Determinants of Political Trust: A Lifetime Learning Model

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This article addresses questions regarding the origins of individual variations in political trust. Using 2 prospective longitudinal studies, we examine the associations between family background, general cognitive ability (g) and school motivation at early age, educational and occupational attainment in adulthood, and political trust measured in early and mid-adulthood in 2 large representative samples of the British population born in 1958 (N=8,804) and in 1970 (N=7,194). A lifetime learning model of political trust is tested using structural equation modeling to map the pathways linking early experiences to adult outcomes. Results show that political trust is shaped by both early and later experiences with institutions in society. Individuals who have accumulated more socioeconomic, educational, and motivational resources throughout their life course express higher levels of political trust than do those with fewer resources.

Keywords: political trust, social status, intelligence, school motivation, longitudinal

Political trust as a concept and construct has become increasingly important in recent debates and academic research. Political trust refers to the confidence people have in their government and institutions. It was derived from the left-right ideology, which can be traced back to the 1950s (e.g., Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950). The current rise in interest is associated with the observation that during the past three decades, there has been a downward trend across most industrialized nations regarding people's trust in institutions and their confidence in government (Catterberg & Moreno, 2006; Citrin & Muste, 1999; Dalton, 2004, 2005; Inglehart, 1997; Putnam, 2000). This is a worrying trend insofar as it is widely believed that the level of political trust can affect the stability of the institutions that make or enforce policies (Citrin & Muste, 1999). As most countries are currently undergoing rapid economic, political, and social change, it becomes increasingly important to understand how and why individuals develop commitment and trust in society and its institutions. The use of prospective longitudinal studies following individuals over multiple developmental periods has been identified as being particularly important for gaining a better understanding of how political trust develops (Flanagan & Sherrod, 1998; Lerner, 2004; Obradović & Masten, 2007; Youniss, McLellan, & Yates, 1997).

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There are, however, only a few and mostly small-scale longitudinal studies examining developmental antecedents and covariates associated with the expression of political trust. Our aim in this article is to close the evidence gap and to examine determinants of political trust as well as change over time by using a longitudinal approach, drawing on data collected for two large representative samples of the British population. We develop and test a lifetime learning model of political trust, examining the role of early as well as later experiences within the family, the school, and the wider social context in shaping the formation and expression of political trust in adulthood. The model spans the period between birth to mid-adulthood, assessing developmental pathways and cumulative experiences across the life course. Furthermore, the model is tested in two birth cohorts (born in 1958 and 1970), establishing its generalizability in a changing sociohistorical context.

Theories on the Origins and Determinants of Political Trust

On the one hand, it is argued that political trust is based on attitudes and values that are learned early in life and are transmitted from generation to generation (Inglehart, 1997; Putnam, 2000). It is assumed that values are acquired early in life and then persist into the adult years. They tend to crystallize by the time an individual reaches adulthood, with relatively little change thereafter (Inglehart, 1997). According to these cultural theories, political trust is an extension of interpersonal trust, learned early in life, which is then, much later, transferred onto political institutions (Inglehart, 1997; Putnam, 1993).

In contrast to the cultural perspective, institutional theories argue that political trust is rationally based, that it is influenced by individual evaluations of institutional performance (Coleman, 1990; Hetherington, 1998), and that attitudes toward institutions vary depending on direct knowledge and experience (Evans & Whitefield, 1995; Hudson, 2006; Nye, Zelikow, & King, 1997). According to institutional theories, political trust is a thoroughly

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cognitive phenomenon that depends on knowledge and beliefs about the institutions to be trusted (Hardin, 2006; Offe, 1999).

Cultural and institutional theories are often characterized as incompatible, although they both share the fundamental assumption that trust is learned and linked at some level to direct experience (Hudson, 2006; Mishler & Rose, 2001). Where the two theories differ is regarding their assumption about when most learning is likely to occur. Cultural theories emphasize the importance of early experiences with little change later on, whereas institutional theories emphasize the role of more proximate and contemporary experiences with institutions. Institutional theories accept that culture can condition attitudes toward institutions, as can the past performance of institutions, but neither culture nor past performance is deterministic. The two assumptions lead, however, to different conclusions of how change in trust can be brought about. If, on the one hand, political trust is deeply rooted in early experiences, little can be done in the short term to cultivate trust, and it will take decades or generations to bring about change (Inglehart, 1997). If, on the other hand, trust originates in direct experiences with institutions, increased trust can be generated by providing economic growth, abstaining from repressive and corrupt practices (Mishler & Rose, 2001), and providing services that increase trust and civic participation.

Correlates of Political Trust

Most studies investigating the determinants and correlates of political trust have been cross-sectional in nature and few have addressed the role of life-course experiences. Furthermore, most studies have focused on social trust, which generally refers to the belief that one can trust strangers (Putnam, 2000; Seligman, 1997; Uslaner, 2002), on the basis of the generalized assumption that the other person means no harm. The notion of political trust, however, refers to beliefs that institutions will competently and fairly deliver their services (Hudson, 2006; Mishler & Rose, 2001).

Unlike in the case of social trust, relatively few studies have investigated the determinants of political trust, and the empirical evidence is not unequivocal. Correlates of political trust found in previous studies include social background, gender, cognitive ability, education, and occupational status. Some studies have found positive associations between ability, education, and occupational status on political trust (Abramson, 1983; Deary, Batty, & Gale, 2008; Hibbing & Theiss-Morse, 1995; Schoon, Cheng, Gale, Batty, & Deary, 2010) whereas others have found negative (Döring, 1992) or nonsignificant associations. Similar inconsistent effects are found regarding other sociodemographic factors such as age and gender. Women have been shown to be more trusting (Glaeser, Laibson, Scheinkman, & Soutter, 2000; Paterson, 2008) or less trusting (Leigh, 2006) than men. Furthermore, there is evidence that trust varies over the life cycle (Hudson, 2006; Putnam, 2000), with some findings suggesting that trust increases with age (Glaeser, Laibson, Scheinkman, & Soutter, 1999; Mishler & Rose, 2001; Patterson, 1999), whereas other studies have established a curvilinear relationship (Brewer, Gross, Aday, & Willnat, 2004; Hudson, 2006; Wollebaek & Selle, 2002). Discrepancies in findings are due to different approaches regarding measurement (single-item measures or use of scales), sampling (cross-sectional or longitudinal, whereby most longitudinal studies were either relative short-term or retrospective studies), or focus on specific developmental periods (young age, age-varied groups, or older age group) and highlight the need for further research to clarify the determinants of political trust. Differences in findings might also be due to differences in period effects, which are not yet well understood.

