



# Coalitional affiliation as a missing link between ethnic polarization and well-being: An empirical test from the European Social Survey



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## ABSTRACT

Many studies converge in suggesting (a) that ethnic and racial minorities fare worse than host populations in reported well-being and objective measures of health and (b) that ethnic/racial diversity has a negative impact on various measures of social trust and well-being, including in the host or majority population. However, there is much uncertainty about the processes that connect diversity variables with personal outcomes. In this paper, we are particularly interested in different levels of *coalitional affiliation*, which refers to people's social allegiances that guide their expectations of social support, in-group strength and cohesion. We operationalize coalitional affiliation as the extent to which people rely on a homogeneous social network, and we measure it with indicators of friendships across ethnic boundaries and frequency of contact with friends. Using multi-level models and data from the *European Social Survey* (Round 1, 2002–2003) for 19 countries, we demonstrate that coalitional affiliation provides an empirically reliable, as well as theoretically coherent, explanation for various effects of ethnic/racial diversity.

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## 1. Introduction

In his seminal work on diversity in the twenty-first century, Robert Putnam (2007) argued that increased ethnic diversity is related to people's withdrawal from civic life and a reduction in social well-being. Effects of an ethnically and racially diverse life on personal health and well-being have been researched by a large number of studies illustrating the role of discrimination (Pascoe and Smart Richman, 2009a,b; Williams and Mohammed, 2009; Williams et al., 2003) as well as other factors like genetics, social and personal identities, socio-economic status, and culture (e.g., Bayard-Burfield et al., 2001; Davey Smith et al., 1998; Navarro, 1990; Oyserman et al., 2014; Silove et al., 2000). However, these factors do not sufficiently explain why some ethnic groups fare better than others on various health and well-being outcomes despite sharing similar socioeconomic conditions and experiences of discrimination (e.g., Morales et al., 2002). A growing body of literature aims to provide a more nuanced understanding for these discrepancies by suggesting that negative effects of diversity are mediated by inter-racial/ethnic contact (e.g., Savelkoul et al., 2011; Stolle et al., 2013). However, this research has produced conflicting results, with some findings indicating inter-ethnic contact is positively related to social well-being (Gundelach and Freitag,

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2014; Stolle et al., 2013), while others suggest a negative association (Stolle and Harell, 2013; Koopmans and Veit, 2014). Also, these studies have not yet explored the relationship between diversity and personal well-being outcomes.

Here, we focus on an evolutionary psychological process that may reconcile some of these discordant findings, and help specify the links between perceived diversity on the one hand and subjective health and well-being on the other. We propose that human coalitional psychology, i.e., evolved cognitive and emotional capacities for building and maintaining coalitions (Kurzban et al., 2001; Tooby and Cosmides, 2010), can help explain the links between ethnic/racial diversity and well-being. We particularly focus on a crucial component of coalitional psychology, namely *coalitional safety*, defined as an intuitive evaluation of perceived support and strength of one's alliances. We operationalize coalitional safety through *coalitional affiliation*, a measure of people's intuitive expectations of support from similar individuals. We aim to demonstrate, using multi-level analysis on the *European Social Survey* (Round 1, 2002–2003), that coalitional affiliation provides an empirically reliable, as well as theoretically coherent, explanation for various effects of perceived ethnic/racial diversity on well-being and health. This view complements cross-national research on the effects of inter-group contact on social well-being (Gundelach and Freitag, 2014; Koopmans and Veit, 2014; Stolle et al., 2008) by providing evidence for a psychological mechanism linking diverse inter-ethnic social interactions with individual-level well-being.

## 2. Background

### 2.1. Diversity, well-being and health

Multiple studies show that ethnic diversity has important implications for well-being and health, especially for members of ethnic minority groups. Ethnic and racial minorities fare worse on various health outcomes, and rate their well-being lower than non-minority members of a nation. For example, Blacks have lower levels of subjective well-being (Thoits and Hewitt, 2001), higher mortality rates (Geronimus et al., 1996; Kochanek et al., 2004), higher hypertension prevalence (Egan et al., 2010) and are more likely to be obese (Flegal et al., 2012) than Whites in the U.S. Native tribal groups in New Zealand, Australia, Canada and the U.S. have higher rates of disease-specific mortality rates than non-indigenous populations (Bramley et al., 2004). Health disparities extend beyond racial lines. Immigrants in the U.S. and other Western countries have poorer health than natives. Immigrants and refugees in the U.S. have higher rates of mental health problems such as depression, anxiety and post-traumatic stress disorders (Fox et al., 2001; Pumariega et al., 2005) and immigrants rate their health worse than the host population (Finch and Vega, 2003). Other studies also demonstrated the disadvantages in especially mental health and well-being of immigrants in Europe. For example, suicide attempts were higher among younger women of Mediterranean origin than their German counterparts in a psychiatric ward in Frankfurt (Storch and Poutska, 2000). Moroccan women in Spain rated their psychological well-being (i.e., happiness and life-satisfaction) much lower than Spanish women (Martinez Garcia et al., 2002).

Socio-economic inequalities and poverty play an important role in explaining health disparities across ethnic and racial lines (Braveman et al., 2010; Nazroo and Williams, 2006; Nazroo, 2003). However, even after taking into account socio-economic and demographic factors, disparities in health persist, steering researchers' attention towards discrimination and experiences of racism as potential contributors to health inequalities (Mays et al., 2007; Paradies, 2006; Williams et al., 1997). Various studies have demonstrated that perceived discrimination significantly deteriorates both physical and mental health (Pascoe and Smart Richman, 2009a,b; Williams and Mohammed, 2009; Williams et al., 2003). Experiences of discrimination and racism are associated with psychological distress, anxiety and depression as well as increased alcohol, tobacco and marijuana use among Black Americans (Brown et al., 2000; Landrine and Klonoff, 1996; Sanders-Phillips et al., 2014). Discrimination leads to health disadvantages by elevating physiological stress responses such as blood pressure, cardiovascular reactivity and heart rate (Brondolo et al., 2003; Clark et al., 1999; Clark, 2000, 2006a,b; Harrell et al., 2003; Mays et al., 2007; Pascoe and Smart Richman, 2009a,b; Williams, 2012). Cumulative exposure to discrimination causes especially deleterious effects on health through increased allostatic load (overwhelming the body's capacity to respond to challenges, referred to as allostasis) (McEwen and Stellar, 1993; McEwen, 1998, 2000, 2004, 2005). In line with this hypothesis, for example, Black Americans have significantly higher allostatic load biomarkers, associated with stress-related conditions like heart disease, hypertension, and obesity than their White counterparts (Geronimus et al., 2006).

