



How to make head or tail of 'bridging' and 'bonding'?: addressing the methodological ambiguity¹

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Abstract

A distinction has recently been proposed between bridging (or encompassing) and bonding (or inward-looking) social networks. However, existing theoretical contributions remain vague as to the fundamental meaning of both concepts. As a consequence, two distinct interpretations have developed alongside each other. In the present paper, we employ data on voluntary association membership in Flanders to empirically illustrate that both approaches can lead to substantially different outcomes and therefore appear to tap into different dimensions of bridging versus bonding. These findings underline the problematic nature of the current conceptual ambiguity. We conclude that should the bridging/bonding distinction add meaningfully to our understanding of the external effects of social networks, it is essential to resolve the conceptual and methodological imprecision.

Keywords: Voluntary associations; bridging and bonding; social networks; membership heterogeneity; social interconnections

1. Introduction

In recent years, a large quantity of academic studies link civic engagement to numerous positive social, political and economic outcomes (see Halpern 2005 for a review). While not the only possible explanation, one popular rationale for this link states that the 'embedded resources in social networks [i.e. 'social capital'] enhance the outcomes of actions' (Lin 2001: 19). More specifically, this literature stresses that active engagement in, for example, voluntary organizations creates a setting in which social trust, norms and values can develop (Putnam 1993; Stolle and Rochon 1998) and spill over beyond the immediate

group (a 'rainmaker' effect; e.g. Putnam and Pharr 2000; Harell and Stolle 2006; Newton 2006). This 'remarkable and often unqualified belief in the value of civic engagement' (Hill and Matsubayashi 2005: 223) has often been (gratefully) embraced by policy-makers at the turn of the millennium to set up policy initiatives supporting the 'civil society'. For example, when Tony Blair first took office as UK Prime Minister in 1997, he underlined his plan to recover social life in the UK (a policy objective popular among many so-called 'Third Way' politicians such as former US president Bill Clinton or former German Chancellor Gerhard Schröder). Many governments also contemplated modifying the broader institutional structure in which voluntary associations worked so as to encourage them to assume a more active role in public provision at the local level.

The academic literature suggesting that civic engagement is normatively positive has, however, been questioned on conceptual, methodological as well as analytical grounds (e.g. Harriss and De Renzio 1997; Anheier and Kendall 2002; Quibria 2003; Hallberg and Lund 2005). For example, some scholars appear to conflate cause and consequence by stating that 'social capital is defined by its function' (Coleman 1988: S98). Hence, the theoretical basis 'appears to have a circular or tautological character' (Anheier and Kendall 2002: 352; see also Portes 1998). Also, most of this literature disregards the wider institutional design of the state. Yet, the 'role played by civil society organizations will depend crucially on the wider political setting (...) and are actually very powerfully influenced by political institutions' (Harriss and De Renzio 1997: 927–928; see also Anheier and Kendall 2002: 355).

One recurrent point of conceptual criticism, important for the present study, concerns the tendency in this literature to bring forward a 'romanticized image of community – with its concomitant neglect of the negative aspects of sociability' (Harriss and De Renzio 1997: 926; see also Bourdieu 1985; Coleman 1988; Levi 1996; Foley and Edwards 1998; DeFilippis 2001; Li, Savage and Pickles 2003). These 'dark sides' of civic engagement include 'market distortions, moral hazards, restrictions to individual freedoms and perpetuation of backward norms' (Quibria 2003: 29; see also Portes, 1998) as well as alienating members from the larger society (see Bobo 1988; Lipset and Marks 2000; Claibourn and Martin 2000; Abrams, Hogg and Marques 2005; Münster 2007) or trapping them in disadvantaged situations (see Bourdieu 1985). Hence, while civic engagement represents access to 'social capital for some [, it] implies social exclusion for others' (Harriss and De Renzio 1997: 926; see also Li, Savage and Pickles 2003).

To accommodate this less favourable feature of social networks, it has recently been suggested to make a distinction between *bridging* (or encompassing) social networks and *bonding* (or inward-looking) ones (e.g. Paxton 1999, 2002; Putnam 2000). We argue that this distinction, while a necessary

first step at addressing the need to distinguish various types of civic engagement, is at present equally plagued by conceptual and methodological problems. While we concentrate on the latter, we should point out that both types of civic engagement appear to be characterized in terms of their expected outcome. That is, the distinction allows the incorporation of negative external effects of civic engagement by, essentially, stereotyping bridging social networks as good and bonding ones as bad (on the argument that the former allow for a more general form of reciprocity and trust-development; see, e.g., Marshall and Stolle 2004). 'Bridging social capital is therefore important (. . .) because it suggests that 'good' social capital is produced' (Roberts and Devine 2003: 308). Clearly, however, such stereotyping may be inaccurate as bonding networks can fulfil a useful social function by providing a vital source of support to people who suffer from bad health or socio-economic hardship (see Szreter and Woolcock 2004; Brisson and Usher 2007).

