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Preference, Opportunity and Choice: A Multilevel Analysis of Diverse Friendship Formation

Angela J. Bahns
abahns@wellesley.edu

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Wellesley College

Direct correspondence to:
Angela J. Bahns
Department of Psychology
Wellesley College
Wellesley, MA 20481
Ph: 1-781-283-3560
abahns@wellesley.edu

Abstract

Diverse friendships offer many benefits for individuals and for intergroup relations, yet similarity is a powerful predictor of attraction and relationship formation. The current study examined how beliefs about the value of diversity relate to friendship choices. Naturally-occurring dyads (*N*=552) were recruited from ten college campus and community samples varying in size and racial heterogeneity. A questionnaire assessed dyad members' beliefs about the value of diversity (valuing diversity), ten social and political attitudes, and four social identity categories (race/ethnicity, religion, sexual orientation, nationality). Multilevel models were estimated to examine dyad-level valuing diversity, community size and community racial heterogeneity as predictors of diverse friendships. Valuing diversity was a significant predictor of diverse friendships; valuing diversity increased the likelihood that dyad members were diverse in race, religion, and sexual orientation but not in nationality or attitudes. The effect of valuing diversity varied according to community size and racial heterogeneity. Valuing diversity increased the likelihood of racially diverse friendships more in communities high compared to low in racial heterogeneity, and increased religiously diverse friendships more in smaller compared to larger communities. Valuing diversity was associated with greater attitude similarity in larger communities but was unrelated to attitude similarity in smaller communities.

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What factors facilitate diverse friendship formation? Sociologists and psychologists have long recognized that a complete understanding of cross-group friendship requires consideration of both individual-level characteristics such as people's *preferences* for same-group or cross-group friends and community-level characteristics such as size and racial heterogeneity which constrain people's *opportunities* to satisfy those preferences (Blau, 1977; Zeng & Xie, 2008). In an environment of free choice, friendship selection is guided by people's needs and goals (Bahns, Crandall, Gillath, & Preacher, 2017). Much attention has been paid to people's preferences for similarity in determining friendship choices (Cheng & Xie, 2013), but there has been relatively little focus on preferences for diversity.

Given the positive value commonly ascribed to the notion of diversity (Bell & Hartmann, 2007), it seems important to consider whether people's positive diversity beliefs are indicative of their friendship choices or whether they are merely paying "lip service" to the idea of diversity. To this end, the current research contributes to the existing literature on cross-group friendship by examining how beliefs about the value of diversity relate to friendship choices. Are people who say they value diversity more likely to have diverse friends?

The focus of this research is on a construct called *valuing diversity*, which measures individual differences in the "attitude of awareness and acceptance of both the similarities and differences among people" (Miville et al., 1999, p. 291). This construct employs a broad definition of diversity, encompassing multiple dimensions of social differences among people. A major goal of this research is to investigate how the relationship between valuing diversity and diverse friendship outcomes may differ depending on the form of diversity being considered. This research uses a behavioral measure of friendship choice by sampling naturally occurring dyads in public spaces and defining friendship outcomes as whether or not the dyad is "diverse"

or "not diverse." Pairs of adults were recruited from communities primarily in the Northeast region of the United States that varied from quite low to quite high in racial/ethnic diversity. While the vast majority of existing work on cross-group friendship is limited to the dimension of race/ethnicity, the current research measures friendship outcomes as "diverse" or "not diverse" along multiple dimensions including race/ethnicity, religion, sexual orientation, nationality, and attitudes and values. Bahns, Springer, and The (2015) found initial support for the hypothesis that valuing diversity is associated with having diverse friends, although this study looked only at attitudinal diversity of friendship pairs. The current research extends this work by adopting a broader view of what constitutes a diverse friendship.

Contact Hypothesis

Intergroup contact theory (Allport, 1954; Pettigrew, 1998) offers one of the most promising methods of prejudice reduction to come out of social science research. The idea seems deceivingly simple—ensure that members of different social groups have meaningful opportunities to interact and get to know one another. Yet from the beginning, intergroup contact theorists have recognized that simply putting people together does not guarantee prejudice reduction. In order for contact to reduce prejudice it must occur under a particular set of conditions, including equal status among groups, common goals, cooperation, and the support of authorities. These conditions can be difficult to achieve in formalized settings such as diversity training workshops or assigned workgroups. However, many of the conditions are naturally met in the context of a friendship between members of different groups. Indeed Pettigrew (1998) pointed out how the critical processes underlying intergroup contact effects (e.g., close affective ties and learning about the outgroup) are facilitated by cross-group friendship.

A growing body of evidence attests to the benefits of cross-group friendship for children and adults. In educational settings, students who have cross-group friends demonstrate better academic and social skills (Denson & Chang, 2009; Hunter & Elias, 1999) and report increased satisfaction with college (Mendoza-Denton & Page-Gould, 2008), increased peer support and reduced peer victimization (Kawabata & Crick, 2011b). Cross-group friendships also help to further the goal of improving intergroup relations by reducing prejudice (Davies, Tropp, Aron, Pettigrew, & Wright, 2011) and intergroup anxiety (Page-Gould, Mendoza-Denton, & Tropp, 2008), reducing intergroup threat (Pettigrew, Christ, Wagner, & Stellmacher, 2007), and increasing multicultural competence and volunteerism (Smith, Parr, Woods, Bauer, & Abraham, 2010). Yet while the benefits that diverse relationships have to offer are well-documented, there is still much to be learned about how individual and contextual factors jointly facilitate their formation (Tropp, O'Brien, & Migacheva, 2014; Turner & Cameron, 2016).

Preference for Similarity or Difference

Several models of friendship choice assume that people have a preference for similarity (often called "homophily bias"; Cheng & Xie, 2013; Joyner & Kao, 2000). This assumption is based on a large body of evidence of the similarity-attraction effect (Byrne, 1971), which demonstrates that people are attracted to others who are like them. When they have a choice, people tend to pick friends and other kinds of relationship partners who are similar to them. The similarity-attraction effect has been documented for attitudes and values (Byrne, 1997), personality (Bahns et al., 2017), behaviors (Urberg, Degirmencioglu, & Tolson, 1998), and demographic variables such as race, ethnicity, age, education, occupation, and gender (McPherson, Smith-Lovin, & Cook, 2001). Despite the demonstrated breadth of people's preferences for similarity, the vast majority of research on cross-group friendship looks only at

racial homophily (cf. Vanhoutte & Hooghe, 2012). Evidence for racial homophily in friendship choices is well-established, particularly among adolescents and young adults in school settings (Hamm, Brown, & Heck, 2005; Kupersmidt, DeRosier, & Patterson, 1995).

The lure of similarity is powerful and widespread. Seeking similar others is one strategy that helps humans meet their needs and further their goals. Forming relationships with others who are like us is one way to construct a safe, stable, and satisfying social environment (Bahns et al., 2017). Why then would anyone want to befriend people who are unfamiliar or who do not share their likes, preferences, and values? Considering the advantages of a similarity-seeking strategy of friendship initiation, preference for similarity can be construed as a psychological barrier to the formation of diverse friendships.

Although similarity-seeking is quite common, there are bound to be individual differences in how strongly people pursue this goal. Still others—especially those who recognize the benefits diverse friendships have to offer—may adopt a different goal entirely, characterized by difference-seeking. Recent findings suggest that positive diversity beliefs are associated with reduced prejudice and discrimination (Kauff, Issmer, & Nau, 2013; Kauff & Wagner, 2012) and increased interest in intergroup contact (Tropp & Bianchi, 2006). The current research extends these findings by using a behavioral measure to examine whether friendship pairs who value diversity highly are more likely to belong to different groups.

