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# Ethnic Diversity and Social Capital in Europe: Tests of Putnam's Thesis in European Countries

Maurice Gesthuizen,\* Tom van der Meer & Peer Scheepers

This article focuses on the core theory recently proposed by Putnam on the relationship between ethnic diversity and dimensions of social capital. Hypotheses are derived from this theory, but also from other theories that propose competing hypotheses on relationships between national characteristics and dimensions of social capital. Essentially, the authors propose more rigorous empirical tests of Putnam's hypotheses by including these competing hypotheses: tests of these hypotheses provide possibilities to evaluate Putnam's and these other theories in terms of general (i.e. cross-national) tenability for the European continent. The general question is: To what extent do national-level characteristics like ethnic diversity, next to other national characteristics, actually affect dimensions of social capital of individual citizens in European countries? The authors set out to answer this question by testing hypotheses on cross-national data from 28 European countries. These data contain valid measurements of a number of dimensions of social capital. The individual-level data are enriched with contextual- (i.e. national-) level characteristics to be included in more advanced multilevel analyses. The main finding is that Putnam's hypothesis on ethnic diversity must be refuted in European societies. Instead, it is found that economic inequality and the national history of continuous democracy in European societies turn out to be more important for explaining cross-national differences in social capital in Europe.

## Introduction and Questions

In a recent contribution, Putnam (2007) has substantiated his core claim, previously announced via diverse media, that ethnic diversity, and by implication immigration, might reduce social capital by presenting empirical evidence from a large survey study conducted in the United States in 2000. The findings come under the heading that immigration and diversity foster social isolation and indicate that in ethnically diverse communities, people tend to distrust people belonging to other races, and moreover, distrust people belonging to their own race and even their own neighbors (Putnam

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2007, 148). In colloquial language, Putnam (2007, 149) concludes that ‘people living in ethnically diverse setting appear to “hunker down” – that is, to pull in like a turtle’. Moreover, he claims that ethnic diversity tends to breakdown (a wide array of other phenomena related to) social capital like trust in local governments, active participation in local community projects, donating to charity, volunteering and having close friends (Putnam 2007, 150).<sup>1</sup> However, he refrains from presenting empirical evidence for these claims. Yet, his general claim is that ‘this pattern encompasses attitudes and behavior, bridging and bonding social capital, public and private connections. *Diversity . . . seems to bring out the turtle in all of us* (Putnam 2007, 151; emphasis in original).

Putnam realizes then that these claims are based on data from merely one country (i.e. the United States). Therefore, he proposes to test these linkages between ‘diversity and hunkering’ (Putnam 2007, 163) in other countries. Our goal is to test these general claims for a number of dimensions of informal and formal social capital (Pichler & Wallace 2007) in a large number of European countries that are quite diverse in terms of ethnic diversity. Yet, we propose to consider other theoretical propositions on contextual characteristics of these European societies that may be related to the level of ethnic diversity in these countries as well as to the breakdown of social capital. This provides us with possibilities to test competing theories and hypotheses rigorously, ascertain (possibly) spurious relationships that eventually provide us with the possibility to evaluate these theories in terms of general tenability, just as emphasized by Putnam (2007, 151). So, our general question is: To what extent do national-level characteristics like (various measures of) ethnic diversity, next to other national characteristics, actually affect (various measures of) social capital of individual citizens in European countries?

We set out to ascertain such relationships employing recent cross-national data (Eurobarometer 62.2, collected in 2004) with advanced methodological tools (i.e. multilevel analyses). These tools provide us with the possibility to control (statistically) for other contextual characteristics of these countries, as well as to control for a number of individual-level determinants of social capital. Controlling for other contextual characteristics is obviously of major importance considering our research question on competing theories and the national characteristics derived from these theories (i.e. national characteristics that may reduce social capital). Moreover, we can determine contextual-level effects simultaneously with individual-level determinants more precisely than Putnam has done, who presented results of merely one-level multiple regression analyses and on merely one dimension of social capital (Putnam 2007, 152). Instead, we will consider more dimensions of social capital, show the empirical evidence to search for and ascertain more general patterns.

## Theories and Hypotheses

### *Putnam's Core Theory*

Putnam (2007) suggests that ethnic conflict theory hypothesizes that ethnic diversity would increase in-group solidarity as well as out-group exclusion, whereas contact theory proposes contradictory effects.<sup>2</sup> Then, Putnam (2007, 144) introduces 'constrict theory', rather implicitly, with a core statement that (ethnic) diversity might reduce both in-group *and* out-group solidarity. Since the latter part of this statement is quite a different branch of research, which is not in the core of his contribution, we will focus on the former part. We suspect that underlying this statement, there is a line of theoretical reasoning proposing that: the more diverse a social context actually is in terms of different (ethnic) groups, the less people of one's 'own kind' there are around with whom people feel familiar with and with whom people can socially identify, the less people feel comfortable with others and the more they distrust others and the less they will socially connect to other people, even to people of their 'own kind'.<sup>3</sup>

These social connections may be informal or formal, as recently acknowledged by Pichler and Wallace (2007) after an overview of debates on indicators of social capital. Formal social capital refers to different kinds or degrees of involvement in formally constituted civic organizations (Putnam 2000; Schofer & Fourcade-Gourninchas 2001); informal social capital to social ties between individuals and their friends, families, colleagues and neighbors (Bourdieu 1983; Coleman 1988; Burt 2001; Lin et al. 2001). Putnam's (implicit) propositions boil down to hypotheses like:

*H1:* The more ethnic diversity, (a) the less social trust, (b) the less informal social capital (e.g. meeting with friends, colleagues and neighbors, or giving informal help), (c) the less formal social capital (e.g. donating to organizations, membership of or participation in organizations).

In this explanation, ethnic diversity serves as a rather static contextual (i.e. demographic) circumstance that Putnam does not distinguish from dynamic changes by considering recent processes of immigration. European societies, however, differ strongly in terms of ethnic diversity and immigration: countries that already contain high levels of ethnic diversity may not attract as many immigrants as other more homogeneous and, moreover, rich countries (Pettigrew 1998). The effect of static circumstances of diversity to which people accommodate may differ from the effect of dynamic changes to which they may react differently (Olzak 1992). Waves of immigration – with sudden influxes of ethnically dissimilar groups, (often) with different looks and habits and (initially) with low social capital – may increase feelings of social isolation. Fast and visible increases of ethnic diversity (i.e. high

immigration rates) might induce cultural threat and social isolation more than stable ethnic diversity (Hooghe et al. 2006). We therefore expect negative effects of immigration on social connections. To consider this possibility, we propose to test similar hypotheses:

*H2:* The more immigration, (a) the less social trust, (b) the less informal social capital, (c) the less formal social capital.