Adopting a longitudinal approach, we aim to advance the understanding of the antecedents and pathways leading to the expression of political trust in a changing sociohistorical context. Drawing on data collected for two nationally representative cohort studies, with cohorts born in the United Kingdom in 1958 and in 1970, we test a lifetime learning model of social attitudes, assessing the relative role of childhood and later influences in shaping the expression of political trust in adulthood. Furthermore, we assess the stability of trust over time, measuring political trust during a major economic recession (i.e., in 1991) and during a period of relative economic stability (i.e., in 2000). Being able to test the lifetime learning model in two age cohorts born 12 years apart will provide a better understanding of the mechanisms and processes underlying the formation of political trust in context. Adopting a developmental-contextual approach, we take into account multiple interlinked influences occurring over time (Bronfenbrenner, 1979; Lerner, 2004) as well as the wider sociohistorical context in which development takes place (Elder, 1998). As far as we are aware, this is one of the first studies to investigate the determinants of political trust using longitudinal data spanning multiple developmental periods and the first to also examine stability and change of political trust in a changing socioeconomic context in two large cohort studies. The study contributes to discussions about the determinants of political trust and social attitudes in general and the generalizability of findings across contexts, as well as regarding consistency and change over time.

Toward a Lifetime Learning Model of Political Trust

In the following, we integrate assumptions regarding early and later experiences within the family, school, and wider social context into a lifetime learning model of social attitudes (see also Mishler & Rose, 2001). Figure 1 shows a diagrammatic depiction of the developmental pathways model, which is tested using structural equation modeling (SEM). It is assumed that political trust develops initially as a result of early experiences in the family and the school contexts, which, in turn, are assumed to influence later experiences with institutions and adult evaluations of institutional performance. Adopting a developmental perspective, the model accounts for direct effects over time as well as the accumulation of experiences over the life course, where later developmental outcomes integrate earlier forms of adaptation.

Human development takes place through processes of progressively more complex interactions between the developing individual and the persons, objects, and symbols in his or her immediate environment (Bronfenbrenner, 1979; Lerner, 2004). Family social status at birth has been shown to be associated with general childhood cognitive ability (Duncan & Brooks-Gunn, 1997; Tong, Baghurst, Vimpani, & McMichael, 2007). The two variables share some genetic as well as environmental influences and are operationalized as correlated independent variables. This approach is considered a preferable, theory-neutral position until more is known about the causal relations and patterns of interaction of these two variables (Deary et al., 2005). Young people from

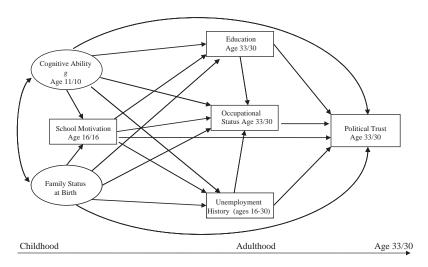


Figure 1. A lifetime learning model of political trust. All ages are in years.

different social backgrounds may have different experiences with institutions (Hudson, 2006), which can accumulate over the life course. Children born into more privileged families will encounter more educational opportunities and greater access to financial resources, role models, and informal networks than will their less privileged peers, which, in turn, will shape their academic attainment and later developmental outcomes (Elder, 1998; Lerner, 2004; Schoon et al., 2002). We thus expect direct as well as indirect associations between parental social status and childhood cognitive ability and political trust in adulthood. Developmentally, we would expect that experiences within the family and the school system shape later connections and attitudes toward institutions. As a person's sense of the world becomes more elaborated, the concept of trust is adjusted by experiences within the family, the school system, and institutions in general (Lerner, 2004).

The model specifies a number of mediating processes indicating possible pathways through which family social status and childhood cognitive ability might influence political trust expressed in adulthood. Parental social status and childhood general cognitive ability (which are allowed to correlate) are assumed to influence early school motivation, educational attainment, and the experience of unemployment, which, in turn, are assumed to influence occupational attainment in adulthood. All of these factors are hypothesized to shape political trust in adulthood.

It has been argued that higher levels of cognitive ability and education are associated with higher levels of political trust, as competencies for informed and accurate processing of information are likely to influence attitude formation (Deary et al., 2008; Rindermann, 2008). We would thus expect higher levels of cognitive ability and education to be positively associated with levels of political trust.

School motivation can be understood as a marker of early experiences with institutions (i.e., the school context), reflecting students' views and their engagement in school-related activities (Eccles & Wigfield, 2002; Fredricks, Blumenfeld, & Paris, 2004), which, in turn, influences later outcomes, such as time spent in education (Schoon, 2008) and educational and occupational attainment (Schoon, Martin, & Ross, 2007). Evidence suggests that schools can play an important role in shaping adolescents' feelings

of social inclusion and, consequently, their attitudes toward institutions (Flanagan, Cumsille, Gill, & Gallay, 2007; Kahne & Sporte, 2008; Paterson, 2008).

The experience of unemployment and adult occupational status are assumed to reflect experiences in the economic system. If someone loses his or her job, he or she might become less confident in government, especially if he or she experiences long-term unemployment, as might someone who does not succeed in climbing the occupational ladder (Hudson, 2006; Mishler & Rose, 2001; Youniss et al., 2002). Social status destination, that is, own occupational status, can also be understood as a reflection of cumulative processes starting in childhood, through family influence, schooling (school motivation and achievement), various job experiences, and further education, which lead to higher occupational status.

Another aspect to be considered here is the role of socioeconomic changes as indicated through fluctuations of the country's economy (Hudson, 2006; Inglehart, 1997). Perceptions of institutions can be influenced by the rise and fall of the economic cycle. Evidence from the Eurobarometer surveys suggests that during the recessions of the 1990s, satisfaction with how democracy is working had decreased to the lowest levels recorded since 1976 (Inglehart, 1997). However, according to Inglehart (1997), it is not a just a matter of institutional performance influencing perceptions, because objective performance is always evaluated according to internalized standards, or cultural orientations that are transmitted from generation to generation.