Importantly, the conceptual ambiguity undermining the value of the bridging/bonding distinction also generates methodological problems in measuring both concepts. In fact, the theoretical vagueness allows for a variety of interpretations. In effect, two different methodological approaches to measure bridging versus bonding social networks have developed: one based on interconnections *between* different networks (Paxton 2002) and one based on socio-economic heterogeneity *within* any given network (Stolle and Rochon 1998; Stolle 2001). In our empirical analysis, we explicitly set both approaches against one another (using data on voluntary association membership in Flanders). Based on their use of similar terminology and the same conceptual background, one would expect similar results. This, however, is not the case. Firstly, we find that both approaches at times fail to identify the same social networks as predominantly bridging or bonding. Secondly, the relationship between an individual's memberships in different types of associations and his/her civic attitudes is affected by the approach taken to distinguish bridging from bonding networks. While future comparative research should substantiate the general nature of these findings, they at least appear to invalidate the idea that both methodological approaches quantify the same thing. At best, one might argue they tap into different aspects of the bridging/bonding division. These findings therefore underline the conceptual ambiguity plaguing the present theoretical literature and illustrate that we, at present, cannot be certain what is indicated by 'bridging' and 'bonding'.

The paper proceeds as follows. The next section discusses the bridging/bonding distinction and presents both methodologies proposed to empirically operationalize this distinction. Both approaches are illustrated using data on voluntary association membership in Flanders. In Section 3, we compare both approaches on two grounds: i.e. whether they designate the same networks as predominantly bridging/bonding and whether the relation between

individual's memberships in bridging/bonding networks and their civic attitudes is affected by the approach taken. The last section concludes.

2. Two views of bridging versus bonding social networks²

In an attempt to accommodate for the 'bright' and 'dark' sides of civic engagement or, more generally, for the varying effects different types of social networks may have, a distinction has recently been proposed between bridging and bonding social networks (Paxton 1999, 2002; Putnam 2000). Bonding networks thereby refer to the type of civic engagement that 'brings together people who are like one another in important respects (ethnicity, age, gender, social class, and so on)' (Putnam and Goss 2002: 11). Bridging networks, on the other hand, 'bring together people who are unlike one another' (Putnam and Goss 2002: 11).³

While this general distinction between bridging and bonding civic engagement has a clear foundation and purpose, it remains vague. As a consequence, two distinct interpretations have been brought forward in empirical applications. A first group of scholars focuses on the socio-economic heterogeneity of membership *within* organizations based on the idea that associations with a more heterogeneous membership constitute, in themselves, a platform for cross-cutting ties across social groups (Stolle and Rochon 1998; Putnam 2000; Stolle 2001; Li, Savage and Pickles 2003). Paxton (2002), on the other hand, concentrates on associations' interconnectedness to the wider community (i.e. *between* various organizations) when defining bridging and bonding networks. The underlying idea here is that bridging socio-economic divides need not necessarily arise within a given social network, but might predominantly result from overlapping networks (Stolle and Hooghe 2003).

These two views are mirrored in two methodologies to empirically gauge the bridging/bonding character of social networks. To explain both methods (in sections 2.1 and 2.2 respectively) and compare them (in section 3), we rely on data taken from five surveys conducted between 1999 and 2004 by the Administration Planning and Statistics (APS) of the Flemish Government, providing a total sample of 7276 individuals. The key variable for our analyses is respondents' membership (active or passive) in different types of voluntary associations (e.g. hobby clubs, sports clubs, women's associations, and so on).⁴ Importantly, while similar data are used in the studies originally proposing both methodologies compared here (i.c. Stolle and Rochon 1998; Paxton 2002; Coffé and Geys 2007a, 2008), they are not ideal. The reason is that they refer to associational types, and not individual organizations.⁵ Nevertheless, though this aggregation issue should lead to caution in interpreting the results, it does not invalidate the methodologies proposed nor our evaluation and comparison of them. The caveat mentioned here should, however, be kept in mind.

2.1. Bridging and bonding via socio-economic heterogeneity of association membership

When distinguishing bonding and bridging associations via the (socio-economic) composition of association membership, it is assumed that bridging social capital is likely to be fostered most by 'memberships in associations that are representative of the larger society' (Stolle and Rochon 1998: 64n). In other words, over- or under-representation of certain socio-economic groups in the association indicates a lack of bridging potential *within* the organization (Stolle and Rochon 1998; Coffé and Geys 2007a).⁶ An extensive account of the empirical method to distinguish between bridging and bonding associations based on this approach is available in Coffé and Geys (2007a). Hence, we only briefly reiterate the main elements here.