Despite the significance of discrimination in explaining health disparities, there are still various health patterns that cannot be explained by experiencing discrimination. For example, White Americans are more likely to report depression than Blacks (Breslau et al., 2006; Dunlop et al., 2003; LaVeist et al., 2014). Although experiencing worse socioeconomic conditions, Hispanics in the U.S. fare equal to or better than Whites (described as the Hispanic health paradox) (Morales et al., 2002). In a 2000–2001 survey, Jewish Americans – a White ethnic group – rated their own health significantly worse than non-Jewish Americans and similar to Black Americans (Pearson and Geronimus, 2011). Moreover, minority status was shown to be a positive predictor of eudaimonic well-being (described as having a purpose in life, autonomy, self-acceptance and positive social relations) (Ryff et al., 2003). Therefore, the concept of discrimination is insufficient in accounting for health differences. While discrimination and socio-economic conditions constitute crucial predictors of well-being and health, a more refined framework that takes into account inter-individually variable social experiences like inter-ethnic contact is better able to explain some of these disparate effects of diversity on well-being and health.

## 2.2. Inter-ethnic contact and well-being

A large body of literature focuses on the effects of ethnic/racial diversity on social well-being, specifically on social trust. Much of this research revolves around Putnam's (2007) 'hunkering down' hypothesis, based on research in the U.S., suggesting that citizens of diverse societies disengage from their communal ties and activities, resulting in declining levels of social trust, especially towards out-groups (see Portes and Vickstrom, 2011 for a review). Several studies show that increased ethnic diversity at the national as well as neighborhood level is negatively related to social trust (Delhey and Newton, 2005; Dinesen and Sønderskov, 2012; Laurence, 2009; Stolle et al., 2008; Wickes et al., 2014). However, other studies fail to detect this negative relationship (Bjørnskov et al., 2008; Gesthuizen et al., 2009; Hooghe et al., 2009; Stolle et al., 2013) or even suggest a positive one (Gundelach, 2014). These discrepant findings have directed the attention to the role of inter-group contact in explaining the effects of neighborhood diversity on social trust.

Based on Gordon Allport's (1954) seminal theory of prejudice, the contact hypothesis argues that increased inter-group contact diminishes prejudice (Pettigrew, 1997; Pettigrew and Tropp, 2000; see Pettigrew et al., 2011 for a review). This hypothesis is confirmed by a variety of studies that focused on various ethnic groups (e.g., Turks in Germany) as well as other stigmatized groups (such as mentally ill) (Caspi, 1984; Pettigrew, 1997; Wagner et al., 1989). However, research applying contact theory to the effects of diversity on social-wellbeing has also produced conflicting findings so far. Some research reveals that inter-group contact buffers the negative effects of diversity. For example, using data from Germany, some studies found that inter-ethnic contact attenuates the negative effects of diversity on trust (Gundelach and Freitag, 2014; Stolle et al., 2013). Dinesen (2011) also found that ethnic diversity had a positive effect on trust in primary school students in Denmark.

Analyzing European Social Survey (2002/2003), Savelkoul et al. (2011) showed that inter-ethnic contact mediates the effects of regional (but not national) diversity, strengthening social trust. Inter-ethnic friendships in integrated—vs. segregated—communities in the U.S. and the U.K. also had a positive relationship with trust especially for Whites (Uslaner, 2011). Others, however, have failed to replicate these positive effects. Koopmans and Veit (2014), using a survey experiment in Germany, showed that while negative inter-ethnic contact reduces social trust in both natives and immigrants, positive inter-ethnic contact has no effect. Based on their analyses of the Canadian General Social Survey (2003), Stolle and Harel (2013) found that ethnic diversity in friendship networks had an overall negative impact on social trust for the adult population; inter-ethnic friendships had a positive relationship with trust only in younger people (aged 15–25). Using data from the Netherlands, Lancee and Dronkers (2008) showed that people with neighbors of a different ethnicity had less trust in neighborhoods and neighbors. In another study, they found that ethnic diversity reduced the quality of contact with neighbors but not inter-ethnic trust in Netherlands (Lancee and Dronkers, 2011). In addition to these discrepant findings, the mechanisms through which inter-ethnic contact is related to social well-being is not specified. Moreover, while there is a large literature on ethnic/racial disparities of well-being and health, the research focusing on ethnic/racial diversity have not explored the possible implications for personal well-being.

To sum up, there are conflicting results from attempts to connect inter-group contact or interaction on the one hand, and ethnic diversity on the other. To remedy this, we offer a more parsimonious framework considering how different situations of inter-group contact may modulate a common process, to do with the human motivation to seek support through membership in coalitions.

## 3. Theory

### 3.1. Coalitions, coalitional safety and coalitional affiliation

We propose to bridge the explanatory gap by considering the operation and effects of human *coalitional psychology* (Tooby and Cosmides, 2010). Humans are distinct from other animal species in their extreme dependence on support and cooperation from conspecifics, and in their capacities for managing stable and extensive alliances, which are rare in nature (Harcourt and Waal, 1992). Coalitions range from small-scale interaction to large groups. They include office cliques, street gangs, political parties, as well as rival villages involved in tribal warfare, or academic cabals in competition for grants and positions. Most importantly, coalitions can scale up to constitute ethnic/racial, cultural or national groups.