In the following, we thus examine the role of family social background, cognitive ability, school motivation, educational achievement, unemployment history, and occupational attainment in adulthood as well as the role of a changing sociohistorical context in shaping the expression of political trust in early and mid-adulthood, drawing on data collected for two representative samples of the British population. First, we examine the mean differences of political trust at two time points in one representative sample. Second, we look at the associations between political trust and a range of indicator variables described above. Following this, we investigate the pathways linking early childhood experiences to later outcomes and political trust in adulthood using SEM.

Hypotheses

Hypothesis 1: If political trust originates in deeply rooted cultural norms, we would expect that (a) political trust is primarily shaped by early experiences in the family and school contexts and (b) there is relatively little variation of trust with change factors such as age or changes in the economic cycle.

Hypothesis 2: If political trust is primarily influenced by direct experiences with institutions, we would expect that political trust is (a) above all associated with later experiences in the economic system, such as the experience of unemployment or occupational status attainment, and (b) associated with change factors such as age and changes in the economic cycle.

Hypothesis 3: The lifetime learning model combines assumptions from cultural and institutional theories on the origin of political trust and accounts for the influence of both early and later experiences with institutions. Following the lifetime learning model, we would expect that political trust (a) is associated with both early and later experiences with social institutions, (b) is reflected in cumulative experiences, and (c) is the result of initial predispositions being reinforced or revised on the basis of later experiences. The model is thus flexible enough to examine both stability and change in attitude formation over time.

Method

Participants

The study draws on two nationally representative cohort studies: the 1958 National Child Development Study (NCDS) and the 1970 British Cohort Study (BCS70), for which participants were selected solely by date of birth (Schoon, 2006). The study participants were recruited as part of a perinatal mortality survey. In both cohorts, the sample population is predominantly White (about 3%–4% are of Indian, Pakistani, Bangladeshi, African, Caribbean, Chinese, or mixed origin), reflecting the ethnic diversity of the U.K. population at the time (Ferri, Bynner, & Wadsworth, 2003).

NCDS comprises 17,415 individuals born in Great Britain in a week in March 1958 (Power & Elliott, 2006). Follow-up studies were conducted at ages 7, 11, 16, 23, 33, 42, and 46 years. Data on the central variable of interest (political trust) is available for NCDS at ages 33 and 42 years. In 1991, at age 33 years, 15,567 cohort members were eligible to take part in the follow-up survey (89% of the original cohort who were alive and living in the United Kingdom). Of these, 10,986 participants completed a questionnaire that included the political trust scale (a 71% response rate). In 2000, at age 42 years, 10,979 participants completed a follow-up study (71% of the eligible cohort members). Further, 8,804 participants have complete measures of childhood cognitive ability (measured at age 11 years) and the institutional trust scale at age 33 years. Among this subsample, 7,694 participants also completed the political trust scale at age 42 years (87% of those who completed the political trust scale at age 33 years). The analysis presented here is based on the sample of 8,804 participants with complete data at ages 11 and 33 years. Compared with the 8,804 individuals who did provide complete data, those individuals who did not complete the 33-year follow-up study had a lower score on the test of general cognitive ability (on the IQ-type scale equivalent, M=101.7, SD=14.4, vs. M=96.6, SD=15.6, respectively; p<.001). In terms of family social background, compared with the analytic sample of 8,804 participants, those individuals who did not complete the 33-year follow-up study were from less privileged family backgrounds (lower occupational status and lower parental education). Further, individuals who completed both the 33-year and the 42-year follow-up studies had a higher score on political trust at age 33 years than did those individuals who did not complete the 42-year follow-up study (M=2.77, SD=0.68, vs. M=2.62, SD=0.68, respectively, p<.001).

BCS70 comprises 16,571 individuals who were born in Great Britain in a week in April 1970 (J. Elliott & Shepherd, 2006). Follow-up studies were conducted at ages 5, 10, 16, 26, 30, and 34 years. Data on political trust for BCS70 has been collected at age 30 years. In 2000, at age 30 years, 15,503 cohort members were eligible to take part in the follow-up survey (94% of the original cohort who were alive and living in the United Kingdom). Of these, 10,833 participants completed a questionnaire that included the political trust scale (a response rate of 70%). For the 7,194 cohort members who completed questions on their political trust, data were also available on their general cognitive ability, which was assessed at age 10 years. The analyses presented in the study are based on the sample of 7,194 participants with complete measures of both childhood cognitive ability tests at age 10 years and political trust at age 30 years.² Compared with the 7,194 individuals with complete data, those individuals who did not complete the 30-year follow-up study had a lower score on the test of general cognitive ability (on the IQ-type scale equivalent, M =101.7, SD = 14.4, vs. M = 96.6, SD = 15.6, respectively, p < 96.6.001) and a more disadvantaged family social background.

Measures

Family social status at birth. In both cohorts, family social status is indicated through parental occupational social status and parental education. Parental occupational status at birth was measured by the Registrar General's measure of social class (RGSC). RGSC is defined according to occupational status and the associated education, prestige (Office for Population Censuses and Surveys, 1980), or lifestyle (Marsh, 1986) and is assessed by the current or last held job. Where the father was absent, the social class (RGSC) of the mother was used. RGSC was coded on a 4-point scale: I/II = professional and managerial class, III = skilled nonmanual, IIIM = skilled manual, IV/V = semi- and unskilled occupations (Leete & Fox, 1977).3 Class I/II is associated with the highest level of prestige or skill, and Class IV/V is associated with the lowest. For ease of interpretation, the scores were reversed so that a high score represents the highest level of prestige. A second indicator of parental social status is parental

¹ Missing data at age 16 years were imputed using the full information maximum likelihood (FIML) approach as implemented in AMOS7 (Arbuckle, 2006).

 $^{^{2}\,\}mathrm{As}$ with the NCDS sample, missing data at age 16 years were imputed using FIML.

³ The occupational categories used in the U.S. Census and other European countries are similarly based on the skills and status of different occupations (Krieger, Williams, & Moss, 1997).

education, which is measured by the age either parent left full-time education.

Childhood cognitive ability. Cognitive ability was measured differently in the two cohorts, yet the measures assessed the same construct of general cognitive ability comprising both verbal and nonverbal skills. In the 1958 cohort, cognitive ability was assessed at age 11 years in school using a general ability test (Douglas, 1964) consisting of 40 verbal and 40 nonverbal items. Children were tested individually by teachers, who recorded the answers for the tests. For the verbal items, children were presented with an example set of four words that were linked either logically, semantically, or phonologically. For the nonverbal tasks, shapes or symbols were used. The children were then given another set of three words or shapes or symbols with a blank. Participants were required to select the missing item from a list of five alternatives. Scores from these two sets of tests correlate strongly with scores on an IO-type test used for secondary school selection (r = .93; Douglas, 1964), suggesting a high degree of validity.