Previous work has identified some of the skill sets and experiences associated with having diverse friends. This work suggests that successfully navigating intergroup interactions both requires and builds social-cognitive skills such as empathy, sociability, and leadership (Esses & Dovidio, 2002; Turner & Cameron, 2016). Indeed, prior intergroup contact is one of the best predictors of having cross-race friends, so it seems that among the many benefits of

intergroup contact is increased interest in having diverse friends (Emerson, Kimbro, & Yancey, 2002; Ramiah, Hewstone, Voci, Cairns, & Hughes, 2013). Initial positive contact experiences are likely to spur increased interest and confidence in pursuing close ties with others from diverse backgrounds (Turner & Cameron, 2016). So while the relationship between intergroup contact and cross-group friendship is likely bidirectional, targeting beliefs about diversity can be an effective way to encourage diverse friendship formation. Research by Turner, Hewstone, and Voci (2007) supports this view, by showing that undergraduate students who viewed intergroup contact as valuable and important were more likely to have cross-group friends.

Finally, a number of demographic indicators have been shown to be associated with diverse friendships. Boys and men are somewhat more likely than girls and women to have diverse friends, though men are less likely than women to have friends of a different sexual orientation (Hamm et al., 2005; cf. Kawabata & Crick, 2011a; Vanhoutte & Hooghe, 2012). Younger compared to older adults (Vanhoutte & Hooghe, 2012), racial minority group members compared to racial majority group members (Hamm et al., 2005), people higher in socioeconomic status and with more education (de Souza Briggs, 2007; Vanhoutte & Hooghe, 2012), and immigrants with greater English proficiency (Fong & Isajiw, 2000) are all more likely to have cross-race friends.

In the current study, the effect of gender composition of the dyad on friendship choices was explored. Examining possible gender effects was important to the current study because the field method employed in this research samples naturally occurring dyads regardless of gender composition. Thus it seemed pertinent to investigate whether the likelihood of a dyad being diverse was different for pairs of women, pairs of men, and mixed-gender pairs.

Opportunity to Meet Diverse Others

Individual goals and preferences notwithstanding, it is important to consider how friendship choices are constrained by structural factors affecting people's opportunities to meet and form friendships with diverse others. Previous work suggests diverse friendships are more likely to form in smaller compared to larger contexts. For example, research has shown that school size and class size are negatively related to interracial friendship formation (Cheng & Xie, 2013; Currarini, Jackson, & Pin, 2010; Fischer, 2008) and that college campus size is negatively related to attitude diversity within friendship pairs (Bahns, Pickett, & Crandall, 2012). These studies suggest that along with greater friendship choice, comes more fine-grained assortment.

The racial/ethnic composition of the community is also likely to affect friendship choices. Blau's (1977) theory of social structure predicts that increased heterogeneity in a community promotes intergroup relations. Previous research has shown that greater racial/ethnic diversity of schools, classrooms, college campuses, and neighborhoods is positively associated with diverse friendship formation (Fischer, 2008; Khmelkov & Hallinan, 1999; Schmid, Al Ramiah, & Hewstone, 2014). Yet in a nationally representative sample of college students, Fischer (2008) found that even after controlling for racial/ethnic diversity of the campus, there was still considerable variance in cross-race friendships between institutions. This suggests that something more than mere opportunity to interact with diverse others affects diverse friendship formation.

To what extent are people's preferences for having diverse friends constrained by the size and diversity of their community? To examine this question a questionnaire-based field method (Crandall, Schiffhauer, & Harvey, 1999) was used to sample naturally-occurring pairs of people from college campus and community settings varying in size and racial/ethnic heterogeneity. Context size and racial/ethnic heterogeneity were selected as moderator variables based on

widespread support for their influence on friendship choices in the cross-group friendship

literature and because they can be objectively measured using archival data. It was hypothesized

that dyads who report higher valuing of diversity would be more likely to be diverse than dyads

who report lower valuing of diversity, and that the size and racial heterogeneity of the

community the dyads were sampled from would moderate this relationship. Past work has

demonstrated the expected relationship between valuing diversity and diverse friendships,

although the context was limited either to behavioral intentions (Tropp & Bianchi, 2006) or to

the domain of attitude diversity (Bahns et al., 2015). The current study extends prior work by

using a behavioral measure of friendship choices and examining the relationship for multiple

forms of diversity.

In regard to the predicted moderator effects, the current research tests the multiplicative

hypothesis that it is the combination of preference and opportunity (more than either factor

alone) that best explains friendship choices. This view recognizes that preferences for diversity

can either be advanced or obstructed by structural features promoting or preventing intergroup

contact, respectively. While valuing diversity and having opportunity to meet diverse others

should each independently increase the likelihood of having diverse friends, positive diversity

beliefs were expected to influence friendship outcomes the most when these two factors are

aligned. For example, racially diverse communities are likely to have social norms that support

diversity (van Geel & Vedder, 2011), which in turn are likely to bolster individual diversity

beliefs. Thus in accordance with previous work showing that smaller and more racially diverse

settings promote diverse friendship formation (Bahns et al., 2012; Cheng & Xie, 2013; Fischer,

2008), the predictive value of valuing diversity in determining friendship outcomes was expected

to be especially strong in small compared to large communities, and especially strong in communities that are high compared to low in racial heterogeneity.

Method

Participants

Participants were 552 dyads (1104 individuals) recruited from ten college or community samples (College 1, N=45 dyads), (College 2, N=49 dyads), (College 3, N=50 dyads), (College 4, N=101 dyads), (College 5, N=71 dyads), (Community 1, N=46 dyads) (Community 2, N=48 dyads), (Community 3, N=44 dyads), (Community 4, N=52 dyads), (Community 5, N=46 dyads). Samples were selected to vary in population size and racial/ethnic heterogeneity (descriptive statistics for each sample are reported in Table 1). College samples included research universities, liberal arts colleges, business schools, and engineering colleges in the Midwest and Northeast regions of the U.S. Community samples included selected neighborhoods of cities in the Northeast region of the U.S.

A racial heterogeneity index "H" (Moody, 2001; Simpson, 1949) was calculated using 2010 U.S. Census data (City of Boston, 2016a, 2016b; U.S. Census Bureau, 2016) or publicly available college enrollment statistics in order to characterize the racial/ethnic composition of each sample. This measure reflects the probability that two randomly selected individuals are from different racial/ethnic groups; higher values indicate greater heterogeneity. The racial heterogeneity index was calculated using six racial/ethnic group categories (White, Black/African American, Hispanic/Latino, Alaska Native or American Indian, Asian/Asian American, and multiracial/other); possible values range from .00 to .83.

Recruitment Procedure

Research assistants randomly approached naturally-occurring dyads in public spaces on college campuses and in neighborhoods of selected communities; both members of the dyad were asked to fill out a short questionnaire. Data collection took place between September 2012 and July 2015 and was carried out by undergraduate research assistants trained by the author. For each sample, locations for data collection were selected according to these criteria: (a) people are likely to be with another person they know; (b) people are likely to be at leisure or waiting around (and hence less likely to feel bothered by the request to participate). Examples of the locations where the data were collected are coffee shops, ice cream parlors, dining halls, food courts, bus stops, and subway stations.

Research assistants were instructed to approach "any group of exactly two people who appear to be interacting in some way." Researchers were trained to approach dyads in random fashion, with the goal of recruiting all dyads present in a given location. Potential participants were told the study was about social relationships and the "research protocol requires that we find two people at once." Willing participants were asked to affirm that they were at least 18 years of age and residents of the selected community (or students at the selected college or university). The majority of dyads approached on college campuses agreed to participate (average acceptance rate 78%); response rates were considerably lower in community samples (average acceptance rate 50%). Members of the dyads were asked to complete their questionnaires separately and to not discuss their answers.

While the recruitment procedure is likely to sample relationships of various kinds, the discussion of the findings is focused on the context of friendship. This is because in past research using the same method (Bahns et al., 2017), when relationship type was measured directly the overwhelming majority of pairs (89%, $N = 524$) reported being friends or acquaintances.

Relationship type was not measured in the current study due to space constraints; to encourage voluntary participation, the method requires that the questionnaire be kept short (one side of one sheet of paper). Gender composition of the dyad was included in the analysis, to compare the pattern of findings for mixed-gender pairs (who are more likely to be romantic couples) and same-gender pairs. This strategy was used to empirically justify treating all the dyads the same.