In a first step, 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 (the number of traits can be chosen by the researcher, though inclusion of more characteristics improves the reliability of the results).⁷ Then these raw scores are normalized between 0 and 1. That is, the largest diversity score across all voluntary associations on a given socio-economic trait is set to 1, the smallest to 0 and the intermediate values rescaled to lie within this range. This normalization guarantees that no dimension is (implicitly) weighted more heavily than another (see Bowen and Moesen 2007) – which is theoretically appealing in the absence of clear criteria concerning such weighing differences. In a third and final step, the normalized diversity scores are added across all socio-economic traits for each association. This indexed 'sum of normalized diversity scores' lies, by definition, between 0 and the number of socio-economic traits included. A smaller value of the index indicates congruence between the association's membership and the overall population composition. Associations at the lower (higher) end of the scale are therefore seen as predominantly bridging (bonding) (Stolle and Rochon 1998; Coffé and Geys 2007a).

The results from applying this method to the APS data introduced above are given in Table I. They are obtained by comparing membership composition in 16 association types with the Flemish population's composition on eight socio-economic dimensions (i.e. age, gender, education level, religion, nationality, professional category, marital status and whether or not one has children).⁸ Specifically, Column 2 presents the sum of normalized diversity scores. The position of the associations on a scale from most bridging (1) to most bonding (16) is given between brackets. It is clear that hobby clubs, associations for artistic activities and humanitarian organizations such as the Red Cross are designated as the most bridging in the sample. The other side of the bridging/bonding divide is populated by women's associations and associations for retired people.

Table I: ‘Internal’ bridging versus bonding association types in Flanders

Association type	Sum of normalized diversity scores
Hobby club	0.883 (1)
Humanitarian organizations	1.215 (2)
Arts activities (literature, dance, theatre, music)	1.371 (3)
Sports associations	1.878 (4)
Neighbourhood committee	1.897 (5)
Organizations aiding elderly, handicapped or deprived people	2.007 (6)
Local community advisory and school council	2.350 (7)
Associations linked to local pub	2.417 (8)
Third world development and international peace	2.787 (9)
Environmental and nature associations	2.969 (10)
Fan club	3.133 (11)
Socio-cultural associations	3.208 (12)
Family organizations	3.366 (13)
Youth associations	3.948 (14)
Women’s groups	4.009 (15)
Associations for retired people	6.018 (16)

Note: Data taken from Coffé and Geys (2007a).

2.2. Bridging and bonding through interconnections between associations

Association members’ affiliations in other associations can be argued to generate ‘organizational embeddedness’ (Cornwell and Harrison 2004: 863) and create ‘bridges’ between organizations. Hence, a second approach to separating bridging from bonding organizations is to look at their connections to the wider organizational community (Paxton 2002; Coffé and Geys 2008). However, although intuitively appealing, simply counting the interconnections between associations is biased towards observing that larger organizations are more isolated (or bonding) than smaller ones. The reason is that, since all links are necessarily symmetric, ‘the size of the groups distinguished by a given parameter is inversely related to the extent of their intergroup relations’ (Blau 1977: 24). Fortunately, running a simple regression model with the observed number of interconnections (i.e. average number of additional memberships in association i ; $CONNECT_i$) as the dependent variable and the membership level of the associations ($MEMB_i$) as the explanatory variable alleviates this bias. The residuals of this regression model denote the bridging or bonding nature of each association *net of the membership size effect*. That is, higher (lower) residuals indicate that an association is more (less) bridging, given their differences in membership size (for more details, see Coffé and Geys 2008).⁹

Applying this method to the Flemish data employed above leads to the results in Table II. The associations in the sample are given in Column (1) while the number of individuals claiming membership in each of these is given in Column (2). Column (3) contains the residuals from the above-mentioned regression.¹⁰ The results show that organizations for third world development

Table II: 'External' bridging versus bonding association types in Flanders

Association type	Number of members (MEMB)	Size-corrected measure of interconnection (RESIDUALS)
Third world development and international peace	282	0.697 (1)
Socio-cultural associations	560	0.351 (2)
Local community advisory and school council	335	0.324 (3)
Organizations providing aid to elderly, handicapped or deprived people	466	0.183 (4)
Arts activities (literature, dance, theatre, music)	488	0.147 (5)
Neighbourhood committee	323	0.089 (6)
Environmental and nature associations	396	0.084 (7)
Family organizations	898	0.062 (8)
Sports associations	1,766	0.023 (9)
Hobby club	492	-0.014 (10)
Humanitarian organizations	585	-0.124 (11)
Women's groups	573	-0.236 (12)
Fan club	112	-0.299 (13)
Youth associations	332	-0.313 (14)
Associations for retired people	510	-0.420 (15)
Associations linked to local pub	453	-0.544 (16)

and international peace and socio-cultural associations are most interconnected and thus most bridging. At the other end of the bridging/bonding divide, we find associations linked to the local pub and those for retired people.

3. Comparing bridging *within* and *between* associations

We are now in a position to consider whether or not both interpretations of (or methodological approaches to) bridging versus bonding social networks lead to analogous results. If so, they are likely to be measuring the same thing (as they claim to do). Although the literature might then still benefit from merging the information of both methods into one more generalized measure, at least the theoretical/conceptual ambiguity noted in the introduction does not spill over into empirical analyses. If, on the other hand, both approaches lead to different results, they at best tap into different dimensions of bridging versus bonding. In that case, the literature not only suffers from conceptual fuzziness, but also from methodological uncertainty when measuring bridging versus bonding.

