



Measuring the ‘Bridging’ versus ‘Bonding’ Nature of Social Networks: A Proposal for Integrating Existing Measures

■ **Benny Geys**

Wissenschaftszentrum Berlin für Sozialforschung, Germany

■ **Zuzana Murdoch**

University of Agder, Norway

ABSTRACT

Recent research illustrates that two distinct interpretations and operationalizations of ‘bridging’ and ‘bonding’ social networks co-exist in the literature (based on links between diverse networks or between socio-economic groups within a given network, respectively), and that these do not coincide in empirical applications. The present contribution first confirms this conclusion using data from the United Kingdom. Then, we suggest a simple way to integrate both existing approaches into a more general measure of bridging and bonding. Applying this more general index to UK and Flemish data, a) provides stronger empirical support for the idea that memberships in bridging groups are more strongly linked to positive civic values than those in bonding ones, and b) shows that the extended index behaves more consistently across institutional settings (i.e. Flanders and the UK) than both underlying measures independently.

KEY WORDS

bonding / bridging / civic engagement / social networks

I Introduction

A large and growing literature discusses the various social, political and economic effects of civic engagement (or, more broadly, social capital). Civic engagement is mostly argued to be a positive force that helps shore up

social trust, norms and values (see Halpern, 2005, for a review). Yet, it has long been recognized that there are potential dark sides to civic engagement (e.g. Bourdieu, 1985; Coleman, 1988; Levi, 1996). To allow for these 'negative aspects of sociability' (Harriss and De Renzio, 1997: 926), Paxton (1999, 2002) and Putnam (2000) proposed a distinction between 'bridging' and 'bonding' social networks. Essentially, bonding networks are thereby described as connecting 'people who are like one another in important respects' while bridging networks link 'people who are unlike one another' (Putnam and Goss, 2002: 11).

This distinction has become increasingly popular. The number of articles in SSCI journals concerned with bridging and/or bonding social capital rose from four papers in 2002 to 26 in 2008. Yet Geys and Murdoch (2008) recently argued that two conceptually distinct interpretations and methodological approaches to measure bridging and bonding co-exist: one built on connections *within* a given group (referred to as 'internal' bridging) and one relying on links *between* different groups ('external' bridging). A 'group' hereby refers to any set of individuals that comes together either on a voluntary or involuntary basis (though, in empirical applications, reference is most often made to voluntary associations). Moreover, using Flemish data, they illustrate that these two approaches do *not* quantify the same thing in empirical applications.

Given the rapidly increasing popularity of both concepts and the theoretical and conceptual implications of recent criticism of them,¹ the present article has two main objectives. First, we seek confirmation of the Flemish findings using two UK datasets (British Social Attitude Survey [2003, 2005] and UK Home Office Citizenship Survey [2005]). Overall, our findings confirm the Flemish conclusions. Second, based on the idea that both interpretations of bridging/bonding might simply tap into different dimensions of the bridging/bonding divide, we propose a simple way to combine the information contained in the existing 'internal' and 'external' measures. Such integration exploits more relevant information and therefore generates a more general measure of bridging and bonding. Applying this generalized measure to both Flemish and UK data, we illustrate that it systematically performs in line with theoretical predictions (cf. Marshall and Stolle, 2004; Putnam, 2000). Moreover, our findings are consistent across both institutional settings.

It is worth stressing that neither of these conclusions necessarily holds for the underlying measures individually (i.e. using *either* internal *or* external interpretations of bridging/bonding). In those cases, bridging does not always outperform bonding, and the results of such tests are inconsistent across institutional settings. Based on our results, a possible explanation for this ambiguity is that focusing on, say, the internal (external) dimension of bridging/bonding ignores important information about its external (internal) dimension. As such, we conclude that our more general measure of bridging/bonding – including information about associations' internal *and* external bridging potential – provides a more consistent indicator of an important distinction between types of social networks. It thereby helps alleviate the current conceptual ambiguity.

This, in turn, not only allows for more accurate policy implications, but also creates a more reliable framework to think about how bridging and bonding relate to each other, and how we can move from one to the other (for recent discussion of these issues, see Leonard, 2004; Ryan et al., 2008).

2 Definitions and Measurement²

To contextualize our arguments, we here reiterate the main definition and measurement issues related to the bridging/bonding distinction proposed by Paxton (1999, 2002) and Putnam (2000). Essentially, bonding social networks are defined as bringing ‘together people who are like one another in important respects (ethnicity, age, gender, social class, and so on)’ (Putnam and Goss, 2002: 11) while bridging ones ‘bring together people who are unlike one another’ (Putnam and Goss, 2002: 11). While providing an intuitive means to distinguish the bright and dark sides of social networks, the imprecise nature of these definitions has allowed for two distinct interpretations in empirical applications. That is, one group of scholars focuses on the socio-economic heterogeneity of membership *within* organizations. This is based on the idea that associations with a more heterogeneous membership constitute, in themselves, a platform for cross-cutting ties across socio-economic cleavage lines (Li et al., 2003; Putnam, 2000; Stolle, 2001; Stolle and Rochon, 1998). In the remainder of our article, we refer to this as ‘internal’ bridging/bonding. Paxton (2002, 2007), on the other hand, concentrates on associations’ interconnectedness to the wider community (i.e. *between* organizations). The underlying idea here is that bridging socio-economic divides might predominantly result from overlapping networks. We refer to this interpretation as ‘external’ bridging/bonding.