An important insight of evolutionary psychology is that a unique set of capacities and motivations underpin coalitional processes in these otherwise disparate domains. In other words, the conflict between two street gangs recruit, to some extent, the same cognitive and emotional processes as the perception of one's society as divided between "us" and "them," between races or between classes. In these different situations, specialized processes attend to information about the distinct coalitions, infer evaluations of the alliances' relative strengths, and motivate people to engage in collective action for their coalition (Kurzban et al., 2005). The cognitive division between "us" and "them" is also widely studied by Social Identity Theory (SIT, Tajfel, 1982; Tajfel and Turner, 1985; see Abrams and Hogg, 2004 for a review). While the evolutionary psychological framework and the SIT are similar in their assumptions regarding the automatic categorization of individuals into groups, they differ in their positions on how these mechanisms occur. From a SIT perspective, group divisions mainly stem from in-group identification or out-group depreciation based on perceived (dis)similarities. Within an evolutionary psychological framework, similarity is selectively observed or manufactured after joining a coalition. Therefore, from an evolutionary psychological point of view, many aspects of racial enmity, for instance stem from seeing members of "the other race" as

engaged in an aggressive competition against one's own group, rather than a simple effect of stereotypes (Kurzban et al., 2001; Sidanius and Pratto, 1999).

Experimental studies have documented the cognitive and emotional processes involved in building and maintaining coalitions, and how they account for important aspects of inter-group relations (Kurzban et al., 2005; Neuberg and Cottrell, 2008). Most relevant to the issues considered here is the fact that people automatically monitor coalitions in the social world (Pietraszewski et al., 2014). As a result, we can expect that people in different situations will form different intuitive evaluations of their own *coalitional safety* as a function of (a) the extent to which they can expect support from other members of the various group(s) and alliances they belong to, and (b) the strength and cohesiveness of their group(s) compared to others. Individuals in a given social context, with its cohesive groups and level of inter-group conflict, may form very different estimates of their coalitional safety, depending on their individual strategies and circumstances. We are particularly interested here in different levels of *coalitional affiliation*, which measures the extent to which people rely on a homogeneous social network.

In this paper, we focus on friendship networks as a proxy for coalitional affiliation. From an evolutionary point of view, friendships consist of enduring, cooperative social interactions, and forming friendships provide important adaptive functions such as increasing reproductive success and social rank among humans as well as other mammals including primates, dolphins and elephants (Seyfarth and Cheney, 2012). A recent evolutionary psychological model, referred to as the 'alliance hypothesis for human friendship', furthermore argues that human friendship is generated by a cognitive system to create alliances for potential disputes (DeScioli and Kurzban, 2009, 2012; DeScioli et al., 2011). Accordingly, human friendship is more like political alliances than trade-like exchange partnership (DeScioli and Kurzban, 2009; Kurzban et al., 2015). For example, as supported by evidence from friendship networks in large online platforms, people's choices of their best friends were predicted strongly by how their friends ranked them (DeScioli et al., 2011). This finding suggests that friendships function as coalitions by providing alliance support that is not available to outsiders. Therefore, friendship networks serve as a valid proxy for coalitional affiliations.

In contrast to the underlying assumption of contact theory, that diverse interactions with other ethnic groups influence general social attitudes, we argue that people's intuitive evaluations of their coalitional safety, approximated from their affiliations with same and other ethnic-group members, may influence different interactional strategies as well as resulting emotions, behavior and attitudes. Individuals can increase their coalitional safety by establishing a network of allies well before the outbreak of disputes or conflicts, incorporating different alliance strategies. For instance, their friendship network may include mostly in-group members, or a more diverse sample of the salient groups in their social environment; they may invest more or less time and effort in cultivating that network. As well as coalitional affiliation, people's estimation of safety will likely be influenced by personal attributes, like social status or income that would mitigate the impact of being coalitionally threatened.

### 3.2. Coalitions, well-being and health – stress as a mediator

How does coalitional safety influence outcomes like subjective well-being and health? While it is not possible for us to test the causal mechanisms with the survey data at hand, we argue that the causal link consists of the stress reactions triggered by perceiving other individuals as a potential threat during social interactions. Empirical studies have demonstrated that interactions with members of different racial and ethnic group members lead to cognitive categorization of out-groups into threats vs. support, friends vs. rivals, which in turn elevates stress, anxiety and negative affect. For instance, interacting with out-group race members leads to increased stress responses (i.e., cortisol changes, cardiovascular reactivity) and this effect is moderated by various coalitional factors such as having previous friendly interactions with out-group members and other-race/ethnicity friends (Blascovich et al., 2001; Mendes et al., 2002, 2007; Page-Gould et al., 2008). Also, White participants interacting with Blacks show typical cardiovascular threat responses (Mendes et al., 2002). Inter-racial contact also impairs cognitive performance of both racial majority and minority group members (Richeson and Shelton, 2003; Richeson et al., 2005). We suggest that the negative effects of ethnically diverse interactions are due to the threat posed to people's coalitional safety.

Strong coalitional affiliations, let them be ethnically diverse or homogenous, will increase people's estimations of their coalitional safety and act as an overall positive source of personal and social well-being. For example, those who hold strong racial/ethnic identities (have strong identification with the coalitional in-group) are better shielded from some of the negative mental health effects of discrimination (Mossakowski, 2003; Sellers and Shelton, 2003). However, in diverse social settings, those with strong homogenous coalitional affiliations will be disadvantaged as their evaluations of coalitional safety rely on the homogeneity of their groups, which is challenged directly by the diverse social encounters.

