

A Life Time Learning Model of Political Trust

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Determinants of Political Trust: A life time learning model

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Determinants of Political Trust: A life time learning model

Abstract: This paper addresses questions regarding the origins of individual variations in political trust. In two 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 two 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 Modelling 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 socio-economic, educational, and motivational resources throughout their life course express higher levels of political trust than those with fewer resources.

Key words: Political trust, Social Status, Intelligence, School motivation, Longitudinal

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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 last 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 et al., 1997). There are, however only few, and mostly small scale longitudinal studies examining developmental antecedents and covariates associated with the expression of political trust. The aim of this paper 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,

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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 respectively), establishing its generalizability in a changing socio-historical 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 towards institutions vary depending upon direct knowledge and experience (Evans & Whitefield, 1995; Hudson, 2006; Nye, Zelikow, & King, 1997). According to institutional theories political trust is a thoroughly cognitive phenomenon that depends on knowledge and beliefs about the institutions to be trusted (Hardin, 2006; Offe, 1999).

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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 when most learning is likely to occur. Cultural theories emphasise the importance of early experiences with little change later on, while institutional theories emphasise the role of more proximate and contemporary experiences with institutions. Institutional theories accept that culture can condition attitudes towards 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 political trust is deeply rooted in early experiences, there is little that can be done in the short term to cultivate trust, and it will take decades or generations to bring about change (Ingelhart, 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, 1999; Seligman, 1997; Uslaner, 2002), based on the generalized assumption that the other person means no harm. The notion of

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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, there have been relatively few studies on 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 (Hibbing & Theiss-Morse, 1995; Abramson, 1983; Deary, 2008) while others have found negative (Döring, 1992) or non significant associations. Similar inconsistent effects are found regarding other socio-demographic factors such as age, and gender. Women have been shown to be more trusting than men (Glaeser et al., 2000; Paterson, 2008), or less trusting (Leigh, 2006). Furthermore there is evidence that trust varies over the life cycle (Hudson, 2006; Putnam, 2000), with some findings suggesting that trust increases with age (Michler & Rose, 2001; Glaeser et al., 1999; Patterson, 1999) while other studies 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.

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Adopting a longitudinal approach we aim to advance our understanding of the antecedents and pathways leading to the expression of political trust in a changing socio-historical context. Drawing on data collected for two nationally representative cohort studies born in the UK in 1958 and in 1970, we test a life time learning model of social attitudes, assessing the relative role of childhood and later influences in shaping the expression of political trust in adulthood. We furthermore 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 life time learning model in two age cohorts born 12 years apart will give 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 socio-historical context in which development takes place (Elder, 1998). As far as we are aware, this will be 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 socio-economic context in two large cohort studies. The study will contribute to discussions about the determinants of political trust and social attitudes in general, the generalisability of findings across contexts, as well as regarding consistency and change over time.

Towards a lifetime learning model of political trust

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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 will be tested using structural equation modelling (SEM). It is assumed that political trust develops initially as a result of early experiences in the family and the school context 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.

Insert Figure 1: A lifetime learning model of political trust

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 shown to be associated with general childhood cognitive ability (Tong et al., 2007; Duncan & Brooks-Gunn, 1997). The two variables share some genetic as well as environmental influences, and are operationalized as correlated independent variables. This approach is considered as 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 different social backgrounds may have different experiences with institutions (Hudson, 2006), which can accumulate over

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the life course. Children born into more privileged families will encounter more educational opportunities, greater access to financial resources, role models, and informal networks than 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 towards 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 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, Batty, & Gale, 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

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context), reflecting student's 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 et al., 2007). There is evidence to suggest that schools can play an important role in shaping adolescents feelings of social inclusion and, consequently their attitudes towards institutions (Flanagan, Cumsille, Gill & Galloway, 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 their job they might become less confident in their government, especially if they experience 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, i.e. 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 socio-economic 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 Euro-Barometer surveys suggests that during the recessions of the 1990s satisfaction with how democracy is working had decreased to the lowest levels ever recorded since 1976 (Inglehart, 1997). However, according to Inglehart, it is not a just a matter of institutional performance influencing perceptions, because objective

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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 socio-historical 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 the two time points in one representative sample. Secondly we look at the associations between political trust and a range of indicator variables described above. Following this we will investigate the pathways linking early childhood experiences to later outcomes and political trust in adulthood using structural equation modelling.