Materials

Valuing diversity. Beliefs about the value of diversity were assessed with 12 items (α = .77) from the Miville—Guzman Universality-Diversity Scale (Miville et al., 1999) adapted by Bahns et al. (2015). Items were selected to assess attitudes and behavioral tendencies that reflect positive views about diversity in the dimensions of race, ethnicity, sexual orientation, nationality, age, social class and disability status (see Appendix). Measurement of this construct was intentionally broad, with the goal of including beliefs that are relevant to the multiple dimensions of diversity included in the friendship outcome measures. The response scale was a 7-point Likert-type scale (1=*strongly disagree*, 7=*strongly agree*); higher scores reflect more positive beliefs about the value of diversity.

Attitude diversity (or similarity). Ten social and political attitudes were assessed with Likert-type scales. These items included "Anyone who is willing and able to work hard has a good chance of succeeding," "I believe that marriage should be between one man and one woman," "I support female contraception," "The average person can live a good enough life without religion," "Abortion should remain legal," (1=*strongly disagree*, 7=*strongly agree*), a single-item measure of political beliefs (1=*conservative*, 4=*moderate*, 7=*liberal*), and single-item feeling thermometers for four social groups (interracial couples, welfare recipients, prostitutes, fat people; 1=*very negative*, 7=*very positive*). Discrepancy scores were calculated as the absolute

value of the difference between scores for each member of the dyad. A composite measure (the mean discrepancy score) was used for analysis. Higher scores reflect greater attitude diversity; lower scores reflect greater attitude similarity.

Classifying dyads as "diverse" or "not diverse". Participants self-reported their *racial/ethnic group identity* (African, Black/African American, Asian, Asian American, European, Latino/a, Multiracial, Native American, White/Caucasian, "I prefer"—with option to specify), *religious group identity* (agnostic, atheist, Christian, Jewish, Buddhist, Muslim, "I prefer"—with option to specify), *sexual orientation* (heterosexual, bisexual, lesbian, gay, queer, questioning, "I prefer"—with option to specify), and *nationality* (asked to specify). For each of these four dimensions, dyads were classified as "diverse" if members reported different identity categories and "not diverse" if members reported the same identity category.

Friendship network diversity. Participants self-reported the number of close friends and the number of diverse friends they have. Close friends were defined as individuals one feels close to and with whom one can share personal information, *not* including relationships primarily maintained on social networking sites such as Facebook; diverse friends were defined as different from oneself in at least one of the following dimensions: sexual orientation, political affiliation, religious beliefs, ethnic/racial identity, social class, nationality. Proportion of diverse friends selected from close friends was used as an index of friendship network diversity.

Demographics. Participants were asked to report their gender identity (female, male, "I prefer"—with option to specify), age in years, and length of relationship in months ("How long have you known the person you are with right now?"). Gender identity was used to classify the gender composition of the dyads into three categories: female dyads, male dyads, and mixed-gender dyads.

Results

Characterizing the Communities

Table 1 presents sample-level descriptive statistics and correlations; additional descriptive statistics are available in the online supplements. Individuals tended to be older and pairs had known each other longer in community samples as compared to college samples (Supplementary Table 1). Table 1 shows that size and racial heterogeneity are moderately correlated, although this correlation is not statistically significant. Thus the goal of looking independently at the effects of community size and racial heterogeneity is reasonably met with this data set. Size is significantly correlated with attitude discrepancy. This indicates that, at the community-level, dyads are characterized by greater attitude diversity in larger compared to smaller communities.

Racial heterogeneity of the community is unrelated to valuing diversity (at the community-level). These aggregate data give some indication that dyads' beliefs about the value of diversity should be considered independently from the opportunity to meet diverse others afforded by the community. Finally, racial heterogeneity of the community and friendship network diversity are positively correlated. This finding demonstrates that people's reports of the diversity of their own friendship network are at least in part reflective of the racial heterogeneity of the community. Minority-status participants were more likely to be found with different-group people compared to majority-status participants (Supplementary Table 2).

Does Valuing Diversity Predict Diverse Relationships?

Data analysis strategy. A series of multilevel models was estimated using MPlus Version 7.4 (Muthén & Muthén, 1998-2015) with dyads nested within communities.

The first set of models tested dyad-level and community-level predictors of specific types

of diverse relationships. The models were estimated as generalized linear mixed models with

binary outcome variables using the Bernoulli response distribution and logit link function. The

models examined the likelihood of dyad members belonging to a different group (vs. same

group). For each binary outcome variable, relationship diversity was modeled in three stages:

baseline, dyad-level, and community-level. The final model is shown in Equation 1.

Level 1 Model

DIVERSE_Y_{ij} (0=same, 1=different) = $\beta_{0j} + \beta_{1j}$ (VALDIV) + β_{2j} (MEN) + β_{3j} (WOMEN)

Level 2 Model

$\beta_{0j} = \gamma_{00} + \gamma_{01}$ (LNSIZE) + γ_{02} (H) + u_{0j}

$\beta_{1j} = \gamma_{10} + \gamma_{11}$ (LNSIZE) + γ_{12} (H) + u_{1j} (1)

The likelihood of a dyad being diverse (DIVERSE_Y_{ij}) was modeled as a binary outcome

variable (0=same, 1=different) for each dyad (*i*) within each community (*j*), with Y_{ij} being either

race, religion, sexual orientation, or nationality. Dyad-level variables are represented as fixed

effects in the Level-1 equation by VALDIV (the mean of dyad members' scores on the valuing

diversity scale, grand mean centered), MEN and WOMEN (dummy-coded indicator variables for

male and female dyads, respectively, with mixed-gender dyads as the reference group).

Community size is represented in the Level-2 equations by LNSIZE (natural log[1] of the total

campus or community population, grand mean centered). Racial heterogeneity of the community

is represented in the Level-2 equations by H (grand mean centered). Cross-level interactions

between VALDIV and LNSIZE and between VALDIV and H are represented in the Level-2

equation for β_{1j}, testing whether the slope of valuing diversity varies across samples according to

community size or racial heterogeneity. The intercept, γ_{00}, represents the natural log of the odds

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[1] Population size was natural log transformed because the distribution was positively skewed.

of being in a diverse dyad for mixed-gender dyads at the grand mean of valuing diversity. The

error terms, u_{0j}, and u_{1j}, represent the model's random effects.

A "build up" model building strategy was used, starting with the null model, adding all

dyad-level variables first, then adding community-level variables one at a time, and retaining

only significant effects. The null models are reported in the top panel of Table 2 and the final

models are reported in the bottom panel of Table 2. For each outcome variable, the null model

indicated there were modest between-sample differences in the likelihood of dyad members

being diverse, which demonstrates the appropriateness of the multilevel analysis.

A second set of models tested dyad-level and community-level predictors of attitude

diversity. Attitude diversity was modeled in three stages: baseline, dyad-level, and community-

level. The final model is shown in Equation 2.

Level 1 Model

$$DISCREP_{ij} = \beta_{0j} + \beta_{1j} (VALDIV) + \beta_{2j} (MEN) + \beta_{3j} (WOMEN) + e_{ij}$$

Level 2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (LNSIZE) + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} (LNSIZE) + u_{1j} \qquad\qquad (2)$$

Attitude diversity within dyads ($DISCREP_{ij}$) was modeled as the mean discrepancy score on the

ten attitudes measured for each dyad (*i*) within each community (*j*). Dyad-level variables are

represented as fixed effects in the Level-1 equation by VALDIV[2], MEN and WOMEN.

Community size[3] is represented in the Level-2 equations by LNSIZE. A cross-level interaction

between VALDIV and LNSIZE is represented in the Level 2 equation for β_{1j}, testing whether the

slope of valuing diversity varies across samples according to community size. The intercept, γ_{00},

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[2] All variables were defined in the same way as in Equation 1.
[3] Racial heterogeneity was also tested as a Level 2 predictor, but it was not significant. In the final model only community size was retained as a Level 2 predictor.

represents the average attitude discrepancy for mixed-gender dyads at the grand mean of valuing diversity. The error terms, e_{ij}, u_{0j}, and u_{1j}, represent the model's random effects.