Both interpretations obviously entail different measurement strategies. Evaluation of the ‘internal’ bridging nature of associations involves comparing membership composition of each association to the composition of the overall population on a large number of socio-economic dimensions (e.g. age, gender, education, income, religion, race, housing status, professional status, occupational classification, marital status, whether one has children).³ This proceeds in three steps. First, a ‘diversity score’ is calculated as the average absolute difference between the population composition and an association’s membership composition on a number of socio-economic traits (though this number of traits can be freely chosen, including more characteristics improves the method’s reliability).⁴ The second step involves normalization of this raw diversity score between 0 and 1. This allows the normalized score to be added across socio-economic traits without implicitly weighting any given dimension more heavily than another (cf. Bowen and Moesen, 2007).⁵ Finally, adding the normalized diversity scores across all socio-economic traits for each association leads to a ‘sum of normalized diversity scores’ index, which by definition lies between 0 and the number of socio-economic traits included. Following the assumption

that bridging social capital derives from ‘memberships in associations that are representative of the larger society’ (Stolle and Rochon, 1998: 64*n*), associations with a lower (higher) index value – which closely (weakly) follow the overall population composition – are then designated as predominantly bridging (bonding) (Coffé and Geys, 2007a; Stolle and Rochon, 1998).

Assessment of the ‘external’ bridging potential relies on counting interconnections between associations and correcting this number for the relative size of each association. Such correction is required since all links between groups are necessarily symmetric and, as a result, ‘the size of the groups distinguished by a given parameter is inversely related to the extent of their intergroup relations’ (Blau, 1977: 24). In other words, not correcting for relative group size would unduly benefit (punish) small (large) groups since all members of a small group can also be members of a large group, but not the other way round. A simple correction for the bias due to unequal membership size involves running a standard OLS regression with the observed number of interconnections (i.e. average number of additional memberships in association *i* as the independent variable and the membership level of the associations as the explanatory variable. Higher (lower) residuals from this regression (i.e. the difference between the predicted and observed number of additional memberships in any given association) indicate that an association has more (less) interconnections than its membership size would lead one to expect. Hence, they denote an association’s bridging or bonding nature *net of the membership size effect*. As multiple memberships generate ‘organizational embeddedness’ (Cornwell and Harrison, 2004: 863), more interconnections to the wider organizational community imply higher ‘external’ bridging potential (see also Coffé and Geys, 2008; Paxton, 2002, 2007).

3 Comparing ‘Internal’ and ‘External’ Bridging/Bonding: UK Evidence

In a recent article using Flemish survey data, Geys and Murdoch (2008) illustrate that the interpretations of bridging/bonding described above do not lead to similar results in empirical applications, and argue that this leads to conceptual ambiguity as regards the meaning of bridging and bonding. In this section, we reassess these claims using data from the British Social Attitude Survey (2003 and 2005) and UK Home Office Citizenship Survey 2005 (we refer to these as SAS and HOC, respectively). Both surveys probe respondents on voluntary association membership, albeit phrased slightly differently. While SAS asks respondents whether they are ‘currently a member of, or [...] regularly join in the activities of, any of the organisations on this card’, the HOC question relates to ‘any groups, clubs or organizations that you’ve been involved in [i.e. taken part in, supported or helped in any way] during the last 12 months’. Hence, the questions differ both in terms of the timeframe referred to, and the

Table 1 Bridging versus bonding association types in UK

	<i>Ranking 'internal' approach</i>	<i>Number of members (MEMB)</i>	<i>Ranking 'external' approach</i>
SAS dataset			
Socio-cultural association (arts, drama, ...)	1	562	3
Sports or recreation club	2	1175	6
Political party and trade unions	3	524	11
Neighbourhood watch or tenants group	4	381	8
Local charity group	5	290	2
Environmental or conservation group	6	307	4
Social or working men's club	7	472	13
Youth group	8	205	5
Pressure or campaigning group	9	147	1
Religious or church group	10	680	7
Women's group	11	187	9
Parent-teacher association	12	354	10
Associations for elderly people	13	203	12
HOC dataset			
Safety and first aid group	1	682	3
Sports group	2	3598	2
Education for adults	3	1427	10
Socio-cultural association (arts, drama, ...)	4	2371	7
Youth/children activities	5	1529	11
Religious group	6	2687	14
Health, disability and social welfare group	7	1489	6
Association for elderly	8	751	4
Local community or neighbourhood group	9	1208	13
Children education and schools	10	2147	9
Trade union	11	708	15
Justice and human rights group	12	440	1
Environmental or animal rights group	13	995	12
Political group	14	294	5
Citizens group	15	389	8

description of one's involvement in voluntary associations. Moreover, the set of association types provided to respondents differs across both surveys: 13 in SAS and 15 in HOC (see Table 1). Hence, while the use of UK data addresses the validity of the original findings in a different institutional setting, the variation in question wording between the two UK surveys gauges the potential importance of such survey-design variations.