The analysis here proceeds in two steps. First, in section 3.1, we explore whether both approaches rank associations similarly on the bridging/bonding divide. Second, in section 3.2, we assess whether members of bridging (rather than bonding) associations have more pro-social civic attitudes (as expected by, e.g., Putnam 2000; Putnam and Goss 2002; Marshall and Stolle 2004) and, crucially, whether this relation is affected by the approach to distinguish bridging from bonding networks.

3.1. Internal bridging/bonding networks are external bridging/bonding networks?

To attest whether the two methodological approaches rank social networks (in this case voluntary associations) similarly on the bridging/bonding divide, we compare the results presented in Tables I and II. Youth groups, women's organizations and associations for the elderly display low bridging potential when using either of the described methods. Neighbourhood committees, organizations for arts activities and those providing aid to the elderly, handicapped and deprived are placed towards the bridging side of the divide in both methods. Clearly, however, various groups show strong shifts in the ranking depending on the method used. Hobby clubs, for example, are the most bridging association type under the *internal* bridging method, whereas they are placed at the bonding side of the spectrum using the interconnectedness measure. The reverse (i.e. high *external* bridging potential but low *internal* bridging potential) is observed for associations for third world development and international peace.

Calculating correlation coefficients between both sets of results reveals that both approaches to bridging and bonding are not significantly related to one another at the 5 per cent level ($r = -0.34$; $p = 0.20$). Moreover, the rankings of association types on a scale from most bridging to most bonding are also only weakly related (Pearson rank-order correlation = 0.28; $p = 0.29$). Hence, high *external* bridging potential does not necessarily signify high *internal* bridging potential (or vice versa). This implies that the two methodological approaches proposed in the literature are conceptually as well as empirically different. They do not appear to capture the same thing.

3.2. Internal and external bridging and members' civic attitudes

Given the designation of different associations as bridging or bonding under both approaches, we now test whether the relation between (bridging and/or bonding) association membership and individuals' civic attitudes is affected by the approach employed to distinguish bridging from bonding groups. The dataset employed for this assessment derives from the APS survey of 2002 (sample size = 1477 individuals), which contains a large number of statements probing individuals' attitudes along various dimensions.¹¹ Using a principal components analysis (PCA), we employ individuals' responses to these statements (ranging from 'completely agree' to 'completely disagree' in five steps) to construct indices for five different civic attitudes: Utilitarian individualism, Intolerance towards immigrants, Acceptance of non-conformism, Feelings of insecurity and Political powerlessness (for technical details of the components, see Appendix A).

As the theoretical underpinnings for a relation between association membership and these five attitudes have been extensively discussed in the prior

literature (see, e.g., Billiet 1998; Hooghe 2003a, b; Freitag 2003; Coffé and Geys 2007b), we immediately turn to the empirical model (subscript *i* referring to individuals):¹²

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

Value_{*i*} represents the component scores of the five civic attitudes that are the respective dependent variables during the analysis. Membership_{*i*} is a vector of three variables measuring the number of memberships an individual claims in each of three categories of associations: the four most bridging associations, the four most bonding and the eight remaining middle-of-the-road associations. This three-way division is necessary from a theoretical point of view since 'bonding and bridging are not either-or categories into which social networks can be neatly divided, but more or less dimensions' (Putnam 2000: 23). The specification of a middle range sharpens the distinction between the two 'extremes' of the scale and explicitly takes this more-or-less character into account (see also, Coffé and Geys 2007b).¹³ Note that, since the two approaches to bridging and bonding lead associations to be placed in various groups across this three-way division (leading to different values of these membership variables), we are able to test whether the regression results depend on the approach employed. Finally, we add a set of control variables based on findings in the prior literature (e.g. Billiet 1998; Putnam 2000; Hooghe 2003a, b; Freitag 2003; Coffé and Geys 2007b): i.e. respondent's extent of religiosity (measured by frequency of church practice), gender, age (in years), level of education, marital status, number of children, and hours of television watching on weekdays.¹⁴

The results for the central membership variables are given in Table III (full results are relegated to Appendix B – where it can be seen that all controls behave in line with previous findings). Evidently, both methodological approaches to bridging and bonding provide some support for the idea that members' civic attitudes are more pro-social and tolerant in bridging networks than bonding ones (in line with Putnam 2000; Putnam and Goss 2002; Marshall and Stolle 2004). Yet, crucially, the relation is much stronger for *external* bridging than for *internal* bridging. Not only are the coefficient estimates larger for bridging groups in the bottom half of Table III (compared to the top half of the table), they are often also statistically significantly different from those of the other two groups (which only holds for political powerlessness in the top panel of Table III). Hence, the 'superior performance' of the bridging (and middle) group compared to the bonding group in terms of members' pro-social attitudes is (statistically) rather weak for *internal* bridging/bonding, but quite strong when focusing on *external* bridging/bonding. This, together with the analysis in section 3.1, underlines that both approaches fail to capture the exact same concepts (at odds with the expectations generated by their use of the same terminology).¹⁵

