



The Roots of Social Capital: Attitudinal and Network Mechanisms in the Relation between Youth and Adult Indicators of Social Capital

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One of the basic assumptions of social capital theory is that social interactions, whether in formal or informal settings, lead to socialization into pro-social value patterns such as generalized trust or reciprocity. This assumption has thus far been tested exclusively with adult populations. As a result, social capital studies tend to ignore a large body of political socialization research indicating that a number of crucial political behaviors and attitudes are already shaped at an early age, and that they continue to be rather stable during the life cycle. In this article, we use the Youth–Parent Socialization panel study (1965–1982) to demonstrate that with regard to generalized trust and participation, distinctive patterns are already in place during adolescence and continue into adulthood. Structural equation modeling produced support both for the attitudinal as for the network mechanism, although the stability with regard to trust was higher than with regard to participation. Our analysis suggests that social capital studies should, in the future, pay more attention to youth research than they have to date.

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Introduction

The recent literature on social capital has successfully demonstrated that networks of civic engagement, generalized trust and norms of reciprocity each have beneficial effects on the functioning of political institutions, individual well-being and even on economic growth (Putnam, 1993; Lin, 2001). However, we know less about how these kinds of attitudes and behaviors might be generated (Hooghe and Stolle, 2003). While institution-centered accounts focus on the role of government institutions and policy effects (Rothstein and Stolle, 2003; Skocpol, 2003), social capital studies tend to be dominated by society-centered approaches that take frequent social



interaction as a prerequisite for the creation of generalized trust and reciprocity (Putnam, 2000). The latter approach implies that interactions with other citizens, especially if they are 'bridging' in nature, exert socialization effects that are said to promote tolerance and higher levels of generalized trust (Mutz, 2002; Hooghe, 2003b).

While most of the current social capital literature departs from a socialization logic (at least implicitly), it is rather striking to observe that the insights gained from the research tradition on political socialization are hardly integrated into this new field of inquiry. There is indeed a potential conflict between the assumptions of social capital research and the findings of the political socialization literature. This second line of research suggests that core values and identities are acquired at an early age and remain relatively stable during the life cycle (Sapiro, 2004). A growing body of research indeed proposes that political attitudes and behaviors are shaped early in life, for example, through socialization within families, schools, peer groups, participation in community projects and youth associations (Jennings and Niemi, 1981; Flanagan and Sherrod, 1998; Hahn, 1998; Jennings and Stoker, this issue; Niemi and Junn, 1998; Oswald and Schmid, 1998; Yates and Youniss, 1999; Galston, 2001; Torney-Purta *et al.*, 2001; Hooghe and Stolle, 2004; Hooghe *et al.*, 2004). Of course, changes in attitudes do occur during adulthood as well (Sigel, 1989a), partly as a result of job experiences (Kohn and Schooler, 1982), family transitions (Lesthaeghe and Moors, 2001) or period effects, but in general these changes do not tend to interfere with the basic pattern established early in the life cycle. In sum, the most powerful socialization experiences occur in the early, formative phases of the life cycle. This implies that if we want to detect socialization effects underlying the formation of democratic and trusting attitudes and behaviors, the more promising strategy would be to focus on young people rather than adults; the social capital literature, at least in this respect, may have been barking up the wrong tree.

Our main claim in this article, therefore, is that social capital research should integrate the study of youth experiences. Adult indicators of social capital are significantly influenced by what happens during adolescence, and this claim applies both to the attitudinal (values, like generalized trust) and the structural (i.e. participation in formal or informal networks) components of social capital. We begin this article with a review of the existing literature on social capital formation, and we identify some of the basic shortcomings in the current research. Next, we turn to the literature on political socialization, to ascertain what insights can be gleaned from it and fruitfully applied to the study of participation and civic attitudes. Subsequently, we identify two possible causal mechanisms explaining the link between youth experiences and adult social capital indicators: a network approach (indicating the integration



in participatory networks) and an attitudinal approach (indicating the creation of civic attitudes). Both of these mechanisms are put to the test, using the results of the 1965–1982 Youth–Parent Socialization panel survey.

Social Interaction as a Source of Social Capital

Society-centered approaches to the study of social capital rely predominantly on the importance of social interactions and voluntary associations in the manner originally suggested by Tocqueville. Voluntary associations and other forms of social interactions are seen as creators of social capital because of their socialization effects on democratic and cooperative values and norms: associations function, in this view, as ‘learning schools for democracy.’ The claim is that in areas with strong, dense, horizontal, and cross-cutting networks, there is a spill-over effect from one’s membership in organizations to the development of cooperative values and norms (Putnam, 1993). In areas where networks with such characteristics do not develop, there are fewer opportunities to learn civic virtues and democratic attitudes, resulting in a lack of trust among citizens. At the micro-level, this entails a causal relationship between an individual’s membership in associations and networks (the structural aspect of social capital), and an individual’s values and attitudes (the attitudinal aspect of social capital). While in the 1990s research attention was focused mainly on participation in formal networks and associations (Putnam, 1993; van Deth, 1997; Bowler *et al.*, 2003), more recent social capital research has assumed that interaction within any kind of context, whether formal or informal, can exert socialization effects (Putnam, 2000). One of the basic assumptions here is that positive interaction with people embodying different characteristics (with regard to religion, ethnicity, cultural orientation, or political preference, e.g.) fosters feelings of tolerance, generalized trust and norms of reciprocity (Stolle, 2001; Mutz, 2002).