Hypotheses

A. If political trust is originating in deeply rooted cultural norms we would expect that i.) political trust is primarily shaped by early experiences in the family and school context; and ii.) there is relatively little variation of trust with change factors such as age or changes in the economic cycle.

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

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C. The life time learning model combines assumptions from cultural and institutional theories on the origin of political trust, and accounts for both the influence of early and later experiences with institutions. Following the life time learning model we would expect that political trust is i.) associated with both early and later experiences with social institutions; ii.) is reflected in cumulative experiences; iii.) later experiences reinforce or revise initial predispositions. 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), 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 to 4 per cent are from Indian, Pakistani, Bangladeshi, African, Caribbean, Chinese or mixed origin), reflecting the ethnic diversity of the UK population at the time (Ferri et al., 2004).

NCDS comprises 17,415 individuals born in Great Britain in a week in March 1958 (Power & Elliott, 2006). Follow-up studies were conducted at age 7, 11, 16, 23, 33, and 42. 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 UK). Of these 10,986 participants completed a questionnaire including the political trust scale (response = 71%). In 2000, at age 42 years 10,979 participants completed a follow-up

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study (response = 71% out of the eligible ones). 8,804 participants have complete measures of childhood cognitive ability (measured at age 11) and the institutional trust scale at age 33. Among this sub-sample 7,694 participants also completed the political trust scale at age 42 (87% of those who completed the political trust scale at age 33). The analysis presented here is based on the sample of 8,804 participants with complete data at age 11 and 33¹. Compared to the 8,804 individuals, those individuals who did not complete the 33-year follow-up study had a lower score on the test of general cognitive ability (IQ-type scale equivalent=101.7(14.4) vs 96.6 (15.6); $p<0.001$). In terms of family social background, compared to the analytic sample of 8,804 participants, those individuals who did not complete the 33-year follow-up study were from less privileged family background (lower occupational status and lower parental education). Further, individuals who completed both the 33-year and 42-year follow-up studies had a higher score on political trust at age 33 than those individual who did not complete the 42-year follow-up study (mean=2.77 (.68) vs mean=2.62 (.68); $p<0.001$).

BCS70 comprises 16,571 individuals who were born in Great Britain in a week in April 1970 (Elliott & Shepherd, 2006). Follow-up studies were conducted at age 5, 10, 16, 26, 30, and 34. 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 UK). Of these 10,833 participants completed a questionnaire including the political trust scale (response = 70%). For 7,194 of the 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

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

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7,194 participants with complete measures of both childhood cognitive ability tests at age 10 and political trust at age 30². Compared to 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 (IQ-type scale equivalent=101.7 (14.4) vs 96.6 (15.6); $p < 0.001$), 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 (OPCS, 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 four-point scale: I/II professional and managerial class; III skilled non-manual; IIIM skilled manual; IV/V semi- and unskilled occupations (Leete, 1977)³. Class I/II is associated with the highest level of prestige or skill, and class IV/V 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 education which is measured by the age either parent had left full-time education.

² As with the NCDS sample, missing data at age 16 was imputed using FIML.

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

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Childhood Cognitive Ability

Cognitive ability was measured differently in the two cohorts, yet assessing the same construct of general cognitive ability comprising both verbal and nonverbal skills. In the 1958 cohort cognitive ability was assessed at age eleven in school using a general ability test (Douglas, 1964) consisting of 40 verbal and 40 non-verbal 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 non-verbal 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 set of tests correlate strongly with scores on an IQ-type test used for secondary school selection ($r=0.93$, 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 (BAS) which can serve as a measure for childhood IQ (Elliott, Murray and Pearson, 1978). The assessment involved the administration of four sub-scales: word definitions and word similarities which were used to measure verbal ability, and recall of digits and matrices which were used to measure non-verbal 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 3 words and asked the child to name another word consistent with the theme. For the 34 items subscale of recall of digits, the teacher read out digits at half-second intervals and asked the child to repeat them. For the 28 items

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matrices subscale, the teacher asked the child to draw in the missing part of an incomplete pattern.