Table III: *Bridging and bonding memberships and civic attitudes*

	Utilitarian individualism	Intolerance towards immigrants	Acceptance of non-conformism	Feelings of insecurity	Political powerlessness
Internal bridging					
Bridging associations (number of memberships)	-0.082** (-2.28)	-0.020 (-0.55)	0.063** (2.05)	-0.062* (-1.67)	-0.099** (-2.50)
Middle associations (number of memberships)	-0.150*** (-4.59)	-0.109*** (-3.44)	0.073** (2.46)	-0.096*** (-2.80)	-0.076** (-2.19)
Bonding associations (number of memberships)	-0.028 (-0.60)	-0.016 (-0.37)	0.043 (1.06)	0.011 (0.25)	0.039 (0.91)
F (bridging = middle)	1.63	2.81*	0.05	0.31	0.16
F (bridging = bonding)	0.73	0.01	0.15	1.06	5.07***
F (middle = bonding)	3.71*	2.63	0.34	2.47	3.78*
F (all coeff. equal)	1.98	1.97	0.17	1.25	2.88*
R ²	16.55	20.99	39.69	18.35	13.12
External bridging					
Bridging associations (number of memberships)	-0.216*** (-4.51)	-0.218*** (-4.86)	0.018 (0.43)	-0.129*** (-2.64)	-0.119** (-2.36)
Middle associations (number of memberships)	-0.102*** (-3.66)	-0.016 (-0.61)	0.077*** (3.49)	-0.066*** (-2.32)	-0.070** (-2.40)
Bonding associations (number of memberships)	0.130** (2.16)	0.078 (1.30)	0.082* (1.68)	0.100* (1.71)	0.113** (2.06)
F (bridging = middle)	3.19*	11.76***	1.27	0.96	0.57
F (bridging = bonding)	18.28***	13.84***	0.96	7.93***	8.44***
F (middle = bonding)	11.10***	1.84	0.01	5.88**	7.82***
F (all coeff. equal)	9.40***	8.40***	0.72	4.27**	4.99***
R ²	17.49	21.72	39.74	18.85	13.38
N	1,359	1,293	1,327	1,267	1,357

Note: t-values based on heteroscedasticity-consistent standard errors between brackets, *** significant at 1 per cent, ** at 5 per cent and * at 10 per cent. N differs over the various specifications due to missing observations. F-tests reflect significance of the difference between coefficients of different groups of associations.

4. Conclusion

Although civic engagement has often been hailed as a cure for many ills, it does not guarantee the end of all sorrows. Indeed, it may have a dark side too in the form of, for example, social exclusion. This recognition has recently led to a distinction between bonding and bridging social networks. The explicit acknowledgement in this distinction that not all forms of community engagement have the same external effects, gives it the potential to serve a crucial role in the debate linking civic engagement to social outcomes. However, at present, both concepts remain under-defined and effectively run the risk of stereotyping bridging and bonding as good and bad respectively. Moreover, this conceptual fuzziness invites various interpretations of what exactly is meant by bridging and bonding.

In the present paper, we empirically compared the two main interpretations that have been brought forward: one based on interconnections between networks (coined *external* bridging here) and one exploiting information on intra-network heterogeneity (termed *internal* bridging here). The results – using Flemish survey data on voluntary association membership – show that both approaches are not only conceptually different, but also lead to different empirical results. Firstly, associations may be placed on different ends of the bridging/bonding divide based on the approach employed. Secondly, the statistical and substantive significance of the relation between (bridging or bonding) membership and civic attitudes is strongly affected by the approach taken to distinguish bridging from bonding networks. Specifically, the link with pro-social attitudes is much stronger when one defines bridging potential as the interconnectedness of an association (i.e. external bridging) than when one looks at its socio-economic diversity (i.e. internal bridging).

Future empirical work should clearly attempt to determine the general nature of these findings. Relying only on Flemish data, as in the present study, does not allow us to draw general conclusions. However, even when Flanders should turn out to be a 'special case', our results still invoke questions concerning the conditions under which both approaches do provide similar results (interpretable as the 'scope conditions' for such a relation; see Lakatos 1981; Elster 1989). Moreover, following a stronger form of falsification theory (see Popper 1963), the present findings lead to an outright rejection of the notion that both approaches to bridging and bonding quantify the same thing (as suggested by their use of similar terminology and theoretical argumentation). In either case, serious methodological as well as conceptual, theoretical questions are brought to the surface. First and foremost, we need to clarify – at a theoretical, conceptual level – what exactly is meant by bridging and bonding. Then, it should be addressed whether both approaches (or interpretations) existing today tap into distinct dimensions of the bridging and bonding divide. Do both have their own specific value in the argumentation (and, if so, what

are these specific contributions) or is one of them more ‘appropriate’ (and, if so, which one)? These questions are crucial to consider in future work on bridging and bonding social networks and their (alleged) differential effects on individuals and the broader society.