Most empirical studies on the effects of voluntary associations and social participation do indeed show that members of organizations and associations exhibit more democratic and civic attitudes than non-members. Almond and Verba (1963) found that members of associations are more supportive of democratic norms, more actively engaged in politics, better informed about politics and more sanguine about their ability to affect political life (Olsen, 1972; Verba and Nie, 1972; Newton and Delhey, 2003). Other authors have noted that the number and type of associations to which people belong, and the extent of their activity within the organization, are all positively related to political engagement (Rogers *et al.*, 1975). In later research, Verba and others document how members of voluntary associations learn self-respect, group identity, and public skills (Verba *et al.*, 1995; Dekker *et al.*, 1997; Moyser and Parry, 1997).



To these findings, the social capital school adds the insight that membership in associations also facilitates the learning of cooperative attitudes and behaviors, including reciprocity. In particular, membership in voluntary associations offers an opportunity for more intensive face-to-face interaction between people, thus creating a setting for the development of trust in others. This in-group trust can be utilized to further group purposes more easily and efficiently. Furthermore, the development of interpersonal trust and the cooperative experiences between members tends to be generalized to the society as a whole (Boix and Posner, 1998; Hooghe, 2003a).

The problem with the research to date is that even though members of voluntary associations show attitudinal and behavioral differences compared to non-members, this difference might be attributed to the fact that people self-select into associations and groups, depending on their original levels of generalized trust and reciprocity. This is a classic problem of endogeneity. People who trust more might be more easily drawn to membership in associations, whereas people who trust less might not join in the first place (Claibourn and Martin, 2000; Stolle, 2001; Mayer, 2003). Ideally, one would track association members over time in order to filter out the separate influence of group membership on trust, controlling for self-selection effects. This step would require a longitudinal research design involving adults.

The lack of solid empirical evidence for the 'learning school' view of social interactions might be related to the fact that for adults, membership in organizations and other regular social contacts are relatively short-lived and happen at a stage in life when important aspects of the socialization process have already been completed. Given the fact that for most adults participation in voluntary associations involves only a limited amount of their time, it seems unlikely that the interaction within these associations would have an exceptionally strong effect on their attitudes (Newton, 1997). The results of a Belgian survey show that, on average, people spend some 2 h 15 min a week in voluntary associations, and there is no apparent reason why this small time investment would have such a strong influence, especially after taking into consideration that family life, work, television and school each consume a substantially larger part of the time budget of most citizens (Hooghe, 2003a). In retrospect, therefore, it seems unlikely indeed that strong socialization effects of non-vital events (like the membership in an association) would be found among adults. Within the reference frame of political socialization studies, we would expect that secondary socialization experiences, that is, those occurring later in the life cycle, will be more ephemeral in nature because they happen in a later phase of life and are of a short-lived character.

In review of socialization studies, it might be more plausible that primary socialization experiences, that is, those experiences in one's childhood and adolescence, are more formative (Sears and Levy, 2003). Although Roberta



Sigel stresses the importance of experiences in later life, she too acknowledges: ‘much of the foundation for political life — affect, cognition, and participation — is in place as the young person reaches adulthood’ (Sigel, 1989b, ix). Or as Paul Whiteley (1999, 41–42) puts it: ‘individual values (...) which can only be explained effectively by socialization processes within the family and in early adulthood experiences, play a more important role in creating social capital than does face-to-face interaction within organizations’.

We therefore suggest opening up the social capital agenda to allow the inclusion of some of the key insights of socialization research. Both with regard to the structural aspects of social capital (participation in networks) as with regard to the attitudinal aspects (generalized trust and reciprocity), socialization research suggests that these patterns are already established early on in life (Stolle, 2003). We believe that current social capital studies, by focusing almost exclusively on the study of adults, miss an important part of the explanation of how social capital is actually generated. This implies that we should turn to the study of adolescents because their social experiences in youth associations, peer groups and other social interactions, as well as their school experiences, might have more impact on their civic attitudes than experiences later on in their lives. This view suggests that core values of social capital, such as norms of reciprocity and generalized trust, can be considered as traits that are acquired early in life (Piaget, 1932; Kohlberg, 1981), and that they remain rather stable throughout one’s lifetime. By studying respondents at an earlier age than social capital studies have done so far, we effectively take up the suggestion made by Niemi and Junn (1998, 157): ‘If we want to understand what adult citizens know and do not know about political life, and how they got that way, the late adolescent years and schools are good places to begin’.