Teenage School Motivation

At age sixteen members of both cohorts completed a 5-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 scale in NCDS and on a 3-point Likert scale in BCS. Item analysis suggests good internal consistency for both cohorts, with coefficient alpha = .77 for NCDS and .75 for BCS 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 school disengagement. Scores in NCDS and BCS were standardized for further analysis.

Educational Attainment

At age 33 in NCDS and at age 30 in BCS, participants were asked about their highest academic or vocational qualifications. Responses are coded to the six-point scale of National Vocational Qualifications levels (NVQ) which ranges from ‘none’ to ‘higher degree level’: 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 post-graduate degrees and equivalent.

Unemployment History

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At age 33 in NCDS and at age 30 in BCS respondents were asked about their employment histories since age 16 (Galindo-Rueda, 2002). For the purpose of our analysis, we calculated the total number of months spent in unemployment between ages 16 and 30 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 BCS and the minimum was 0 for both NCDS and BCS.

Occupational Attainment

Data on current or last occupation held by NCDS and BCS cohorts members at age 33 and 30 respectively are coded according to the Registrar General's Classification of Occupations (RGSC), described above, using a four point classification (professional-managerial, skilled non-manual, skilled manual, and semi-or unskilled) in both cohorts.

Political Trust

Participants in both cohorts completed an identical 7-item attitude scale asking them to report on their attitudes and views about government and institutions (Wiggins & Bynner, 2003). Data is available for NCDS at ages 33 and 42 and for BCS70 at age 30. Sample items were: "There is one law for the rich and one law for the poor"; "Politicians are in politics for their own benefit"; "No political party would benefit me". All items were measured on a five-point Likert scale with the response options: Strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree. All items show a loading of $>.40$ in a principal component analysis (PCA) with oblimin-rotation and internal consistency is good (Alpha = .78 in NCDS and .70 in BCS)⁴.

⁴ Results of the PCA can be obtained from the corresponding author.

Results

Descriptive Analysis

The means for the political trust scale in the NCDS sub-sample are 2.78 (SD = .68) at age 33 and 2.68 (SD = .61) at age 42 respectively. Paired sample *t*-test shows that there is a statistically significant decline in political trust over this time period ($t(df = 7691) = 14.17, p < .001$). This trend holds true for both men and women ($t(df = 7664) = 9.77, p < .001$ for men; and $t(df = 4026) = 10.26, p < .001$ for women). In BCS sample the mean for the political trust scale are 2.70 (SD = .57). When political trust scores in the two samples were compared, ANOVA and Post Hoc Scheffe Tests show that there were statistically significant differences over time (i.e. between 1991 and 2000, that is between ages 33 and 42 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 in NCDS and age 30 in BCS.

There were significant gender differences in political trust, with women scoring higher than men at both time points in NCDS (mean = 2.70, SD = .72 for men and mean = 2.80, SD = .65 for women at age 33; at age 42 mean = 2.63, SD = .64 for men and mean = 2.73, SD = .57 for women) and in BCS at age 30 (mean = 2.63, SD = .61 for men and mean = 2.76, SD = .53 for women at age 30). ANOVA shows that the differences were statistically significant ($F(1,7690) = 36.75, p < .001$ at age 33; and $F(1,7692) = 51.20, p < .001$ at age 42 in NCDS); and ($F(1,7191) = 94.51, p < .001$ at age 30 in BCS). There were no significant cohort x gender interactions.

Insert Table 1 & Table 2 about here

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 analysis in NCDS and BCS respectively. In NCDS political trust scores measured at age 33 and 42 are highly correlated ($r=.63$). As can be seen in Table 1, the correlation coefficients between political trust measured at age 33 and age 42 and the other variables are similar across time, and all these associations were statistically significant with $p<.001$. As can be seen in Table 2, the correlation coefficients between political trust measured at age 30 in BCS 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, who had experienced less time being unemployed, who obtained higher educational qualifications and higher occupational status as adults also scored higher on the political trust scale.