The results from calculating the internal and external measures of bridging/bonding for both datasets are presented in the upper and lower panel, respectively, of Table 1. Column 2 contains associations' position on a scale from

most bridging (low rank) to most bonding (high rank) for the internal bridging measure. Column 4 shows a similar ranking for external bridging. The number of individuals claiming membership in each association is given in Column 3.

Using these results, we perform two tests to evaluate whether both operationalizations quantify the same thing – and thus measure the same concepts (as suggested by their use of similar theoretical arguments and terminology). First, we compare Columns 2 and 4 in Table 1. This allows us to assess whether both approaches similarly rank organizations on a scale from most bridging to most bonding. For both datasets, these rankings are shown to be only weakly related using a Pearson rank-order correlation test (correlation SAS-data = 0.198, $p = 0.52$; correlation HOC-data = 0.093, $p = 0.74$). Hence, we observe that ‘high *external* bridging potential does not necessarily signify high *internal* bridging potential (or vice versa)’, in line with the Flemish data (Geys and Murdoch, 2008: 442). Moreover, the consistency of this finding across both UK samples implies that the exact wording of the membership question leaves this conclusion unaffected.

As a second test, we analyse whether this divergence affects the relation between, on the one hand, membership in bridging/bonding networks and, on the other hand, individuals’ social and political attitudes.⁶ To this end, we estimate the following empirical relation (subscript i for individuals):⁷

$$\text{Value}_i = a + b_1 \text{Membership}_i + \text{Controls}_i + e_i$$

where value_i represents component scores derived from a principal components analysis (PCA) of individuals’ responses (ranging from ‘completely agree’ to ‘completely disagree’ in five steps) to a number of statements concerning two civic attitudes: Political powerlessness and Authoritarianism (for technical details, see Appendix A). The crucial variables are captured in the ‘Membership’ vector. This contains three variables indicating the number of memberships an individual claims in a) the four most bridging, b) the four most bonding and c) the five remaining ‘middle-of-the-road’ associations.⁸ As values for these three variables differ across internal and external bridging/bonding, this allows testing whether inferences depend on the approach employed. To minimize potential missing-variable bias, we add an extensive set of control variables (cf. Coffé and Geys, 2007b; Hooghe, 2003; Putnam, 2000): i.e. frequency of church attendance, gender, age, education level, marital status, number of children and newspaper reading. The results are given in Table 2. To preserve space (and since all controls coincide with previous findings – available on request), we only display results for our central membership variables.

First, the data do *not* support the idea that political powerlessness and authoritarianism are lower for members of bridging rather than bonding networks. In fact, the distinction between memberships in bridging and bonding groups is mostly statistically insignificant (as shown by the F-tests in the bottom of Table 2). This goes against the theoretical suggestion advocated by

Table 2 Bridging and bonding memberships and civic attitudes (SAS data)

Variable	Political powerlessness	Authoritarianism
Internal bridging		
Bridging associations	-0.125 ***	-0.107 ***
(number of memberships)	(-6.21)	(-4.88)
Middle group of associations	-0.042	-0.045
(number of memberships)	(-1.63)	(-1.55)
Bonding associations	-0.072 ***	-0.114 ***
(number of memberships)	(-2.61)	(-3.67)
F (bridging = middle)	5.52 **	2.72 *
F (bridging = bonding)	2.13	0.02
F (middle = bonding)	0.56	2.37
F (all coeff. equal)	2.97 *	1.65
R ²	5.13	10.28
External bridging		
Bridging associations	-0.143 ***	-0.065 ***
(number of memberships)	(-6.22)	(-2.66)
Middle group of associations	0.032	0.011
(number of memberships)	(1.17)	(0.36)
Bonding associations	-0.123 ***	-0.192 ***
(number of memberships)	(-5.45)	(0.36)
F (bridging = middle)	21.72 ***	3.74 *
F (bridging = bonding)	0.35	11.36 ***
F (middle = bonding)	16.34 ***	24.27 ***
F (all coeff. equal)	12.08 ***	12.67 ***
R ²	5.45	10.82
N	6291	5198

Note: t-values based on heteroscedasticity-consistent standard errors between brackets; *** significant at 1%, ** at 5% and * at 10%

F-tests reflect significance of difference between coefficients of different association variables

Controls for gender, age, marital status, number of children, church attendance, race, education and newspaper readership included in all models

Putnam (2000), Putnam and Goss (2002) and Marshall and Stolle (2004) and is also at odds with findings for Flemish data (see Geys and Murdoch, 2008; more detailed discussion of this finding follows in section 4.2). Second, and crucially, important differences are revealed across both approaches to bridging/bonding. In fact, strong and statistically significant differences between memberships in bridging, middle or bonding associations mainly occur for the *external* measure, but not for the *internal* one (see F-tests in Table 2). Hence, as in Flanders, internal and external approaches to bridging/bonding do not lead to similar findings, and thus clearly fail to capture the same concepts.