Political Socialization Research

Focusing on the socialization effects of experiences early in the life cycle implies a return to the field of political socialization, which has largely been abandoned in the past two decades (Jennings, 2002; Sapiro, 2004). While in the 1960s and 1970s various studies on this topic were published, by the time Renshon (1977) brought out his *Handbook of Political Socialization*, the field had fallen out of grace. The assumptions of the early literature on political socialization have indeed become outdated. Following the lead of authors like Hyman (1959), who coined the expression, as well as Easton and Dennis (1969), political socialization was seen as a mechanism to ensure that younger age cohorts adopted and internalized the political orientations of older generations. The main concern involved political and democratic stability, as is understandable from the perspective of the post-war years. Political socialization functioned as



a source of diffuse support for the political system. Indeed, most of the authors in this line of research considered 'socialization as a stabilizing social mechanism' (Schwartz and Schwartz, 1975, 4).

The prevailing mood in the youth socialization literature of the 1970s and 1980s was rather skeptical about the possibility to socialize civic attitudes and behaviors. Most studies in this period focused on the effects of civic education, and the conventional wisdom was that civic education had little, or very small effects on political attitudes or political knowledge of pupils (Niemi and Junn, 1998, 16; Galston, 2001). The seminal study in this respect was conducted by Langton and Jennings (1968), and it underscored that the effects of civic education 'are extremely weak, in most instances bordering on the trivial' (Langton and Jennings, 1968, 858).

Civic education studies were revived again with the publication of the Niemi and Junn (1998) research, which was much more optimistic about the potential of civic education than Langton and Jennings three decades earlier. In their analysis, participation in civics courses, the recent timing of courses, the multiplicity of topics as well as the discussion of current political events had significant effects particularly on political knowledge, and therefore, they speculate, also on the future likelihood to vote. They conclude from their study: 'one finding is clear and consistent: school and curriculum have an enduring impact on the development of civic knowledge in high school students. By *enduring*, we mean that their effects are positive, statistically significant, and of meaningful size in comparison to and in the presence of other competing explanations of civic knowledge, including individual abilities and interests and home environment' (Niemi and Junn, 1998, 142–143, emphasis in original).

The differences between the 1968 results and the 1998 study are partly due to a different research design, but they also document how the field of civic education itself has changed during the past three decades. Practices of civic education had to respond to the criticism that its efforts did not produce any enduring effects, and it seems that this in turn has led to the development of new educational practices. Service learning is just one of these innovations. Although this kind of 'compulsory volunteerism' has initially been met with some skepticism, evaluation studies show that service learning experiences can indeed be effective (Metz and Youniss, 2003). About 32% of all public schools in the United States had service learning incorporated into their curricula by 1998, and several research projects have sprung up to evaluate their effects (Galston, 2001, 229). The finding is that participation experiences at a relatively early age contribute to the formation of a robust feeling of civic identity, which lasts long after the initial socialization experience (Yates and Youniss, 1998). In a massive comparative 1998 study among 14-year-olds, too, the insight emerged that not only civic education, but also extra-curricular



participation experiences, and the openness of the classroom climate had a significant impact on political knowledge and the future likelihood to vote (Torney-Purta *et al.*, 2001; Torney-Purta, Barber and Richardson, this issue).

The research on youth socialization as noted above documents the fact that youthful experiences, whether at school or in extracurricular activities can have profound influences on civic knowledge and to a certain degree on civic attitudes among youngsters. We do, however, observe a disagreement about which specific aspects are most important: the cognitive elements presented in 'traditional' civic education; the hidden curriculum as experienced in the classroom and school climate, or rather; the active involvement in all kinds of community projects (Smith, 1999; Morgan and Streb, 2001; Flanagan, 2003).

What is also clear from this summary, however, is that most research attention thus far has been directed to what goes on in schools: even the service and community projects underscored in recent studies have been mainly school-organized (Metz and Youniss, 2003). It can be argued, however, that there is no reason to focus as exclusively on the school context; other interaction contexts experienced by adolescents, might have equally strong effects. It is our purpose therefore, to shift the focus in the studies of youth socialization away from the sole focus on schools to include other interaction settings, most notably various memberships in voluntary associations, informal social interactions and the role of parents.

We suggest here that the study of adolescents' social environments and their involvement in various forms of social interaction is one of the promising avenues for socialization research. Unfortunately, thus far there are only a few studies focusing on the effects of non-school-related youth participation and social interaction. The material that is available, however, points in the direction of strong and persistent effects of participation in youth organizations on attitudes, network integration and mobilization. This means that people who were already active during their adolescence and student years are much more likely to be targeted by mobilization efforts in their later life (Hanks, 1981; Beck and Jennings, 1982; Johnson *et al.*, 1998).