Structural Equation Modelling

Structural Equation Modeling (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 structural equation modelling 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 full

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information maximum likelihood (FIML) approach. FIML estimation is a theory based approach based on the direct maximisation of the likelihood of all the observed data, not just from cases with complete data. FIML is preferable to maximum likelihood estimation based on complete data (the listwise deletion (LD) approach) since FIML estimates tend to show less bias and are more reliable than LD estimates even when the data deviate from missing at random and are non-ignorable (Arbuckle, 1996).

Insert Figure 2 & Figure 3 about here

Figure 2 and Figure 3 show the structural equation model relating early childhood experiences to adult social status and political trust at age 33 in NCDS and at age 30 in BCS. The usual structural equation modelling conventions are used, with the latent variable shown as a circle and manifest variables in rectangles. Single headed arrows represent causal influences. The double-headed arrow represents the correlation between independent variables. Unique and error variance for each manifest variables and disturbance on the latent variables are included in the model (not shown in the diagram). Path estimates are given as standardised regression coefficients that may be squared to obtain the variance shared by adjacent variables. Path coefficients for men ($n = 4267$ in NCDS and 3486 in BCS) are shown on the left and for women ($n = 4537$ in NCDS and 3708 in BCS) on the right.

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Model Fit

In line with current practice, several criteria were used to assess the fit of the data to the model. The χ^2 statistic is overly sensitive to model misspecification when sample sizes are large or the observed variables are non-normally distributed. The root mean square error of approximation (RMSEA) gives a measure of the discrepancy in fit per degrees of freedom (<.05 indicates 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 the Chi-square was 168.1 ($df = 20, p < .001$), the RMSEA was .039, and CFI .987. For NCDS women the Chi-square was 143.0 ($df = 20, p < .001$), the RMSEA was .037, and the CFI .989. The model explains 18 per cent of variation in political trust scores among men (95% CI .16 to .20) and 15 per cent among women (95% CI .13 to .17). In BCS70 the Chi-square for men was 257.3 ($df = 39, p < .001$), the RMSEA was .040, and CFI .973. For women the Chi-square was 211.7 ($df = 39, p < .001$), the RMSEA was .035, and the CFI .978. The model explains 16 per cent of variation in political trust scores among men (95% CI .14 to .18) and 11 per cent among women (95% CI .09 to .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 between parental status and unemployment history for women. In BCS the path between unemployment history and political trust for women was also nonsignificant. In

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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 and not more than 25% in BCS. The association between parental social status and childhood cognitive ability is slightly stronger in BCS than 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 there were direct paths linking family social background and cognitive ability to political trust, and a direct link between school motivation measured at age 16 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. 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 is most strongly associated with current occupational status, followed by childhood cognitive ability, family social status, experience of long-term unemployment and school motivation.

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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 women in both samples ($F(1,7692) = 42.60, p < .001$ in NCDS; and ($F(1,7192) = 83.96, p < .001$ in BCS). In BCS the strongest direct predictors of political trust among men and women are school motivation and occupational status at age 30, as well as family social background.

Gender differences in path coefficients for both cohorts were tested using *t*-tests. In NCDS childhood intelligence 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 men ($z=3.33, p < .001$). For men the association between occupational attainment and political trust was stronger than for women ($z=6.22, p < .001$).

In BCS 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

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

Cohort differences

We furthermore tested cohort differences in the strengths of pathway coefficients, again using t-tests. For men, there are cohort differences in the pathways linking childhood intelligence 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.

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For women there were significant cohort differences in the pathways linking childhood intelligence and occupational attainment ($z=3.02, p<.01$), suggesting that in BCS childhood intelligence played an increasingly important role in shaping occupational attainment of women. For both men and women, we observe cohort differences in the pathways linking childhood intelligence 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 intelligence and political trust has reduced for the later born cohort ($z=2.00, p<.05$ for men and $z=3.59, p<.001$ for women), though 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 BCS. We furthermore observe that in NCDS the association between men's own occupational attainment and political trust was stronger than in BCS ($z=3.54, p<.001$), suggesting that occupational status might have lost some of the power in predicting variations in political trust among men.

