

Antecedents of political trust in adolescence: Cognitive abilities and perceptions of parents

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Abstract

This study examined the predictors of political trust in late adolescence. Three waves of longitudinal data (ages 11, 15, and 17) from 1,116 Czech adolescents (346 participated at least in the first and last wave) were analyzed using structural equation modeling. Results showed that high verbal cognitive ability in early adolescence predicted greater political trust in late adolescence. This effect was explained by adolescents' greater cognitive political engagements, but not by their more positive relationships with authorities (e.g., school or parents) during adolescence. Next, early adolescents who perceived more parental warmth demonstrated greater political trust when they reached late adolescence. These results suggest that some young people might enter adulthood more skeptical regarding politics based on their abilities and early nonpolitical experiences.

Keywords: Civic development; Cognitive ability; Cognitive political engagement; Czech Republic; Parental warmth; Political trust.

Introduction

Adolescents construct various expectations and beliefs about the world of politics that affect their civic activities (Sherrod, Torney-Purta, & Flanagan, 2010). Political trust, defined broadly as the perceived trustworthiness of the political environment and authorities regarding whether politicians observe the rules and serve the public (Citrin & Muste, 1999), represents an important part of a young person's worldview. For instance, a lack of political trust during adolescence can result in low interest in politics and voting (Bynner & Ashford, 1994), or in the development of a preference for nonconventional political activities (Bandura, 1997; Beaumont, 2010). From a macro-level perspective, citizens' political trust is embedded in the broader political culture of a country (Almond & Verba, 1963; Inglehart, 1997), is partially derived from the social norms and interpersonal trust present in that society (Putnam, 2000), and is associated with citizens' assessments of the actual performance of political authorities (Mishler & Rose, 2001). In addition, psychological research has revealed that political trust can also reflect individual adolescents' histories. Research has shown that parental authoritarian practices (Gniewosz, Noack, & Buhl, 2009), adolescents' cognitive abilities (Schoon & Cheng, 2011), and educational performance (Bynner & Ashford, 1994) are associated with levels of political trust or alienation. However, these developmental hypotheses have not been tested in one comprehensive model that includes early perceptions of parents, cognitive abilities, and subsequent relations to authorities (school and parents). This study employed longitudinal data covering a six-year period to study predictors of political trust in late adolescence.

Political trust refers to the evaluation of individual politicians, governments, or institutions; however, it can also refer to generalized beliefs about the political environment as a whole (Citrin & Muste, 1999). In the current study, we drew on the latter concept of political trust. We understood political trust as being the opposite of political cynicism, which

is defined as a generalized mistrust not of particular politicians, but of the politicians in general. According to this definition, people with low political trust perceive political environment as corrupting its participants and attracting corrupt persons (Cappella & Jamieson, 1997). The lack of political trust can be also understood as one component of political alienation (besides the lack of political efficacy or powerlessness), and is sometimes referred to as political normlessness (Finifter, 1970; Levi & Stoker, 2000). Our understanding of political trust stems from cognitive conceptions of interpersonal trust that define trust as the set of personal assumptions, beliefs and expectations that other people behave beneficially (or at least not detrimentally) to one's interest (Kramer & Carnevale, 2001). Particularly in the situations of lacking personal contact, these assumptions, beliefs and expectations can be generalized to a whole social category such as politicians (Offe, 1999).

Previous studies have reported that people with greater political trust have greater cognitive abilities. In large-scale longitudinal studies, general cognitive ability in early adolescence was found to be positively associated with political trust in adulthood (Deary, Batty, & Gale, 2008; Schoon, Cheng, Gale, Batty, & Deary, 2010; Schoon & Cheng, 2011). Additionally, researchers have found that political trust is positively associated with openness to experience (Mondak & Halperin, 2008), which is a relatively stable personality trait that is linked (although not identical) to verbal cognitive ability (McCrae & Sutin, 2009). Further, some researchers have considered that attained education level is a manifestation of cognitive abilities (Rindermann, 2008). In this respect, there is some evidence to support a positive association between adolescents' education levels and their political trust (Henn, Weinstein, & Forrest, 2005); however, other studies on the general population have not found such support (see Catterberg & Moreno, 2006). To summarize, political trust seems to be positively associated with cognitive ability, particularly concerning verbal aspects.