### *Competing Theories: Economic Inequality*

Putnam (2000) points out that a rather strong relationship between economic inequality and social capital has been ascertained previously, indicating that the higher the level of economic inequality, the lower the level of social capital (Uslaner & Brown 2005). This claim has its theoretical roots in the same source as the ethnic diversity explanation – namely in the homophily principle (McPherson et al. 2001), according to which individuals have an aversion to heterogeneity (Alesina & La Ferrara 2002). From this perspective, economic inequality is another source of diversity: economic inequality decreases shared norms. Evidence for this proposition has been found repeatedly, both at the national level (Van Oorschot & Arts 2005) and at the local and regional level (Alesina & La Ferrara 2002; Putnam 2007). Since ethnic diversity and economic inequality may be (strongly) related, we certainly consider inequality to be a ‘competing’ contextual characteristic to explain cross-national differences in social capital. This hypothesis may come under a similar kind of theoretical reasoning: the higher the level of economic inequality, the higher the ‘social barriers’ between different (ethnic) groups, the less people there are around of one’s ‘own kind’ with whom people feel familiar with and whom they can trust, the less people will connect to other people, be it formally or informally.<sup>4</sup> These statements boil down to similar hypotheses like:

*H3:* The higher the level of economic inequality, (a) the less social trust, (b) the less informal social capital, (c) the less formal social capital.

### *Competing Theories: Social Security*

We like to include other contextual determinants that may contribute to the explanation of social capital. The first one has become known under the heading of the ‘crowding out’ thesis. At the core lies the historical assessment that family and friendship bonds used to function as a safeguard against economic hardship. This function has gradually been taken over by nation-states, different in terms of welfare state regimes (Esping-Andersen 1990, 1999). These welfare state regimes (e.g. social democratic, corporatist or liberal) differ in the extent to which they provide their citizens with social security, which in turn may differentially ‘crowd out’ the supportive role of

previously existing informal caring relations and social networks (Van Oorschot & Arts 2005). This thesis is obviously not relevant if one considers one country, like the United States, with a rather uniform social security system, but may be relevant if one considers a number of countries that vary strongly in terms of welfare regimes, according to by Esping-Andersen (1990, 1999), and hence in the extent to which they provide their citizens with social security. These propositions provide us with the next hypotheses:

*H4:* The higher the level of social security (as a percentage of GDP), (a) the less informal social capital, (b) the less formal social capital.

There is previous evidence that a nation's wealth, as indicated by GDP, may also contribute to (at least) formal social capital (Curtis et al. 2001; Halman 2003). Apparently, national wealth provides citizens with more means and infrastructure to contribute to the public sphere, at least.

### *Competing Theories: Democratic History*

There are yet more contextual characteristics that may explain as to why citizens, particularly in countries with relatively short or interrupted histories of democracy, would hunker down, or at least retreat from the public sphere into the private sphere (Howard 2003). Social and civic organizations in communist societies were generally considered to be 'state' organizations, constituted to organize these societies and control the social life of its citizens, until less than a generation ago, but this collective memory lives on. To deal with this repressive state, people 'compartmentalized their lives into small social networks made up of people whom they knew well' (Badescu & Uslander 2003). Völker and Flap (2001) actually found, even in post-communist East Germany, that citizens 'created niches in their personal networks as a refuge, a shelter, from the meddling by the government and party into their private lives'. Similarly, countries temporarily ruled by militaristic, if not totalitarian, regimes may share a collective memory making them 'shy' of the public sphere (and hence reduce formal social capital) and retreat into the private sphere (informal social capital). Vice versa, it may take time, if not generations, to trust democratic institutions (Rose 1994). In terms of theoretical propositions, then, we would propose a line of theoretical reasoning that is slightly different from the above one we tried to derive from Putnam: the shorter the history of continuous democracy, the less people feel comfortable and the more they distrust others and the less they will socially connect to other people in the public sphere, but not necessarily in the private sphere. Hence, we suggest that:

*H5:* The longer the history of continuous democracy, (a) the more interpersonal trust, (b) the more informal social capital, (c) the more formal social capital.

## Data and Measurements

For the purpose at hand, we decided to use Eurobarometer 62.2, containing a number of measurements relevant to test the hypotheses mentioned above, which has been conducted in November–December 2004 in 28 countries.<sup>5</sup> Approximately 27,000 people were interviewed face-to-face via a questionnaire designed to cover, among other things, a broad range of social capital questions. Samples were drawn according to a multistage random design. First, administrative regions were drawn proportional to population size, after which a cluster of random starting addresses was drawn. Further addresses were selected by a random walking procedure, and finally a random procedure was applied to select the respondent at the final address. Sizes per country are, on average, 1,000 individuals older than 15; although for some smaller countries (Luxembourg, Cyprus, Malta), it was half that size. The samples are representative at the country level.<sup>6</sup> We included only people who had lived in the country for at least two generations (i.e. their parents and the respondents were born in the country).

### *Dependent Variables: Interpersonal Trust, Formal and Informal Social Capital*

The data contain one question on interpersonal trust: ‘Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with other people?’ Respondents were also allowed to answer that this would depend. Although this phrase differs somewhat from the ones used by Putnam, this measurement has been widely used (Miller & Mitamura 2003). Our selection of informal social capital variables contains three questions on contact frequency and one on informal social support. Contact frequency with *friends*, *colleagues* and *neighbors* are coded ‘never’, ‘less than a month’, ‘once a month’, ‘several times a month’, ‘once a week’ and ‘several times a week’. *Giving help*, a measure of informal social support, was tested as follows: ‘And in which of the following situations did you, yourself, help or support friends, neighbors or other acquaintances in the past twelve months?’ Eight possible situations were provided. We consider these measurement to be proxies to the ones used by Putnam (2007, 151). These secondary data do not provide measurements for trust in community leaders and register for voting, which is irrelevant in many European countries, nor is it possible to ascertain contacts with family members.

Respondents were also asked to which kinds of organizations (14 possibilities such as a business or professional organization, or a charity or personal aid organization) they donated money to, were a member of or actively participated in. For active *participation in organizations*, we counted all possible organizations to come to our final measurement, but for *donations to organizations*

and *membership of organizations*, we excluded trade unions and church memberships because in some Scandinavian countries it is more ‘a matter of necessity or administrative practice than a voluntary choice’ (Van Oorschot & Arts 2005, 11).