Discussion

This study 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 age 33 and 42 in NCDS (see Table 1) and at age 30 in BCS (see Table 2). There were significant gender differences in political trust,

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as women expressed higher levels of political trust than men. Furthermore, there was a slight but statistically significant decline in political trust between 1991 when NCDS cohort members were aged 33 and 2000 when cohort members in NCDS were aged 42 and those in BCS were 30 years old.

Examining pathways linking early childhood experiences and later outcomes in two different samples suggest that the life time learning model fitted the data collected for two cohorts born 12 years apart, suggesting generalizability of the model in a different socio-historical context. Attitudes towards institutions and the political system appear to be shaped by both early experiences within the family and school context as well as later experiences in the economic system. Furthermore, the significant association between political trust and cognitive ability support the assumption of rational evaluation, i.e. the role of knowledge and information processing for attitude formation (Deary et al., 2008). However, direct associations between general ability and political trust are only small, and have 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 age 33 and 42 in NCDS, indicating stability of political trust over the nine years, political trust varies in a systematic manner with socio-economic background and later experiences in the education and economic system. Generally those individuals lacking resources (socio-economic, educational, and

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motivational) show lower levels of trust than those with plenty of resources, suggesting that individual circumstances, i.e. lack of resources or opportunities, shape attitudes towards institutions, and that the persisting experience of disadvantage might lead to loss of trust in institutions. The experience of accumulated advantages and resources, on the other hand, 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 life long 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 and Rose, 2001) enables the assessment of developmental and cumulative processes in the acquisition of political trust. The findings suggest that individuals from relative disadvantaged background might have fewer resources, fewer educational opportunities, encounter more problems in establishing themselves in the labour market or climbing the occupational ladder compared to their more privileged peers. Furthermore those from less privileged backgrounds tend to accumulate less favourable experiences with institutions. The findings thus suggest that early and later experiences with institutions can exert similar and reinforcing effects, although later revisions of developmental trajectories are possible.

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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 context, as well as later encounters in the labour 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, Gross, Aday, Willnat, 2004; Putnam, 2000). It has, for example, been shown by Hudson (2006) that the association between mistrust in institutions and age is non linear, reaching a peak in midlife, between the 40's and 50's, and decreasing thereafter. It might thus be that our NCDS cohort members have reached such a peak of mistrust at age 42. Age might reflect differences in knowledge, as people might learn with growing experience. However age might also reflect other aspects, such as being at a particular life stage, or having adopted a particular life style.

On the other hand, the decline in political trust over the two time points might be a reflection of the global trend towards 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 members of the 1958 cohort at similar age, assessed nine years earlier 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, coincided with a major economic recession, while the second assessment 9 years later, occurred at a time of an economic boom and recovery. It has been argued that trust and economic success may have a circular

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interaction, that with greater economic success individuals may become more instrumentally rational and less trusting (Hollis, 1998; Inglehart, 1997). It could however also be, that the experience of the recession during the early 1990s has left a ‘scarring effect’, that the potential threat of an economic boom and bust has 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 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 socio-historical 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 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 organisation and making use of right to vote (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. While for men social class destination appears to be a stronger direct predictor of political trust than social origin, for women, especially those in NCDS, cognitive ability appears to be a more important predictor. To what extent changing socialization experiences, in

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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, i.e. 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, 2002; Uslaner, 2002; Wilkinson, 2009).

It is also interesting to note 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, by increasing engagement of young people in the school and wider social context, stimulating their motivation to learn and critical thinking (Flanagan et al., 2007; Ginwright, 2002; Kahne & Spote, 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

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school motivation than 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. Aiming to engage young people who have become disaffected with school or society at large, it is important to take into account their socio-economic 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).

In interpreting the findings some strengths and limitations of our study have to be considered. The study is based on a large, fairly representative sample of the UK 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 has been 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 since the two instruments captured both verbal and nonverbal aspects of general cognitive ability.

