

Neighborhood Ethnic Diversity and Trust: The Role of Intergroup Contact and Perceived Threat

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Katharina Schmid¹, Ananthi Al Ramiah², and
Miles Hewstone¹

¹Department of Experimental Psychology, University of Oxford, and

²Yale-NUS College

Abstract

This research reported here speaks to a contentious debate concerning the potential negative consequences of diversity for trust. We tested the relationship between neighborhood diversity and out-group, in-group, and neighborhood trust, taking into consideration previously untested indirect effects via intergroup contact and perceived intergroup threat. A large-scale national survey in England sampled White British majority ($N = 868$) and ethnic minority ($N = 798$) respondents from neighborhoods of varying degrees of diversity. Multilevel path analyses showed some negative direct effects of diversity for the majority group but also confirmed predictions that diversity was associated indirectly with increased trust via positive contact and lower threat. These indirect effects had positive implications for total effects of diversity, cancelling out most negative direct effects. Our findings have relevance for a growing body of research seeking to disentangle effects of diversity on trust that has so far largely ignored the key role of intergroup contact.

Keywords

neighborhood diversity, intergroup contact, perceived threat, out-group trust, in-group trust, neighborhood trust, intergroup dynamics, racial and ethnic attitudes and relations

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With Western societies growing ever more ethnically diverse, a controversial claim—that living in diverse areas has negative consequences for trust not only of out-groups but also of in-groups and even people in general (see Putnam, 2007)—has sparked heated debate in both academic and public policy domains alike. This is a debate to which psychology can and should contribute yet has so far failed to do, despite growing interest in the psychological sciences on the consequences of diversity for other outcomes (e.g., Antonio et al., 2004). Prior research, led mainly by political scientists and sociologists, has yielded only inconclusive results. We argue, however, that in examining only direct effects of diversity, existing research has ignored a key psychological process that helps explain how diversity—a macro-level phenomenon characterizing a given spatial unit (i.e., the aggregate-level proportional representation of different subpopulations in a given spatial unit, such as neighborhoods or cities)—may indirectly affect trust. We thus

argue that diversity offers opportunities for intergroup contact, such that diversity—via its positive effects on contact, which can reduce intergroup threat and foster trust—may not only directly but also indirectly, and positively, affect trust. In this research, we tested this prediction using data from majority and minority respondents purposely sampled from neighborhoods varying in ethnic diversity.

Neighborhood Diversity and Trust

Trust is broadly defined as a positive bias toward other people in the processing of imperfect information (Yamagishi & Yamagishi, 1994) and making benign

Corresponding Author:

Katharina Schmid, University of Oxford, Department of Experimental Psychology, South Parks Rd., Oxford OX1 3UD, United Kingdom
E-mail: katharina.schmid@psy.ox.ac.uk

assumptions about other people's behavior, thereby allowing individuals to overcome uncertain social situations (see Kollock, 1994). Because extending trust to others, despite uncertainty over their motives, intentions, and behavior, places individuals in a psychological state of vulnerability (Kramer, 1999), it involves relinquishing control and granting power to others in the expectation that they will not exploit one's vulnerability (Tanis & Postmes, 2005).

Prior research examining effects of diversity on trust has focused predominately on interpersonal trust, such as generalized trust (i.e., trust in other people in general; e.g., Hooghe, Reeskens, Stolle, & Trappers, 2009) or trust in one's neighbors (e.g., Lancee & Dronkers, 2011). Such trust is commonly regarded as part of the "social glue" that holds communities together, with positive outcomes for society (Uslaner, 2011). Trust may, however, also be group based; that is, trust may be extended to or withheld from others based on their group memberships, and individuals are more likely to trust fellow in-groups than out-groups (Foddy, Platow, & Yamagishi, 2009). Conceptually and empirically distinct from out-group attitudes (e.g., Tam, Hewstone, Kenworthy, & Cairns, 2009), out-group trust (unlike attitudes) involves putting one's in-group at risk and presupposes a state of vulnerability, thereby making it a more demanding criterion for positive intergroup relations (Kramer & Carnevale, 2001).