### *Independent Variables at the Contextual Level*

To measure *ethnic diversity*, we used a measure derived from Alesina et al. (2003) providing us with (Herfindahl) indices for 190 countries labelled as a measure of *ethnic fractionalization*. This measurement is essentially similar to the measurements used by Putnam (2007, 167, note 13) as it indicates the probability that two randomly selected individuals from a population belonged to different groups. Of course, Putnam has calculated this (Herfindahl) index for different racial groups at the level of communities whereas the measure provided by Alesina et al. is based on ethnic groups and measured at the level of nations.

Like Putnam (2007, 155), we also considered other measures of ethnic diversity like percentage of immigrants, indicating a rough delineation between in-group and out-groups. Such a measure was provided by the United Nations Population Division (UNPD 2002), labelled as a measure of ‘*migrant stock*’, referring to mid-year estimates of the number of people who are born outside the country. Since this static measure of migrant stock is due to over-time changes in immigration, we also included a more dynamic measure indicating the average ‘*net migration per 1,000 capita*’ for a period of some years prior to the measurement of our dependent variables.<sup>7</sup>

Next, to measure social security at the national level, we use the *percentage of GDP spent on social protection* (provided by Eurostat).<sup>8</sup> A previous study showed that this measurement could substitute the different welfare regimes, at least in Western European countries, with substantially similar conclusions regarding some dimensions of social capital (Scheepers et al. 2002a). We included *income inequality*, using the Eurostat statistics ‘the ratio of total income received by the 20 percent of the population with the highest income (top quintile) to that received by the 20 percent of the population with the lowest income (lowest quintile)’.<sup>9</sup> To control for cross-national differences in wealth, we also included GDP.

To calculate the *history of continuous democracy* of European countries, we subtracted the most recent year in which democracy was constituted in the country from the year of data collection. This approach distinguished most Western and Northern European countries (except West Germany) not only from the former communist countries (like East Germany, the Baltic states, Poland, Bulgaria and Romania), but also from the countries that lived some time under militaristic regimes in the late 1960s and 1970s (like Portugal, Spain and Greece).



### *Independent Variables at the Individual Level*

To control for composition effects as well as to avoid the risk of overestimating contextual-level determinants, we included a number of individual-level determinants like *educational attainment* measured as the age at which the respondent left full-time formal education. Moreover, we included a number of other relevant individual-level characteristics (see also Putnam 2000; Halpern 2005): gender, age, urbanization, employment status, marital status and employment situation.<sup>10</sup> A full list of all variables included in the design with descriptive statistics is presented in Table 1. Table 2 contains the means per country of all dimensions of social capital. In Appendix Table 1, the associations between the dependent variables are presented. In Appendix Table 2, the correlations between the independent variables at the contextual level are presented. Although the latter correlations are substantial in some cases, which makes them all the more worthwhile to consider them simultaneously to be competing explanations of social capital, they are not that high to warn us for problems related to multi-collinearity. In Appendix Table 3, the bi-variate correlations between country characteristics and average levels of dimensions of social capital are presented, indicating that the correlations between most contextual characteristics and dimensions of social capital are higher than the correlation between ethnic fractionalization and dimensions of social capital.

## Analyses

Our hypotheses and the measurements at the contextual and individual level call for multilevel analyses (Snijders & Bosker 1999). Many studies in this field, including Putnam's own, erroneously did not acknowledge the multilevel structure of the hypotheses. Some discarded the individual level and focused exclusively on country-level averages. Others opted to include contextual heterogeneity as an individual-level characteristic. This leads to biased standard errors – also acknowledged by Putnam (2007, 157) – which in turn may lead us to accept hypotheses that should be refuted.

First, we estimated so-called 'empty models' to consider the variance at the individual and contextual levels. These results are presented in Table 3, showing that the variances at the individual level are much higher than the variances at the level of countries. Since the variance of each of our dependent variables was significant at the contextual level (of countries), we decided to include in subsequent steps all individual-level variables and then contextual-level variables. We like to mention that, after taking the individual-level determinants into account, most country-level variances decreased somewhat, indicating that country differences in social capital are to some

Table 1. Descriptive Statistics (28 Countries, N = 21,428 (Based on Independent Variables Only))

|                                   | Minimum | Maximum | Mean  |
|-----------------------------------|---------|---------|-------|
| <i>Dependent variables</i>        |         |         |       |
| Trust                             | 0.00    | 1.00    | 0.30  |
| Meeting with friends              | 1.00    | 6.00    | 4.43  |
| Meeting with colleagues           | 1.00    | 6.00    | 2.61  |
| Meeting with neighbors            | 1.00    | 6.00    | 3.39  |
| Giving informal help              | 0.00    | 8.00    | 2.40  |
| Donations to organizations        | 0.00    | 11.00   | 0.64  |
| Memberships of organizations      | 0.00    | 11.00   | 0.60  |
| Participation in organizations    | 0.00    | 13.00   | 0.39  |
| <i>Individual characteristics</i> |         |         |       |
| Education                         | 1.00    | 68.00   | 18.33 |
| Male                              | 0.00    | 1.00    | 44.36 |
| Female                            | 0.00    | 1.00    | 55.64 |
| Age                               | 0.00    | 8.40    | 3.49  |
| Age <sup>2</sup>                  | 0.00    | 70.56   | 14.89 |
| Professional                      | 0.00    | 1.00    | 0.06  |
| Other white collar                | 0.00    | 1.00    | 0.25  |
| Skilled manual                    | 0.00    | 1.00    | 0.11  |
| Unskilled manual                  | 0.00    | 1.00    | 0.04  |
| Self-employed                     | 0.00    | 1.00    | 0.06  |
| Housekeeping                      | 0.00    | 1.00    | 0.10  |
| Unemployed                        | 0.00    | 1.00    | 0.07  |
| Retired                           | 0.00    | 1.00    | 0.30  |
| Married                           | 0.00    | 1.00    | 0.67  |
| Single                            | 0.00    | 1.00    | 0.12  |
| Divorced/separated                | 0.00    | 1.00    | 0.08  |
| Widowed                           | 0.00    | 1.00    | 0.12  |
| Rural area                        | 0.00    | 1.00    | 0.40  |
| Small city                        | 0.00    | 1.00    | 0.35  |
| Large city                        | 0.00    | 1.00    | 0.25  |
| <i>Country characteristics</i>    |         |         |       |
| Ethnic fractionalization          | -0.18   | 0.36    | 0.00  |
| Migrant stock                     | -6.57   | 30.23   | 0.00  |
| Net migration                     | -8.71   | 8.69    | 0.00  |
| Inequality                        | -1.44   | 2.46    | 0.00  |
| Social security                   | -9.94   | 10.36   | 0.00  |
| Wealth GDP                        | -55.46  | 153.54  | 0.00  |
| Democratic history                | -31.00  | 54.00   | 0.37  |