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Appendix A

We regard five civic attitudes, measured through a principal component analysis (PCA) of individuals’ answers to related statements (four to eight depending on the attitude under consideration). Below, we present the statements employed for each attitude as well as the information about the PCA: i.e. component weights for each statement, eigenvalue, percentage of explained variance and Cronbach alfa of the component.

Utilitarian individualism: eight statements

0.79	In society, one better looks after himself/herself first.
0.79	In society, one has to fight for his/her own position, the rest follows automatically.
0.79	One should always pursue personal pleasure and not think too much about others.
0.78	It is important to first strive for a prominent for yourself.
0.75	One should take care of oneself first and defend ones own interests.
0.69	What counts is money and power. The rest is hot air.
0.66	Well-informed people can use this primarily to improve their own position.
0.63	Striving for personal success is more important than having good relations with others.

Eigenvalue	4.3
Explained variance	54%
Cronbach Alfa	0.88

Intolerance towards immigrants: four statements

0.85	Immigrants come here to take advantage of our social welfare system.
0.82	If the job-market deteriorates, 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.

Eigenvalue	2.7
Explained variance	67%
Cronbach Alfa	0.84

Acceptance of non-conformism: eight statements assessing individual’s acceptance of:

0.75	Piercings.
0.74	Wearing provocative clothing.
0.74	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 relation.
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.

Eigenvalue	3.6
Explained variance	45%
Cronbach Alfa	0.83

Feelings of insecurity: seven statements

0.75	In the evening, one has to be very careful on the streets.
0.72	Over the past ten years, streets have become more dangerous.
0.71	I do not open the door when someone rings my 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.

Eigenvalue	3.4
Explained variance	49%
Cronbach Alfa	0.82

Political powerlessness: five statements

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 the government accepts an unjust law, there is little a citizen can do about that.

Eigenvalue	2.7
Explained variance	54%
Cronbach Alfa	0.78

Appendix B**Table B1:** *'Internal' bridging and bonding memberships and civic attitudes (full results)*

Variable	Utilitarian individualism	Intolerance towards immigrants	Acceptance of non-conformism	Feelings of insecurity	Political powerlessness
Intercept	0.549*** (2.60)	-0.471*** (-3.37)	1.094*** (9.80)	-0.701*** (-5.06)	-0.714*** (3.25)
Religion low ^a	0.055 (0.77)	0.254*** (3.24)	-0.196*** (-2.94)	0.050 (0.66)	-0.008 (-0.10)
Religion medium ^a	-0.017 (-0.26)	0.208*** (2.92)	-0.378*** (-5.86)	0.125* (1.70)	-0.018 (-0.24)
Religion high ^a	-0.153* (-1.66)	0.053 (0.57)	-0.661*** (-8.07)	0.147 (1.53)	-0.045 (-0.47)
Children (number of children)	-0.016 (-0.74)	-0.069*** (-3.19)	-0.006 (-0.34)	-0.069*** (-3.43)	-0.028 (-1.31)
Gender (dummy: 1 = male)	0.157*** (3.08)	0.015 (0.29)	0.134*** (3.08)	-0.310*** (5.84)	0.036 (0.70)
Age (in years)	-0.011 (-1.23)	0.013*** (6.56)	-0.019*** (-11.85)	0.018*** (9.13)	0.028*** (3.15)
Age squared	0.0001 (1.46)	-	-	-	-0.0002** (-2.23)
Education (dummy for lower secondary)	-0.350*** (-3.74)	-0.183** (-2.15)	0.045 (0.65)	0.020 (0.23)	-0.066 (-0.74)
Education (dummy for higher secondary)	-0.564*** (-5.96)	-0.345*** (-3.95)	0.245*** (3.61)	-0.014 (-0.16)	-0.232*** (-2.62)
Education (dummy for higher education)	-0.800*** (-8.17)	-0.730*** (-7.97)	0.515*** (7.02)	-0.313*** (-3.23)	-0.571*** (-5.94)

Table B1: *Continued*

Variable	Utilitarian individualism	Intolerance towards immigrants	Acceptance of non-conformism	Feelings of insecurity	Political powerlessness
Married (dummy: 1 = married)	0.068 (1.11)	0.095* (1.64)	-0.220*** (-4.63)	0.075 (1.25)	0.041 (0.63)
Television time (average hours/day)	0.050*** (2.59)	0.053** (2.49)	-0.048*** (3.03)	0.045** (1.96)	0.051** (2.23)
Bridging associations (number of memberships)	-0.082** (-2.28)	-0.020 (-0.55)	0.063** (2.05)	-0.062* (-1.67)	-0.099** (-2.50)
Middle group of associations (number of memberships)	-0.150*** (-4.59)	-0.109*** (-3.44)	0.073** (2.46)	-0.096*** (-2.80)	-0.076** (-2.19)
Bonding associations (number of memberships)	-0.028 (-0.60)	-0.016 (-0.37)	0.043 (1.06)	0.011 (0.25)	0.039 (0.91)
N	1,359	1,293	1,327	1,267	1,357
R ²	16.55	20.99	39.69	18.35	13.12
F (bridging = middle)	1.63	2.81*	0.05	0.31	0.16
F (bridging = bonding)	0.73	0.01	0.15	1.06	5.07**
F (middle = bonding)	3.71*	2.63	0.34	2.47	3.78*
F (all coeff. equal)	1.98	1.97	0.17	1.25	2.88*

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 observations.