Race/ethnicity. The coefficient for valuing diversity was positive and significant (B=0.370, SE=0.148, p=.012), indicating that positive beliefs about diversity predict an increased likelihood of dyad members being different-race. The effects for gender composition of the dyad were not significant and therefore were not retained in the final model. The main effect of community heterogeneity was positive and significant (B=2.016, SE=0.955, p=.035), indicating that the likelihood of a dyad being different-race increases with racial heterogeneity of the community (see Table 3). The cross-level interaction between valuing diversity and heterogeneity was marginally significant (B=0.772, SE=0.452, p=.087).

The nature of the interaction is revealed by comparing the odds ratios for valuing diversity in samples that are "high" and "low" in racial heterogeneity. The odds ratio reflects the odds of dyad members being different-race for dyads "high" (1 SD above the grand mean) in valuing diversity relative to dyads "low" (1 SD below the grand mean) in valuing diversity. The odds ratio in samples that are "high" in racial heterogeneity is 1.899, and 1.378 in samples that are "low" in racial heterogeneity. This indicates that valuing diversity increases the likelihood of a dyad being different-race to a greater degree in more racially heterogeneous communities. This conclusion is corroborated by the probabilities displayed in Table 3. The main effect of community size and the cross-level interaction between valuing diversity and size were not significant and thus were not retained in the final model.

Together these findings suggest that communities high in racial diversity are more likely to foster racially diverse relationships than communities low in racial diversity. Further, dyads with positive diversity beliefs are especially likely to be racially diverse when there is ample

racial diversity in the pool of available relationship partners but racially diverse relationships may have less opportunity to form in racially homogeneous communities.

Religion. The coefficient for valuing diversity was positive and significant, indicating that positive diversity beliefs predicted an increased likelihood of dyad members being different-religion (B=0.323, SE=0.113, p=.004). The coefficient for MEN was positive and significant (B=0.562, SE=0.199, p=.005), indicating that male dyads compared to mixed-gender dyads are more likely to be different-religion. The coefficient for WOMEN was not significant (B=-0.045, SE=0.24, p=.85), indicating that female and mixed-gender dyads are equally likely to be different-religion. The coefficient for community size was negative and significant (B=-0.222, SE=0.030, p<.0005), indicating that the likelihood of dyad members having different religious identities is reduced in larger communities. The cross-level interaction between valuing diversity and size was marginally significant (B=-0.054, SE=0.032, p=.093).

The odds ratio for valuing diversity is 1.815 in smaller communities and 1.276 in larger communities. These values indicate that the likelihood of a dyad being different-religion is greater for dyads "high" in valuing diversity relative to dyads "low" in valuing diversity, and that the effect of valuing diversity is more pronounced in smaller communities. This conclusion is corroborated by the probabilities displayed in Table 4. The main effect of community heterogeneity and the cross-level interaction between valuing diversity and heterogeneity were not significant and thus were not retained in the final model.

Together these results suggest that smaller communities are more likely to foster religiously diverse relationships. Further, dyads with more positive diversity beliefs are generally more likely to be religiously diverse and there is some evidence that this is especially likely to be

true in smaller communities. Finally, pairs of men are more likely have different religious identities than are pairs of women or mixed-gender pairs.

Sexual orientation. The coefficient for valuing diversity was positive and significant (B=0.401, SE=0.202, p=.047), indicating that positive diversity beliefs predicted an increased likelihood of dyad members being different-sexual orientation. The coefficient for MEN was negative and significant (B=-1.08, SE=0.539, p=.045), indicating that male dyads are less likely than mixed-gender dyads to be different-sexual orientation. The coefficient for WOMEN was not significant (B=-0.094, SE=0.303, p=.757), indicating that female dyads and mixed-gender dyads are equally likely to be different-sexual orientation. The main effects[4] for community size and heterogeneity were not significant and thus were not retained in the final model.

The odds ratio for valuing diversity is 1.684, which indicates that dyads who score "high" on valuing diversity are more likely to be in a different-sexual orientation friendship than dyads who score "low" on valuing diversity. This conclusion is corroborated by the probabilities reported in Table 5. In general the likelihood of dyad members having different sexual orientations is quite low in comparison to the likelihood of dyads being different-race or different-religion. Pairs of men are especially unlikely to have different sexual orientations.

Nationality. The coefficient for valuing diversity was not significant (B=0.270, SE=0.175, p=.124) so the effect was not retained in the final model. The coefficient for MEN was positive and significant (B=0.682, SE=0.253, p=.007), indicating that male dyads are more likely than mixed-gender dyads to be different-nationality. The coefficient for WOMEN was not significant (B=-0.322, SE=0.299, p=.282), indicating that female dyads and mixed-gender dyads are equally likely to be different-nationality.

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[4] Cross-level interactions were not estimated because the slope of valuing diversity did not vary across samples.

The main effect of heterogeneity was not significant (B=1.388, SE=1.322, p=.294) but the cross-level interaction was significant (B=4.496, SE=1.796, p=.012), indicating that between-sample differences in the slope for MEN are at least in part accounted for by differences in racial heterogeneity of the community. The nature of the cross-level interaction is revealed by comparing the odds ratios in samples that are "high" and "low" in racial heterogeneity. The odds ratio for male dyads (relative to mixed-gender dyads) is 4.117 in communities "high" in racial heterogeneity and 0.963 in communities "low" in racial heterogeneity. These values indicate that male dyads are more likely to be diverse in nationality than mixed-gender dyads, but only in racially diverse communities. This conclusion is corroborated by the probabilities reported in Table 6. The main effect and cross-level interaction for community size were not significant and thus were not retained in the final model.

The ICC calculated from the final model indicates that after taking gender composition of the dyad and community racial heterogeneity into account, 7.8% of the between-sample variance on the latent variable y (DIVERSE_NATIONALITY$_{ij}$) is left unexplained. It seems that the factors that were tested are not particularly good predictors of whether or not dyads are diverse in terms of nationality. One possibility is that proportion of immigrants (in community samples) or proportion of international students (in college samples) may be a better marker of opportunity to meet people of different nationalities than is racial heterogeneity.

Attitudes and values. A series of nested models estimated the likelihood of a dyad being attitudinally diverse (see Table 7), starting with the null model (Model 1). Model 2 added dyad-level predictors of attitude discrepancy as fixed effects. Model 3 added community size as a Level-2 predictor of intercepts. In Model 4, the slope of valuing diversity was allowed to vary

randomly across samples and community size was estimated as a Level-2 predictor of intercepts and slopes.

In the final model (Model 4) there were significant effects for valuing diversity (B=-0.125, SE=0.047, p=.008) and gender composition of the dyad. The negative coefficient for valuing diversity indicates that valuing diversity was associated with less attitude discrepancy (greater attitude similarity). The positive coefficient for MEN (B=0.155, SE=0.056, p=.006) indicates that male dyads compared to mixed-gender dyads were more attitudinally discrepant. The coefficient for WOMEN was not significant (B=0.047, SE=0.051, p=.361), which indicates that female and mixed-gender dyads did not differ in attitude discrepancy. Community size was a significant predictor of attitude discrepancy (B=0.034, SE=0.008, p<.0005); the positive coefficient indicates that dyads recruited in larger compared to smaller communities were on average more attitudinally diverse.

The cross-level interaction between valuing diversity and community size was significant (B=-0.050, SE=0.014, p<.0005). Follow-up tests revealed that the simple slope is negative and significant in larger (1 SD above the mean; B=-0.251, SE =0.050, p <.0005) and moderately sized communities (at the grand mean; B=-0.125, SE=0.047, p=.008) and nonsignificant in smaller communities (1 SD below the mean; B=0.001, SE=0.067, p=.99)[5]. These findings reveal that in larger and moderately sized communities valuing diversity was predictive of attitude similarity, whereas in smaller communities valuing diversity was unrelated to attitude similarity.