When people derive their evaluations of coalitional safety from more diverse affiliations, these negative effects recede. Having a greater number of social support networks, like peers, friends, or family of one's own ethnic group as well as of other race/ethnic groups—providing a coalitional safety net—help improve reports of health and well-being as well as reducing physiological markers of stress and anxiety (Blascovich et al., 2001; Clark, 2003; Finch and Vega, 2003; Jasinskaja-Lahti, 2006; Page-Gould et al., 2008, 2010a,b, 2014). For example, cross-ethnic/racial friendships reduced stress hormone reactivity in participants who were implicitly prejudiced or highly concerned about out-group rejection (Page-Gould et al., 2008). Past inter-racial friendships also predicted faster cortisol recovery from a stressful public speech and mental arithmetic task (Trier social stress test, Kirschbaum et al., 1993) delivered to an other-race evaluator (Page-Gould et al., 2010a).

Additionally, these positive effects of past cross-racial friendship on cortisol reactivity were carried over to social interactions with novel other-race members (Page-Gould et al., 2010b).

#### 4. Hypotheses

Based on the theoretical background outlined in the previous sections, we test the following hypotheses:

1. Perceptions of increasing ethnic/racial diversity in social interactions (i.e., in neighborhoods) erode subjective well-being and health.
2. People with stronger coalitional affiliations with in-group ethnicity/race (homogenous coalitional affiliations) experience larger negative effects of perceived diversity on well-being and health.

#### 5. Data and methods

##### 5.1. Data

The data used in this paper came from the European Social Survey (ESS), Round 1, which was conducted in 2002/2003 in 21 countries (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland and United Kingdom). The ESS is a repeat cross-sectional survey of attitudes, beliefs and behaviors in Europe. The ESS Round 1 included a specific module on immigration with several questions targeting opinions about race and ethnicity. Therefore, this round is a good fit for the issues considered here.

To better isolate the effects of racial/ethnic coalitional perceptions, we excluded three countries (Israel, Luxembourg and Poland), in which more than thirty percent of the sample reported that most immigrants to the country were of the same race/ethnic group as the majority. The resulting sample set includes data from 19 countries. Additionally, 3365 missing cases on all variables included in the analyses were deleted list-wise. The final sample size was 32,833.

##### 5.2. Outcome variables

Subjective well-being was measured by combining two variables (see Delhey and Dragolov, 2014; Diener et al., 2009): happiness and life satisfaction. Both are 11-item continuous variables. For happiness, the respondents answered the question: 'Taking all things together, how happy would you say you are?' Their responses ranged from 0 'extremely unhappy' to 10 'extremely happy.' Life satisfaction was measured with the following question: 'All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied.' Respondents' answers ranged from 0 'extremely dissatisfied' to 10 'extremely satisfied.' These two items were averaged (correlation = .68,  $p < .001$ )<sup>1</sup> to construct the subjective well-being variable. The intra-class correlation coefficient (ICC) for subjective well-being was 11 percent.

Subjective-health was measured with the following question: 'How is your health in general?' This subjective health indicator is a commonly used and validated measure of health status (see Manderbacka, 1998); it is one of the health indicators recommended by the World Health Organization (deBruin et al., 1996) and is closely related to more objective measures of health (Chandola and Jenkinson, 2000; Jylhä et al., 1998). The respondents answered on a 5-item ordinal scale, ranging from 1 'very good' to 5 'very bad'. This variable was reverse coded so that increasing values indicated better health. The ICC for subjective-health was 7 per cent.

##### 5.3. Key independent variables

We first created a variable measuring whether or not the respondents had immigrant background. If the respondent said 'no' to any of the following, they were scored as having an immigrant background (1 = immigrant): 'Are you a citizen of [country]?' 'Were you born in [country]?' 'Was your father born in [country]?' 'Was your mother born in [country]?'.

Perceived ethnic diversity was measured with a variable that asked the participants to describe the ethnic/racial composition of the area where they currently lived. The respondents were asked to choose from three categories: 1 'An area where almost nobody is of a different race or ethnic group from most [country] people', 2 'Some people are of a different race or ethnic group from most [country] people', 3 'Many people are of a different race or ethnic group.' For the respondents who did not have any immigrant background, scoring higher on this variable indicates greater diversity in the living area.<sup>2</sup>

<sup>1</sup> The correlation coefficients across countries range from .74 (Sweden) to .53 (Portugal).

<sup>2</sup> Note that having an immigrant background does not necessarily indicate belonging to an ethnic minority. However, because the ESS does not include neighborhood and friendship diversity questions for both ethnic/racial minorities and immigrants, we draw from both types of questions when applicable. Moreover, the question about the ethnic composition of the living area is asked in the same battery of questions that inquire about respondents' views about immigrants ("people who have come to live in country from another country"); therefore, people were likely thinking about same types of groups when answering questions about ethnic groups in living area and immigrants. However, we still took an additional step to reduce the mismatch between ethnic/racial group and immigrant social categories and excluded the countries where a sizeable proportion of the sample indicated that most immigrants were the same ethnicity as the host population.

However, this would not be the case for those that come from a different ethnic background than the host population. Because we expect the potential for ethnically diverse social interactions to increase as the perceived proportion of those from a different ethnic/racial background than the respondent—not just the proportion of ethnic minorities in the living area—increases, we reverse coded this variable. This way, for those with an immigrant background, reporting to live in an area with no ethnic minorities meant higher diversity (recoded as 3), and reporting to live in an area where many people were of a different ethnic/racial group indicated less diversity (recoded as 1). The final recoded variable is an ethnic diversity variable, independent of the ethnic background of the respondent (1 = Least diversity, 3 = Most diversity).

This variable was entered as a factorial variable (1 = Least diversity was the omitted, reference category). This variable is a more precise measure of diversity of social interactions than regional or national level diversity employed by previous research (e.g., [Savelkoul et al., 2011](#)) because interactions with diverse others only occur if they are in spatially close proximity. Living in a fractionally diverse but segregated community has different implications for research about the effects of diversity on social-interactional and attitudinal outcomes (see for example [Uslaner, 2006](#)). In line with previous research that focuses on perceptions of neighborhood racial composition, we also expect that racial diversity of a community only has an impact on attitudes and behavior if the members of that community are aware of that diversity ([Chiricos et al., 2001](#); [Pickett et al., 2012](#)). Therefore, we relied on ‘perceived’ rather than objective measures of diversity.