^a Low, medium and high religion are dummy variables indicating Christian religion with no, infrequent (i.e. less than once a month) and frequent (i.e. more than once a month) church-attendance. Non-Christian is reference group.

Table B2: 'External' bridging and bonding memberships and civic attitudes (full results)

Variable	Utilitarian individualism	Intolerance towards immigrants	Acceptance of non-conformism	Feelings of insecurity	Political powerlessness
Intercept	0.416* (1.95)	-0.603*** (-2.60)	1.064*** (5.26)	-0.494** (-2.08)	-0.779*** (-3.55)
Religion low ^a	0.066 (0.93)	0.258*** (3.32)	-1.196*** (2.93)	0.058 (0.76)	-0.004 (-0.05)
Religion medium ^a	-0.004 (-0.06)	0.217*** (3.07)	-0.379*** (-5.92)	0.136* (1.87)	-0.004 (-0.05)
Religion high ^a	-0.121 (-1.32)	0.073 (0.81)	-0.666*** (-8.38)	0.170* (1.81)	-0.005 (-0.06)
Children (number of children)	-0.010 (-0.49)	-0.069*** (-3.23)	-0.008 (-0.50)	-0.059*** (-2.95)	-0.020 (-0.94)
Gender (dummy: 1 = male)	0.116** (2.31)	-0.006 (-0.12)	0.137*** (3.15)	-0.342** (-6.53)	-0.005 (-0.09)
Age (in years)	-0.006 (-0.63)	0.018* (1.87)	-0.018** (-2.11)	0.007 (0.73)	0.032*** (3.39)
Age squared	0.0001 (0.86)	-0.0001 (-0.52)	-0.00001 (-0.10)	0.0001 (1.16)	-0.0002** (-2.49)
Education (dummy for lower secondary)	-0.345*** (-3.71)	-0.187** (-2.17)	0.044 (0.63)	0.030 (0.34)	-0.067 (-0.75)
Education (dummy for higher secondary)	-0.556*** (-5.93)	-0.344*** (-3.93)	0.245*** (3.60)	-0.002*** (-0.03)	-0.228*** (-2.58)
Education (dummy for higher education)	-0.763*** (-7.86)	-0.707*** (-7.62)	0.520*** (6.99)	-0.273*** (-2.81)	-0.551*** (-5.75)
Married (dummy: 1 = married)	0.074 (1.22)	0.089 (1.45)	-0.221*** (-4.17)	0.113* (1.72)	0.048 (0.75)
Television time (average hours/day)	0.046** (2.40)	0.050** (2.41)	-0.048*** (-2.95)	0.040* (1.77)	0.047** (2.13)
Bridging associations (number of memberships)	-0.216*** (-4.51)	-0.218*** (-4.86)	0.018 (0.43)	-0.129*** (-2.64)	-0.119** (-2.36)
Middle group of associations (number of memberships)	-0.102*** (-3.66)	-0.016 (-0.61)	0.077*** (3.49)	-0.066*** (-2.32)	-0.070** (-2.40)
Bonding associations (number of memberships)	0.130** (2.16)	0.078 (1.30)	0.082* (1.68)	0.100* (1.71)	0.113** (2.06)
N	1,359	1,293	1,327	1,267	1,357
R ²	17.49	21.72	39.74	18.85	13.38
F (bridging = middle)	3.19*	11.76***	1.27	0.96	0.57
F (bridging = bonding)	18.28***	13.84***	0.96	7.93***	8.44***
F (middle = bonding)	11.10***	1.84	0.01	5.88**	7.82***
F (all coeff. equal)	9.40***	8.40***	0.72	4.27**	4.99***

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 observations.

^a Low, medium and high religion are dummy variables indicating Christian religion with no, infrequent (i.e. less than once a month) and frequent (i.e. more than once a month) church-attendance. Non-Christian is reference group.

Notes

1. The author gratefully acknowledges helpful comments by (and/or discussions with) Hilde Coffé, Tom Cusack, Sokratis Koniordos, Piotr Matczak, Zuzana Murdoch, three anonymous referees and participants at the 8th ESA Meeting (Glasgow, September 2007). He is also grateful for the hospitality of the 'Corporate Taxation and Public Finance' Department at the ZEW (Mannheim, Germany) where he was a research guest during part of this research.