Using U.S. data, Putnam (2007) reported that individuals residing in census tracts characterized by higher ethnic diversity reported lower neighborhood trust (i.e., trust in neighbors), out-group trust (i.e., trust in ethnic out-groups), and in-group trust (i.e., trust in one's ethnic in-group). Similar findings, albeit focusing only on generalized or neighborhood trust, have been obtained in other studies (e.g., Alesina & La Ferrara, 2002), although counterevidence also exists (e.g., Gesthuizen, Van der Meer, & Scheepers, 2008; Hooghe et al., 2009; Uslaner, 2012). Likely reasons for this mixed evidence lie in the focus on different countries with different immigration histories and social-welfare policies, the examination of differently sized geographical units (e.g., examining diversity at large metropolitan area or country levels as opposed to smaller neighborhoods), and the use of different measures and control variables. However, we believe the most critical factor is that most prior research considered only direct effects, without including a key variable, intergroup contact, which may explain how diversity affects various types of trust indirectly.¹

Theoretical Underpinnings: Conflict, Constrict, and Contact Theories

Conflict theory (e.g., Blalock, 1967; Bobo, 1999) was the first to posit that contextual diversity may negatively affect individual-level outcomes. Focusing on explaining

prejudice toward minority out-groups, conflict theory stipulates that exposure to contexts characterized by greater proportions of minority out-group members evokes competitive threat to the majority in-group's position and thereby fuels prejudice (e.g., Quillian, 1995). Much of this is echoed in the more recent, somewhat loosely defined, *constrict theory* (Putnam, 2007), which extends the potential negative outcomes of diversity from prejudice to trust. Constrict theory thus proposes that exposure to diverse environments leads people to withdraw from others and social life at large, to the extent that they end up trusting others less—including those belonging to their own ethnic groups.

In sharp contrast, *contact theory* (see Allport, 1954) allows for more optimistic predictions on the consequences of diversity. It postulates that having positive contact with individuals from different groups reduces prejudice (see Brown & Hewstone, 2005), and research also confirms positive effects on intergroup trust (e.g., Tam et al., 2009). Moreover, intergroup contact is known to reduce intergroup threat perceptions, to the extent that such contact exerts positive indirect effects on out-group trust via reduced threat (e.g., Tausch, Tam, Hewstone, Kenworthy, & Cairns, 2007). Conceptualized as the belief that the out-group is in some way detrimental to the in-group, intergroup threat often concerns "realistic" issues (e.g., competition over resources, territory, or status) but may also be more intangible and symbolic in nature (see Riek, Mania, & Gaertner, 2006, for a review).

Of note, diversity offers opportunities for intergroup contact; specifically, individuals living in more diverse contexts have greater contact with individuals of other groups (Pettigrew, Wagner, & Christ, 2010; Schlüter & Wagner, 2008; Stein, Post, & Rinden, 2000; Wagner, Christ, Pettigrew, Stellmacher, & Wolf, 2006). Similarly, greater perceived diversity predicts greater contact, both among majority populations (Wagner, Hewstone, & Machleit, 1989) and ethnic minority populations (Vervoort, Flap, & Dagevos, 2010). Moreover, research has found that diversity can exert indirect prejudice-reducing effects via its positive effects on contact (e.g., Pettigrew et al., 2010; Schlüter & Wagner, 2008; Wagner et al., 2006). Although these studies highlight the importance of considering indirect effects of diversity on prejudice, none of them allows conclusions to be drawn regarding potential indirect effects of diversity on trust. No prior research has thus examined the effects of diversity on different types of trust while taking into consideration indirect effects via intergroup contact and perceived threat.

Hypotheses

We examined the effects of neighborhood ethnic diversity on three different types of trust—out-group, in-group, and neighborhood trust—among general population samples

derived from neighborhoods in England varying in their proportion of ethnic minority residents. In testing both direct and indirect (via intergroup contact and perceived threat) effects, as well as total effects of diversity, we simultaneously examined the predictions of conflict, constrict, and contact theories. Because diverse contexts offer opportunities for contact, we expected diversity to be positively associated with greater contact, which, in turn, would be associated with lower threat. We thus hypothesized that diversity would be indirectly, positively related with trust by virtue of its positive effects on contact. Moreover, we expected these positive indirect effects to positively influence the total effects of diversity (i.e., the sum of direct and indirect effects), such that we would not witness negative total effects of diversity on trust.