4 Integrating Internal and External Bridging/Bonding

4.1 A Generalized Index of Bridging and Bonding

Although our findings in section 3 illustrate the general nature of the conceptual ambiguity highlighted in Geys and Murdoch (2008), this does not mean that bridging and bonding are empty concepts. One way forward is to develop strategies that overcome such ambiguities. In this section, we therefore propose a simple methodology to combine the information contained in both operationalizations (i.e. internal *and* external bridging/bonding) into one single measure. To the extent that both interpretations tap into different dimensions of the bridging/bonding divide, such combination retains more relevant information and therefore creates a more general measure of bridging and bonding.

Specifically, we suggest constructing a two-by-two matrix (see Figure 1) where the internal bridging/bonding measure is depicted in the horizontal dimension and the external one in the vertical dimension. After calculating associations' position on a scale from most bridging to most bonding using the methodologies described in section 2 (e.g. Table 1), this two-by-two matrix allows us to easily combine both sets of information. That is, associations ranked towards the bridging (bonding) side of the bridging/bonding continuum *on both methodologies* are placed in the upper left (lower right) corner, respectively, of the matrix. Associations that are bridging (bonding) in one dimension but bonding (bridging) in the other land in the upper right (lower left) corners of the matrix. Hence, rather than two binary distinctions (i.e. internal bridging/bonding and external bridging/bonding), we create one four-way distinction.

Clearly, an important question at this point concerns where to draw the dividing line between bridging and bonding associations. Unfortunately, there is no clear theoretical answer to this question. That is, researchers may choose to place the dividing line between bridging and bonding exactly in the middle of the obtained rankings (i.e. having an equal number of each), or anywhere left or right of the middle. Obviously, the choice for any such division should be carefully defended. Nevertheless, to alleviate the arbitrary nature of this choice, it may be fruitful to rely on a three-way distinction (i.e. bridging-middle-bonding). This not only sharpens the empirical divide between bridging and bonding associations (cf. Coffé and Geys, 2007b; Geys and Murdoch, 2008; Putnam, 2000), but also implies that associations in the middle of the ranking are not unnecessarily and possibly erroneously forced into either the bridging or bonding category.

To give a simple example of this integration procedure, imagine we have a dataset containing all necessary information on four association types (A, B, C and D). Then, the methodologies described in section 2 will give us two rankings from most bridging to most bonding: one for internal bridging/bonding

External	Bridging – Bridging	Bridging – Bonding
	Bonding – Bridging	Bonding – Bonding
Internal		

Figure 1 Integrating internal and external approaches to bridging and bonding

and one for external bridging/bonding. Assume that these rankings are A, D, B, C and D, B, A, C respectively. If we then place the dividing line between bridging and bonding halfway through this ranking, we have two bridging and two bonding associations for either interpretation of bridging/bonding. Inserting these findings into the matrix presented in Figure 1, we find the following result. Association A falls in the upper right corner of the matrix since it is bridging on the internal dimension and bonding on the external one. Similarly, association B is placed in the lower left corner; it is bonding on the internal dimension and bridging on the external one. Associations C and D are, respectively, bonding and bridging along both dimensions, thereby being placed in the lower right and upper left corners of our two-by-two matrix.

4.2 Membership in Bridging/Bonding Associations and Members' Civic Attitudes

Paxton (1999, 2002) and Putnam (2000) initially advocated the distinction between bridging and bonding social networks to accommodate the existence of dark sides to civic engagement. This has often induced the view that memberships in bridging associations are likely to be better than memberships in bonding ones (on the argument that the former allow for a more general form of reciprocity and trust-development; e.g. Marshall and Stolle, 2004). While this arguably entails an unwarranted stereotyping of bridging groups as good and bonding ones as bad, existing empirical analyses have also failed to provide uniform support for this prediction (e.g. Coffé and Geys, 2007b; Geys and Murdoch, 2008). Clearly, part of this may result from reliance on 'partial' interpretations (i.e. *either* internal *or* external) of bridging and bonding in previous work. By providing a more general measure of bridging/bonding, the methodology proposed in section 4.1 allows for more rigorous testing of this basic proposition.

To do so, we return to the regression analysis in section 3 above:

$$\text{Value}_i = a + b_1 \text{Membership}_i + \text{Controls}_i + e_i$$

The main difference with section 3 is that the three central 'Membership' variables employed there are replaced by six new variables. The first three represent the number of memberships an individual claims in associations that are,

Table 3 Membership and civic attitudes using extended bridging/bonding measure (UK-SAS data)