Source: Eurobarometer 62.2 (2003–2004).

extent due to compositional differences of their populations. To consider the direction of the contextual-level effects, we included the various measures related to ethnic diversity in separate models (not shown), controlling for individual-level variables; second, we ran a model (M3) containing all measures related to ethnic diversity jointly, controlling for individual-level variables; and finally, we ran for each of our dependent variables a model (M4) in which other contextual- and individual-level determinants were also included. Our findings proved to be robust<sup>11</sup> and stable.<sup>12</sup>

Table 2. Countries and Their Level of Informal and Formal Social Capital

|                 | Interpersonal trust | Meeting with friends | Meeting with colleagues | Meeting with neighbors | Giving informal help | Donations to voluntary organizations | Memberships of voluntary organizations | Participation in voluntary organizations |
|-----------------|---------------------|----------------------|-------------------------|------------------------|----------------------|--------------------------------------|--|--|
| Belgium         | 0.312               | 4.115                | 2.201                   | 2.226                  | 2.668                | 0.909                                | 1.005                                  | 0.640                                    |
| Denmark         | 0.761               | 4.736                | 2.551                   | 3.076                  | 3.168                | 0.841                                | 1.761                                  | 0.595                                    |
| West Germany    | 0.347               | 4.633                | 2.567                   | 3.294                  | 2.116                | 0.885                                | 0.928                                  | 0.499                                    |
| East Germany    | 0.265               | 4.259                | 2.432                   | 3.322                  | 2.137                | 0.591                                | 0.546                                  | 0.443                                    |
| Greece          | 0.195               | 4.838                | 2.866                   | 4.079                  | 1.796                | 0.327                                | 0.279                                  | 0.270                                    |
| Spain           | 0.347               | 4.124                | 2.485                   | 2.320                  | 2.118                | 0.199                                | 0.335                                  | 0.227                                    |
| Finland         | 0.558               | 4.357                | 2.827                   | 2.772                  | 2.639                | 1.083                                | 1.035                                  | 0.646                                    |
| France          | 0.216               | 4.397                | 2.310                   | 2.405                  | 2.575                | 0.778                                | 0.773                                  | 0.525                                    |
| Ireland         | 0.321               | 4.673                | 3.116                   | 3.401                  | 2.372                | 1.066                                | 0.708                                  | 0.610                                    |
| Italy           | 0.206               | 4.121                | 2.175                   | 1.929                  | 1.526                | 0.320                                | 0.347                                  | 0.304                                    |
| Luxembourg      | 0.342               | 4.520                | 2.353                   | 2.421                  | 2.374                | 1.907                                | 1.734                                  | 0.723                                    |
| The Netherlands | 0.643               | 5.122                | 2.368                   | 4.413                  | 3.123                | 2.017                                | 2.025                                  | 0.808                                    |
| Austria         | 0.296               | 4.405                | 2.742                   | 2.953                  | 1.960                | 0.950                                | 0.771                                  | 0.563                                    |
| Portugal        | 0.228               | 4.666                | 3.237                   | 4.308                  | 1.164                | 0.297                                | 0.206                                  | 0.135                                    |
| Sweden          | 0.673               | 4.920                | 2.671                   | 3.146                  | 3.226                | 0.932                                | 2.130                                  | 0.765                                    |
| Great Britain   | 0.380               | 4.554                | 2.399                   | 3.220                  | 2.744                | 0.736                                | 0.751                                  | 0.470                                    |
| Cyprus          | 0.185               | 4.622                | 2.731                   | 4.189                  | 2.083                | 0.698                                | 0.424                                  | 0.343                                    |
| Czech Republic  | 0.167               | 4.413                | 2.778                   | 4.047                  | 2.764                | 0.229                                | 0.330                                  | 0.258                                    |
| Estonia         | 0.343               | 3.664                | 2.591                   | 2.390                  | 2.255                | 0.332                                | 0.384                                  | 0.345                                    |
| Hungary         | 0.251               | 3.969                | 2.420                   | 1.922                  | 1.666                | 0.305                                | 0.139                                  | 0.156                                    |
| Latvia          | 0.148               | 4.404                | 3.294                   | 4.581                  | 3.174                | 0.188                                | 0.202                                  | 0.250                                    |
| Lithuania       | 0.134               | 4.439                | 2.763                   | 4.634                  | 2.510                | 0.219                                | 0.145                                  | 0.166                                    |
| Malta           | 0.199               | 3.330                | 1.573                   | 3.090                  | 1.800                | 1.235                                | 0.397                                  | 0.330                                    |
| Poland          | 0.093               | 3.931                | 2.517                   | 3.049                  | 2.050                | 0.193                                | 0.221                                  | 0.238                                    |
| Slovakia        | 0.158               | 4.667                | 3.022                   | 4.604                  | 3.222                | 0.215                                | 0.316                                  | 0.305                                    |
| Slovenia        | 0.240               | 4.679                | 2.723                   | 4.397                  | 2.872                | 0.676                                | 0.688                                  | 0.423                                    |
| Bulgaria        | 0.200               | 4.636                | 2.873                   | 4.092                  | 2.265                | 0.178                                | 0.113                                  | 0.130                                    |
| Romania         | 0.159               | 4.236                | 2.069                   | 3.525                  | 2.161                | 0.074                                | 0.096                                  | 0.124                                    |

Source: Eurobarometer 62.2 (2003–2004).

Table 3. Empty Models (M1) and Individual-level Models (M2): Individual- and Country-level Variance

|                                | Individual-level variance ("0ij) |       | Country-level variance ("0ij) |       |
|--------------------------------|----------------------------------|-------|-------------------------------|-------|
|                                | M1                               | M2    | M1                            | M2    |
| Interpersonal trust            | 3.290                            | 3.290 | 0.643                         | 0.573 |
| Meeting with friends           | 2.025                            | 1.893 | 0.138                         | 0.128 |
| Meeting with colleagues        | 2.681                            | 2.248 | 0.124                         | 0.092 |
| Meeting with neighbors         | 3.009                            | 2.829 | 0.707                         | 0.724 |
| Giving informal help           | 3.434                            | 3.195 | 0.282                         | 0.238 |
| Donations to organizations     | 0.795                            | 0.769 | 0.242                         | 0.225 |
| Memberships of organizations   | 0.924                            | 0.876 | 0.331                         | 0.276 |
| Participation in organizations | 0.549                            | 0.533 | 0.040                         | 0.030 |

Note: All variances are at least twice the size of their standard errors.