Using multilevel modeling, we considered two operationalizations of diversity, actual neighborhood diversity (based on objective population statistics) and perceived neighborhood diversity (based on individuals' subjective appraisal of their neighborhood's diversity). By focusing on relatively small geographical units to measure neighborhood diversity, we overcame problems of prior research focusing on larger geographical units, such as countries or districts (e.g., Gesthuizen et al., 2008; Wagner et al., 2006); it is in such smaller community contexts that individuals negotiate their everyday relations (see also Oliver & Wong, 2003).

We tested our predictions among White British majority and ethnic minority respondents. We also examined the effects of diversity on the three types of trust alongside another outcome variable, out-group attitudes, to ensure that effects of diversity on trust occur independently from the conceptually distinct construct of prejudice and attitudes. We controlled for key demographic variables (age, gender, education, and income), as well as neighborhood deprivation (because diversity and deprivation often covary; e.g., Letki, 2008).

Method

Design and participants

Primary sampling units (subsequently referred to as neighborhoods) were so-called middle-layer super-output areas (mean $N = 7,200$ residents). Data collection was subcontracted to a professional survey organization that conducted face-to-face interviews. Sampling of respondents within neighborhoods was based on random-location quota sampling, with quotas set on the profile of respondents interviewed in each neighborhood, based on key demographics (age, gender, working status, ethnicity). Data collection took place from October 2009 to February 2010.

The final sample comprised 1,666 adults (age range = 16–97) drawn from 224 neighborhoods, of which 868

were White British majority respondents (418 males, 450 females; mean age = 47.79 years) nested in 218 neighborhoods. Targeted oversampling yielded 798 ethnic minority respondents (431 males, 366 females, 1 unidentified; mean age = 37.73 years) nested in 196 neighborhoods.

Neighborhood-level variables

Diversity. For White British respondents, we used the ethnic-fractionalization index (Montalvo & Reynal-Querol, 2005), which ranges from 0 (*low*) to 1 (*high*); higher scores reflect greater probability of encountering a non-White British person in the neighborhood. For the ethnic minority sample, we used the Herfindahl index (Hirschman, 1964; range = 0–1). Higher scores reflect greater probability of encountering a White British person. In our selected neighborhoods, the ethnic-fractionalization index ranged from .02 to .83 and the Herfindahl index from .17 to .95.

We refer to both indexes as diversity measures yet ask the reader to keep in mind that for the majority, higher scores reflect greater probability of encountering an ethnic minority individual, whereas for the minority, higher scores reflect greater probability of encountering a majority individual.

Index of multiple deprivation (IMD). We assessed the socioeconomic profile of the selected neighborhoods using the IMD, a United Kingdom–government-derived statistic assessing relative levels of social and economic deprivation of small regional areas, based on a variety of indicators (e.g., income, health deprivation, crime; see Noble, McLennan, Wilkinson, Whitworth, Barnes, & Dibben, 2008). In our selected neighborhoods, the IMD ranged from 3.15 (low) to 73.92 (high).

Individual-level variables

Perceived neighborhood diversity. For White British participants, perceived neighborhood diversity was measured using one item: “What proportion of residents in your neighborhood are people from ethnic minority backgrounds?” The same measure was used for ethnic minority participants, except that “people from ethnic minority backgrounds” was replaced with “people of White British background.” Responses were made on a scale from 1 (*none or very few*) to 5 (*almost all or all*).

Positive neighborhood contact. For White British participants, positive neighborhood contact was measured using two items: “How often, if at all, do you mix socially with people from ethnic minority backgrounds in your neighborhood?” and “How often, if at all, do you have brief everyday encounters with people from ethnic minority backgrounds, which might involve exchanging a couple of words, for example, in corner shops, buying

a paper and so on?" Ethnic minority respondents were given the same measures but were asked about their contact with "people of White British background." Responses were made on a scale from 1 (*never*) to 5 (*very often*). The two items were reliably correlated (White British: $r = .49$, $p < .001$; ethnic minority: $r = .50$, $p < .001$) and averaged.

Perceived intergroup threat. Five items measured intergroup threats. For White British participants, three items measured realistic threat: "The more political and economic power people from ethnic minority backgrounds have in this country, the more difficult it is for White British people," "People from ethnic minority backgrounds commit a lot of crime that affects White British people," and "People from ethnic minority backgrounds take good jobs away from White British people." Two items measured symbolic threat: "People from ethnic minority backgrounds threaten White British people's way of life," and "People from ethnic minority backgrounds and White British people have very different values." The same five measures were used for ethnic minority participants, except that the roles of the in-groups and out-groups in the questions were swapped. Ratings were made on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The five items formed reliable indexes (White British: $\alpha = .84$; ethnic minority: $\alpha = .70$).