<i>Variable</i>	<i>Political powerlessness</i>	<i>Authoritarianism</i>
Bridging – Bridging	–0.163 ***	–0.319 ***
(number of memberships)	(–3.53)	(–6.39)
Bridging – Middle	–0.082 ***	–0.042 *
(number of memberships)	(–3.92)	(–1.73)
Middle – Middle	0.012	–0.131 *
(number of memberships)	(0.17)	(–1.77)
Bridging – Bonding	–0.221 ***	–0.167 ***
(number of memberships)	(–4.61)	(–3.25)
Middle – Bonding	–0.022	–0.017
(number of memberships)	(–0.75)	(–0.56)
Bonding – Bonding	–0.077 *	–0.062
(number of memberships)	(–1.82)	(–1.36)
F (all membership coefficients equal)	3.40 ***	5.97 ***
R ²	5.31	11.46
N	6291	5198

Note: t-values based on heteroscedasticity-consistent standard errors between brackets; *** significant at 1%, ** at 5% and * at 10%

F-tests reflect significance of difference between coefficients of different association variables

Controls for gender, age, marital status, number of children, church attendance, race, education and newspaper readership included in all models

respectively, a) bridging, b) bonding or c) middle-of-the-road in both internal and external dimensions. The second group of three variables represents the number of memberships an individual claims in associations that are a) bridging in one dimension, bonding in the other, b) bridging in one dimension, middle-of-the-road in the other and c) bonding in one dimension, middle-of-the-road in the other. As such, we are able to evaluate to what extent memberships in associations that are, say, bridging in both dimensions are associated with differences in civic attitudes compared to memberships in associations that are, say, bonding in both dimensions.

We perform this analysis for both the UK data presented above and the Flemish data used in Geys and Murdoch (2008) (for technical details on the various independent variables employed, see Appendix A).⁹ Using both datasets has two benefits. First, it allows us to assess the consistency of the results across institutional settings. Second, it enables analysis of whether the differences between the UK and Flemish data observed when using the internal and external bridging/bonding measures independently (see section 3) persist when we combine both dimensions into one measure. The results are given in Table 3 (for UK data) and Table 4 (for Flemish data). Once again, results for all controls coincide with previous findings and have been omitted to preserve space (available upon request).

Table 4 Membership and civic attitudes using extended bridging/bonding measure (Flemish data)

Variable	Intolerance				
	Utilitarian individualism	towards immigrants	Acceptance of non-conformism	Feelings of insecurity	Political powerlessness
Bridging – Bridging (number of memberships)	-0.218 *** (-2.86)	-0.241 *** (-2.95)	0.195 *** (2.62)	-0.130 (-1.40)	-0.180 ** (-1.96)
Bridging – Middle (number of memberships)	-0.115 *** (-3.59)	-0.068 ** (-2.13)	0.013 (0.49)	-0.073 ** (-2.28)	-0.077 ** (-2.21)
Middle – Middle (number of memberships)	-0.340 *** (-3.29)	-0.287 *** (-2.75)	0.313 *** (3.33)	-0.263 ** (-2.32)	-0.168 (-1.38)
Bridging – Bonding (number of memberships)	-0.147 (-1.56)	-0.007 (-0.08)	0.051 (0.73)	-0.088 (-0.91)	-0.159 * (-1.73)
Middle – Bonding (number of memberships)	0.062 (0.98)	0.101 (1.48)	0.162 *** (2.85)	0.040 (0.60)	0.061 (0.92)
Bonding – Bonding (number of memberships)	0.020 (0.31)	0.017 (0.29)	0.059 (1.15)	0.037 (0.62)	0.078 (1.44)
F (all membership coefficients equal)	3.88 ***	3.58 ***	3.43 ***	1.80	2.47 **
R ²	17.29	21.36	40.51	18.86	13.41
N	1368	1302	1335	1276	1366

Note: t-values based on heteroscedasticity-consistent standard errors between brackets; *** significant at 1%, ** at 5% and * at 10%

N differs over the various specifications due to missing values for some of the attitude measurements

Controls for gender, age, marital status, number of children, church attendance, education and hours of television watching per day included in all models

Looking first at the UK data, it is clear that additional memberships in associations that are bridging in at least one dimension are significantly negatively related to feelings of political powerlessness and authoritarianism. For both values, the coefficient estimate for associations that are bridging in both dimensions is among the strongest in the table. Associations which are middle-of-the-road in one dimension and bonding in the other lead to insignificant results on both civic attitudes. Similarly, weak results are obtained for associations that are bonding or middle-of-the-road along both dimensions (i.e. either the effect is statistically insignificant or significant only at the 10% level). These results thus strongly support theoretical predictions that bridging associations are more likely to be closely related to positive societal outcomes (e.g. Marshall and Stolle, 2004; Putnam, 2000).

Interestingly, as shown in Table 4, these results are closely replicated in the Flemish dataset. Memberships in associations that are *either* bridging or middle-of-the-road in both dimensions, *or* bridging in one dimension and middle-of-the-road in the other, lead to the largest (and statistically significant) reduction in feelings of 'individualism', 'insecurity' and 'intolerance towards immigrants'. The weakest (and statistically insignificant) effects for three values are found for memberships in associations that are *either* bonding in both dimensions *or* bonding in one dimension and middle-of-the-road in the other. Similarly, memberships in associations that are bridging or middle-of-the-road in both dimensions have the strongest (and statistically significant) relation with acceptance of non-conformist forms of behaviour. Finally, for the measure of political powerlessness, the only significant effects are found for memberships in associations that are bridging in at least one dimension (closely in line with the UK data). Overall, while memberships in associations that are bridging in both dimensions consistently have the largest or second-largest coefficient estimate, memberships in associations which are bonding in both dimensions *never* have a statistically significant effect. Once again, therefore, findings are closely in line with theoretical predictions.