Cross-ethnic coalitional affiliation was operationalized with a novel approach grounded in the theoretical framework explained in the previous sections (i.e., [DeScioli and Kurzban, 2009](#); [DeScioli et al., 2011](#)). We measured cross-ethnic coalitional affiliation by combining two variables that map on to the qualitative dimensions of the respondents’ friendships. The first variable was a question that asked the respondents if they had any friends who had come from another country. The response categories were 1 ‘Yes, several’, 2 ‘Yes, a few’ and 3 ‘No, none at all’. The second variable asked the respondents: ‘how often do you meet socially with friends, relatives or work colleagues?’ Their answers ranged from 1 ‘Never’ to 7 ‘Every day’. This second variable was reverse coded for the respondents who indicated ethnically diverse friendships: (a) if they did not have an immigrant background and indicated that they had ‘a few’ or ‘several’ immigrant friends, or (b) if they had an immigrant background but indicated they had ‘no’ immigrant friends. This way, if the respondents had diverse friendships and reported that they were meeting with their friends everyday their score would be 1.

For those who reported ethnically homogenous friendships: (a) if they did not have an immigrant background and indicated that they had ‘no’ immigrant friends, or (b) if they had an immigrant background and indicated they had ‘a few’ or ‘several’ immigrant friends, this social meeting variable was recoded to a scale ranging from 8 to 14. If the respondents never met with their friends, their score would be 8 and if they met with them every day their score would be 14. The resulting was a cross-ethnic coalitional affiliation variable, ranging from 1 to 14, where 1 meant ‘diverse coalitional affiliation’ (having friends from a different ethnic background and meeting with them every day) and 14 meant ‘homogenous coalitional affiliation’ (having no friends from a different ethnic group, but meeting with friends every day). This operationalization is also similar to the experimental research measuring inter-racial contact, which asks respondents to (a) list their other-race friends/acquaintances and (b) rate how well they know them, thereby creating a contact score that captures both the quantity and the quality of social relations by multiplying the number of contacts (a) with how well they know them (b) (see [Ito et al., 2004](#); [Blair et al., 2003](#)).

#### 5.4. Control variables

We included in our analyses several control variables shown by previous research to be related to well-being and health. These included tolerance for gays/lesbians, socio-economic indicators (feelings about income, education, and unemployment), immigrant background, belonging to a discriminated group, demographic characteristics (gender, birth year, and marital status). Ethnic fractionalization at the national level, income inequality (Gini coefficient) and Gross Domestic Product (GDP per capita) (see [Branscombe et al., 1999](#); [Inglehart, 2002](#); [Inglehart et al., 2008](#); [Kim et al., 2006](#); [Pinquart and Sørensen, 2000](#); [Ryff et al., 2003](#)). Means and standard deviations of all variables are summarized in [Table 1](#).

Tolerance for gays and lesbians was measured with a single item collecting respondents’ agreement with the following statement on a 5-item scale ranging from ‘agree strongly’ to ‘disagree strongly’: ‘Gay men and lesbians should be free to live their own life as they wish.’ Feelings about household income instead of annual household income was measured as a socio-economic indicator because there was a high refusal rate for the latter variable (about 3921 people refused to answer and 2530 indicated they did not know). The feelings about household income was measured with the question: ‘Which of the descriptions on this card comes closest to how you feel about your household’s income nowadays?’ on a 4-item ordinal scale ranging from 1 ‘living comfortably on present income’ to 4 ‘finding it very difficult on present income.’ French data on this item was excluded from the data set since it deviated from the other countries with one extra answer category (it ranged from 1 to 5). We recoded the variable from the French country-specific data set to combine the first two response options (‘living very comfortable’ and ‘comfortable enough’), which kept this variable very comparable to that of other countries. Then, we merged this variable with the rest of the dataset. Education was measured in years and a dummy variable was introduced for those who indicated that they were unemployed as their main activity in the last seven days was (1 = unemployed). Whether or not the respondents belonged to a discriminated group (1 = discriminated) was entered as a dummy variable. Birth year was measured in years, gender (1 = male) and marital status (1 = married) were coded as dummies.

Ethnic fractionalization was measured with an index developed by [Alesina et al. \(2004\)](#) to denote the probability of two randomly selected individuals in a given country belonging to different ethnic groups (values range from 0 to 1). In our

**Table 1**  
Descriptive statistics ( $N = 32,833$ ).

Variable	Mean	Std. Dev.	Min	Max
Individual-level:				
Subjective wellbeing	7.32	1.84	0	10
Subjective health	3.87	0.90	1	5
Medium ethnic diversity in living area	0.41	0.49	0	1
High ethnic diversity in living area	0.10	0.30	0	1
Cross-ethnic coalitional affiliation (centered)	0	4.76	-6.99	6.01
Tolerance for gays/lesbians (centered)	0	1.10	-2.84	1.16
Feelings about household income (centered)	0	0.80	-0.86	2.14
Education (centered)	0	4.01	-11.96	28.04
Unemployed	0.04	0.20	0	1
Immigrant	0.14	0.14	0	1
Discriminated	0.06	0.24	0	1
Male	0.48	0.50	0	1
Birth year (centered)	0	17.78	-55.76	33.24
Married	0.55	0.50	0	1
Country-level:				
Ethnic fractionalization (centered)	0	0.15	-0.14	0.37
Gini coefficient (centered)	0	3.99	-6	7.75
GDP per capita (logged, centered)	0	0.23	-0.61	0.32

sample, the country with the smallest ethnic fractionalization was Portugal with a score of .05, and the greatest ethnic fractionalization was Belgium, scoring .56.