Cognitive ability of the 1970 cohort was also assessed in school, using a modified version of the British Ability Scales that can serve as a measure for childhood IQ (C. D. Elliott, Murray, & Pearson, 1978). The assessment involved the administration of four subscales: word definitions and word similarities, which were used to measure verbal ability, and recall of digits and matrices, which were used to measure nonverbal ability. For the word definitions subscale, the teacher articulated each of 37 words in turn and asked the child about its meaning. For each of the 42 items in the word similarities subscale, the teacher enunciated three words and asked the child to name another word consistent with the theme. For the 34-item subscale of recall of digits, the teacher read out digits at half-second intervals and asked the child to repeat them. For the 28-item matrices subscale, the teacher asked the child to draw in the missing part of an incomplete pattern.

Teenage school motivation. At age 16 years, members of both cohorts completed a five-item school motivation scale (e.g., "School is largely a waste of time"; "I do not like school"). Items were measured on a 5-point Likert-type scale in NCDS and on a 3-point Likert-type scale in BCS70. Item analysis suggests good internal consistency for both cohorts, with coefficient alphas of .77 for NCDS and .75 for BCS70 samples. The validity of the school motivation scale has been established in previous studies, showing significant correlations between school motivation and educational aspirations (Schoon et al., 2007) and time spent in education (Schoon, 2008). A high score indicates positive school motivation, and a low score indicates school disengagement. Scores in NCDS and BCS70 were *z* standardized for further analysis.

Educational attainment. At age 33 years in NCDS and at age 30 years in BCS70, participants were asked about their highest academic or vocational qualifications. Responses are coded to the 6-point scale of National Vocational Qualifications levels: 0 = no qualifications, 1 = some qualifications (Certificate of Secondary Education Grades 2 to 5), 2 = O level (equivalent to qualifications taken at the end of compulsory schooling), 3 = A level (equivalent to university entrance level qualifications), 4 = postsecondary degree/diploma and equivalent; and 5 = higher postgraduate degrees and equivalent.

Unemployment history. At age 33 years in NCDS and at age 30 years in BCS70, respondents were asked about their employ-

ment histories since age 16 years (Galindo-Rueda, 2002). For the purpose of our analysis, we calculated the total number of months spent in unemployment between ages 16 and 30 years to gain a measure of the duration of unemployment experienced. The maximum number of months spent in unemployment was 156 for NCDS and 153 for BCS70; the minimum was 0 for both NCDS and BCS70.

Occupational attainment. Data on current or last occupation held by NCDS and BCS70 cohorts members at ages 33 years and 30 years, respectively, are coded according to the RGSC, described above, using a 4-point classification (professional–managerial, skilled nonmanual, skilled manual, and semi- or unskilled) in both cohorts.

Political trust. Participants in both cohorts completed an identical seven-item attitude scale asking them to report on their attitudes and views about government and institutions (Wiggins & Bynner, 1993). Data are available for NCDS at ages 33 and 42 years and for BCS70 at age 30 years. Sample items were "There is one law for the rich and one law for the poor," "Politicians are in politics for their own benefit," and "No political party would benefit me." All items were measured on a 5-point Likert-type scale with the response options $1 = strongly \ agree$, 2 = agree, $3 = neither \ agree \ nor \ disagree$, 4 = disagree, and $5 = strongly \ disagree$. All items show a loading of more than .40 in a principal component analysis with oblimin rotation, and internal consistency is good ($\alpha = .78$ in NCDS and .70 in BCS70).⁴

Results

Descriptive Analysis

The means for the political trust scale in the NCDS subsample are 2.78 (SD = 0.68) at age 33 years and 2.68 (SD = 0.61) at age 42 years. Paired sample t tests show that there is a statistically significant decline in political trust over this time period, t(7691) = 14.17, p < .001. This trend holds true for both men and women, t(7664) = 9.77, p < .001, and t(4026) = 10.26, p < .001, respectively. In the BCS70 sample, the mean for the political trust scale is 2.70 (SD = 0.57). When political trust scale scores in the two samples were compared, analyses of variance and post hoc Scheffé tests show that there were statistically significant differences over time (i.e., between 1991 and 2000; that is, between ages 33 and 42 years in the 1958 cohort), F(2, 22572) = 43.96, p < .001, but not between the two samples measured at the same time in 2000 but at different ages (i.e., at age 42 years in the NCDS and age 30 years in the BCS70).

There were significant gender differences in political trust, with women scoring higher than men at both time points in NCDS (at age 33 years, M = 2.70, SD = 0.72, for men and M = 2.80, SD = 0.65, for women; at age 42 years, M = 2.63, SD = 0.64, for men and M = 2.73, SD = 0.57, for women) and in BCS70 at age 30 years (M = 2.63, SD = 0.61, for men and M = 2.76, SD = 0.53, for women). Analysis of variance shows that the differences were statistically significant, F(1, 7690) = 36.75, p < .001, at age 33 years, and F(1, 7692) = 51.20, p < .001, at age 42 years in NCDS

⁴Results of the principal component analysis can be obtained from Ingrid Schoon.

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and F(1, 7191) = 94.51, p < .001, at age 30 years in BCS70. There were no significant Cohort \times Gender interactions.

Correlates of Political Trust

Table 1 and Table 2 show the correlations between the political trust scale and all other measures and variables included in the analyses of NCDS and BCS70. In NCDS, political trust scores measured at ages 33 and 42 years are highly correlated (r = .63). As can be seen in Table 1, the correlation coefficients between political trust measured at age 33 years and age 42 years and the other variables are similar across time, and all of these associations were statistically significant, with ps < .001. Table 2 shows that the correlation coefficients between political trust measured at age 30 years in BCS70 and the other variables are similar to the associations observed in NCDS. Men and women whose parents had more education and higher occupational status, those who scored higher in the childhood ability tests and the school motivation scale, those who had experienced less time being unemployed, and those who obtained higher educational qualifications and higher occupational status as adults also scored higher on the political trust scale.