Overall, the empirical analysis in both countries thus leads to similar results. In fact, even a casual glance at Tables 3 and 4 shows that the strongest relations always congregate in the upper half of the tables, while the weakest effects are found in the bottom half (note that we ordered association types from most-to-least bridging potential in the table). This strongly supports integrating the information from internal and external measures of bridging/bonding into one single measure – as proposed and illustrated here. Indeed, integration of both measures not only leads to stronger support for the theoretical prediction that bridging outperforms bonding, but also to more consistent results across various institutional settings.

5 Conclusion and Discussion

Despite the increasing popularity of the bridging and bonding concepts in the social capital literature, their precise meaning has recently been questioned. First, two different operationalizations co-exist in the literature: one based on interconnections *between* networks and one based on information concerning *within*-network heterogeneity. Second, and crucially, these do not lead to similar outcomes in empirical applications (Geys and Murdoch, 2008). The present article first provided a replication of this previous work using two UK datasets. These not only refer to a different setting (UK versus Flanders), but also employed slightly different wording regarding the association-membership question. The results corroborate the Flemish findings, and thereby suggest their general nature.

Then, based on the idea that the internal and external interpretation of bridging/bonding might simply tap into different dimensions of the bridging/

bonding divide, we brought forward a simple way to integrate their respective information contents. This, by retaining more relevant information, leads to a more general measure of bridging and bonding. Our analysis of Flemish and UK data shows that this generalized measure consistently performs in line with theoretical predictions (cf. Marshall and Stolle, 2004; Putnam, 2000), which was not the case for the internal and external operationalizations individually. This indicates that including information about associations' internal *and* external bridging potential into one index provides a more consistent indicator of an important distinction between types of social networks – and as such helps alleviate the current conceptual ambiguity.

Notes

- 1 This criticism is not just related to the inherent meaning of both concepts (cf. Geys and Murdoch, 2008), but also to their relationship and how we can move from one to the other in a given society (e.g. Leonard, 2004; Ryan et al., 2008).
- 2 The methodological discussion provided here closely follows Coffé and Geys (2007a, 2008) and Geys and Murdoch (2008). Due to space constraints, however, we keep the description of methodological tools and operationalizations at a bare minimum and refer to these works for more details.
- 3 Although 'social class' is a key predictor of social and political attitudes (e.g. Hayes, 1995; Hayes and McAllister, 1995) and is often considered an important aspect of social networks (e.g. Bourdieu, 1987; Pichler and Wallace, 2009), its measurement is contested. As such, our list of socio-economic dimensions does not include a direct reference to social class. Yet measures such as education, income, occupational classification and professional status indirectly allow capturing some core aspects of social class distinctions.
- 4 For example, suppose three groups (A, B and C) exist with shares of male/female members equal to 24%:76%, 35%:65% and 47%:53% respectively. The overall population consists of 48% men and 52% women. The 'diversity score' for A with respect to gender thus equals: $(|48-24| + |52-76|)/2 = 24$. Similarly, the 'diversity scores' for B and C equal 13 and 1.
- 5 Using the same example as before, the 'normalized' diversity scores will equal 0 for group C and 1 for group A, by virtue of their having the smallest and largest raw diversity score respectively. For group B, it equals $(15-1)/(24-1) = 0.52$.
- 6 This analysis can only be performed using the SAS data as attitudinal questions were, unfortunately, less wide-ranging in the HOC dataset.
- 7 Given our use of cross-sectional data, the direction of causality (i.e. whether it derives from socialization or self-selection effects) cannot be clearly established. Still, our aim is to assess a potential divergence between both methodological approaches to bridging/bonding, making causality issues less pertinent.
- 8 This trichotomy sharpens the distinction between the 'extremes' of the bridging/bonding scale (Coffé and Geys, 2007b). Results are similar when including three or five associations in the bridging and bonding categories and the remaining associations in the middle category (available on request).

- 9 Note that, for the UK dataset, four associations are retained in the bridging and bonding extremes of the scale (on both internal and external dimensions). For the Flemish dataset, we include five associations in the extreme categories. The difference derives from the slightly larger number of associations available in the Flemish dataset. Our main findings are, however, unaffected by this choice. That is, using five associations in the extreme category in the UK dataset or four in the Flemish dataset always leads to the same results.