The standard deviation of attitude discrepancy scores is generally larger in larger communities (see Table 1). So while dyads are on average more attitudinally diverse in larger communities, there is greater variation around the mean compared to smaller communities. The

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[5] The simple slope is negative and significant in 7 of 10 samples; the simple slope is nonsignificant in the 3 smallest samples, all of which are college samples.

results of Model 4 indicate that this variation can be predicted by valuing diversity scores. Except in the smallest communities, dyads with more positive diversity beliefs were more attitudinally *similar* than dyads with less positive diversity beliefs.

Discussion

With these data, we are able to discover some of the factors that facilitate the formation of diverse relationships. The data tell a complex story, and highlight the importance of considering both preferences for diversity and opportunities to meet those who are different from oneself. Do people's beliefs about the value of diversity predict their friendship choices? It seems that they do, although the nature of this relationship changes rather drastically depending on the form of diversity being considered.

Perhaps the most common understanding of diversity is difference on the dimension of race or ethnicity (Bell & Hartmann, 2007). Indeed the literature on cross-group friendship primarily examines interracial friendship. In the current study dyads who reported valuing diversity were more likely to be racially diverse. Positive diversity beliefs were also predictive of diverse friendships as defined by other social identity categories including religion and sexual orientation. In stark contrast, when the form of diversity being considered was attitudes and values, positive diversity beliefs were associated with choosing *similar* friends. Dyads who value diversity highly were even more likely than dyads who value diversity less to share attitudes and values. When dyads say they value diversity, it seems, they are not necessarily thinking about diversity of thought. Instead, scoring high on the valuing diversity scale may be a marker of shared liberal values.

The relationship between valuing diversity and attitude similarity identified in the current study is inconsistent with the findings of Bahns et al. (2015). The measure of diversity beliefs

used in both of these studies was intentionally designed to reference multiple dimensions of diversity. Thus it is possible that diversity of thought is an important component of one's beliefs about the value of diversity for some individuals but not for all. Based on in-depth interviews exploring popular conceptions of diversity in four large U.S. cities, Bell and Hartmann (2007) suggest that in everyday discourse people often define diversity broadly. The people they interviewed generally recognized that diversity is about celebrating differences among people which may include "situations, or opinions, or attitudes" (Bell & Hartmann, 2007, p. 904). When pressed to describe their own experiences with diversity, however, Bell and Hartmann found that people often shift from a more general understanding of diversity to one almost entirely based on race. Future research should assess people's beliefs about the value of diversity of thought more directly, to clarify the relationship between such beliefs and friendship choices. Future research should also explore whether one's own identification with a given social identity category determines whether valuing diversity on that dimension predicts friendship choices.

Valuing diversity was not a reliable predictor of whether the dyads we sampled were diverse in terms of nationality. The direction of the effect was positive as expected, but the effect size was not as strong as for the other outcome measures. While the measure of valuing diversity used in this research does include items assessing interest in knowing people from different countries or who speak different languages, it may be that race and ethnicity were foremost in people's minds as they responded to the questionnaire. Alternatively, the weaker relationship identified for nationality as compared to race may reflect greater between-sample variation in the frequency of different-nationality dyads as compared to different-race dyads.

Preferences for diversity notwithstanding, opportunity to meet people who are different is a key factor in the formation of diverse friendships. The findings show that the relationship

between valuing diversity and friendship outcomes is qualified by the size and racial heterogeneity of the community. As expected, the pairs we sampled were more likely to be racially diverse in communities that score high on the racial heterogeneity index. This is consistent with past work on the effects of context racial heterogeneity on interracial friendship (Fischer, 2008; Khmelkov & Hallinan, 1999; Schmid et al., 2014). People were also more likely to be found with someone of a different nationality in racially diverse communities. And yet, the effect of racial heterogeneity of the community on friendship choice is not just a straightforward effect of increasing opportunity to meet diverse others. The data show that the strength of the relationship between diversity beliefs and diverse friendship outcomes varies according to the racial heterogeneity of the community.

While dyads who say they value diversity were more likely to be racially diverse overall, this effect was more pronounced in communities high compared to low in racial heterogeneity. This finding is consistent with the multiplicative hypothesis that valuing diversity influences friendship choices the most when the structural features of the community promote intergroup contact. In other words, racial heterogeneity of the community amplifies the effect of diversity beliefs. Perhaps social norms regarding the value of diversity are more positive in communities that are higher in racial heterogeneity. This explanation is consistent with work showing the importance of peer norms of inclusion and multicultural campus climate in determining children's and college students' interest in cross-ethnic friendships (Simmons, Wittig, & Grant, 2010; Tropp et al., 2014). People's diversity beliefs are bolstered when institutional norms support diversity, and positive diversity norms are especially likely in racially diverse environments (van Geel & Vedder, 2011).

Previous research suggests that diverse friendships are more likely to form in smaller compared to larger contexts because having more choice makes it easier to find people who are similar to oneself (Bahns et al., 2012; Cheng & Xie, 2013). Consistent with this argument, in the current study people were more likely to be with someone of a different religion in smaller compared to larger communities. The findings were also consistent with the predicted moderator effect, showing that valuing diversity increased the likelihood of a dyad being religiously diverse more in smaller compared to larger communities.

Contrary to the predictions, however, the pairs we sampled were on average more attitudinally diverse in larger compared to smaller communities. This finding, taken alone, seems contradictory to the findings of Bahns and colleagues (2012) who found that college students were more attitudinally similar to their friends at a large campus compared to smaller campuses. However, when community size is considered in the context of beliefs about diversity, it becomes clear that in larger contexts valuing diversity is associated with attitude similarity among friends. Consistent with Hackett and Hogg's (2014) work on the diversity paradox, valuing diversity is a value that many people hope is shared by others in their community. In the current study dyad members' scores on the valuing diversity scale tended to be similar, so it is perhaps not surprising that dyads who endorsed valuing diversity tended to share other liberal attitudes and values as well.[6] If value similarity is a goal, people can more easily interact and form friendships with others who share their liberal attitudes in larger communities.

With respect to gender, the findings of the current study are mostly consistent with previous findings (Hamm et al., 2005; cf. Kawabata & Crick, 2011a; Vanhoutte & Hooghe, 2012). Pairs of men, relative to pairs of women and mixed-gender pairs, were more likely to be

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[6] The intraclass correlation for the valuing diversity scale is .26 (p<.001), indicating that members of the dyad were similar to each other in valuing diversity. Valuing diversity correlated positively with 9 of the 10 liberal attitudes assessed, mean r = .19.

diverse in terms of religion and nationality and less likely to be diverse in terms of sexual orientation. The latter finding is consistent with research on homophobia which shows that heterosexual men are especially likely to have negative attitudes toward gay men (Kite & Whitley, 1996). Gender was unrelated to friendship outcomes for the models focused on race or attitudes and values. Importantly, in all of the models mixed-gender pairs were not reliably distinguished from same-gender pairs. And since the relationships of mixed-gender pairs are more likely to be romantic than those of same-gender pairs, the conclusions drawn from these data can reasonably be applied to the context of friendship.

This research contributes to the understanding of diverse friendships in several ways. First, it demonstrates that dyad members' beliefs about the value of diversity reliably predict friendship outcomes. The current research builds upon past work by incorporating a behavioral measure of friendship outcomes rather than relying on self-reported interest in intergroup contact (Tropp & Bianchi, 2006). The pairs of people we sampled who reported more positive beliefs about diversity were more likely to belong to different racial/ethnic, religious, or sexual orientation groups. And while the self-report measure of diversity beliefs is likely subject to social desirability bias, it was still predictive of friendship outcomes. Self-presentational concerns are much less of a concern with a behavioral measure of friendship outcomes. For example, it is quite unlikely that with whom people appeared in a public place was influenced by a desire to be politically correct, because pairs were identified and recruited before they learned the purpose of the study.