The available data has also restricted the scope of potential mechanisms we can examine. No comparable data was available on political trust during adolescence. Our

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study thus describes a developmental model predicting political trust expressed during adulthood. We have used school motivation at age 16 as an indicator of early attitudes towards 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, i.e. during adolescence and the adult years, and the immediate and long-term impact of school engagement in stimulating political trust. It also has to be taken into consideration that independent variables can change over time as well as the dependent one. 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 per cent 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 has 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 since sample attrition is greatest amongst individuals in more deprived circumstances. Our results may thus be a

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conservative estimate of the long term influence of social inequalities experienced during childhood. Missing data at the variable level may also be non-random. 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 UK 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. Based on data collected for the European and World Value Survey levels of trust in institutions have shown to be lower in Britain and the US (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 there is evidence to suggest that factors unique to the individual as well as those related to direct experiences with institutions play a role 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 last few decades, there are relatively few studies examining 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

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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 both with early and later experiences. Trust in institutions is not completely engrained 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, employment status, as well as a changing socio-historical context. The findings point to several possible windows for interventions aiming to improve levels of trust, ranging from experiences in the education system as well as later experiences with institutions that increase trust and engagement. 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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Table 1. 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 (NCDS)

Variables			1	2	3	4	5	6	7	8	9	10	11	12
		Mean SD												
1.	Political trust age 42	2.68 (.61)	–											
2.	Political trust age 33	2.75 (.69)	.626	–										
3.	Gender	1.52 (.50)	.081	.077	–									
4.	Parental social class	2.26 (.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.	Non-verbal scores (cognitive ability)	21.79 (7.27)	.258	.270	.012	.259	.247	.223	.792	–				
9.	School motivation age 16	0 (1)	.228	.234	.071	.152	.146	.122	.250	.229	–			
10.	Unemployment History (by month)	5.58 (13.10)	-.140	-.161	-.086	-.096	-.059	-.047	-.141	-.139	-.111	–		
11.	Education attainment age 33	2.41 (1.36)	.267	.278	-.066	.315	.291	.273	.508	.495	.404	-.161	–	
12.	Occupational status age 33	2.77 (1.14)	.264	.311	.008	.255	.233	.195	.375	.349	.286	-.164	.519	–

Note: Variables were scored such that a higher score indicated greater political trust at age 33 and 42, being female, a more professional occupation for the parent and higher age parents left school, a higher verbal and non-verbal cognitive ability scores, a higher school motivation score in teen, more advanced educational qualifications, shorter period of unemployment history, and more professional occupation in adulthood.