SEM

SEM was used to assess the pathways linking early and later socialization experiences to political trust. Paths in the models are designed to correspond with the time sequence in which the variables occurred. All SEM pathway models were carried out using the program AMOS 7 (Arbuckle, 2006) and were run for men and women separately because of the significant gender differences in expressed political trust. The AMOS program uses maximum likelihood estimation that can be based on incomplete data, known as the FIML approach. FIML estimation is a theorybased approach using the strategy of direct maximization of the likelihood of all of the observed data, not just from cases with complete data. FIML is preferable to maximum likelihood estimation based on complete data (the listwise deletion approach) because FIML estimates tend to show less bias and are more reliable than listwise deletion estimates even when the data deviate from missing at random and are nonignorable (Arbuckle, 1996).

Figure 2 and Figure 3 show the structural equation model relating early childhood experiences to adult social status and political trust at age 33 years in NCDS and at age 30 years in BCS70. The usual SEM conventions are used, with the latent variable shown as a circle and manifest variables as rectangles. Single-headed arrows represent causal influences. The double-headed arrow represents the correlation between independent variables. Unique and error variances for each of the manifest variables and disturbance on the latent variables are included in the model (but are not shown in the diagram). Path estimates are given as standardized regression coefficients that may be squared to obtain the variance shared by adjacent variables. Path coefficients for men (n = 4,267 in NCDS and 3,486 in BCS70) are shown on the left and path coefficients for women (n = 4,537 in NCDS and 3,708 in BCS70) on the right.

Model fit. In line with current practice, several criteria were used to assess the fit of the data to the model. The chi-square statistic is overly sensitive to model misspecification when sample

Pearson Correlations Among Political Trust at Two Time Points, Family Background, Cognitive Ability, School Motivation, Education, Unemployment History, and Occupational Status in the 1958 Cohort of the National Child Development Study

2

Variable	M	SD	-	2	33	4	ĸ	9	7	∞	6	10	11	12
1. Political trust age 42 years	2.68	0.61												
2. Political trust age 33 years	2.75	69.0	.626											
3. Gender	1.52	0.50	.081	.077										
4. Parental social class	2.26	0.98	.194	.225	023									
5. Father age left school	15.02	1.96	.158	.176	.001	.445								
6. Mother age left school	15.00	1.54	.140	.148	.017	.343	.528							
7. Verbal scores (cognitive ability)	23.17	8.98	.267	.273	.113	.257	.245	.225						
8. Nonverbal scores (cognitive ability)	21.79	7.27	.258	.270	.012	.259	.247	.223	.792					
9. School motivation age 16 years	0	1	.228	.234	.071	.152	.146	.122	.250	.229				
10. Unemployment History by month	5.58	13.10	140	161	086	960	059	047	141	139	111			
11. Education attainment age 33 years	2.41	1.36	.267	.278	990.—	.315	.291	.273	.508	.495	.404	161		
12. Occupational status age 33 years	2.77	1.14	.264	.311	800:	.255	.233	.195	.375	.349	.286	164	.519	

Note. Variables were scored such that a higher score indicated greater political trust at ages 33 and 42 years, being female, a higher status occupation for the parent and higher age at which parents left school, higher verbal and nonverbal cognitive ability scores, a higher school motivation score in teens, more advanced educational qualifications, longer period of unemployment, and a higher occupational status in adulthood

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Pearson Correlations Among Political Trust at Age 30, Family Background, Cognitive Ability, School Motivation, Education, Unemployment History, and Occupational Status in the 1970 Cohort of the British Cohort Study

	И	QS	1	2	3	4	5	9	7	8	6	10	11	12	13
1. Political trust age 30 years 2.	2.70	0.57	I												
	1.52	0.50	.114	I											
3. Parental social class 2.	2.25	1.04	.165	007											
4. Age father left school 15.	15.45	1.19	.154	.003	.405										
5. Age mother left school 15.	15.39	1.26	.121	003	.281	.459									
6. Word similarities (cognitive ability) 28.	28.43	4.23	.161	089	.236	.219	.221								
	10.48	4.99	.154	106	.275	.251	.258	.647							
	22.53	4.22	.108	.030	.104	660.	.087	.301	.313						
	.85	5.30	.190	.048	.193	.190	.180	44. 44.	.451	.293					
10. School motivation age 16 years 0	_	-	.237	.074	.113	.077	090.	.111	.129	.040	.123				
, h	1.28	14.98	137	107	071	042	044	074	068	036	103	103			
s	2.69	1.30	.227	002	.266	.250	.204	.347	.376	.186	.335	.291	148		
•	2.85	1.09	.280	080	.233	.206	.172	.284	.368	.181	.280	.254	140	444	

Note. Variables were scored such that a higher score indicated greater political trust at age 30 years, being female, a higher status occupation for the parent and higher age at which parents left school. higher verbal and nonverbal cognitive ability scores, a higher in adulthood sizes are large or the observed variables are nonnormally distributed. The root-mean-square error of approximation (RMSEA) gives a measure of the discrepancy in fit per degrees of freedom (values less than .05 indicate a good fit). The final index of choice is the comparative fit index (CFI), where values above .95 indicate acceptable fit (Bentler, 1990).

In both cohorts, the same model showed a good fit for both men and women. For NCDS men, $\chi^2(20)=168.1, p<.001, RMSEA=.039, CFI=.987.$ For NCDS women, $\chi^2(20)=143.0, p<.001, RMSEA=.037, CFI=.989.$ The model explains 18% of the variation in political trust scores among men, 95% confidence interval (CI) [.16, .20], and 15% of the variation among women, 95% CI [.13, .17]. In BCS70, $\chi^2(39)=257.3, p<.001, RMSEA=.040, CFI=.973.$ For women, $\chi^2(39)=211.7, p<.001, RMSEA=.035, CFI=.978.$ The model explains 16% of the variation in political trust scores among men, 95% CI [.14, .18], and 11% of the variation among women, 95% CI [.09, .13]. According to Cohen (1992), the f^2 values of .02, .15, and .35 are termed *small*, *medium*, and *large*, respectively.

In both cohorts, all paths in the model were significant, except for the path between highest educational qualification and political trust for both men and women and the path between family social status at birth and unemployment history for women. In BCS70, the path between unemployment history and political trust for women was also nonsignficant. In both cohorts, parental social status is associated significantly with childhood cognitive ability. Although the association is strong, it does not explain more than 20% of the variation in cognitive ability in NCDS or more than 25% of the variation in BCS70. The association between parental social status and childhood cognitive ability is slightly stronger in BCS70 than in NCDS, suggesting greater social inequality in academic attainment in the later born cohort, although it has to be kept in mind that different measures of cognitive ability were used in the two cohorts.