Specifying the Causal Mechanisms: Network and Attitudinal Approaches

We propose, therefore, that social capital studies should integrate more explicitly the findings about the importance of youth experiences on the various social capital indicators. Peers, parents and friends, too can be seen as important socialization contexts (Youniss, 1982; Adler and Adler, 1998), and therefore they too should be included into the research. Most of the current socialization research is education oriented, and its main goal is to determine what is the impact of education practices and school characteristics. Contrary



to the main current in socialization research we suggest a much broader approach, that involves various potential sources of influence on the civic attitudes and behaviors of young people beyond the school context. Assuming that these patterns will remain relatively stable throughout the life cycle, this means that we can shed more light on the question of what exactly are the sources of social capital.

Two different causal mechanisms might explain the enduring effects of youth and adolescent social participation on adult social capital indicators. The first mechanism focuses on networks and civic skills as a source for future recruitment, and the second suggests that associational involvement in one's youth contributes to the development of civic attitudes as an enduring feature of one's personality that is perpetuated into adulthood.

The *network approach* claims that those who integrate early on in politicized networks, continue to be involved in this kind of action later in their lives. This approach builds on the finding in mobilization research that access to pre-existing networks is of crucial importance for any mobilization campaign to succeed (Diani and McAdam, 2002). Even if we leave out any possibility of a socialization effect, we can assume that those who have been active in the past are more likely to be integrated in one of these networks. Participation therefore can be considered as a self-reinforcing activity: participation generates recruitment networks that can be utilized by subsequent mobilization campaigns. The research conducted by Verba and associates strongly points to the conclusion that having been asked to join a campaign or an activity is an important predictor of participation behavior. Those who have been active in the past have a far greater chance of being targeted by such mobilization efforts: 'Requests for political activity are not random. Those who ask others directly to get involved in politics are apt to target likely prospects before making appeals' (Verba *et al.*, 1995, 139). Not only former members of youth associations are structurally embedded in politicized networks, from the point of view of the mobilizing agent, it is also much more reasonable to try to mobilize people about whom you know that they already have an activist history and experience (Verba *et al.*, 1995; Brady *et al.*, 1999).

The network approach does not assume that youth participation has any effect on attitudes. What happens rather is that participants are integrated into networks that can be used for subsequent recruitment and mobilization. Participants also have the opportunity to acquire civic skills that can be used in later forms of political and organizational behavior. The main expectation of this approach, therefore, is that those who have been active at an early age will continue to participate more intensely throughout their life cycle.

The *attitudinal approach*, on the other hand, assumes that youth experiences have a direct effect on the attitudes and values of adults. This approach suggests that by interaction with others young people will become imbued with

more civic and more egalitarian attitudes. Opinions differ, however, on the exact causal mechanism that might be invoked to explain this relation. Putnam (2000) states that only intensive face-to-face forms of participation and interaction will exert a strong socialization effect, but other authors are much more sanguine about the consequences of more distant, passive or even mere check book membership forms (Wollebaek and Selle, 2003). The main expectation here is that youth participation will leave a persistent attitudinal imprint not just at a young age, but throughout the life cycle, even controlling for adult participation levels.

To summarize, we expect two different effects from youth experiences. First, youth associations can potentially offer a good context to create all kinds of networks and skills that can be used for recruitment and participation efforts later on in the life cycle. Our first hypothesis, therefore, is that participation at a young age increases the likelihood that one will participate more intensely during adult life (Hypothesis 1). Second, we expect that youth participation has a direct effect on attitudes during adolescence, while we assume that these youthful attitudes tend to be rather stable. Our second hypothesis, therefore is that youth participation experiences will have a direct impact on adult attitudes (Hypothesis 2). These two hypotheses are visualized in Figure 1, and will be put to the test using the results of the Student–Parent Socialization study.

Data and Methods

To test both hypotheses simultaneously, we need access to a panel data set that: first, spans the period from youth to adulthood, and; second, includes both

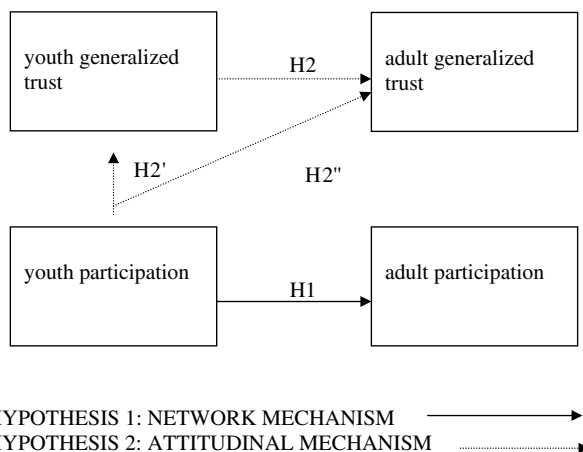


Figure 1 Hypotheses derived from the network and socialization approach.