A Life Time Learning Model of Political Trust

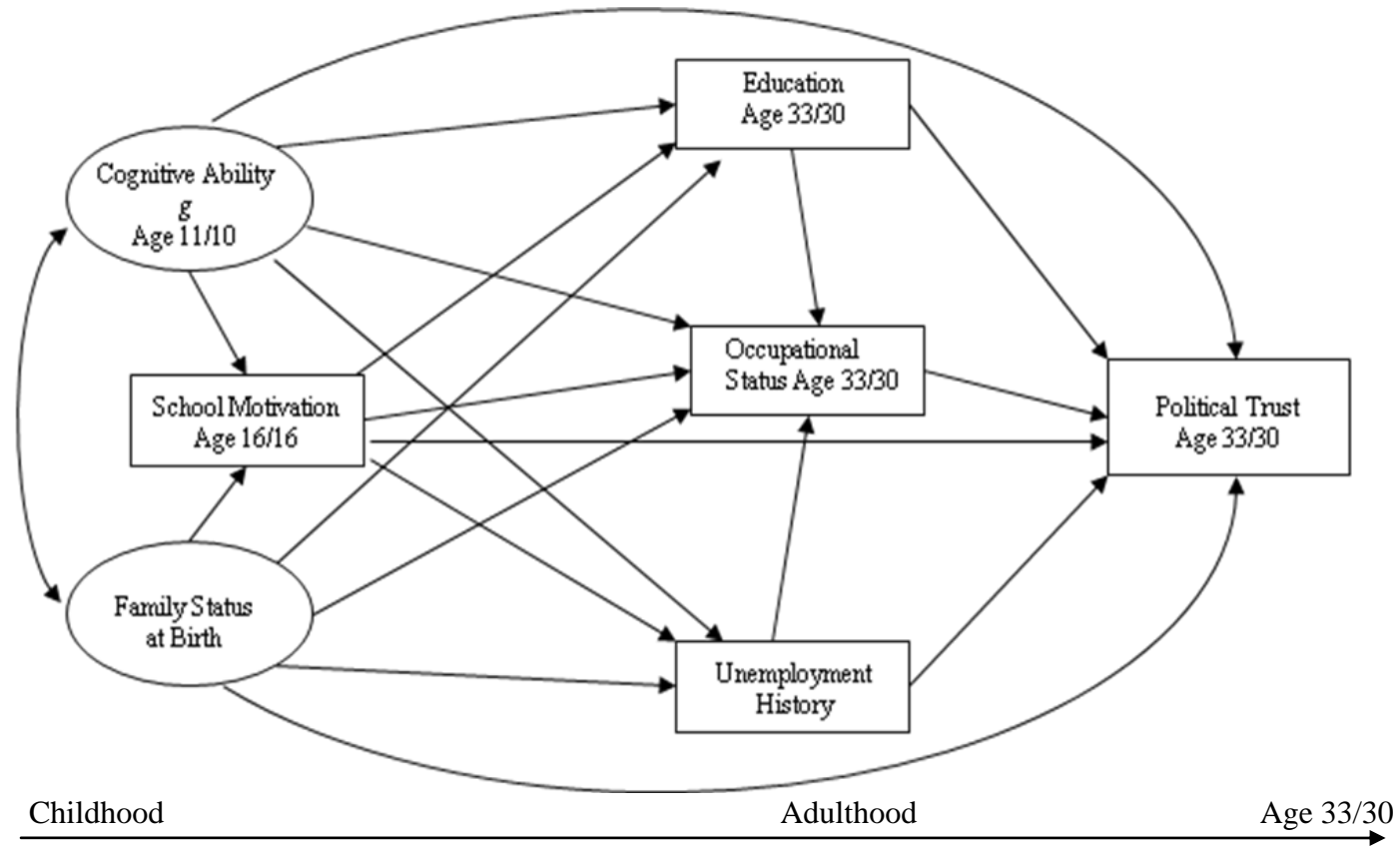
Table 2. Pearson correlations among political trust at age 30, family background, cognitive ability, school motivation, education, unemployment history, and occupational status in the 1970 cohort (BCS70)

Variables			1	2	3	4	5	6	7	8	9	10	11	12	13		
		Mean SD															
1.	Political trust age 30	2.70 (.57)	–														
2.	Gender	1.52 (.50)	.114	–													
3.	Parental social class	2.25 (1.04)	.165	-.007	–												
4.	Father age left school	15.45 (1.19)	.154	.003	.405	–											
5.	Mother age left school	15.39 (1.26)	.121	-.003	.281	.459	–										
6.	Word similarities (Cognitive ability)	28.43 (4.23)	.161	-.089	.236	.219	.221	–									
7.	Word definitions (Cognitive ability)	10.48 (4.99)	.154	-.106	.275	.251	.258	.647	–								
8.	Recall of digits (Cognitive ability)	22.53 (4.22)	.108	.030	.104	.099	.087	.301	.313	–							
9.	Matrices (Cognitive ability)	15.85 (5.30)	.190	.048	.193	.190	.180	.444	.451	.293	–						
10.	School motivation age 16	0 (1)	.237	.074	.113	.077	.060	.111	.129	.040	.123	–					
11.	Unemployment History (by month)	4.28 (14.98)	-.137	-.107	-.071	-.042	-.044	-.074	-.068	-.036	-.103	-.103	–				
12.	Education attainment age 30	2.69 (1.30)	.227	-.002	.266	.250	.204	.347	.376	.186	.335	.291	-.148	–			
13.	Occupational status age 30	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, being female, a more professional occupation for the parent and higher age parents left school, a higher verbal and non-verbal cognitive ability scores, a higher school motivation score in teen, more advanced educational qualifications, shorter period of unemployment history, and more professional occupation in adulthood.