Second, previous research on diverse friendships is dominated by work on interracial friendships. The current research extends the understanding of diverse friendships by employing a broad conception of diversity. The measure of diversity beliefs and the outcome measures span

multiple forms of diversity. Adopting a broad conception of diversity allows one to discover that the relationship between diversity beliefs and diverse friendships is quite different depending on whether the form of diverse friendship being considered is a socio-demographic dimension such as race, religion, or sexual orientation; or a value-based dimension such as social and political attitudes.

Third, the current study used a multilevel approach to highlight how a difference-seeking strategy of friendship selection can either be facilitated or hindered by the number and variety of social choices one is afforded by the surrounding community. Recruiting pairs from communities that varied in both size and racial heterogeneity allowed for a more complete understanding of these community-level factors. It seems that dyads who value diversity are more likely to be diverse in social environments with greater variety of choices, at least when the form of diversity being considered is race or nationality. However, when religion or attitudes and values is the form of diversity being considered, dyads who value diversity seem to be *less* likely to be diverse in environments with greater number of choices.

The current findings demonstrate that people's diversity beliefs are meaningful indicators of their behavior. This suggests that for interventions aiming to encourage diverse friendship formation, a reasonable strategy is to focus on educating people about the value of diversity. At the same time, difference-seeking goals can only be realized when there is ample opportunity to meet people who are different. However, simply bringing diverse people to a community without attending to personal diversity beliefs and the broader diversity climate may backfire. For people who prefer to be with people who are like them, a diverse environment only makes it easier to satisfy similarity-seeking goals (Bahns et al., 2012). Moreover, the findings suggest that

interventions that target people's personal beliefs about diversity are likely to be most effective when the salient social norm in the community is one that values diversity.

Despite its strengths there are several limitations of the current study. The majority of the data were collected in the northeast region of the United States, where people tend to hold more liberal political beliefs than in other regions of the country. Consequently, diversity beliefs are likely to be more positive in these samples than they would be in a nationally representative sample. Importantly, diversity beliefs were still helpful in distinguishing among diverse and non-diverse friendships even with this restriction of range. In addition the conclusions about size and racial heterogeneity of the community may be influenced by the particular communities included in the sample. While every attempt was made to sample from communities representing the fullest possible range of size and racial heterogeneity, it was difficult to identify communities that were both large in size and low in racial heterogeneity. Thus the natural confounding of population size and diversity should be kept in mind when interpreting the findings, particularly in regard to the effect of opportunity to meet diverse others. Similarly, population size and sample type (college or community) are confounded, with the smallest samples being college samples and the largest samples being community samples. This may affect the interpretation of results in regard to community size. Exploratory analyses confirmed, however, that the continuous measure of population size gives a more precise picture of variance across samples than the dichotomous measure of sample type. Finally, relationship type was not assessed directly in the current study, which should be noted as a limitation. While it is not clear that all pairs in the current study would call themselves friends, it is clear that appearing together in public reflects a meaningful social choice that is reliably related to their diversity beliefs.

Conclusions

People's beliefs about the value of the diversity are related to their friendship choices. Among pairs of people who were found together in public places, those who said they value diversity were indeed more likely to be diverse in race, religion, or sexual orientation; however, in larger communities they were also more likely to be similar in attitudes and values. Diversity beliefs were more strongly related to friendship choices in communities with ample opportunity to meet people who are different from oneself. Policies and interventions that aim to increase the formation of diverse friendships should consider both preferences and opportunities for meeting diverse others. In addition, special attention should be paid to the form of diversity being considered.

References

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

Bahns, A. J., Crandall, C. S., Gillath, O., & Preacher, K. J. (2017). Similarity in relationships as niche construction: Choice, stability, and influence within dyads in a free choice environment. *Journal of Personality and Social Psychology*, *112* (2), 329-355. doi:10.1037/pspp0000088

Bahns, A. J., Pickett, K. M., & Crandall, C. S. (2012). Social ecology of similarity: Big schools, small schools and social relationships. *Group Processes & Intergroup Relations, 15*(1), 119-131. doi:10.1177/1368430211410751

Bahns, A. J., Springer, L. S., & The, C. (2015). Fostering diverse friendships: The role of beliefs about the value of diversity. *Group Processes & Intergroup Relations, 18*(4), 475-488. doi:10.1177/1368430214566893

Bell, J. M., & Hartmann, D. (2007). Diversity in everyday discourse: The cultural ambiguities and consequences of "Happy Talk". *American Sociological Review, 72*(6), 895-914. doi: 10.1177/000312240707200603

Blau, P. M. (1977). A macrosociological theory of social structure. *American Journal of Sociology, 83*, 26-54. doi:10.1086/226505

Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.

Byrne, D. (1997). An overview (and underview) of research and theory within the attraction paradigm. *Journal of Social and Personal Relationships, 14*(3), 417-431. doi:10.1177/0265407597143008

Cheng, S., & Xie, Y. (2013). Structural effect of size on interracial friendship. *Proceedings of the National Academy of Sciences, USA, 110*(18), 7165-7169. doi:10.1073/pnas.1303748110

City of Boston. (2016a). *Back Bay/Beacon Hill data profile: Population demographics*.

Retrieved from https://www.boston.gov/sites/default/files/documentfile-07-

2016/backbay-beaconhill_planning_district_profile.pdf

City of Boston. (2016b). *Dorchester data profile: Population demographics*. Retrieved from

https://www.boston.gov/sites/default/files/document-file-07-

2016/dorchester_planning_district_profile.pdf

Crandall, C. S., Schiffhauer, K. L., & Harvey, R. (1999). Friendship pair similarity as a measure

of group value. *Group Dynamics, 1*, 133-143. doi: 10.1037/1089-2699.1.2.133

Currarini, S., Jackson, M. O., & Pin, P. (2010). Identifying the roles of race-based choice and

chance in high school friendship network formation. *Proc Natl Acad Sci U S A, 107*(11),

4857-4861. doi:10.1073/pnas.0911793107

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-group

friendships and intergroup attitudes: A meta-analytic review. *Personality and Social

Psychology Review, 15*(4), 332-351. doi:10.1177/1088868311411103

de Souza Briggs, X. (2007). 'Some of my best friends are....': Interracial friendships, class, and

segregation in America. *City & Community, 6*(4), 263-290. doi:10.1111/j.1540-

6040.2007.00228.x

Denson, N., & Chang, M. J. (2009). Racial diversity matters: The impact of diversity-related

student engagement and institutional context. *American Educational Research Journal,

46*(2), 322-353. doi:10.3102/0002831208323278

Emerson, M. O., Kimbro, R. T., & Yancey, G. (2002). Contact theory extended: The effects of

prior racial contact on current social ties. *Social Science Quarterly, 83*(3), 745-761.

doi:10.1111/1540-6237.00112

Esses, V. M., & Dovidio, J. F. (2002). The role of emotions in determining willingness to engage in intergroup contact. *Personality and Social Psychology Bulletin, 28*(9), 1202-1214. doi:10.1177/01461672022812006

Fischer, M. J. (2008). Does campus diversity promote friendship diversity? A look at interracial friendships in college. *Social Science Quarterly, 89*(3), 631-655. doi:10.1111/j.1540-6237.2008.00552.x

Fong, E., & Isajiw, W. W. (2000). Determinants of friendship choices in multiethnic society. *Sociological Forum, 15*(2), 249-271. doi:10.1023/a:1007569424332

Hackett, J. D., & Hogg, M. A. (2014). The diversity paradox: When people who value diversity surround themselves with likeminded others. *Journal of Applied Social Psychology, 44,* 415-422. doi: 10.1111/jasp.12233

Hamm, J. V., Brown, B. B., & Heck, D. J. (2005). Bridging the ethnic divide: Student and school characteristics in African American, Asian-descent, Latino, and White adolescents' cross-ethnic friend nominations. *Journal of Research on Adolescence, 15*(1), 21-46. doi:10.1111/j.1532-7795.2005.00085.x

Hunter, L., & Elias, M. J. (1999). Interracial friendships, multicultural sensitivity, and social competence: How are they related? *Journal of Applied Developmental Psychology, 20*(4), 551-573. doi:10.1016/s0193-3973(99)00028-3