Source: Eurobarometer 62.2 (2003–2004).

## Results

### *Tests of Putnam's Core Theory*

Let us have a look first and foremost at the contextual-level determinant in Table 4 upon which the core claim of Putnam is based – that is, on the effects of ethnic fractionalization (*H1*) on dimensions of social capital. The effects of ethnic fractionalization do not reach significance in either model 3 or model 4, actually implying that the bi-variate correlations that we presented in Appendix Table 3 are spurious; there must be other contextual determinants that explain away this correlation. This also holds for the relationship of (a different characteristic of ethnic diversity) the migrant stock living in the country with some dimensions of social capital; the effect of migrant stock on donations to and participation in voluntary organization turn to non-significance once the effects of other contextual determinants are taken into account. There are, however, two exceptions to this rule: we find positive, instead of negative, effects of the migrant stock in the country on giving informal help and on membership of voluntary organizations. As these effects are clearly in the opposite direction of the effects suggested by Putnam, we certainly have to reject this core claim and its constituents.

Next, let us turn to the hypotheses on net migration, the dynamic aspect of diversity. We find a negative effect on interpersonal trust, supporting *H2(a)*, which comes out only after including other relevant contextual characteristics. Yet, we find also some positive, instead of negative, effects of net migration: on some dimensions of informal social capital, net migration

Table 4. The Relationship between Contextual (i.e. National-level) Characteristics and Dimensions of Social Capital

|                           | Interpersonal trust |               | Meeting with friends |               | Meeting with colleagues |               | Meeting with neighbors |               | Giving informal help |               | Donations to voluntary organizations |               | Memberships of voluntary organizations |               | Participation in voluntary organizations |               |
|---------------------------|---------------------|---------------|----------------------|---------------|-------------------------|---------------|------------------------|---------------|----------------------|---------------|--------------------------------------|---------------|--|---------------|--|---------------|
|                           | M3                  | M4            | M3                   | M4            | M3                      | M4            | M3                     | M4            | M3                   | M4            | M3                                   | M4            | M3                                     | M4            | M3                                       | M4            |
| Ethnic fractionalization  | <i>-1.897</i>       | <i>-0.566</i> | <i>-0.264</i>        | <i>-0.027</i> | 0.297                   | <i>-0.130</i> | 0.276                  | <i>-0.250</i> | 0.668                | 0.915         | <i>-0.985</i>                        | <i>-0.699</i> | <i>-1.184</i>                          | <i>-0.369</i> | <i>-0.397</i>                            | <i>-0.142</i> |
| Migrant stock             | <i>0.030</i>        | <i>-0.001</i> | 0.001                | 0.016         | 0.001                   | 0.004         | <i>-0.020</i>          | <i>0.043</i>  | 0.007                | <b>0.030</b>  | <b>0.029</b>                         | <i>0.018</i>  | <b>0.032</b>                           | <b>0.030</b>  | <b>0.011</b>                             | <i>0.005</i>  |
| Net migration             | 0.022               | <b>-0.137</b> | <b>0.047</b>         | <b>0.084</b>  | <i>-0.011</i>           | 0.008         | <i>-0.004</i>          | <b>0.226</b>  | 0.001                | 0.025         | <b>0.073</b>                         | 0.000         | <b>0.062</b>                           | 0.007         | <b>0.023</b>                             | <i>-0.013</i> |
| Inequality                |                     | <i>-0.093</i> |                      | <i>-0.053</i> |                         | 0.018         |                        | <i>-0.105</i> |                      |               | <b>-0.249</b>                        | <b>-0.097</b> |  | <b>-0.128</b> | <b>-0.027</b>                            |               |
| Social security           |                     | 0.014         |                      | <i>0.026</i>  |                         | <i>-0.014</i> |                        | 0.019         |                      | 0.002         |                                      | <i>-0.010</i> |  | <b>0.029</b>  | 0.001                                    |               |
| Wealth                    |                     | 0.008         |                      | <i>-0.007</i> |                         | 0.001         |                        | <b>-0.026</b> |                      | <b>-0.010</b> |                                      | 0.004         |  | <i>-0.001</i> | <b>0.002</b>                             |               |
| Democratic history        |                     | <b>0.014</b>  |                      | 0.002         |                         | <i>-0.004</i> |                        | 0.000         |                      | <b>0.009</b>  |                                      | <b>0.005</b>  |  | <b>0.008</b>  | <b>0.002</b>                             |               |
| Constant                  | <b>-1.292</b>       | <b>-1.283</b> | <b>5.240</b>         | <b>5.242</b>  | <b>3.584</b>            | <b>3.577</b>  | <b>3.271</b>           | <b>3.265</b>  | <b>2.580</b>         | <b>2.584</b>  | <b>0.339</b>                         | <b>0.343</b>  | <b>0.314</b>                           | <b>0.316</b>  | <b>0.234</b>                             | <b>0.241</b>  |
| Number of observations    | 21,039              | 21,039        | 21,166               | 21,166        | 18,869                  | 18,869        | 21,101                 | 21,101        | 21,324               | 21,324        | 21,324                               | 21,324        | 21,324                                 | 21,324        | 21,324                                   | 21,324        |
| -2 log likelihood         | -                   | -             | 73,677               | 73,672        | 68,197                  | 68,190        | 81,974                 | 81,963        | 85,393               | 85,780        | 55,053                               | 55,035        | 57,825                                 | 57,789        | 47,197                                   | 47,156        |
| Individual-level variance | <b>3.290</b>        | <b>3.290</b>  | <b>1.893</b>         | <b>1.893</b>  | <b>2.248</b>            | <b>2.248</b>  | <b>2.829</b>           | <b>2.829</b>  | <b>3.195</b>         | <b>3.195</b>  | <b>0.769</b>                         | <b>0.769</b>  | <b>0.876</b>                           | <b>0.876</b>  | <b>0.533</b>                             | <b>0.533</b>  |
| Country-level variance    | <b>0.488</b>        | <b>0.179</b>  | <b>0.105</b>         | <b>0.088</b>  | <b>0.087</b>            | <b>0.068</b>  | <b>0.703</b>           | <b>0.486</b>  | <b>0.216</b>         | <b>0.132</b>  | <b>0.108</b>                         | <b>0.055</b>  | <b>0.159</b>                           | <b>0.044</b>  | <b>0.017</b>                             | <b>0.003</b>  |

Notes: Models are controlled for individual-level variables: education, gender, age, age<sup>2</sup>, urbanization, employment situation and marital status. Bold = Coefficient is at least twice its standard error. Italic = Country effects are between 1.5 and twice its coefficient's standard error. In spite of the fact that we have directional hypotheses, we use two-tailed test that are more strict, statistically speaking.

appears to increase the frequency of contact with friends and neighbors, which is clearly at odds with *H2(b)* derived from Putnam. The positive effects that we find (in model 3) of net migration on dimensions of formal social capital certainly do not support the claims of Putnam and, moreover, turn to non-significance once the other contextual determinants are included. These findings clearly reject *H2(c)*.