attitudinal and participation variables. As far as we know, only one publicly available data set meets these requirements: the Youth–Parent Socialization study, a panel study with interviews in 1965, 1973 and 1982 (Jennings *et al.*, 1983). A fourth wave, with interviews in 1997, has not been made publicly available yet (see Jennings and Stoker, this issue). The survey gauges the impact of life-stage events and historical trends on the behaviors and attitudes of respondents. In 1973, 1,119 of the original 1,669 youths who completed the 1965 interview were re-interviewed, and an additional 229 completed mail-back questionnaires were received. In 1982, 958 of the original high-school seniors were re-interviewed, and 82 additional completed questionnaires were mailed back. We will use this data set to ascertain the relational structure between youth attitudes and participation levels on the one hand, and adult attitudes and participation levels on the other. As we also included parental characteristics in the analysis (information obtained directly from the parents of the respondents in 1965), most of our analyses will be based on a lower number of cases, however. Regression analysis allows us to select the most relevant variables to model this relation, and these variables will subsequently be used to estimate a structural equation model, allowing us to ascertain most of the hypothesized relations, summarized in Figure 1, simultaneously.

Results: Explaining Adult Participation and Trust

The first hypothesis, derived from the network mechanism, is rather straightforward: it is predicted that those who were already active in high school, will continue to be more engaged during their life cycle. In this specific case, this implies that we should find a strong relation between participation levels in 1965 (when the respondents were 17) and in 1982 (when their average age was 34 years). In the 1965 wave, the high school students were questioned about their membership or involvement in 11 different types of organizations. A first look at the data reveals that pupils in 1965 were very active: over 70% of them were church members, and over 50% claimed they have been officers in some school organization, committee or group, and about a third participated in athletic teams. When we look at bivariate figures (see Table 1) we observe that those who were active teenagers are still more engaged almost two decades later. With the exception of members in youth occupational groups and student papers, all former youth members are more engaged as adults in associational life. It is important to note, however, that this relation is not statistically significant for each and every kind of association. Some youth groups, such as athletic clubs, neighborhood groups and being an officer undoubtedly contribute to a higher number of adult memberships, whereas other groups, like occupational clubs, or editing a school paper, apparently do not.



Table 1 Relation between youth (1965) and adult (1982) participation

<i>Types of youth organizations</i>	<i>% members in 1965</i>	<i>Adult participation non-members of this youth organization</i>	<i>Adult participation of members of this youth organization</i>
School/student paper	30.1	1.25	1.23
Hobby groups	17.6	1.24	1.26
School subject groups	33.2	1.21	1.32
Occupational groups	35.8	1.27	1.21
Neighborhood groups***	33.4	1.16	1.43
Church**	71.3	1.05	1.33
Scouts*	29.8	1.19	1.40
Athletic clubs***	34.7	1.14	1.46
Music/culture groups	29.4	1.22	1.31
Debate team	8.1	1.25	1.27
Being an officer***	57.8	1.06	1.39

Entries are number of memberships in 1982 of various types of voluntary associations broken down by previous youth organization membership status in 1965. Figures for 1982 include membership in fraternity, informal, neighborhood, sports, hobby, ethnic, civic and professional organizations and unions.

* indicate significant differences of means between 1965 members and non-members in ANOVA test. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

We get a more complete understanding of the relation between youth participation and adult participation levels, however, if we move from this bivariate exploration toward a full multivariate model (Table 2). In our first model, we included most of the variables that in earlier research proved to have an effect on participation levels (Verba *et al.*, 1995). At the individual level (measured in 1982), these variables include education, income, gender, ethnicity, employment status, being married and the number of relocations since 1965. Since it is well known that religious involvement tends to have a positive impact on participation levels, we also included church attendance in 1982 as a control variable. Furthermore, we included various parental background variables: the education level of both parents, and the generalized trust and the participation levels of the parents in 1965. This first model reflects the influences of these background variables, indicating that education, income, and current church attendance make a difference for the respondent's adult membership levels. The parental background variables, on the other hand, do not seem to have an impact.