Income inequality was measured with the Gini coefficient provided by the World Bank for 2000. For the countries that did not have a reported Gini coefficient for the year 2000 (Czech Republic, Denmark, France, the Netherlands, Portugal, Slovenia, and the UK), the nearest year with the available data point was used. The Gini index measures the extent to which the distribution of income among individuals or households within a country deviates from a perfectly equal distribution; it lies between 0 and 100 and higher values indicate greater inequality. The Gini coefficient ranged from 24.7 (Denmark) to 38.45 (Portugal) in the sample. Log-transformed GDP per capita in purchasing power parities for 2002 (current international \$, World Bank Data) was also controlled for in all models.

### 5.5. Modeling strategy

The ESS data have a nested structure as individuals are nested in countries. Accordingly, the outcome variables were analyzed with two-level random-intercept models, where we estimated the random effects of countries, and fixed effects of individual-level coalitional psychological variables and other explanatory variables. All continuous predictors were grand-mean centered before entering into the models to make the random part of the model interpretable since with grand-mean centering, the intercept is the value of the outcome variable when predictors are held constant at their means, rather than zero.

Design weights were applied at level one (to account for unequal probability of selection), and weights were scaled so that they summed to the sample size of the corresponding countries (to account for unequal sample sizes). Three models were estimated for each outcome variable. The first model investigated the relationship between perceived ethnic/racial diversity in living area and well-being, the second model introduced the effects of coalitional affiliations, and the third model added the interaction between coalitional affiliations and perceived ethnic/racial diversity. The proposed model suggests a causal relationship leading from coalitional psychological mechanisms to subjective well-being and health. However, the relationship among these variables may also be reciprocal or the causal order might be in the opposite direction (selection effects). Therefore, all models also controlled for several individual-level variables including demographic characteristics (i.e., age, gender), socio-economic status, tolerance and experiences of discrimination to account for reciprocity or selection effects.

## 6. Results

The results of the random-intercept regression models are presented in Table 2. Looking at Models 1A and 1B on Table 2, we see that the effects of perceived ethnic/racial diversity in living areas were in the negative direction across both subjective well-being and health outcomes. These effects were statistically significant with the exception of the effects of living in areas with some ethnic diversity on well-being. For example, subjective well-being and subjective ratings of health of the respondents who reported to live in areas with the most ethnic/racial diversity were .156 ( $p < .01$ ) and .088 ( $p < .001$ ) units smaller than those who reported the least ethnic/racial diversity in living quarters. These effects were net of socio-economic background, demographic characteristics, discrimination and tolerance. These results support hypothesis 1, increasing perceived neighborhood diversity had a negative relationship with well-being and health.

**Table 2**Random-intercept regression results for key predictors of subjective well-being and health, European Social Survey ( $N = 32,833$ ).

	1A Wellbeing	1B Health	2A Wellbeing	2B Health	3A Wellbeing	3B Health
<i>Fixed effects</i>						
<i>Individual-level</i>						
Intercept	7.297*** [0.073]	3.844*** [0.033]	7.296*** [0.073]	3.843*** [0.032]	7.292*** [0.073]	3.842*** [0.033]
Some ethnic/racial diversity	-0.050 [0.038]	-0.050*** [0.012]	-0.045 [0.038]	-0.046*** [0.012]	-0.044 [0.039]	-0.046*** [0.012]
Most ethnic/racial diversity	-0.156** [0.050]	-0.088** [0.019]	-0.149* [0.048]	-0.082*** [0.019]	-0.156*** [0.046]	-0.083*** [0.019]
Cross-ethnic coalitional affiliation			0.005 [0.003]	0.004* [0.001]	0.012*** [0.004]	0.005** [0.002]
Some minority × Coalitional affiliation					-0.011** [0.004]	-0.002 [0.002]
Many minority × Coalitional affiliation					-0.024*** [0.006]	-0.004 [0.004]
Tolerance	0.052*** [0.011]	0.020*** [0.006]	0.053*** [0.011]	0.021*** [0.006]	0.053*** [0.011]	0.021*** [0.006]
Feelings about household income	-0.668*** [0.043]	-0.187*** [0.013]	-0.668*** [0.043]	-0.188*** [0.013]	-0.669*** [0.043]	-0.188*** [0.013]
Education	0.001 [0.004]	0.024*** [0.003]	0.001 [0.004]	0.024*** [0.003]	0.002 [0.004]	0.024*** [0.003]
Unemployed	-0.563*** [0.148]	0.001 [0.025]	-0.564*** [0.148]	0.000 [0.025]	-0.561*** [0.148]	0.000 [0.025]
Immigrant	-0.015 [0.039]	-0.014 [0.018]	-0.027 [0.039]	-0.024 [0.019]	-0.019 [0.039]	-0.022 [0.019]
Discriminated	-0.565*** [0.057]	-0.187*** [0.028]	-0.564*** [0.057]	-0.186*** [0.028]	-0.565*** [0.058]	-0.186*** [0.028]
Male	-0.103*** [0.021]	0.066*** [0.014]	-0.102*** [0.021]	0.067*** [0.014]	-0.102*** [0.021]	0.067*** [0.014]
Birth year	0.007*** [0.002]	0.016*** [0.001]	0.007*** [0.002]	0.016*** [0.001]	0.007*** [0.002]	0.016*** [0.001]
Married	0.361*** [0.029]	0.057*** [0.014]	0.361*** [0.029]	0.056*** [0.014]	0.362*** [0.029]	0.056*** [0.014]
<i>Country-level</i>						
Ethnic fractionalization	0.591* [0.265]	0.070 [0.143]	0.592* [0.265]	0.071 [0.143]	0.592* [0.267]	0.071 [0.143]
Gini coefficient	-0.042** [0.016]	0.007 [0.009]	-0.042** [0.016]	0.007 [0.009]	-0.042** [0.016]	0.007 [0.009]
GDP per capita	1.417*** [0.183]	0.521*** [0.132]	1.421*** [0.183]	0.524*** [0.131]	1.421*** [0.184]	0.524*** [0.131]
<i>Random effects</i>						
Variance (Intercept)	0.066	0.0298	0.0656	0.0296	0.0661	0.0297
Variance (Residual)	2.578	0.602	2.578	0.602	2.576	0.602
<i>Pseudo R-squares</i>						
Level-1	0.1238	0.1794	0.1240	0.1798	0.1245	0.1799
Level-2	0.8232	0.4933	0.8242	0.4960	0.8230	0.4944

Note: Values in brackets are robust standard errors. For the ethnic/racial diversity variable, reference category is "none ethnic/racial diversity".