Trust. For White British participants, we measured out-group trust using the following item: "Thinking specifically about people from ethnic minority backgrounds would you say that 1—many can be trusted, 2—some can be trusted, 3—a few can be trusted, or 4—none of them can be trusted." We used the same measure of out-group trust for ethnic minority participants but replaced "people from ethnic minority backgrounds" with "people of White British background." For both groups, we then measured in-group trust and neighborhood trust with the same item, but the name of the out-group was replaced with the name of the respondents' in-group and with "people living in your neighborhood," respectively. All three items were reverse-coded; higher scores reflected greater trust.

Out-group attitudes. For White British participants, out-group attitudes were measured using a feeling thermometer: "How do you feel about people from ethnic minority backgrounds?" For ethnic minority respondents, we used the same measure, again replacing "people from ethnic minority backgrounds" with "people of White British background." Responses ranged from 1 (*cold*) to 10 (*warm*).

Demographic variables. We treated age as a continuous variable. Gender was coded 0 for male and 1 for female. Education was treated as a continuous variable

(1 = no education, 2 = certificate of secondary education, 3 = advanced certificate of education, 4 = higher diploma below degree level, 5 = degree level and above), as was annual household income, ranging from 1 (under £2,500) to 14 (over £100,000).

Results

Intraclass correlations for trust and attitudes were moderate to large (range = .11–.37), demonstrating substantial variance between neighborhoods. We thus employed multilevel path analyses to simultaneously estimate the hypothesized relationships at the between-neighborhoods level (i.e., at the neighborhood level) and at the within-neighborhoods level (i.e., at the individual level), respectively. At the between-neighborhoods level of the model, we used a doubly manifest approach involving the modeling of relationships between the context-level variables (diversity and IMD) and the individual-level variables aggregated to the context level (see Marsh et al., 2009). We estimated model parameters using Mplus Version 6 (Muthén & Muthén, 2010), using full-information maximum-likelihood estimation and robust standard errors.

We analyzed the data separately for both groups. We estimated our models such that we examined, at the between-neighborhoods level, effects of the objective diversity index (independent variable) on contact (first-order mediator), threat (second-order mediator), and out-group, in-group, and neighborhood trust and attitudes (dependent variables).² At the within-neighborhoods level, we examined effects of perceived neighborhood diversity (independent variable) on contact (first-order mediator), threat (second-order mediator), and out-group, in-group, and neighborhood trust and attitudes (dependent variables). We included age, gender, education, and income as independent covariates at the within-neighborhoods level and IMD as a covariate at the between-neighborhoods level of the model. The estimated models were fully saturated. Tables 1 and 3 show the full set of estimated direct effects for the majority and the minority sample, respectively (Tables S1–S3 in the Supplemental Material available online show descriptive statistics and zero-order correlations). In the description of our results, we focus on Tables 2 and 4, which show direct effects, specific and total indirect effects (based on Sobel tests; see e.g., MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002), and total effects of diversity on the trust and attitude variables at the within- and between-neighborhoods levels of the model.

White British majority sample

As Table 2 shows, at the between-neighborhoods level, greater diversity (measured by ethnic fractionalization,

Table 1. Estimated Direct Effects at Between- and Within-Neighborhoods Levels of the Model for the White British Sample