For both men and women, direct paths linked family social background and cognitive ability to political trust, and there was a direct link between school motivation measured at age 16 years and political trust expressed in early adulthood. Furthermore, parental social status was significantly associated with highest educational attainment but showed less association with the participants' own occupational status, especially for women in both cohorts (see Figure 2 and Figure 3). The findings thus suggest that the influence of family social status on political trust in adulthood is partially mediated via educational attainment, which, in turn, is mediated via occupational attainment.

The same model described above was run to predict political trust in NCDS at age 42 years. The model fitted the data well and showed similar (or nearly identical) pathway coefficients as those reported above and in Figure 2.

Gender differences. Among men in the NCDS sample, political trust at age 33 years is most strongly associated with current occupational status, followed by childhood cognitive ability, family social status, experience of long-term unemployment, and school motivation. Among women, political trust appears to be most strongly associated with childhood cognitive ability, followed by school motivation, family social origin, own social status, and the experience of unemployment. Men experienced more unemployment than did women in both samples, F(1, 7692) = 42.60, p < .001, in NCDS; F(1, 7192) = 83.96, p < .001,

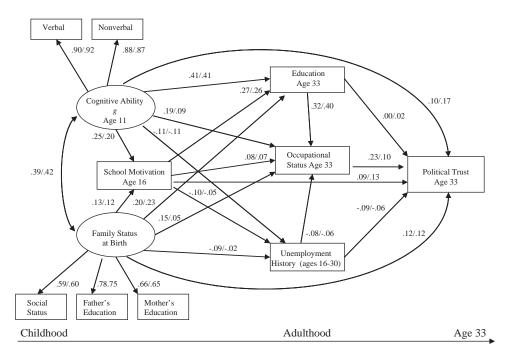


Figure 2. Path model of political trust in the 1958 cohort: National Child Development Study. For males, n = 4,267, comparative fit index = .987, and root-mean-square error of approximation = .039. For females, n = 4,537, comparative fit index = .989, and root-mean-square error of approximation = .037. Latent variables are shown as circles and manifest variables are shown as rectangles. Single-headed arrows represent causal influences. The double-headed arrow represents the correlation between independent variables. Path coefficients for men are shown on the left slide of the slashes, whereas path coefficients for women are shown on the right.

in BCS70. In BCS70, the strongest direct predictors of political trust among men and women are school motivation and occupational status at age 30 years, as well as family social background.

Gender differences in path coefficients for both cohorts were tested using t tests. In NCDS, childhood cognitive ability had a stronger direct association with school motivation among men than among women (z = 1.92, p < .05). It showed a stronger direct association with occupational attainment among men (z = 3.04, p < .001) and with political trust expressed by women (z = 2.09, p < .05). The association between family background and own occupational attainment was stronger for men than for women (z = 3.10, p < .001), as was the association between school motivation and experience of unemployment (z = 3.08, p < .01). Educational and occupational attainment were more strongly linked among women than among men (z = 3.33, p < .001). For men, the association between occupational attainment and political trust was stronger than it was for women (z = 6.22, p < .001).

In BCS70, significant gender differences in path coefficients were observed regarding the link between family social status and school motivation (z=2.77, p<.01), which was stronger for men than for women, and between family social status and educational qualification (z=2.02, p<.05), which was stronger for women than for men. School motivation and unemployment history (z=4.21, p<.001), as well as school motivation and occupational attainment (z=2.477, p<.01), were more strongly linked among men than among women, as were the associations between occupational attainment and political trust (z=2.392, p<.05).

In both cohorts, school motivation had a stronger association with the unemployment history of men than the unemployment history of women, and adult occupational status appears to have a stronger association with political trust among men than among women. Men with lower scores on school motivation at age 16 years were more likely to experience unemployment in the following years than were women, and men in higher status occupations expressed higher levels of political trust compared with women.

Cohort differences. We further tested cohort differences in the strengths of pathway coefficients, again using t tests. For men, there are cohort differences in the pathways linking childhood cognitive ability and school motivation (z = 6.68, p < .001), suggesting that in the later born cohort, high cognitive ability is less strongly associated with high school motivation among men. Furthermore, the direct associations between school motivation and own occupational attainment (z = 4.77, p < .001) and between school motivation and political trust (z = 4.51, p < .001) have increased for the later born cohort, suggesting that among men in the later born cohort, school motivation plays an increasingly important role in shaping occupational attainment and trust in institutions. For women, these associations have remained more or less the same. For both men and women, school motivation had a stronger association with the experience of unemployment in the later born cohort (z = 17.51, p < .001, for men and z = 2.87, p <.01, for women), underlining the increasing importance of school motivation for future career development.

For women, there were significant cohort differences in the pathways linking childhood cognitive ability and occupational attainment (z = 3.02, p < .01), suggesting that in BCS70, childhood intelligence played an increasingly important role in shaping

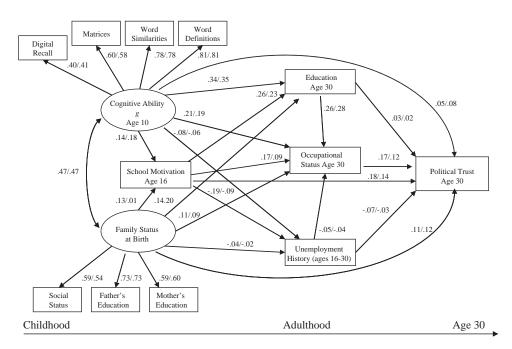


Figure 3. Path model of political trust in the 1970 cohort: British Cohort Study. For males, n = 3,484, comparative fit index = .973, and root-mean-square error of approximation = .040. For females, n = 3,708, comparative fit index = .978, and root-mean-square error of approximation .035. Latent variables are shown as circles and manifest variables are shown as rectangles. Single-headed arrows represent causal influences. The double-headed arrow represents the correlation between independent variables. Path coefficients for men are shown on the left slide of the slashes, whereas path coefficients for women are shown on the right.

the occupational attainment of women. For both men and women, we observed cohort differences in the pathways linking childhood cognitive ability and educational qualifications (z = 3.10, p < .01, for men and z = 3.80, p < .001, for women), suggesting that cognitive ability has a reduced role in shaping educational attainment in the later born cohort. Likewise, the association between childhood cognitive ability and political trust was reduced for the later born cohort (z = 2.00, p < .05, for men and z = 3.59, p <.001, for women), although it still remains significant. This finding may, in part, be due to the different measures used to assess childhood cognitive ability in the two cohorts and the fact that the measurement model in NCDS had a better fit than the one in BCS70. We furthermore observed that in NCDS, the association between men's own occupational attainment and political trust was stronger than it was in BCS70 (z = 3.54, p < .001), suggesting that occupational status might have lost some of the power in predicting variations in political trust among men.