\*  $p < .05$  (two-tailed tests).\*\*  $p < .01$  (two-tailed tests).\*\*\*  $p < .001$  (two-tailed tests).

When we turn to the effects of coalitional affiliation, looking at Models 2A and 2B, we see that cross-ethnic coalitional affiliation did not show a significant relationship with subjective well-being, but it had a small significant and positive effect in health equation. People who had more homogenous coalitional affiliations reported better health ( $p < .05$ ). Turning to the interactions of coalitional affiliation and ethnic/racial diversity in living areas (Models 3A and 3B), we see that both the main effects of cross-ethnic coalitional affiliation ( $p < .001$ ) and the interactions ( $p < .01$  and  $p < .001$ ) were significant for subjective well-being but not health. This would suggest that while for subjective well-being, the effects of perceived ethnic/racial diversity in living areas depend on coalitional perceptions, for subjective ratings of health, it does not. All interaction terms



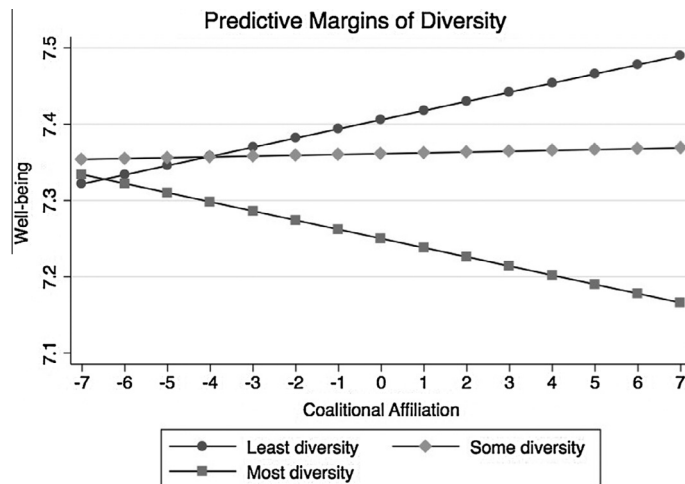


Fig. 1. Perceived neighborhood diversity, coalitional affiliation and well-being.

were in a negative direction, suggesting that respondents with more homogenous coalitional affiliations experience greater negative effects of perceived diversity on subjective well-being and health (even though these interaction terms were not significant for health). These results partially support hypothesis 2.

For a better interpretation of the interaction terms, we also conducted some post-estimations after the well-being equation. First we tested whether or not overall interaction terms were significant. The overall interaction between diversity and coalitional affiliation was significant for well-being ( $p < .001$ ). Then, we calculated the average marginal effects for coalitional affiliation for each level of ethnic diversity. When we compared the slopes of coalitional affiliation across different levels of perceived diversity, we found that for well-being the effects of coalitional affiliation differed significantly across each value of diversity ( $p < .01$  for all contrasts). These effects can be seen in Fig. 1 that plots the differences in predictive margins for levels of diversity on values of coalitional affiliation varying between  $-7$  and  $7$  in increments of 1. While we should note that the coefficient sizes for these interaction terms are relatively small (which is not uncommon for observational social science studies, Cohen et al., 2013), as can be seen in Fig. 1, these effects depict a clear pattern of divergence in the effects of coalitional affiliation on well-being for those with perceptions of low vs. high diversity. Accordingly, in neighborhoods that are perceived to be diverse, as coalitional affiliations become more homogenous well-being deteriorates; whereas in neighborhoods that are not perceived to be diverse homogenous coalitional affiliations are related to increasing positive well-being. These results confirm our second hypothesis concerning well-being. The estimated effects of control variables were in line with previous research (see Table 1).

Tolerance had a small but positive correlation with both well-being and health. Reporting hardships with household income was negatively correlated with well-being and health. Education had a small, positive effect on health but not well-being. Being unemployed was negatively related to well-being but not health. Respondents who reported belonging to a discriminated group ranked lower on both well-being and health than those who did not, men rated lower well-being but better health than women, younger people reported better well-being and health, and married individuals rated both their well-being and health more positively than non-married ones. Having an immigrant background did not have any significant effects in any of the models. In all models, ethnic fractionalization was positively correlated with well-being, but not significantly related to health. In contrast to ethnic fractionalization, national income inequality (measured by the Gini coefficient) had negative effects on subjective well-being in all models, but was not significantly associated with subjective health. Additionally, country-level GDP per capita was positively associated with both well-being and health at the individual-level.

## 7. Discussion and conclusions

There is a vast literature showing that subjective well-being and health both have positive influences on various other personal and social domains such as employment, income, family life and community involvement (e.g., Diener and Biswas-Diener, 2002; Helliwell and Putnam, 2004; Pichler, 2006). Therefore, persistent inequalities in health and well-being along ethnic/racial lines have provoked social scientists' interest in the causes and mechanisms of these disparities. Researchers have focused on various factors such as genetics, discrimination and socio-economic status in explaining these disparities (Diener et al., 1999; Dolan et al., 2008). However, this research does not adequately explain the interpersonal psychological mechanisms through which ethnic/racial polarization is linked to health and well-being. Using European Social Survey Round 1 data, this study sought to bridge this gap by providing evidence for a social-psychological process linking perceptions of ethnic/racial diversity with well-being and health.

