on issues related to ethnic differences. However, the consistency of our findings is in line with the earlier research of Osbeck et al. (1997), demonstrating similarity-attraction at the intergroup level, conducted with participants in Canada. It is important that the results of these studies be tested in other Western and also non-Western societies. There are some promising results with Swedish participants show that individuals who are in settings with more outgroup members become less influenced by intergroup similarity (Zhao, 2023), suggesting that contact might in the long term to some extent weaken the power of



similarity-attraction at the intergroup level. Sixth, the scope of this study in testing the impact of diversity-management approaches on similarity-attraction is limited and does not encompass the varied dimensions of multiculturalism ideology (Grigoryev & Berry, 2021).

Nevertheless, our findings add to the extremely limited but important literature on similarity and intergroup relations. The consistent pattern of our results supports similarity-attraction, and this pattern largely holds across ethnic, religious, and political groups, as well as under three different conditions, including conditions where differences and similarities are celebrated. This raises questions about the diversity management policies being applied, as the world becomes more ethnically and religiously diverse.

While similarity-attraction at the intergroup level is endorsed by our research findings, future research could further explore reasons why similarity-attraction might not remain robust in a context where differences are celebrated, and also where similarities are celebrated. In a context where differences are celebrated, individuals might adopt a norm of perceiving intergroup differences as of high value, and they might be attracted to different rather than similar others. Alternatively, in a context where similarities are celebrated, similar others could be perceived as a threat to ingroup distinctiveness. This idea is in line with the need for a distinctive identity, integral to social identity theory (Tajfel & Turner, n.d.), and is supported by some empirical evidence (Amiot et al., 2012; Moghaddam & Stringer, 1988). Thus, future research could explore an alternative to the similarityattraction hypothesis, postulating that in conditions where either differences or similarities are celebrated, preference will be shown for contact with others who are different.

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This article has earned the Center for Open Science badges for Open Data and Open Materials through Open Practices Disclosure. The data and materials are openly accessible at https://osf.io/4vzuy/?view_only=77e8a36c82fb49b7a145df915015c00d.

Data statement

The findings of this study are openly available in the Open Science Foundation repository at [https://osf.io/4vzuy/?view_only=77e8a36c82fb49b7a145df915015c00d]. The study materials, data files, and program code used in the analysis can also be found at the same repository.

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Appendix 1 Demographic characteristics of Study 1 sample

Variable	Black/African American	Hispanic/Latin American	White American
	M(SD)	M(SD)	M(SD)
N	79	77	77
Gender (#)			
Female	22	35	44
Male	54	42	32
Gender variant, transgender	1	0	1
Prefer not to answer	1	0	0
Age (years)	33.89(10.47)	31.27 11.21)	39.17(12.84)
Education (#)			
Less than high school or equivalent	0	1	0
High school degree or equivalent	10	12	9
Associate degree	3	9	6
Some college but no degree	15	19	11
Bachelor's degree	29	29	24
Graduate degree	21	7	27
Socioeconomic status (1-10)	5.51(1.51)	5.14(1.24)	5.66(1.98)
Religiosity (1-9)	5.23(2.91)	3.92(2.81)	5.01(3.37)
Political orientation (1-9)	4.96(2.35)	4.79(2.30)	5.26(2.48)
Political ideology (1-9)	4.81(2.57)	4.73(2.60)	4.93(2.75)
Political party (#)			
Democrat	41	32	38
Independent	18	26	26
Republican	17	18	18
Other	2	1	5

Note. N = 233.

Appendix 2 **Demographic characteristics of Study 2 sample**

	Black/African American	Hispanic/Latin American	White American
Variable	M(SD)	M(SD)	M(SD)
N	281	260	253
Gender (#)			
Male	134	129	120
Female	144	129	129
Gender variant, transgender	2	2	4
Age (years)	29.71(10.19)	26.10(7.76)	34.84(12.62)
Education (#)			
Less than high school or equivalent	2	0	0
High school degree or equivalent	49	46	37
Associate degree	34	32	21
Some college but no degree	75	95	63
Bachelor's degree	70	69	83
Graduate degree	50	18	48
Socioeconomic status (1-10)	5.14(1.60)	5.02(1.54)	5.59(1.86)
Religiosity (1-9)	4.89(2.70)	4.45(2.82)	4.44(2.20)

(Continued)



(Continued).

	Black/African American	Hispanic/Latin American	White American
Variable	M(SD)	M(SD)	M(SD)
Political orientation (1-9)	3.88(2.14)	4.23(2.36)	4.47(2.44)
Political ideology (1-9)	3.81(2.26)	4.10(2.51)	4.52(2.58)
Political party (#)			
Democrat	160	113	106
Independent	26	60	67
Republican	84	68	67
Other	9	19	13

Note. N = 794.

Appendix 3 Demographic characteristics of Study 3 sample

	Baptist	Catholic	Protestant
Variable	M(SD)	M(SD)	M(SD)
N	361	364	280
Gender (#)			
Male	104	119	96
Female	257	243	181
Gender variant, transgender	0	2	2
Age (years)	37(14.64)	37.9(14.80)	38.51(15.73)
Education (#)			
Less than high school or equivalent	3	1	2
High school degree or equivalent	54	30	28
Associate degree	54	23	31
Some college but no degree	105	68	43
Bachelor's degree	103	154	104
Graduate degree	42	87	71
Socioeconomic status (1-10)	5.27(1.71)	5.77(1.52)	5.75(1.65)
Religiosity (1-9)	6.25(2.21)	4.78(2.39)	5.54(2.33)
Political orientation (1-9)	5.91(2.31)	4.48(2.28)	4.53(2.38)
Political ideology (1-9)	6.06(2.37)	4.46(2.37)	4.57(2.53)
Political party (#)			
Democrat	71	166	110
Independent	91	85	74
Republican	182	103	76
Other	14	7	16

Note. N = 1005.



Appendix 4 Demographic characteristics of Study 4 sample

Variable	Liberals <i>M(SD)</i>	Conservatives <i>M(SD)</i>
Gender (#)		
Male	155	148
Female	142	146
Gender variant, transgender	12	3
Ethnicity		
Asians	17	13
Black or African-American	19	15
White, non-Hispanic	268	261
Other	5	8
Age (years)	39.70(12.88)	45.80(14.87)
Education (#)		
Less than high school or equivalent	2	3
High school degree or equivalent	41	47
Associate degree	25	40
Some college but no degree	56	60
Bachelor's degree	122	105
Graduate degree	63	0
Socioeconomic status (1-10)	4.81(1.79)	5.22(1.85)
Religiosity (1-9)	2.43(2.18)	5.57(3.01)
Political orientation (1-9)	2.11(1.22)	7.30(1.33)
Political ideology (1-9)	2.11(1.22)	7.30(1.33)
Political party (#)		
Democrat	252	11
Independent	47	39
Republican	2	235
Other	8	12

Note. N = 606.

Appendix 5

Forest plot of a mini meta-analysis of PSI