Level and independent variable	Dependent variable					
	Intergroup contact	Perceived threat	Out-group trust	In-group trust	Neighborhood trust	Out-group attitudes
Between-neighborhoods level						
Diversity	2.40 (0.24)***	-0.58 (0.33)	-0.64 (0.30)*	-0.29 (.34)	-0.99 (0.40)*	-0.13 (0.24)
Intergroup contact	—	-0.24 (0.09)**	0.09 (0.09)	0.03 (0.08)	0.10 (0.09)	0.09 (0.06)
Perceived threat	—	—	-0.52 (0.07)***	-0.25 (0.06)***	-0.28 (0.06)***	-0.26 (0.04)***
IMD	0.00 (0.00)	0.01 (0.01)*	-0.01 (0.01)	-0.01 (0.00)*	-0.02 (0.01)***	0.00 (0.00)
Within-neighborhoods level						
Perceived diversity	0.43 (0.04)***	0.06 (0.04)	-0.12 (0.04)**	-0.10 (0.04)**	-0.23 (0.04)***	-0.05 (0.04)
Intergroup contact	—	-0.26 (0.04)***	0.09 (0.03)**	0.02 (0.03)	0.04 (0.04)	0.09 (0.03)**
Perceived threat	—	—	-0.46 (0.03)***	-0.20 (0.03)***	-0.13 (0.03)***	-0.40 (0.04)***
Education	0.16 (0.04)***	-0.30 (0.04)***	0.14 (0.04)***	0.15 (0.04)***	0.04 (0.04)	0.08 (0.04)
Income	0.04 (0.05)	-0.05 (0.05)	0.07 (0.04)	0.03 (0.05)	0.24 (0.04)***	0.00 (0.04)
Age	-0.09 (0.03)**	0.00 (0.03)	0.11 (0.03)***	0.13 (0.03)***	0.26 (0.03)***	0.01 (0.03)
Gender	0.00 (0.03)	-0.06 (0.03)	0.02 (0.03)	-0.03 (0.03)	-0.02 (0.03)	0.11 (0.04)**

Note: Unstandardized coefficients are shown, and standard errors are given in parentheses. At the between-neighborhoods level, the measure of diversity was the ethnic-fractionalization index (Montalvo & Reynal-Querol, 2005). IMD = Index of Multiple Deprivation.
 p* < .05. *p* < .01. ****p* < .001.

i.e., increased probability of encountering someone from an ethnic minority background in one’s neighborhood) was directly associated with lower out-group and neighborhood trust but not with in-group trust and out-group attitudes. All indirect effects of diversity via contact and

threat were positive, as were the total indirect effects (although the total indirect effect on in-group trust was nonsignificant). No significant total effects on trust were observed; the total effect for out-group attitudes was positive.

Table 2. Direct, Indirect, and Total Effects of Diversity on Outcome Variables for the White British Sample

Level and effect	Out-group trust	In-group trust	Neighborhood trust	Out-group attitudes
Between-neighborhoods level				
Direct effect	-0.64 (0.30)*	-0.29 (0.34)	-0.99 (0.40)*	-0.13 (0.24)
Indirect effect via intergroup contact	0.22 (0.21)	0.08 (0.19)	0.24 (0.22)	0.22 (0.14)
Indirect effect via perceived threat	0.30 (0.18)	0.15 (0.09)	0.16 (0.10)	0.15 (0.09)
Indirect effect via contact and threat	0.30 (0.12)*	0.14 (0.07)*	0.16 (0.07)*	0.15 (0.06)*
Total indirect effect	0.82 (0.24)**	0.37 (0.21)	0.55 (0.26)*	0.52 (0.16)**
Total effect	0.18 (0.28)	0.08 (0.26)	-0.44 (0.27)	0.39 (0.19)*
Variance explained (<i>R</i> ²)	.34	.11	.21	.22
Within-neighborhoods level				
Direct effect	-0.12 (0.04)**	-0.10 (0.04)**	-0.23 (0.04)***	-0.05 (0.04)
Indirect effect via intergroup contact	0.04 (0.01)**	0.01 (0.01)	0.02 (0.02)	0.04 (0.01)**
Indirect effect via perceived threat	-0.03 (0.02)	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.02)
Indirect effect via contact and threat	0.05 (0.01)***	0.02 (0.01)***	0.01 (0.00)**	0.04 (0.01)***
Total indirect effect	0.06 (0.02)**	0.02 (0.02)	0.02 (0.02)	0.06 (0.02)**
Total effect	-0.06 (0.04)	-0.08 (0.04)*	-0.21 (0.04)***	0.01 (0.04)
Variance explained (<i>R</i> ²)	.38	.13	.23	.24

Note: Unstandardized coefficients are shown, and standard errors are given in parentheses. At the between-neighborhoods level, the measure of diversity was the ethnic-fractionalization index (Montalvo & Reynal-Querol, 2005). At the within-neighborhoods level, the measure of diversity was perceived diversity.
 p* < .05. *p* < .01. ****p* < .001.