Joyner, K., & Kao, G. (2000). School racial composition and adolescent racial homophily. *Social Science Quarterly, 81*(3), 810-825. Retrieved from http://www.jstor.org/stable/42864005

Kauff, M., Issmer, C., & Nau, J. (2013). Pro-diversity beliefs and everyday ethnic discrimination on grounds of foreign names. *Journal of Community & Applied Social Psychology, 23*(6), 536-542. doi:10.1002/casp.2143

Kauff, M., & Wagner, U. (2012). Valuable but not threatening: The influence of divesrity beliefs on discrimination against immigrants. *Socail Psychological and Personality Science, 3*, 714-721. doi:10.1177/1948550611435942

Kawabata, Y., & Crick, N. R. (2011a). The antecedents of friendships in moderately diverse classrooms: Social preference, social impact, and social behavior. *International Journal of Behavioral Development, 35*(1), 48-57. doi:10.1177/0165025410368946

Kawabata, Y., & Crick, N. R. (2011b). The significance of cross-racial/ethnic friendships: Associations with peer victimization, peer support, sociometric status, and classroom diversity. *Developmental Psychology, 47*(6), 1763-1775. doi:10.1037/a0025399

Khmelkov, V. T., & Hallinan, M. T. (1999). Organizational effects on race relations in schools. *Journal of Social Issues, 55*(4), 627-645. doi:10.1111/0022-4537.00139

Kite, M. E., & Whitley, B. E. (1996). Sex differences in attitudes toward homosexual persons, behaviors, and civil rights: A meta-analysis. *Personality and Social Psychology Bulletin, 22*(4), 336-353. doi:10.1177/0146167296224002

Kupersmidt, J. B., DeRosier, M. E., & Patterson, C. P. (1995). Similarity as the basis for children's friendships: The roles of sociometric status, aggressive and withdrawn behavior, academic achievement and demographic characteristics. *Journal of Social and Personal Relationships, 12*(3), 439-452. doi:10.1177/0265407595123007

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology, 27*, 415-444. doi:10.1146/annurev.soc.27.1.415

Mendoza-Denton, R., & Page-Gould, E. (2008). Can cross-group friendships influence minority students' well-being at historically white universities? *Psychological Science, 19*(9), 933-939. doi:10.1111/j.1467-9280.2008.02179.x

Miville, M. L., Gelso, C. J., Pannu, R., Liu, W., Touradji, P., Holloway, P., & Fuertes, J. (1999). Appreciating similarities and valuing differences: The Miville-Guzman universality-diversity scale. *Journal of Counseling Psychology, 46*(3), 291-307. doi:10.1037//0022-0167.46.3.291

Moody, J. (2001). Race, school integration, and friendship segregation in America. *American Journal of Sociology, 107*(3), 679-716. doi:10.1086/338954

Muthén, L. K., & Muthén, B. O. (1998–2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Page-Gould, E., Mendoza-Denton, R., & Tropp, L. R. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology, 95*(5), 1080-1094. doi:10.1037/0022-3514.95.5.1080

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology, 49*, 65-85. doi:10.1146/annurev.psych.49.1.65

Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. (2007). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations, 31*(4), 411-425. doi:10.1016/j.ijintrel.2006.11.003

Ramiah, A. A., Hewstone, M., Voci, A., Cairns, E., & Hughes, J. (2013). It's never too late for 'us' to meet 'them': Prior intergroup friendships moderate the impact of later intergroup friendships in educational settings. *British Journal of Educational Psychology, 83*(1), 57-75. doi:10.1111/j.2044-8279.2011.02054.x

Schmid, K., Al Ramiah, A., & Hewstone, M. (2014). Neighborhood ethnic diversity and trust: The role of intergroup contact and perceived threat. *Psychological Science, 25*(3), 665-674. doi:10.1177/0956797613508956

Simmons, S. J., Wittig, M. A., & Grant, S. K. (2010). A mutual acculturation model of multicultural campus climate and acceptance of diversity. *Cultural Diversity and Ethnic Minority Psychology, 16*(4), 468-475. doi:10.1037/a0020237

Simpson, E. (1949). Measurement of diversity. *Nature, 163*(4148), 688. doi:10.1038/163688a0

Smith, H., Parr, R., Woods, R., Bauer, B., & Abraham, T. (2010). Five years after graduation: Undergraduate cross-group friendships and multicultural curriculum predict current attitudes and activities. *Journal of College Student Development, 51*(4), 385-402. doi:10.1353/csd.0.0141

Tropp, L. R., & Bianchi, R. A. (2006). Valuing diversity and interest in intergroup contact. *Journal of Social Issues, 3*, 533-551. doi:10.1111/j.1540-4560.2006.00472.x

Tropp, L. R., O'Brien, T. C., & Migacheva, K. (2014). How peer norms of inclusion and exclusion predict children's interest in cross-ethnic friendships. *Journal of Social Issues, 70*(1), 151-166. doi:10.1111/josi.12052

Turner, R., & Cameron, L. (2016). Confidence in contact: A new perspective on promoting cross-group friendship among children and adolescents. *Social Issues and Policy Review, 10*, 212-246. doi: 10.1111/sipr.12023

Turner, R., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology, 93*, 369-388. doi:10.1037/0022-3514.93.3.369

Urberg, K. A., Degirmencioglu, S. M., & Tolson, J. M. (1998). Adolescent friendship selection and termination: The role of similarity. *Journal of Social and Personal Relationships, 15*(5), 703-710. doi:10.1177/0265407598155008

van Geel, M., & Vedder, P. (2011). Multicultural attitudes among adolescents: The role of ethnic diversity in the classroom. *Group Processes & Intergroup Relations, 14*(4), 549-558. doi:10.1177/1368430210379007

Vanhoutte, B., & Hooghe, M. (2012). Do diverse geographical contexts lead to diverse friendship networks? A multilevel analysis of Belgian survey data. *International Journal of Intercultural Relations, 36*(3), 343-352. doi:10.1016/j.ijintrel.2011.09.003

Zeng, Z., & Xie, Y. (2008). A preference-opportunity-choice framework with applications to intergroup friendship. *American Journal of Sociology, 114*, 615-648. doi: 10.1086/592863

Table 1

Sample-Level Descriptive Statistics and Correlations

Sample	Size	H	Valuing diversity		Network diversity		Attitude discrepancy		Proportion of Diverse Friendships			
			M	*SD*	*M*	*SD*	*M*	*SD*	Race	Religion	Orient.	Nation.
Community 1	27,982	.309	5.40_{cd}	.75	.37	.31	1.29	0.51	17%	39%	5%	26%
Community 2	27,476	.329	5.48_{ce}	.81	.58	.32	1.45	0.60	46%	54%	16%	63%
College 1	19,695	.393	4.72_a	.92	.44	.34	1.32	0.64	40%	38%	12%	44%
College 2	326	.566	5.13_{bf}	.67	.58	.26	1.31	0.51	47%	80%	20%	55%
Community 3	1,585,873	.675	5.19_{bd}	.91	.51	.37	1.66	0.74	40%	45%	11%	73%
College 3	3,250	.680	5.33_{defg}	.75	.53	.30	1.47	0.60	58%	66%	4%	68%
College 4	2,364	.712	5.57_c	.69	.67	.29	1.33	0.66	59%	70%	24%	65%
College 5	11,189	.713	5.09_b	.75	.59	.30	1.20	0.65	59%	69%	11%	43%
Community 4	88,333	.748	5.50_{cg}	.78	.58	.36	1.45	0.63	43%	47%	17%	45%
Community 5	2,230,722	.763	5.10_c	.84	.57	.34	1.65	0.71	51%	36%	12%	82%
Total			5.28	.81	.56	.32	1.39	0.64	47%	54%	14%	50%

Correlations	1.	2.	3.	4.	5.
1. Size	--				
2. H	.40	--			
3. Val. diversity	-.22	.10	--		
4. Network div.	.02	.63*	.37	--	
5. Attitude disc.	.82**	.34	.06	.06	--

Note. Valuing diversity and network diversity were measured at the individual-level. Attitude discrepancy (Attitude disc.) is defined at the dyad-level; it is the mean difference between dyad members' scores on the ten attitude items. The table reports sample-level means for each of these variables. Means sharing the same subscript do not significantly differ. Proportion of diverse friendships reflects the percentage of dyads in the sample that were classified as "diverse" (dyad members selected different identity categories). Size=population size. H=racial heterogeneity index. Network diversity (Network div.)=proportion of diverse friends/close friends. Orient.=sexual orientation. Nation.=nationality. Val. diversity = valuing diversity. *$p \le .05$. **$p < .01$.