In the second model (II) we attempt to test our first hypothesis, by including both the participation level of the respondent and the trust level, in 1965. Following the results from our bivariate exploration, we included here only the youth memberships which demonstrated a significant relation with adult participation, that is, neighborhood groups, athletic clubs and scouts, and

Table 2 Explaining adult trust and participation

<i>Independent variables</i>	<i>Model I Participation 1982</i>	<i>Model II Participation 1982 (incl. youth var.)</i>	<i>Model III Generalized Trust 1982</i>	<i>Model IV Generalized Trust 1982 (incl. youth var.)</i>
Cte	0.403 (0.355)	0.061 (0.391)	0.368 (0.111)	0.183 (0.121)
<i>Respondent's background variables</i>				
Education level	0.916*** (0.226)	0.801*** (0.233)	0.000 (0.072)	-0.029 (0.073)
Income	0.801* (0.337)	0.829* (0.339)	0.107 (0.106)	0.117 (0.105)
Gender	-0.176 (0.152)	-0.179 (0.154)	0.036 (0.048)	0.036 (0.048)
Race	0.453 (0.252)	0.490 (0.261)	-0.278*** (0.078)	-0.232** (0.080)
Employment status	-0.271 (0.193)	-0.320 (0.201)	0.092 (0.060)	0.083 (0.062)
Marital status	0.128 (0.161)	0.106 (0.164)	0.014 (0.052)	0.039 (0.052)
Relocations since 1965	-0.133 (0.224)	-0.121 (0.230)	0.012 (0.071)	0.045 (0.072)
Church attendance 1982	0.250*** (0.041)	0.245*** (0.042)	0.014 (0.013)	0.020 (0.013)
<i>Respondent's parental influences</i>				
Education level father	0.004 (0.265)	0.067 (0.275)	0.005 (0.017)	0.008 (0.017)
Education level mother	-0.313 (0.343)	-0.303 (0.356)	0.036 (0.022)	0.041 (0.022)
Participation level parents in 1965	0.228 (0.367)	0.061 (0.374)	0.024 (0.116)	0.026 (0.116)
Trust parents 1965	0.181 (0.095)	0.140 (0.098)	0.041 (0.030)	0.017 (0.030)
<i>Youth variables (1965)</i>				
Generalized trust	—	0.385* (0.186)	—	0.239*** (0.058)
Group memberships	—	0.148* (0.061)	—	0.003 (0.019)
Adj. r^2	0.15	0.17	0.05	0.09
<i>n</i>	398	380	382	366

Entries are unstandardized regression coefficients (OLS) and standard errors. Dependent variable, resp. participation level in 1982 (Models I and II) and generalized trust in 1982 (Models III and IV). Parental trust and participation were measured in the parent's sample in 1965.

Sign.: * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Data source: Jennings *et al.* (1983).





being an officer in an association. Both of these youth measurements had a significant effect on the participation level in 1982, with the effect of participation slightly stronger than the effect of trust. Overall, we notice a small rise in explained variance as a result of including these youth measurements as independent variables, which confirms our assumption that youth experiences matter for adult participation.

In testing our second, attitudinal hypothesis, we follow the same logic. Our dependent variable is generalized trust (or 'social trust'), which is operationalized here as the index of three trust items also used in the American General Social Survey. The questions ask about the respondent's trust in others, their view on the fairness of others, and their feeling about whether others would take advantage of them given the chance. As before, in the first model (Model III), we only include background, parental and control variables to explain adult generalized (or social) trust. In this model, the explanatory power of these variables remains relatively weak, with a very strong negative effect from ethnicity, indicating that non-whites on average are more distrustful than whites, which is in line with earlier research on this topic (Marshall and Stolle, 2004). In this analysis, too, the effect of parental variables was negligible. The inclusion of the youth variables (Model IV) boosts the explained variance considerably, with a strong relation between trust levels in 1965 and those in 1982. Youth participation, on the other hand, does not seem to have an effect on adult trust levels. This implies that only one of the three causal mechanisms (youth trust to adult trust), integrated in our second hypothesis, is fully confirmed in this model. The other two relations, assumed in the second hypothesis were either not tested (youth participation to youth trust), or proved to be non-existent (youth participation to adult trust).

A Simultaneous Estimation of Adult Trust and Participation

In our effort to determine the effect of adolescent experiences on adult social capital indicators, we have thus far relied on regression analyses. As a consequence, we could take into consideration only one social capital indicator at the same time. With regard to participation habits, we have shown that participation measurements in 1965 were significantly related to participation habits in 1982, at least for a number of organizations. The adult level of generalized trust was strongly related to the level of generalized trust during adolescence, but it was not related to the participation level in 1965.

However, if we want to determine whether the network or the attitudinal mechanism should be regarded as the best way to explain the relation between adolescence experiences and adult social capital indicators, this entails that both of them should be included simultaneously in a model. This is beyond the



reach of regression analysis since the network mechanism is supposed to have an effect mainly on the adult participation level, and the attitudinal mechanism mainly on the adult trust level.