Table 3. Estimated Direct Effects at Between- and Within-Neighborhoods Levels of the Model for the Ethnic Minority Sample

Level and independent variable	Dependent variable					
	Intergroup contact	Perceived threat	Out-group trust	In-group trust	Neighborhood trust	Out-group attitudes
Between-neighborhoods level						
Diversity	1.48 (0.30)***	0.74 (0.31)*	-0.13 (0.35)	-0.43 (0.35)	-0.03 (0.46)	0.07 (0.24)
Intergroup contact	—	-0.37 (0.07)***	0.19 (0.09)*	0.25 (0.09)**	0.23 (0.09)*	0.10 (0.06)
Perceived threat	—	—	-0.36 (0.07)***	-0.36 (0.08)***	-0.26 (0.08)**	-0.17 (0.06)**
IMD	0.00 (0.01)	0.01 (0.01)*	-0.01 (0.01)	-0.01 (0.00)	-0.01 (0.01)*	0.00 (0.00)
Within-neighborhoods level						
Perceived diversity	0.28 (0.04)***	0.01 (0.04)	0.07 (0.04)	0.11 (0.04)**	0.06 (0.04)	0.05 (0.05)
Intergroup contact	—	-0.18 (0.04)***	0.06 (0.04)	0.10 (0.04)*	0.13 (0.04)**	0.11 (0.04)**
Perceived threat	—	—	-0.39 (0.05)***	-0.28 (0.05)***	-0.17 (0.05)***	-0.23 (0.05)***
Education	0.00 (0.04)	0.00 (0.04)	0.08 (0.06)	-0.01 (0.06)	0.00 (0.05)	0.02 (0.05)
Income	0.00 (0.05)	-0.20 (0.05)***	0.07 (0.06)	0.09 (0.05)	0.17 (0.06)**	0.03 (0.05)
Age	0.01 (0.04)	-0.08 (0.04)*	-0.04 (0.04)	0.02 (0.04)	0.11 (0.04)*	0.00 (0.04)
Gender	0.04 (0.03)	-0.02 (0.03)	0.05 (0.03)	0.02 (0.04)	-0.01 (0.04)	0.03 (0.03)

Note: Unstandardized coefficients are shown, and standard errors are given in parentheses. At the between-neighborhoods level, the measure of diversity was the Herfindahl index (Hirschman, 1964). IMD = Index of Multiple Deprivation.

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

At the within-neighborhoods level, subjective perceptions of diversity were directly associated with lower out-group, in-group, and neighborhood trust but not with attitudes. All indirect effects via contact and threat were positive, as were the total indirect effects on out-group trust and attitudes. The total effects of perceived diversity were nonsignificant for out-group trust and attitudes but were negative for in-group and neighborhood trust.

Ethnic minority sample

As Table 4 shows, at the between-neighborhoods level, greater diversity (as measured by Herfindahl, i.e., increased probability of encountering a White British person in the neighborhood) did not exert any direct effects on trust or attitudes. All indirect effects via contact and threat were positive, yet no significant total indirect effects emerged. Diversity did not exert significant total effects on any of the outcome variables.

At the within-neighborhoods level, perceived diversity exerted only a significant, positive direct effect on in-group trust. All indirect effects via contact and threat were positive, as were all total indirect effects (with the exception of out-group trust). All total effects on trust were positive; no total effect on attitudes emerged.

Discussion

Our research constitutes the first comprehensive test of the effects of neighborhood diversity on trust that

(a) included measures of out-group, in-group, and neighborhood trust; (b) considered direct as well as previously untested indirect effects (via intergroup contact and perceived threat); (c) measured not only actual but also perceived diversity, using multilevel analyses to account for both between- and within-neighborhoods level direct, indirect, and total effects; (d) compared majority and ethnic minority respondents; (e) focused on small, meaningful neighborhood units; (f) showed effects of diversity on trust over and above previously tested effects on out-group attitudes; and (g) controlled for key demographic and neighborhood-level covariates.

Our study revealed some negative direct effects of diversity, similar to those noted by Putnam (2007) and others (e.g., Alesina & La Ferrara, 2002). Although we did not witness any negative direct effects of diversity for the minority sample, for the majority respondents, diversity (both perceived diversity at the individual level and ethnic fractionalization at the neighborhood level) exerted negative direct effects on out-group and neighborhood trust; perceived diversity was also directly associated with lower in-group trust.

However, we found consistent positive indirect effects of diversity via contact and threat (at both the neighborhood and individual level) on all types of trust and attitudes for both groups. We have thus shown that greater diversity was consistently associated with more contact, and contact with lower threat, which resulted in more diversity being indirectly associated with greater out-group, in-group, and neighborhood trust.