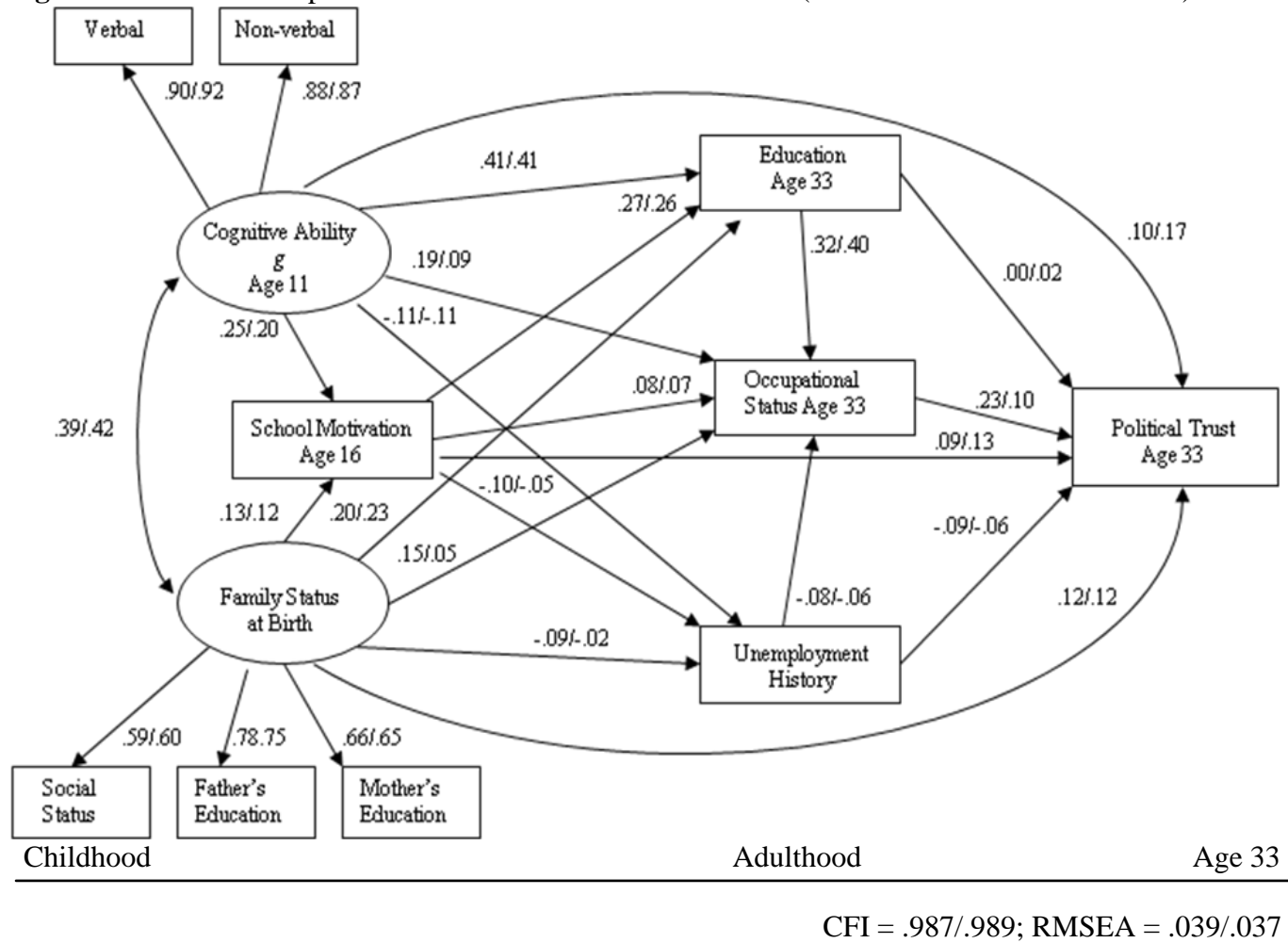
A Life Time Learning Model of Political Trust

Figure 1. A lifetime learning model of political trust



A Life Time Learning Model of Political Trust

Figure 2. Path model of political trust in the 1958 cohort: NCDS (males = 4267 / females = 4537)



A Life Time Learning Model of Political Trust

Figure 3. Path model of political trust in the 1970 cohort: BCS70 (males = 3484 / females = 3708)