2. Since all papers proposing and/or using methods to distinguish bridging from bonding social networks concentrate on voluntary association membership, we follow this approach. Clearly, however, individuals also interact in other settings (e.g. schools or the workplace). While this implies that a focus on associations is best seen as a partial analysis and should be complemented by information on people's informal networks, it does not affect the general nature of the *methods* themselves.

3. It is interesting to note that the terminology employed here mirrors the importance attached to *bridges* in social network formation theory (e.g. Weimann 1982; Calvó-Armengol and Jackson 2004). Such bridges are in this literature seen as crucial links between different groups, allowing for a wider dissemination of knowledge, understanding and information than would be feasible without them. In sociology – and drawing on 'The strength of weak ties' by Granovetter (1973) – a very similar argument is raised in the theory of 'structural holes' by Burt (1992, 2001). Relationships spanning holes in a social structure are argued to provide an important opportunity and advantage for those involved.

4. We include active and passive members since the effects of active and passive membership are often found to be only marginally different (see Wollebaek and Selle 2003, Hooghe 2003a and Stutzer and Frey 2006).

5. The ideal dataset would involve (exhaustive) data at the level of the

individual associations. Unfortunately, such data are, to the best of our knowledge, unavailable.

6. Over- or under-representation of given socio-economic groups hereby implies that their share in the association is larger or smaller than in the overall population. Alternatively, one could regard the extent to which members distinguish themselves from each other (rather than from the overall population) (e.g. Stolle 2001; Li, Savage and Pickles 2003).

7. It is important to adequately define the comparison population. While in small, homogenous countries the entire population may be an accurate yardstick, in large countries where regional variations in population composition are significant, the demographic profile of a more localized population may be more desirable. Given the small size of Flanders and the minor regional differences in population composition, we employ the entire Flemish population as a reference group.

8. While the APS-surveys include 22 association types, six are disregarded here. Health care associations are excluded since membership in these is compulsory in Belgium. Self-help groups and the white protest movement lack sufficient members in the sample to allow reliable analysis. Unions, political parties and religious groups are excluded as these are most likely to harbour a diverse set of homogeneous associations (e.g. labour unions are grouped into one association 'type' with employers' organizations and retailers' associations). This may lead the analysis to designate them as more bridging than is justified based on the underlying associations (see also Stolle and Rochon 1998; Coffé and Geys 2007a). Still, their inclusion only marginally affects the ranking of the remaining association types from most to least bridging (Coffé and Geys 2007a).

9. This obviously does not imply that association size as such is irrelevant and should be discarded. In fact, larger associations are likely to have a larger impact than

smaller groups in terms of their social consequences. The 'correction' applied here does not negate this. It merely avoids biased inferences by controlling for the lower interconnections of large associations deriving solely from size differences.

10. As expected, the relation between $CONNECT_i$ and $MEMB_i$ is significantly negative (t -value = -2.72 ; $p = 0.02$) – indicating that larger associations are less interconnected. For example, members of the largest organization type (i.e. sports associations) have on average 1.27 additional memberships (with 63 per cent having at least one additional membership) whereas those in the smallest organization type (i.e. organizations for third world development and international peace) have on average 2.76 extra memberships (with almost 87% of the members having additional memberships). Importantly, this relation is not particular to our dataset. Using World Value Studies data Paxton (2002) finds trade unions, religious groups and sports associations to be the most isolated (or bonding) groups. Peace, human rights and environmental organizations are most connected (or bridging). As trade unions and sports groups are (much) larger than human rights and peace organizations, this suggests the general nature of the size-related bias indicated above.

11. The larger dataset used above could not be employed here as the attitudinal questions were, unfortunately, much less extensive in all but the 2002 wave of the survey.

12. As in all studies of this type, the direction of the causal link between participation and attitudes is not self-evident. Attitudes

may differ due to socialization or self-selection effects. Given the cross-sectional character of the dataset, we cannot address this issue here. However, as our main intention is to assess the possible difference between the two methodological approaches to bridging and bonding, this inability to pinpoint causality is not overly problematic.

13. As a robustness check, we estimated the model including either three or five associations in the bridging and bonding categories and the remaining associations in the middle category. The results are comparable to the ones presented in the main text and are available upon request.

14. Inclusion of a respondent's income was never statistically significant once education was controlled for and strongly reduced the number of observations. Hence, we did not retain it in the final estimations. The results, however, are robust to the reduction in sample size when this variable is included.

15. Our findings may be affected by the institutional design of the voluntary sector: i.e. the different roles played by the various organizations, their relations to the wider political setting, their own institutional design and so on. Indeed, institutional design may be a crucial factor in assessing 'bonding' and 'bridging' networks (see Coffé and Geys 2007a: 132) and may help to explain why individuals' civic attitudes vary across different types of voluntary activity. As such, it is important in future research to distinguish between these factors and those related to the socialization or self-selection effects referred to above.

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