Table 4. Direct, Indirect, and Total Effects of Diversity on Outcome Variables for Ethnic Minority Sample

Level and effect	Out-group trust	In-group trust	Neighborhood trust	Out-group attitudes
Between-neighborhoods level				
Direct effect	-0.13 (0.35)	-0.43 (0.35)	-0.03 (0.46)	0.07 (0.24)
Indirect effect via intergroup contact	0.29 (0.14)*	0.37 (0.15)*	0.35 (0.15)*	0.14 (0.10)
Indirect effect via perceived threat	-0.27 (0.11)*	-0.26 (0.12)*	-0.19 (0.10)*	-0.13 (0.06)*
Indirect effect via contact and threat	0.20 (0.06)**	0.20 (0.07)**	0.15 (0.06)**	0.10 (0.04)*
Total indirect effect	0.22 (0.18)	0.31 (0.20)	0.30 (0.18)	0.11 (0.11)
Total effect	0.09 (0.36)	-0.12 (0.37)	0.27 (0.44)	0.18 (0.26)
Variance explained (R^2)	.20	.20	.17	.09
Within-neighborhoods level				
Direct effect	0.07 (0.04)	0.11 (0.04)**	0.06 (0.04)	0.05 (0.05)
Indirect effect via intergroup contact	0.02 (0.01)	0.03 (0.01)*	0.04 (0.01)**	0.03 (0.01)**
Indirect effect via perceived threat	-0.00 (0.02)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Indirect effect via contact and threat	0.02 (0.01)***	0.01 (0.00)**	0.01 (0.00)**	0.01 (0.00)**
Total indirect effect	0.04 (0.02)	0.04 (0.02)*	0.04 (0.02)**	0.04 (0.02)**
Total effect	0.10 (0.04)*	0.15 (0.04)***	0.11 (0.05)*	0.09 (0.05)
Variance explained (R^2)	.18	.11	.11	.08

Note: Unstandardized coefficients are shown, and standard errors are given in parentheses. At the between-neighborhoods level, the measure of diversity was the Herfindahl index (Hirschman, 1964). At the within-neighborhoods level, the measure of diversity was perceived diversity.

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

Notably then, when we considered the total effects of diversity we did not, by and large, witness negative effects of diversity. Thus, at the neighborhood-level, diversity did not exert significant total effects on any type of trust, nor on attitudes, for the majority group, which suggests that the positive indirect effects via contact cancelled out the obtained negative direct effects on trust. In fact, the total effect on out-group trust was positive (albeit nonsignificant) for the majority group, as was the effect on out-group attitudes. For the minority group, effects were similar, such that there was no total effect of actual diversity. Moreover, at the individual level, we observed positive total effects of perceived diversity on all trust outcomes for the minority. These positive total effects may suggest that minority group members adapt better to diverse environments (perhaps because they are accustomed to encountering contexts shared by majority members or to being in the minority in everyday life), with positive consequences for trust.

For the majority, however, we did witness two negative total effects of perceived diversity at the individual level on in-group and neighborhood trust, which might appear to support constrict theory (Putnam, 2007). However, given that constrict theory predicts negative effects on all types of trust and is also theoretically rooted in conflict theory (e.g., Blalock, 1967; Bobo, 1999), which was originally formulated to explain dominant majority group members' prejudice, it is noteworthy that we did not observe analogous negative total effects of perceived diversity on out-group trust or attitudes. These findings, particularly for in-group trust, may thus also reflect a process akin to "deprovincialization" (see Pettigrew, 1997),

whereby intergroup contact prompts individuals to reappraise the importance of their in-group's norms and values, with positive consequences for intergroup relations. Subjective perceptions of diversity may thus evoke similar deprovincialization processes, involving perhaps a lowering of in-group trust relative to out-group trust rather than a reduction of trust per se. Indeed, such processes may be particularly applicable to dominant majority groups. It remains, however, for future research to explore this possibility further.