References

- Blau, P. M. (1977) *Inequality and Heterogeneity: A Primitive Theory of Social Structure*. New York: The Free Press.
- Bourdieu, P. (1985) 'The Forms of Capital', in J. Richardson (ed.) *Handbook of Theory and Research for the Sociology of Education*, pp. 241–58. New York: Greenwood.
- Bourdieu, P. (1987) *Distinction: A Social Critique of the Judgement of Taste*. Harvard, MA: Harvard University Press.
- Bowen, H. and W. Moesen (2007) 'Benchmarking the Competitiveness of Nations: Non-uniform Weighting and Non-economic Dimensions', *Corporate Governance* 7(1): 6–16.
- Coffé, H. and B. Geys (2007a) 'Towards an Empirical Characterization of Bridging and Bonding Social Capital', *Nonprofit and Voluntary Sector Quarterly* 36(1): 121–39.
- Coffé, H. and B. Geys (2007b) 'Participation in Bridging and Bonding Associations and Civic Attitudes: Evidence from Flanders', *Voluntas* 18(4): 385–406.
- Coffé, H. and B. Geys (2008) 'Measuring the Bridging Potential of Voluntary Associations: The Importance of Association Size', *Sociology* 42(2): 357–69.
- Coleman, J. (1988) 'Social Capital and the Creation of Human Capital', *American Journal of Sociology* 94: S95–S120.
- Cornwell, B. and J.A. Harrison (2004) 'Union Membership and Voluntary Associations: Membership Overlap as a Case of Organizational Embeddedness', *American Sociological Review* 69(6): 862–81.
- Geys, B. and Z. Murdoch (2008) 'How to Make Head or Tail of Bridging and Bonding? Addressing the Methodological Ambiguity', *British Journal of Sociology* 59(3): 435–54.
- Halpern, D. (2005) *Social Capital*. Cambridge: Polity.
- Harriss, J. and P. de Renzio (1997) 'Missing Link or Analytically Missing? The Concept of Social Capital', *Journal of International Development* 9(7): 919–37.
- Hayes, B. (1995) 'The Impact of Class on Political Attitudes: A Comparative Study of Great Britain, West Germany, Australia and the United States', *European Journal of Political Research* 27: 69–91.
- Hayes, B. and I. McAllister (1995) 'Social Class, Class Awareness and Political Beliefs in Northern Ireland and the Republic of Ireland', *Economic and Social Review* 26: 349–68.
- Hooghe, M. (2003) 'Participation in Voluntary Associations and Value Indicators: The Effect of Current and Previous Participation Experiences', *Nonprofit and Voluntary Sector Quarterly* 32(1): 47–69.

- Leonard, M. (2004) 'Bonding and Bridging Social Capital: Reflections from Belfast', *Sociology* 38(5): 927–44.
- Levi, M. (1996) 'Social and Unsocial Capital', *Politics and Society* 24: 44–55.
- Li, Y., M. Savage and A. Pickles (2003) 'Social Capital and Social Exclusion in England and Wales (1972–1999)', *British Journal of Sociology* 54(4): 497–526.
- Marshall, M.J. and D. Stolle (2004) 'Race and the City: Neighborhood Context and the Development of Generalized Trust', *Political Behavior* 26: 125–53.
- Paxton, P. (1999) 'Is Social Capital Declining in the United States? A Multiple Indicator Assessment', *American Journal of Sociology* 105: 88–127.
- Paxton, P. (2002) 'Social Capital and Democracy: An Interdependent Relationship', *American Sociological Review* 67: 254–77.
- Paxton, P. (2007) 'Association Membership and Generalized Trust: A Multilevel Model across 31 Countries', *Social Forces* 86(1): 47–76.
- Pichler, F. and C. Wallace (2009) 'Social Capital and Social Class in Europe: The Role of Social Networks in Social Stratification', *European Sociological Review* 25(3): 319–32.
- Putnam, R. (2000) *Bowling Alone: Collapse and Revival of American Community*. New York: Simon & Schuster.
- Putnam, R. and K.A. Goss (2002) 'Introduction', in R. Putnam (ed.) *Democracies in Flux. The Evolution of Social Capital in Contemporary Society*, pp. 1–19. Oxford: Oxford University Press.
- Ryan, L., R. Sales, M. Tilki and B. Siara (2008) 'Social Networks, Social Support and Social Capital: The Experiences of Recent Polish Migrants in London', *Sociology* 42(4): 672–90.
- Stolle, D. (2001) 'Getting to Trust. An Analysis of the Importance of Institutions, Families, Personal Experiences and Group Membership', in P. Dekker and E.M. Uslander (eds) *Social Capital and Participation in Everyday Life*, pp. 118–33. London: Routledge.
- Stolle, D. and T.R. Rochon (1998) 'Are All Associations Alike? Member Diversity, Associational Type, and the Creation of Social Capital', *American Behavioral Scientist* 42(1): 47–65.

Benny Geys

Has been a post-doctoral research fellow at the Wissenschaftszentrum Berlin für Sozialforschung (WZB, Germany) since October 2005. He studied economics at the Katholieke Universiteit Leuven (Belgium) and Leicester University (UK) and obtained his PhD in economics from the Vrije Universiteit Brussel (Belgium). His work focuses on (local) government performance, intergovernmental relations and civic engagement and has appeared in, for example, *Journal of Urban Economics*, *European Journal of Political Economy*, *European Journal of Political Research*, *Electoral Studies*, *British Journal of Sociology*, *Sociology* and *Social Science Quarterly*.