A further consideration is that social capital studies assume a causal relation between attitudinal (such as generalized trust), and structural components of social capital (such as participation). Revealing the effects of the attitudinal or the network mechanism in an encompassing manner, therefore, implies that all of these alleged causal effects, even if they are indirect, should be included in the model simultaneously. Looking at both social capital indicators in an isolated manner, as we have done so far, therefore, cannot be considered as an ideal research design for our problem, both for methodological and theoretical reasons.

In order to estimate all relevant direct and indirect relations simultaneously, we will rely on structural equation modeling. Although this technique lends itself perfectly to time-series or longitudinal and/or panel design (Hershberger *et al.*, 1996), structural equation modeling is usually used for rather short term data sets, resulting from (quasi-) experimental research. We are not, at this time, aware of any structural equation models covering a time span of almost two decades. It has to be acknowledged, furthermore, that the relations that were revealed by the regression analysis generally were weaker than the ones usually used to build a structural equation model. Furthermore, in order to fully test our hypotheses in the final model, we had to include a number of weak relations that normally would have been dropped for methodological reasons. Including these theoretically relevant relations reduced the fit parameters for our model. Nevertheless, we succeeded in building a reliable and stable structural equation model, estimating simultaneously the impact of various background and historical variables on both adult participation and trust levels.

In building this model, we used the same logic as in the previous regression analyses: we adopted a rather agnostic position with regard to the heated debate within social capital studies about causality issues, by simply allowing various causal relations between related variables, in line with our two hypotheses. The results of the analyses themselves helped us to determine which causal flow was most likely. In addition, we selected from the previous regression analyses the strongest variables, that is, those having a significant relation with either trust or participation levels. Contrary to regression analysis, however, structural equation modeling calls for parsimony. A number of 'promising' variables from the regression analysis, therefore, had to be deleted from our final model, since they only weakened the overall stability of the model, without contributing anything to the explanation offered by the model. This selection process led to the construction of the structural equation model that is represented in Figure 2. The core model takes account of the various trust and participation measures (parents, respondents 1965 and



respondents 1982) that are crucial to our argument. As in the previous regression analysis, the 1965 measurement of participation only included those organizations where bivariate analysis revealed a significant correlation with adult participation levels. Other variables that were included are:

- education level (measured in 1982);
- gender;
- race (whites vs non-whites);

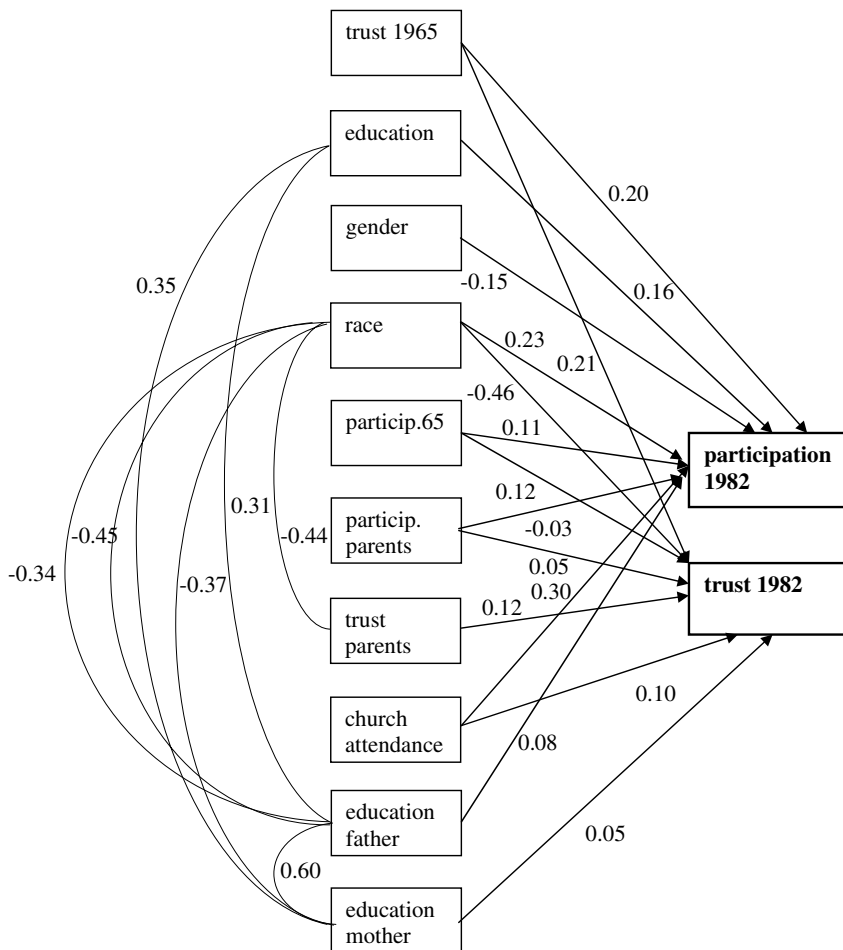


Figure 2 Structural equation model for adult participation and trust (LISREL). Variables based on Table 2, Models II and IV. Covariances between error terms below 0.30 have been omitted for reasons of clarity. χ^2 14.75, df 6, $P = 0.02$. RMSEA 0.049; standardized RMR 0.025; NFI 0.96, GFI 0.98.