Importantly, our research does not align with the body of research that claims negative effects of neighborhood diversity on trust (e.g., Putnam, 2007). We thus did not obtain any negative total effects of actual diversity at the neighborhood level for either the majority or the minority group. Moreover, for perceived diversity, total effects were positive for the minority, and although for the majority group, total effects on in-group and neighborhood trust were negative, no negative effect on out-group trust emerged. This suggests that perceived diversity does not, by and large, exert negative effects either. Our research thus shows that in seeking to understand if, and especially how, diversity affects trust, it does not suffice to merely consider direct effects. Rather, it is vital to capture how diversity is subjectively encountered, that is, through contact with those others who shape one's diverse environments. Thus, once the positive indirect effects of diversity on trust were accounted for, most negative direct effects of diversity were cancelled out.

Moreover, our research holds implications for psychological research more generally. Psychologists often ignore the potential involvement of wider context-level

factors and their interplay with individual-level processes; for example, research on contact has tended to focus on the relationship between contact and attitudes solely at the individual level (for exceptions, see, e.g., Pettigrew et al., 2010; Wagner et al., 2006). Yet it is increasingly being recognized that psychology can and should strive toward an integration of macro-level factors when examining individual-level processes (e.g., Christ & Wagner, 2012; Pettigrew, 2008; Pettigrew & Tropp, 2011). Not only will this integration of micro and macro levels advance psychological theory per se, but it is also invaluable if psychology wishes to inform policy making and have real-world applicability. By considering neighborhood characteristics and their interplay with psychological processes of trust, our research speaks directly to the call for such integrative, cross-level research (see e.g., Pettigrew, 2008).

Notwithstanding our contributions, there are a number of limitations to acknowledge. A key limitation is that our data is cross-sectional, which limits our ability to draw inferences about causality. Future research employing longitudinal data will allow for testing of bidirectional relationships and greater confidence in inferring causality. Some of our constructs were also assessed with a limited set of items, and we asked, of necessity, the majority about ethnic minority respondents and the minority about White British respondents (the target out-group was thus more clearly defined for the minority). Although general population surveys need to be economical, both with time and cost, future research should aim to consider, if and where possible, a more nuanced assessment of constructs and target groups. It also remains for research to examine effects of diversity on trust in other contexts (e.g., other countries, but also workplaces or educational settings) and to examine potential multiplicative, or interactive, effects between different contexts. Moreover, research has shown that segregation, rather than diversity, negatively affects trust (Uslaner, 2012), which makes it imperative for future research to replicate our findings while considering a measure of segregation alongside diversity. Finally, our research suggests that mere exposure to diversity may not unequivocally lead to uptake of contact for everyone. Future work should therefore consider potential moderating factors that explain when and for whom diversity leads to positive contact. For example, individuals exposed to positive intergroup norms in their social environments, who hold positive diversity beliefs or more liberal ideologies, or have extended contact (see e.g., Wright, Aron, McLaughlin-Volpe, & Ropp, 1997) may be more likely to take up contact opportunities in diverse settings.

To conclude, our findings call for a more measured account of the potential consequences of diversity on trust. Unlike Putnam and other researchers, we argue and have empirically confirmed that diversity does not inevitably lead people to “hunker down” (Putnam, 2007,

p. 149), but also enables them to open up and can provide them with opportunities for engaging with others of different ethnic backgrounds than their own. Diversity thus offers possibilities for having positive, face-to-face contact, and not merely living side-by-side, with one another, which can cancel out, or even override, potential negative effects of diversity on trust toward others, regardless of their ethnic background.

Author Contributions

All authors developed the study concept and contributed to the study design. Data collection by the survey company was overseen by all authors. K. Schmid performed the data analysis and drafted the manuscript, and A. Al Ramiah and M. Hewstone provided critical revisions. All authors approved the final version of the manuscript for submission.

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Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

Notes

1. The data used by Putnam (2007) included a measure of inter-ethnic friendships, yet he did not test whether the relationship between diversity and trust was affected by this measure (for a discussion, see Pettigrew & Tropp, 2011, pp. 164–166).
2. The ethnic-fractionalization and Herfindahl indexes were highly correlated with the measure of perceived diversity aggregated to the neighborhood level (White British: $r = .71$, ethnic minority: $r = .72$); they were also highly correlated with measures capturing the percentage of ethnic minorities and White British people in the neighborhood, respectively (White British: $r = .96$, ethnic minority: $r = .89$). We replicated our analyses considering the aggregate perceived diversity measure and the percentage measures as alternative operationalizations of diversity at the between-neighborhoods level. The overall pattern of results was comparable with results reported here and can be obtained from the first author.

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