Address: Reichpietschufer 50, D-10785 Berlin, Germany.

E-mail: geys@wzb.eu

Zuzana Murdoch

Is doctoral research fellow at the Department of Political Science at the University of Agder (Norway). She works predominantly on micro-processes of integration of European bureaucrats and civic engagement. Some of her previous work appeared in *British Journal of Sociology*.
Address: Department of Political Science, Service Box 422, NO-4604 Kristiansand, Norway.
E-mail: zuzana.murdoch@uia.no

Date submitted February 2009
Date accepted October 2009

Appendix A

For both civic attitudes in the UK-SAS dataset, we present the six statements employed to gauge this attitude as well as information about the first factor deriving from the PCA: i.e. component weights for each statement, eigenvalue, percentage of explained variance and Kaiser-Meyer-Olkin measure for sampling adequacy (KMO).

Table 1 Political powerlessness

Component weight	Statement
0.699	People like me have no say in what the government does.
0.827	Generally speaking those we elect as MPs lose touch with people pretty quickly.
0.840	Parties are only interested in people's votes, not in their opinions.
0.069	Voting is the only way people like me can have a say about how the government runs things.
0.161	Sometimes politics and government seems so complicated that a person like me cannot really understand what is going on.
0.525	It doesn't really matter which party is in power, in the end things go on much the same.

Notes: Eigenvalue: 2.51; Explained variance: 41.83%; KMO-index: 0.759

Table 2 Authoritarianism

Component weight	Statement
0.729	Young people today don't have enough respect for traditional British values.
0.806	People who break the law should be given stiffer sentences.
0.760	For some crimes, the death penalty is the most appropriate sentence.
0.602	Schools should teach children to obey authority.
0.059	The law should always be obeyed, even if a particular law is wrong.
0.266	Censorship of films and magazines is necessary to uphold moral standards.

Notes: Eigenvalue: 2.69; Explained variance: 44.81%; KMO-index: 0.812

Similarly, for the five civic attitudes in the Flemish dataset, we present the statements employed to gauge this attitude and information about the first factor deriving from the PCA.

Table 3 Utilitarian individualism

<i>Component weight</i>	<i>Statement</i>
0.79	In society, one is better off looking after himself/herself first.
0.79	In society, one has to fight for his/her own position, the rest follows automatically.
0.79	People should always pursue their personal pleasure and mustn't think too much about others.
0.78	It is important to strive in the first place for a prominent position for yourself.
0.75	Everybody has to take care of himself /herself first and defend his/her own interests.
0.69	What counts is money and power. The rest is just hot air.
0.66	People who know much can use this primarily to improve their own position.
0.63	Striving for personal success is more important than having good relations with others.

Notes: Eigenvalue: 4.3; Explained variance: 54%; Cronbach's Alpha: 0.88

Table 4 Intolerance towards immigrants

<i>Component weight</i>	<i>Statement</i>
0.85	Immigrants come here to take advantage of our social welfare system.
0.82	If the number of jobs decreases, immigrants should be sent back to their own countries.
0.82	Muslims are a threat to our culture and traditions.
0.80	In general, immigrants cannot be trusted.

Notes: Eigenvalue: 2.7; Explained variance: 67%; Cronbach's Alpha: 0.84

Table 5 Acceptance of non-conformism

<i>Component weight</i>	<i>Statement</i>
0.75	Piercings.
0.74	Wearing provocative clothing.
0.74	The use of softdrugs (e.g. cannabis).
0.70	Having different partners while all partners are informed about this.
0.64	Visiting a prostitute when one does not have a steady relationship.
0.60	The legal recognition of other forms of cohabitation than marriage.
0.59	Buying goods that one knows are illegal copies.
0.58	Consciously shocking people.

Notes: Eigenvalue: 3.6; Explained variance: 45%; Cronbach's Alpha: 0.83

Table 6 Feelings of insecurity

<i>Component weight</i>	<i>Statement</i>
0.75	In the evening, one has to be very careful on the street.
0.72	Over the past ten years, the streets have become more dangerous.
0.71	I do not open the door when someone rings at the doorbell in the evening or at night.
0.70	Out of fear of being robbed, I always immediately lock the car when I get in.
0.68	Alarm systems are no superfluous luxury these days.
0.67	When I am on holiday, I dare not leave my house unguarded.
0.66	The police are no longer able to protect us from criminals.

Notes: Eigenvalue: 3.6; Explained variance: 49%; Cronbach's Alpha: 0.82

Table 7 Political powerlessness

<i>Component weight</i>	<i>Statement</i>
0.81	Political parties are only interested in my vote and not in my opinion.
0.78	Most politicians promise a lot, but they don't do anything.
0.73	There is no point to voting since parties do whatever they want.
0.72	Politicians have never learnt to listen to ordinary people like me.
0.64	If Parliament has voted in favour of an unjust law, there is little a citizen can do about that.

Notes: Eigenvalue: 2.7; Explained variance: 54%; Cronbach's Alpha: 0.78