#### *Tests of Competing Theories: Economic Inequality*

Then, we turn to tests of *H3* on economic inequality. We ascertain a typical pattern. Generally, the effects of economic inequality are negative; however, they do not reach significance regarding all dimensions of social capital. Yet, economic inequality does have significant negative effects on one dimension of informal social capital (i.e. giving informal help), as well as on all dimensions of formal social capital under consideration (i.e. donations to organizations, membership of and participation in organizations). Considering this, we conclude that the evidence on the relationship between economic inequality and formal social capital is rather convincing, supporting *H3(c)*, which, however, does not hold for interpersonal trust and all dimensions of informal social capital, hence rejecting *H3(a)* and *H3(b)*.

#### *Test of Competing Theories: Social Security*

Let us consider, next, the effects of social security as proposed in *H4*. Overall, these effects seldom reach significance; actually, we only find a positive effect on membership of organizations. We propose that these findings altogether reject *H4*. We also find that the level of wealth (as indicated by GDP) increases one dimension of formal social capital (i.e. participation in organizations), whereas wealth appears to decrease other dimensions of informal social capital (i.e. meeting with neighbors and giving informal help).

#### *Tests of Competing Theories: Democratic History*

Finally, let us turn to the effects of the history of democracy. We find that these effects are generally positive, although they do not all reach significance. Yet we find that the longer the history of continuous democracy, the higher the level of interpersonal trust, giving informal help, donations to, memberships of and participation in organizations. The finding that this history of continuous democracy has no significant effects on meeting with friends, colleagues and neighbors implies that countries with short histories (i.e. former communist countries) and countries with interrupted democracies (i.e. some of the Mediterranean countries) do not differ in this respect from the other European countries. These relationships can be verified by looking

at Table 2, where we find that (nearly) all former communist countries (e.g. Latvia, Lithuania, Poland, Bulgaria and Romania) are rather low on interpersonal trust as well as on all dimensions of formal social capital, which also holds for (nearly) all of the Mediterranean countries (e.g. Greece, Spain, Italy and Portugal). We consider this evidence to clearly support *H5(a)* and *H5(c)*, and to reject hypothesis *H5(b)*.

Although the focus of this contribution is not particularly on the individual-level determinants, we like to mention some striking patterns (all tables are available on request from the authors). Highly educated people are more involved in informal and formal social activities, except for meeting with neighbors, which is more typical for lower educated people. Similarly, we find that higher professionals show higher levels of informal and formal social capital, except for meeting with the neighbors, which is a behavioral pattern more typical for manual workers and those not (anymore) involved in the labor market. People living in rural areas appear to outperform city dwellers in nearly all dimensions of social capital, except for giving informal help.

## Conclusions and Discussion

In this contribution, we have focused on the thesis recently proclaimed by Putnam (2007) that people living in conditions of ethnic diversity tend to 'hunker down' or change into 'turtles', metaphorically speaking. Since he developed this thesis in the context of American society, Putnam actually called for tests in other societies. Therefore, we undertook the challenge to test his thesis on recent cross-national European data, containing a relatively wide spectre of valid measurements of core dimensions of interpersonal trust, informal and formal social capital (cf. Pichler & Wallace 2007), which we consider semantically equivalent to measurements employed by Putnam in many respects. Moreover, we collected cross-national measurements on ethnic diversity and some other contextual characteristics that turned out to be (strongly) associated and theoretically considered to affect these dimensions of social capital. We tested Putnam's thesis with rather advanced methodological tools, taking the nature of the two-level data into account, hence avoiding the possibility of methodological errors. This holds particularly for models we developed including competing contextual determinants for all dimensions of social capital providing possibilities to find spurious relationships. Yet, there may be other contextual characteristics that could possibly add to the explanation of dimensions of social capital and in turn would produce other spurious relationships that follow-up researchers could develop theories on and then take into account. Such theoretical explanations should be kept in balance with the available degrees of freedom

(Snijders & Bosker 1999). Another methodological improvement could be to include the municipality level between the national and the individual levels and build a three-level model. However, it may be extremely difficult, if not impossible, to find valid data in all countries of all determinants at this level.

To answer our crucial question – to what extent do national-level characteristics, like (various measures of) ethnic diversity, next to other national characteristics, actually affect (various measures of) social capital of individual citizens in European countries? – is not simple, unfortunately, and certainly not as easy as Putnam wanted us to believe. We found no evidence at all for what we consider to be Putnam's core claim on the relationship between ethnic diversity and dimensions of social capital: these relationships turned out to be spurious in Europe. Since Putnam claimed that the link between ethnic diversity and hunkering down would hold for public and private connections, we have to refute this general thesis for European societies. We found some significant relationships between an alternative measure of ethnic diversity (i.e. migrant stock) and some dimensions, but these relationships also turned out to be spurious or significantly positive instead of negative, which certainly does not provide us with empirical evidence for the detrimental effects of diversity Putnam suggested. The net level of immigration also turned out to have positive, rather than negative, relationships, or spurious relationships with dimensions of social capital. We found only one exception to this general pattern: a negative effect of net migration on interpersonal trust. Our findings underpin the need for a methodologically sound test of the hypotheses on ethnic diversity and social connectedness. Several studies that acknowledged the hierarchical structure of the hypotheses, and included contextual control factors, did not find the negative effect of ethnic diversity on social connections (cf. Johnston & Soroka 2001; Hooghe et al. 2006).

Having ascertained that Putnam's core claims turn out to be spurious in Europe, the question is: Which other national characteristics determine dimensions of social capital in Europe? The finding that the national level of social security does not affect any of the dimensions of informal social capital, but does 'crowd out' only one dimension of formal social capital (i.e. membership), dismisses this national characteristic as a really important determinant. The finding that the nations' wealth reduces the frequency of some meetings (e.g. with neighbors) and increases only the level of participation in organizations means that we consider this to be a necessary, but not sufficient, explanatory determinant. We found, however, that economic inequality appeared to reduce significantly all dimensions of formal social capital (i.e. public connections in organizations), as well as one dimension of informal social capital (i.e. giving help). We also found that the democratic histories of European societies turned out to affect interpersonal trust, giving informal help, donations to, memberships of and participation in organizations.