- church attendance in 1982, which proved to be the best proxy variable to measure the impact of religious beliefs or involvement on trust;
- education level of father and of mother of the respondent (measured in 1965).

Constructed in this manner, the model proves to be stable, with a goodness-of-fit index (GFI) of 0.98 and a root mean square error of approximation (RMSEA) of 0.049, implying that this can be regarded as a reliable model, given the fact that RMSEA's of even 0.080 are considered to be acceptable (Browne and Cudeck, 1993).

To a large extent, this structural equation model confirms and further qualifies our regression results. The relation between adolescent and adult trust levels is quite strong, with a regression weight of 0.21. The effect of youth participation on adult participation is significant, but clearly weaker, with a regression weight of 0.11. In general, the analysis shows that adult participation levels are determined mainly by church attendance, ethnicity, trust during the youth phase, education and gender. Adult trust levels seem to be determined mainly by ethnicity, trust during the youth phase, youth participation and trust level of one's parents. The model clearly lends support for the occurrence of both the attitudinal as the network mechanism, but with a stronger relation for trust. This model, therefore, is congruent with the claim made by Uslaner (2002) and others that generalized trust can be seen as a rather stable attitude, with, in this case, a large degree of stability, even over a 17-year timespan. Jennings and Stoker (this issue) have demonstrated that trust levels tend to be lower for younger age cohorts. If we combine this finding with the fact that trust levels tend to remain stable (despite obvious age effects, documented by Jennings and Stoker, this issue), this implies that in the years, and even decades ahead, the most likely evolution will be a further reduction of trust levels, as older and more trusting age cohorts are gradually replaced by more distrusting younger cohorts.

With regard to the effects of youth participation, the results are more mixed. On the one hand, in this respect, too, we observe a distinct stability: those who were already active in 1965 continue to remain active almost two decades later, pointing in the direction of a network mechanism. On the other hand, it remains to be ascertained what exactly are the socializing effects of youth participation. While the regression analysis did not reveal any significant socialization effects, in the structural equation model, these effects could be clearly detected, and this is obviously a topic for further analysis. Whatever the sources of adolescent civic attitudes might be, however, our equation model demonstrates that once these attitudes are in place, at the end of adolescence, they remain rather stable, even two decades later.



Conclusion: Toward a Life Cycle Approach of Social Capital

In this article, we have demonstrated how adult civic attitudes and networks, two important dimensions of social capital, are influenced by adolescents' experiences. Because of the exploratory character of this article, we had to rely on a secondary analysis of an existing dataset not specifically collected for this purpose. This implies, for example, that some of the measurements on which we had to rely, were not specifically tailored to our needs. However, even with these limitations in mind, we were able to perform important tests into the link between youth socialization, attitudes and networks.

With regard to the network mechanism (H1 in Figure 1), the relation between youth and adult participation proved to be significant and relatively strong. Given the results in the Jennings and Stoker article (this issue), it is reasonable to expect that these effects will grow even stronger as the respondents mature, as a result of what they call a sleeper effect. With regard to the attitudinal mechanism, the evidence is mixed. Of the three relations we depicted in this mechanism (H2 in Figure 1) only one (from youth trust to adult trust) was significant in the regression analysis, but this one proved to be exceptionally strong in the structural equation model. Our tentative conclusion at this point of research, therefore, would be that both the attitudinal and the network mechanism are important if we want to understand how youth experiences contribute to the shaping of political attitudes and behaviors among adults.

It seems obvious that generalized trust can be seen as a relatively stable characteristic in one's life: trust levels at age 17 are strongly related to trust levels at age 34, which means that in order to fully understand adults' social capital, we need to shift our attention to the study of youth. Questions on what exactly happens during this youth phase, and the kind of experiences that might have shaped youth generalized trust, were not included in this analysis and will be the topic of further investigation. We realize that several issues remain unanswered. Better data and models should allow us to successfully disentangle the effects that result from pre-existing values and attitudes before the onset of youth participation, from actual participation effects. Longitudinal data starting at an earlier age and over longer periods of time would also reveal how lasting the effects of youth socialization are, and how they compare to other influences, such as civic education, institutional experiences, and parental upbringing. What is clear, however, is that various youth experiences matter to explain adult social capital indicators. Any effort to study the generation of social capital, therefore, should adopt a long-term perspective instead of focusing solely on adults.



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Notes

- 1 Both authors contributed equally to this article, but for reasons of fairness, we do not always wish to adhere to alphabetical order.