Table 2

Generalized Linear Mixed Models Predicting the Likelihood of a Dyad Being Diverse

	Race		Religion		Sexual orientation		Nationality	
	B	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Null model								
Fixed effects								
Intercept	-0.144	0.176	0.214	0.202	-1.881***	0.194	0.277	0.218
Random effects								
Between samples (t_{00})	0.179	0.162	0.326**	0.106	0.136	0.107	0.378*	0.184
ICC	.052		.090		.040		.103	
Final model								
Fixed effects								
Intercept	-0.100	0.126	0.207	0.158	-1.661***	0.295	0.283	0.250
Level 1 slopes								
Valuing diversity	0.370*	0.148	0.323**	0.113	0.401*	0.202		
Women			-0.045	0.240	-0.094	0.303	-0.322	0.299
Men			0.562**	0.199	-1.080*	0.539	0.682**	0.253
Mixed			*ref*	---	*ref*	---	*ref*	---
Level 2 variables								
Size (ln)			-0.222***	0.030				
H	2.016*	0.955					1.388	1.322
Cross-level interactions								
Valuing Diversity x Size			-0.054†	0.032				
Valuing Diversity x H	0.772†	0.452						
Men x H							4.496*	1.796
Random effects								
Between samples								
intercepts (t_{00})	0.062	0.057	0.026	0.035	0.093	0.138	0.279**	0.093
slopes (t_{11})	0.016	0.058	0.011	0.015			0.066	0.119
covariance (t_{10})	0.028	0.061	-0.016	0.021			0.129	0.135
ICC	.019		.008		.028		.078	

Note. ICC = intraclass correlation. *ref* = reference group. ***$p<.001$; **$p<.01$; *$p<.05$; †$p<.10$

Table 3

Probability of a Dyad Being Different-Race as a Function of Valuing Diversity and Racial

Heterogeneity of the Community

	Valuing Diversity		
	Low	High	Total
Heterogeneity			
Low	36%	43%	40%
High	48%	63%	56%
Total	42%	53%	48%

Note. "High" and "Low" are defined as 1 *SD* above and below the grand mean, respectively.

Table 4

Probability of a Dyad Being Different-Religion as a Function of Valuing Diversity, Gender

Composition, and Community Size

	Valuing Diversity		
	Low	High	Total
Women			
Smaller size	60%	73%	67%
Larger size	37%	43%	40%
Total	49%	58%	54%
Mixed-gender			
Smaller size	61%	74%	68%
Larger size	38%	44%	41%
Total	50%	59%	55%
Men			
Smaller size	74%	84%	79%
Larger size	52%	58%	55%
Total	63%	71%	67%

Note. "High" and "Low" are defined as 1 *SD* above and below the grand mean, respectively.

Table 5

Probability of a Dyad Being Different-Sexual Orientation as a Function of Valuing Diversity and

Gender Composition

| | Valuing Diversity | | |
	Low	High	Total
Gender composition			
Women	12%	18%	15%
Mixed-gender	13%	20%	17%
Men	5%	8%	7%
Total	10%	15%	13%

Note. "High" and "Low" are defined as 1 *SD* above and below the grand mean, respectively.

Table 6

Probability of a Dyad Being Different-Nationality as a Function of Gender Composition and

Community Racial Heterogeneity

	Racial Heterogeneity		
	Low	High	Total
Gender composition			
Women	44%	55%	50%
Mixed-gender	52%	62%	57%
Men	51%	87%	69%
Total	49%	68%	59%

Note. "High" and "Low" are defined as 1 *SD* above and below the grand mean, respectively.

Table 7

Multilevel Models Predicting Attitude Discrepancy Within Dyads

	Model 1		Model 2		Model 3		Model 4	
	B	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Fixed effects								
Intercept	1.407***	0.046	1.356***	0.069	1.334***	0.060	1.335***	0.062
Level 1 slopes								
Valuing diversity			-0.150**	0.055	-0.138*	0.053	-0.125**	0.047
Women			0.027	0.059	0.055	0.059	0.047	0.051
Men			0.147*	0.063	0.149**	0.057	0.155**	0.056
Mixed			*ref*	---	*ref*	---	*ref*	---
Level 2 variables								
Size (ln)					0.038***	0.007	0.034***	0.008
Cross-level interaction								
Valuing Diversity x Size							-0.050***	0.014
Random Effects								
Between samples								
intercepts (t_{00})	0.013	0.007	0.013	0.007	0.004	0.004	0.003	0.005
slopes (t_{11})							0.002	0.006
covariance (t_{10})							-0.001	0.004
Within samples (s^2)	0.399***	0.024	0.388***	0.021	0.388***	0.021	0.382***	0.022
ICC	.032		.032		.010		.008	

Note. ICC = intraclass correlation. *ref* = reference group.

***$p<.001$; **$p<.01$; *$p<.05$

Appendix

Valuing Diversity Scale

1. Knowing about the experiences of people of different races increases my self-understanding.

2. Knowing someone from a different ethnic group broadens my understanding of myself.

3. I can best understand someone after I get to know how he/she is both similar and different

　　from me.

*4. It's often hard to find things in common with people from another generation.

5. I am interested in knowing people who speak more than one language.

6. I attend events where I might get to know people from different racial backgrounds.

7. I would be interested in participating in activities involving people with disabilities.

*8. I don't know too many people of a different social class than my own.

9. I often feel a sense of kinship with persons from different ethnic groups.

10. I am comfortable getting to know people from different countries.

11. When I listen to people of different races describe their experiences in this country, I am

　　moved.

*12. It's really hard for me to feel close to a person who has a different sexual orientation than

　　mine.

*Item is reverse scored

Supplementary Table 1

Descriptive Statistics by Sample

Sample	Sample Size	Length of relationship		Age		Gender composition of the dyad		
	N dyads	*M*	*SD*	*M*	*SD*	Men	Women	Mixed
Community 1	46	233.65	210.22	51.50	14.59	6.8%	34.1%	59.1%
Community 2	48	107.38	127.12	32.34	15.93	27.1%	33.3%	39.6%
College 1	45	30.87	34.13	20.63	2.08	20.9%	44.2%	34.9%
College 2	49	25.88	21.01	20.08	1.29	30.6%	34.7%	34.7%
Community 3	44	105.49	126.88	30.55	12.96	42.5%	27.5%	30%
College 3	50	20.37	25.98	20.09	2.99	34%	38%	28%
College 4	101	20.20	20.84	19.49	1.18	0%	99%	1%
College 5	71	26.92	25.05	21.79	3.04	39.4%	19.7%	40.9%
Community 4	52	121.99	131.12	29.92	11.12	13.5%	50%	36.5%
Community 5	46	116.10	130.57	27.21	11.05	35.5%	26.7%	37.8%

Note. Length of relationship is measured in months at the dyad-level (the average of each dyad member's response); age is measured in years at the individual-level.

Supplementary Table 2

Likelihood of Being Found with a Different-Group Person by Group Status

	Race	Religion	Sexual Orientation	Nationality
Majority group	33%	39%	7%	36%
Minority group	59%	71%	78%	72%

Note. Majority group is defined as White, Christian, heterosexual, and American. For each category, minority group respondents were significantly more likely to be found with a different-group person as compared to majority group respondents.