Discussion

In this study, we examined associations and pathways linking family social background, childhood general cognitive ability, school motivation, experience of unemployment, educational and occupational attainments, and adults' political trust in two large, prospective, and population-representative samples. All six indicators were significantly correlated with political trust as measured at ages 33 and 42 years in NCDS (see Table 1) and at age 30 years in BCS70 (see Table 2). There were significant gender differences in political trust, as women expressed higher levels of political trust than

men did. Furthermore, there was a slight but statistically significant decline in political trust between 1991, when NCDS cohort members were aged 33 years, and 2000, when NCDS cohort members were aged 42 years and those in BCS70 were 30 years old.

The examination of the pathways linking early childhood experiences and later outcomes in two different samples reveals that the lifetime learning model fitted the data collected for two cohorts born 12 years apart, suggesting generalizability of the model in a different sociohistorical context. Attitudes toward institutions and the political system appear to be shaped by both early experiences within the family and school contexts as well as later experiences in the economic system. Furthermore, the significant association between political trust and cognitive ability supports the assumption of rational evaluation, that is, the role of knowledge and information processing for attitude formation (Deary et al., 2008). However, direct associations between general ability and political trust are small and were reduced for the later born cohort. Furthermore, the influence of childhood cognitive ability on political trust expressed in adulthood appears to be mediated via educational and occupational attainment.

The findings underline the importance of conceptualizing the formation of social attitudes as a developmental process, reflecting the accumulation of individual circumstances and experiences over the life course. Although there is a strong association between political trust measured at ages 33 and 42 years in the 1958 cohort, indicating stability of political trust over the 9 years, political trust varies in a systematic manner with socioeconomic background and later experiences in the education and economic systems. Gener-

ally, those individuals lacking resources (socioeconomic, educational, and motivational) show lower levels of trust than do those with plenty of resources, suggesting that individual circumstances, that is, lack of resources or opportunities, shape attitudes toward institutions. The findings suggest that individuals from relatively disadvantaged backgrounds might have fewer educational opportunities, encounter more problems in establishing themselves in the labor market, or have more trouble climbing the occupational ladder compared with their more privileged peers. Furthermore, those from less privileged backgrounds tend to accumulate less favorable experiences with institutions. The persisting experience of disadvantage, in turn, might lead to loss of trust in institutions. The experience of cumulating advantages and resources, however, appears to be associated with trust placed in the institutions that created opportunities and life chances.

The evidence suggests that trust is shaped along developmental pathways and depends on ongoing relationships, involving both early and later experiences. Early encounters set the scene in a lifelong series of experiences but do not completely determine later outcomes. Associations between later experiences and political trust cannot be understood without taking into account individual developmental histories and experiences within the system. Integrating assumptions from cultural and institutional theories into a lifetime learning model (see also Mishler & Rose, 2001) enables the assessment of developmental and cumulative processes in the acquisition of political trust. The findings suggest that early and later experiences with institutions can exert similar and reinforcing effects, although later revisions of developmental trajectories are possible.

Past and current social interactions provide multiple opportunities for testing the validity of trust placed in institutions, beginning with early experiences in the family and school contexts, as well as later encounters in the labor market. Although there is considerable stability of political trust over time, the findings suggest changes with age. In our sample, political trust appears to reduce with age, confirming previous findings (Brewer et al., 2004; Putnam, 2000). It has, for example, been shown by Hudson (2006) that the association between mistrust in institutions and age is nonlinear, reaching a peak in midlife—between the 40s and 50s—and decreasing thereafter. It might thus be that our NCDS cohort members have reached such a peak of mistrust at age 42 years. Age might reflect differences in knowledge, as people might learn from experience. However, age might also reflect other aspects, such as being at a particular life stage or having adopted a particular life style.

The decline in political trust over the two time points might also be a reflection of the global trend toward a decline in expression of political trust (e.g., Citrin & Muste, 1999; Dalton, 2005; Inglehart, 1997; Putnam, 2000). Members of the 1970 cohort expressed significantly lower levels of political trust in their early 30s than did members of the 1958 cohort at similar age, on the identical political trust scale. However, cohort, age, and period effects are difficult to disentangle. The finding could indicate declining trust with age as well as a decline in trust in response to a changing economic climate. The first assessment of political trust in 1991, when the 1958 cohort was aged 33 years, coincided with a major economic recession, whereas the second assessment 9 years later, in the year 2000, occurred at a time of an economic boom and recovery. It has been argued that trust and economic success may have a circular interaction, that with greater economic success

individuals may become more instrumentally rational and less trusting (Hollis, 1998; Inglehart, 1997). It could also be, however, that the experience of the recession during the early 1990s had a scarring effect; that is, the potential threat of an economic boom and bust perhaps left individuals less trusting in the performance of institutions. The future impact of a roller coaster economy, especially in the light of the current major global economic crisis, remains to be seen, but it could potentially lead to a further decline in levels of political trust. Declining levels of political trust, in turn, might have implications for the stability of institutions in a changing sociohistorical context (Citrin & Muste, 1999) and might also influence levels of trust among future generations. Further research is needed to delineate in more detail potential cohort, age, and period effects in shaping the expression of political trust across the life course and in changing times, as well as stability and change of political trust over time.

Our study suggests that gender is also significantly associated with political trust, and women reported higher levels of political trust than did men at both time points and in both cohorts. Gender differences in political trust may partly be due to the finding that in both samples, women were more likely than men to participate in society through membership in organizations and voting (Paterson, 2008; Schoon, 2007). The findings also suggest differences in the pathways in the development of political trust for men and women, possibly reflecting different socialization experiences. For men, social class destination appears to be a stronger direct predictor of political trust than social origin, whereas for women, especially those in NCDS, cognitive ability appears to be a more important predictor. To what extent changing socialization experiences, in particular regarding the increasing participation of women in further education and employment, will change levels of political trust in the population remains to be seen.