Thus we gain a fairly consistent overall picture of social capital in European societies. The overall picture is that it is not ethnic fractionalization as suggested by Putnam, but instead, the years of continuous democracy and the level of economic inequality that are important for social capital in European societies. Economic inequality may increase social barriers between (ethnic) groups that in turn reduce (at least slightly) one dimension of informal and all dimensions of formal social capital. The length or stability of democracy increases interpersonal trust, at least one dimension of informal and all dimensions of formal social capital. These differential effects underscore the fruitfulness of the distinction between formal and informal social capital (cf. Pichler & Wallace 2007). Yet these findings appear to be clearly at odds with the theoretical propositions we tried to deduce from Putnam's 'constrict theory', where we found no indications for the necessity to make distinctions between formal and informal social capital or to expect such differential effects of contextual determinants.

These findings indicate that there is still a political cleavage in Europe at the level of ordinary citizens, even after the abolition of non-democratic institutions some generations ago. Most people living in Western and Nordic European countries share long histories of democracy (except for Germany) in which civic organizations have fulfilled democratic utilities, whereas such organizations are circumvented by many people living in Eastern and Southern European countries. This cleavage does not show up – at least not as clearly – when it comes down to informal social contacts. Therefore, we like to suggest, in line with Howard (2003) and Badescu and Uslaner (2003) that the European countries' history of democratic institutions may actually have some effects on formal social capital, which are, however, in need of empirical tests that are difficult to perform due to a lack of longitudinal data.

Appendix Table 1. Correlations between Indicators of Social Capital (N Varies between 18,704 and 21,687)

|                                | Interpersonal trust | Meeting with friends | Meeting with colleagues | Meeting with neighbors | Giving informal help | Donations to voluntary organizations | Memberships of voluntary organizations | Participation in voluntary organizations |
|--------------------------------|---------------------|----------------------|-------------------------|------------------------|----------------------|--------------------------------------|--|--|
| Interpersonal trust            | 1.000               |                      |                         |                        |                      |                                      |  |  |
| Meeting with friends           | 0.089**             | 1.000                |                         |                        |                      |                                      |  |  |
| Meeting with colleagues        | 0.053**             | 0.354**              | 1.000                   |                        |                      |                                      |  |  |
| Meeting with neighbors         | 0.001               | 0.291**              | 0.180**                 | 1.000                  |                      |                                      |  |  |
| Giving informal help           | 0.101**             | 0.201**              | 0.168**                 | 0.106**                | 1.000                |                                      |  |  |
| Donations to organizations     | 0.193**             | 0.075**              | 0.053**                 | 0.005                  | 0.199**              | 1.000                                |  |  |
| Memberships of organizations   | 0.249**             | 0.147**              | 0.099**                 | -0.001                 | 0.221**              | 0.512**                              | 1.000                                  |  |
| Participation in organizations | 0.146**             | 0.123**              | 0.129**                 | 0.030**                | 0.191**              | 0.409**                              | 0.603**                                | 1.000                                    |

Notes: For interpersonal trust, the Spearman's rho is used. ~ p < 0.10 (two-tailed). \* p < 0.05 (two-tailed). \*\* p < 0.01 (two-tailed).

Appendix Table 2. Bi-variate Macro-level Correlations between Country Characteristics (N = 28)

|                          | Ethnic fractionalization | Migrant stock | Net migration | Wealth  | Inequality | Social security | Democratic history |
|--------------------------|--------------------------|---------------|---------------|---------|------------|-----------------|--------------------|
| Ethnic fractionalization | 1.000                    |               |               |         |            |                 |                    |
| Migrant stock            | 0.541**                  | 1.000         |               |         |            |                 |                    |
| Net migration            | -0.279                   | 0.102         | 1.000         |         |            |                 |                    |
| Wealth                   | -0.051                   | 0.467*        | 0.757**       | 1.000   |            |                 |                    |
| Inequality               | 0.223                    | 0.218         | -0.331~       | -0.392* | 1.000      |                 |                    |
| Social security          | -0.391*                  | -0.137        | 0.312         | 0.458*  | -0.446*    | 1.000           |                    |
| Democratic history       | -0.289                   | 0.178         | 0.556**       | 0.749** | -0.385*    | 0.451*          | 1.000              |

Notes: ~ p < 0.10 (two-tailed). \* p < 0.05 (two-tailed). \*\* p < 0.01 (two-tailed).

Appendix Table 3. Bi-variate Macro-level Correlations between Country Characteristics and Average Levels of Social Capital in a Country (N = 28)

|                          | Interpersonal trust | Meeting with friends | Meeting with colleagues | Meeting with neighbors | Giving informal help | Donations to voluntary organizations | Memberships of voluntary organizations | Participation in voluntary organizations |
|--------------------------|---------------------|----------------------|-------------------------|------------------------|----------------------|--------------------------------------|--|--|
| Ethnic fractionalization | -0.238              | -0.024               | 0.114                   | 0.014                  | 0.217                | -0.039                               | -0.025                                 | -0.154                                   |
| Migrant stock            | 0.127               | 0.066                | 0.105                   | -0.085                 | 0.210                | 0.343~                               | 0.325~                                 | 0.364~                                   |
| Net migration            | 0.185               | 0.147                | -0.073                  | -0.041                 | -0.027               | 0.467*                               | 0.349~                                 | 0.462*                                   |
| Wealth                   | 0.495**             | 0.037                | -0.172                  | -0.363~                | 0.037                | 0.575**                              | 0.579**                                | 0.789**                                  |
| Inequality               | -0.424*             | -0.020               | 0.228                   | 0.157                  | -0.228~              | -0.242                               | -0.421*                                | -0.514**                                 |
| Social security          | 0.490**             | -0.038               | -0.311                  | -0.314                 | -0.107               | -0.059                               | 0.435*                                 | 0.508**                                  |
| Democratic history       | 0.715**             | 0.286                | 0.012                   | -0.173                 | 0.308                | 0.532**                              | 0.673**                                | 0.838**                                  |

Notes: ~ p < 0.10 (two-tailed). \* p < 0.05 (two-tailed). \*\* p < 0.01 (two-tailed).