Our results indicate that perceived ethnic/racial diversity of living areas is negatively correlated with subjective well-being and health. This suggests that having racially and ethnically diverse daily social interactions has some potential adverse effects on well-being and health. We should note that our conclusion relies on the mental representation of neighborhood composition, rather than on objective indicators like the actual percentage of ethnic minorities. Measuring the effects of perceived diversity of social interactions supports our assumptions about the links between individual psychologies and well-being, as people's perceptions of their everyday interactions should be a more accurate predictor of their daily stressors than researcher-identified compositional characteristics. However, this perception-based measurement of diversity might also fail to capture objective characteristics of neighborhoods that might influence well-being, regardless of whether or not individuals perceive them. Previous research indicates that while perceptions of neighborhood composition overlaps to a certain degree with the objective composition calculations based on census tracts or blocks, there is also considerable variation between the objective and subjective measures (Campbell et al., 2009; Coulton et al., 2001). Therefore, objective neighborhood characteristics still remain an important contextual factor. For example, higher proportions of ethnic/racial minorities are concentrated in high poverty areas, with lesser access to quality health-care, higher crime rates and a generally inadequate physical environment (e.g., Sampson et al., 2005; Stafford and Marmot, 2003; Williams and Collins, 2001). While acknowledging the importance of these neighborhood-level factors, we argue that in addition to the contextual factors or effects of individual background – like being discriminated against, psychological factors may contribute to subjective experiences of well-being and health. As the European Social Survey lacks information on the neighborhood characteristics, it is not possible for us to test the effects of neighborhood composition directly. Still, we controlled for various socio-economic characteristics of the respondents that might account for some of the neighborhood socio-economic factors and other individual-level characteristics like experience of discrimination, citizenship status, demographics, and we found that coalitional affiliations are important for subjective well-being and health.

Our key finding was that the effects of perceived diversity on subjective well-being (but not health) depended on coalitional perceptions. That is, individuals with homogenous coalitional affiliations – those who perceived other ethnic/racial group members as rivals rather than allies – were more negatively affected than others by an ethnically/racially diverse social life. This finding suggests that diversity, *per se*, is not the cause of negative well-being, but that people who bring certain perceptions to their interactions end up with biases affirming those negative interactions, facilitating adverse subjective mental states. This finding has important theoretical implications. It suggests a new model for the psychological processes influencing well-being in increasingly diverse societies. For health, we found no significant interaction between coalitional psychology and perceived ethnic/racial diversity, even though perceptions of diversity were negatively correlated with ratings of health. In line with research focusing on neighborhood effects, this finding might suggest that health outcomes are more likely to be affected by objective neighborhood conditions associated with increasing diversity, such as diminishing quality of life and limited access to health care in these neighborhoods due to unequal distribution of resources.

For subjective well-being, our results are in line with the evolutionary psychological perspective that evolved capacities track alliances that happen to underlie inter-ethnic/racial dynamics (Kurzman et al., 2001; Cosmides et al., 2003). A significant implication of this view is that racial antagonism is not an inevitable part of human nature; racial categories trigger hostility only when they reliably cue inter-coalitional rivalry, which happens only under certain historical conditions (Cosmides et al., 2003; see also, Bobo, 1999; Omi and Winant, 1994). Additionally, these results imply that interventions to enhance subjective well-being by improving neighborhood conditions, or relocation of those in impoverished neighborhoods to higher socio-economic status neighborhoods (see Goering and Feins, 2003; Wilson, 1987), might not be sufficient for reducing disparities and increasing overall well-being. While we agree that changes in the physical conditions of living quarters may contribute to diminishing inequalities and promoting well-being and health, we also argue that these interventions should be complemented with other strategies to change group-level coalitional dynamics. For example, there is a large body of literature on coalition-building strategies in organization research and bridging social capital (bringing people from diverse backgrounds together) across the social sciences (e.g., Ellison et al., 2007; Mizrahi and Rosenthal, 2001; Kim et al., 2006). Effective methods for facilitating inter-racial/ethnic coalitions can be devised by incorporating insights from this research.

The current study also had some limitations that suggest future research programs. One major limitation of our study is the issue of reverse causality or self-selection. One can argue that the direction of causality goes from subjective well-being and health to coalitional affiliations. Perhaps, people who feel less happy and healthy are also less socially tolerant of people from different backgrounds and hence have more homogenous coalitional affiliations. In order to account for some of these self-selection effects, we controlled for a propensity for tolerance (using tolerance for gays and lesbians as a proxy). However, longitudinal or experimental research is required to shed better light on these mechanisms by ruling out these limitations. Furthermore, data from a larger set of countries should be investigated to test the universality of these relationships as well as how a more diverse set of contextual factors can shape them.

Measurement of well-being and friendship networks also remains as another important limitation of our study. Unfortunately the wave of the ESS analyzed in this paper did not include multiple indicators for well-being and subjective health. So we relied on a relatively narrow set of items tapping into these concepts, which also potentially reduces our explanatory power and effect sizes. Our measure of the diversity of friendship networks also relies on the few items available in the ESS. Moreover, we lack questions directly asking the degree of social contact the respondents have with their

immigrant friends. Thus, we operationalized the quality of contact with immigrant friends by recoding a variable that asks about the frequency of social meetings with friends in general. Future research should investigate the links between coalitional psychologies, diversity and well-being by including multiple and more specific indicators that can help capture the multifaceted nature of human social interactions and psychological states.

In conclusion, results from this study offer evidence for a social psychological mechanism linking perceived diversity with well-being and health. Our findings suggest that coalitional psychology shapes daily experiences in diverse social landscapes in a way that might inhibit or promote subjective well-being and health. Building on these results, future research can identify the structural factors and cultural-evolutionary turning points creating or modulating homogenous vs. diverse coalitional affiliations to advance public health and well-being.

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