Other interesting findings concern the association between family social status and general cognitive ability, which has increased for the later born cohort, and the decreasing influence of childhood cognitive ability on educational attainment. Although one has to be cautious in interpreting this finding, as cognitive ability was assessed differently in the two samples, the findings might suggest increasing social inequality, that is, the more privileged and not the most able have benefited from the expansion of educational opportunities since the 1980s (Galindo-Rueda & Vignoles, 2005; Schoon, 2008, 2010a). Increasing social inequality, in turn, might create cynicism and lack of trust in institutions, following the assumption that trust cannot thrive in an unequal world (Ginwright & Cammarota, 2002; Uslaner, 2002; Wilkinson & Pickett, 2009).

It is also interesting that cognitive ability as well as school motivation, but not highest educational qualifications, have a direct association with political trust in adulthood. This finding could indicate a crucial window of opportunity and possible leverage of how trust in institutions and civic participation can be enhanced, by providing more knowledge and information about what institutions actually do and by increasing the engagement of young people in the school and wider social contexts, stimulating their motivation to learn and critical thinking (Flanagan et al., 2007; Ginwright & Cammarota, 2002; Kahne & Sporte, 2008; Youniss et al., 2002). This is particularly relevant for males in the later born cohort, for whom school motivation, in addition to adult status attainment, appears to be a key driver of political trust. For young men in the

later born cohort, the findings furthermore suggest that childhood cognitive ability is less strongly associated with school motivation than it is in the 1958 cohort. This might suggest increasing school disengagement among bright young men in the later born cohort (Schoon, 2008, 2010b), which occurs before educational choices are realized. When aiming to engage young people who have become disaffected with school or society at large, it is important to take into account their socioeconomic circumstances and education histories, as the experience of childhood disadvantage can undermine levels of academic achievements, which, in turn, influences later adjustment (Duncan & Brooks-Gunn, 1997; Schoon, 2006). The lack of a direct association between highest educational qualifications and political trust may, however, partly be due to the covariance between educational qualifications and occupational attainments (r = .52 in NCDS and r = .44 in BCS70) or between school motivation and educational qualifications (r =.40 in NCDS and r = .29 in BCS70).

Some strengths and limitations of our study have to be considered when interpreting the findings. The study is based on a large, fairly representative sample of the U.K. population that was followed from birth into the adult years. As with all research using cohort studies, this work is constrained by having to make the best use of available data, which in this case were collected up to 50 years ago, following the research interests and approaches relevant at the time. For example, childhood cognitive ability was assessed with different test instruments in the two cohorts. Using a latent variable approach, however, it is possible to make comparisons at the conceptual level, especially because the two instruments captured both verbal and nonverbal aspects of general cognitive ability.

The available data have also restricted the scope of potential mechanisms we can examine. No comparable data were available on political trust during adolescence. Our study thus describes a developmental model predicting political trust expressed during adulthood. We have used school motivation at age 16 years as an indicator of early attitudes toward institutions, which might have conflated the role of engagement with education and learning. However, our findings have identified a critical window of opportunity for developing political trust, illustrating the potential of experiences at school for overcoming the impact of social background and engendering political trust at a later age (Flanagan et al., 2007; Kahne & Sporte, 2008; Youniss et al., 2002). Future research has to examine in more detail the stability and change of political trust across different life stages, that is, during adolescence and the adult years, and the immediate and long-term impact of school engagement in promoting political trust.

It also has to be taken into consideration that independent variables, as well as the dependent one, can change over time. In the case of family background, however, there is evidence that parental social status and education remain relatively stable over time (Schoon, 2006). Furthermore, the effect sizes of the observed associations between political trust and other variables in the models are small to medium, although highly significant. For example, the model explains about 18% of variation in political trust scores among men in the NCDS cohort, and the 95% confidence interval for Cohen's f^2 ranges from .16 to .20 (Cohen, 1992).

Another limitation is the attrition of respondents over time. It may be that missing data at the individual level and at the variable level affected the validity of the results. Response bias at the individual level would tend to underestimate the magnitude of the effects of social family background on future development, because sample attrition is greatest amongst individuals in more deprived circumstances. Our results may thus be a conservative estimate of the long-term influence of social inequalities experienced during childhood. Missing data at the variable level may also be nonrandom. The FIML approach has been adopted as a best effort technique for dealing with these problems, but bias in our model estimates may still be present.

Furthermore, the study is based on U.K. data, and it might be that the British context, characterized by a comprehensive education system and a liberal welfare state valuing individual rights and responsibilities more than collective provision, may have uniquely influenced the findings. Data collected for the European and World Value Survey of levels of trust in institutions have shown trust to be lower in Britain and the United States (both liberal welfare states) than in Scandinavian countries characterized by an inclusive education system and an universal welfare model but higher than in most post-Soviet countries, such as Czech Republic, Hungary, Romania, or Bulgaria (Arts & Halman, 2004; Hudson, 2006). Thus, trust appears to vary between countries, although evidence suggests that factors unique to the individual as well as those related to direct experiences with institutions play roles in shaping the expression of political trust in different cultural contexts (Hudson, 2006; Mishler & Rose, 2001).

To conclude, the longitudinal approach adopted in this study enabled us to gain a better understanding of cumulative experiences across the life course and their role in shaping the expression of trust during adulthood. Although measuring social attitudes has been the focus of many studies and investigations during the past few decades, relatively few studies have examined both antecedents and correlates of political trust within a prospective longitudinal approach covering multiple developmental periods. Furthermore, it is rare, but very necessary, to see complex models replicated in different but comparable samples to gain a better understanding of the generalizability of findings. It appears that political trust is a reflection of ongoing development and accumulated experiences across the life course, associated with both early and later experiences. Trust in institutions is not completely ingrained at an early age and develops over time and in context. Levels of trust are associated with early experiences but also with state change variables such as age and employment status, as well as a changing sociohistorical context. The findings point to several possible windows for interventions aiming to improve levels of trust, ranging from experiences in the education system to later experiences with institutions that enable individuals to develop their capabilities. Further research is needed to investigate the dynamic processes in the formation of political trust in more detail and to gain a better understanding of its association with social participation and engagement.

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