## NOTES

1. Strictly speaking, this metaphor of hunkering down or breaking down seems to imply the need for longitudinal analyses on longitudinal or preferably panel data to answer the question if and to what extent people react to (changes in) circumstances of ethnic diversity. Such longitudinal data are quite rare, yet there are exceptions (Scheepers & Janssen 2003). Since such data are certainly not readily available in so many European countries with comparable measurements in comparable time frames, we restrict ourselves, just like Putnam, to tests on cross-sectional data.
2. For different versions of the core theory, see Blumer (1958); Blalock (1967); see also Bobo (1999); Quillian (1995, 1996); Scheepers et al. (2002b). There is some evidence for the first part of this statement on the relationship between ethnic diversity and in-group attitudes missed by Putnam, who states that this kind of evidence is virtually non-existent: Coenders et al. (2004) found in a wide array of countries that ethnic diversity increases in-group attitudes like chauvinism, but not patriotism, after controlling for individual- and contextual-level determinants. There is mixed evidence for the latter part of this statement on the relationship between ethnic diversity and out-group attitudes. Some studies find support to the *positive* effect of one aspect of diversity (i.e. outgroup size) on outgroup derogation (e.g. Fossett & Kiecolt 1989; Quillian 1995, 1996; Coenders & Scheepers 1998; Coenders 2001; Scheepers et al. 2002b; Semyonov et al. 2006), whereas others fail to find such evidence (e.g. Evans & Need 2002; Semyonov et al. 2004) and some find mixed evidence for certain dimensions of out-group exclusion (Coenders et al. 2005). A third group of studies documents a *negative* effect (Hood & Morris 1997; Lubbers et al. 2006). Particularly the latter findings could be explained by intergroup contact theory (Allport 1954; Pettigrew 1998; Wagner et al. 2006) proposing that diversity in terms of larger outgroup size provides opportunities for positive intergroup contact, which in turn would ameliorate anti-outgroup attitudes.
3. Previous research already suggested that social connections do not thrive in heterogeneous environments. Lehnig (1998, 238) claimed 'the greater the number and diversity of persons in a group, the more that universalistic norms require altruism, and yet – at the same time – the weaker the force of altruism'. In ethnically diverse settings, citizens may feel threatened and are therefore less likely to connect to others socially (Hooghe et al. 2006). This idea has been applied to ethnic diversity before, with mixed results (Johnston & Soroka 2001; Alesina & La Ferrara 2002; Delhey & Newton 2005; Hooghe et al. 2006). All test the claim that social connections tend to be lower in ethnically diverse societies. The core argument seems to be that (ethnic) diversity makes people generally shy to come out, be it in formal or informal connections.
4. The core of this proposition would lead us to suspect that other kinds of social barriers, like linguistic or religious cleavages, could also reduce social capital. Since such hypotheses have not yet been formulated by Putnam, we will focus our analyses on this type of inequality.
5. These are: Belgium, Denmark, West Germany, East Germany, Greece, Spain, Finland, France, Ireland, Italy, Luxemburg, the Netherlands, Austria, Portugal, Sweden, Great Britain, Northern Ireland, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Bulgaria and Romania.
6. For more detailed information, see: [http://www.za.uni-koeln.de/data/en/eurobarometer/questionnaires/ZA4231\\_bq\\_en.pdf](http://www.za.uni-koeln.de/data/en/eurobarometer/questionnaires/ZA4231_bq_en.pdf)
7. These figures actually refer to the period 1995–2000. UNPD updates these figures every five years. It would not make sense to take figures referring to the period 2000–2005 as the measurements of our dependent variables are collected in 2004.
8. In a previous publication (Scheepers et al. 2002b), we tested whether the inclusion of the typology of welfare state regimes (as proposed by Esping-Andersen (1990)) versus the percentage of GDP spent on social protection would lead to substantially different conclusions, which it did not. We prefer the latter measurement because it is more valid, reliable and updated.
9. For more information on all Eurostat indicators used, see the link 'long-term indicators' on the Eurostat homepage.

10. Due to data limitations, we were not able to include other relevant individual-level determinants like religiosity and household size.
11. A risk of quantitative, cross-national research is the problem of outliers. Cross-national studies focus on a limited number of countries, and when one of these countries strongly differs on one or more characteristics, this country may strongly affect the outcomes of the analysis. In our study, we found that Luxembourg was such an outlier on several characteristics (GDP/capita, migrant stock). We therefore re-ran our models, leaving Luxembourg out of the analysis. In our replication of the fourth models in Table 4, the findings proved to be remarkably stable. First and foremost, leaving out Luxembourg did not alter our conclusions in any way. The direction of the effects did not change, while their significance was subject to only minor fluctuations. The most important change was that economic development (GDP/capita), which originally significantly determined giving informal help, lost its significance by the exclusion of Luxembourg.
12. Another risk is the problem of multi-collinearity. High correlations among the country-level determinants (in addition to the relatively small N at level 2) in our multilevel analyses might lead to incorrect conclusions as the effects may overlap and the coefficients might be the result of chance. To test whether this is the case or whether the found coefficients on the level 2 determinants are stable, we performed perturbation analyses (Belsley 1991). Basically, we re-ran the statistical models 100 times. For each of these tests, we introduced different small random errors in our measures at the country level. If the coefficients found in the fourth models in Table 4 are not stable but caused by multi-collinearity, we would expect that they would be affected by introducing small, random errors simultaneously in all measures. We tested for each of the 100 perturbations what the resulting coefficients would be in a similar hierarchical modelling procedure (tables and details available from the authors on request). The most important questions are: How often are the coefficients in the same direction as those in the original tables? And how often are the coefficients significant? With regards to the first question, we found that the direction of the coefficients was very stable. For each of the coefficients that were significant in Table 4, the effects pointed in the same direction in all of our perturbations. We are therefore very certain that the direction of the effects is stable. With regards to the second question, we found that coefficients that were not significant in Table 4 did not turn significant in our perturbation analyses. Similarly, significant coefficients in Table 4 remained significant in the vast majority of our perturbation analyses, with a few exceptions. With regards to giving informal help, we found significant effects of migrant stock and of wealth in Table 4. In our perturbation analyses, these effects were significant at the 0.05 level in, respectively, 32 and 46 percent of the perturbations. Similarly, for donations to voluntary associations, inequality and democratic history were significant determinants in Table 4. They were less stable determinants in our perturbation analyses: in, respectively, 50 and 35 percent of the perturbations these determinants were significant at the 0.05 level. Nevertheless, we should conclude that by and large our findings in Table 4 are stable. First, the direction of the significant effects is undisputed. Second, the majority of the effects remain significant in our perturbation analyses at the 0.05 level. And third, even those four effects that were not stable at the 0.05 level remained significant at the 0.10 level.

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