The association between political trust and cognitive ability can have several explanations. Regarding political trust in adulthood, achieved social status and income level are potential explanatory mechanisms. More precisely, higher cognitive abilities in childhood positively predict higher social status and income in adulthood, which are associated with higher political trust (Schoon & Cheng, 2011). However, this explanation is not sufficient in explaining the political trust of late adolescents who typically do not have a stable income and a definite future social status, but already have a relatively stable sense of political trust (Claes, Hooghe, & Marien, 2012; Hooghe & Wilkenfeld, 2008).

Some scholars have suggested that a basis for social trust in adolescence develops from everyday nonpolitical experiences in small proximal communities (Flanagan, 2003). This notion can apply also to political trust as research has shown that, for adolescents, strong connections to their parents, schools, and neighborhoods predict greater political trust in young adulthood (Duke, Skay, Pettingell, & Borowsky, 2009). As such, we proposed that these processes might serve as a link between adolescents' cognitive abilities and political trust. Specifically, we hypothesized that adolescents with different levels of cognitive abilities have different developmental experiences in their schools and families, which can influence political trust. In other words, the effect of cognitive abilities on political trust can be mediated through developmental experiences in schools and families.

First, adolescents with greater cognitive abilities are more likely to develop positive relationships to school during their maturation, which can generalize to other social institutions, such as politics. This notion is supported by research that has shown that children and adolescents with higher general cognitive abilities report more positive relationships to school (Geddes, Murrell, & Bauguss, 2010; Richards, Encel, & Shute, 2003). Consequently, based on the public institutional hypothesis, positive relations to school can generalize to politics. This hypothesis assumes that adolescents' political attitudes and

activities are shaped by their experiences with public institutions, such as schools (Amadeo, Torney-Purta, Lehmann, Husfeldt, & Nikolova, 2002; Amnå & Zetterberg, 2010).

Specifically, schools are usually adolescents' first opportunities to learn how institutional systems of authority work and what to expect from them (Estévez & Emler, 2009). These experiences can shape later perceptions of other institutions in the public realm, including political authorities. Data from different countries support this notion as middle adolescents' trust in and positive perceptions of school are associated with their trust in governmental institutions (Torney-Purta, Barber, & Richardson, 2004).

Second, adolescents with better cognitive abilities tend to have positive relationships with parents, which can generalize to politics. Research has shown that a child's language competency is positively associated with the quality of the parent-child relationship (van IJzendoorn, Dijkstra, & Bus, 1995). This relation is probably bidirectional as harmonious relationships provide opportunity for children to develop verbal skills and better verbal skills help children make more harmonious social relationships (van IJzendoorn et al., 1995). In consequence, adolescents' positive or negative relationship to parental authorities can serve as a model to foster or undermine their trust in other social authorities, including political authorities (Duke et al., 2009; Flanagan & Gallay, 1995; Gniewosz et al., 2009). Thus, we expected that adolescents who have poor relationships with their parents would report lower political trust.

However, the parent-child relationship is not affected solely by the child's cognitive ability; a more important factor is parental behaviors toward the child. If children perceive their parents as emotionally warm, supportive, and respectful of their dignity, they are likely to develop more positive relationships with them (Karavasilis, Doyle, & Markiewicz, 2003). Therefore, we expected that early adolescents who perceive more parental warmth would report closer ties to (or less alienation from) parents in middle adolescence, which can

translate to greater political trust in late adolescence (Duke et al., 2009; Flanagan & Gallay, 1995; Gniewosz et al., 2009).

Finally, the association between early cognitive abilities and later political trust can be explained by factors other than school or family experiences. For example, Denny and Doyle (2008) found that 11-year-olds with more developed specific cognitive abilities, namely comprehension, become more interested in politics when they reach adulthood. This finding is not surprising because adolescents who lack specific cognitive skills might have difficulties following and understanding politics, which reduces their cognitive engagement in this area (Rindermann, Flores-Mendoza, & Woodley, 2012). At the same time, lacking or low cognitive engagement in politics can be associated with lower political trust (Catterberg & Moreno, 2005) as the individual would create only a shallow view on politics, which may be distorted in the negative direction (Meffert, Chung, Joiner, Waks, & Garst, 2006). Therefore, we expected that cognitive ability would have an indirect effect on political trust as mediated by individuals' cognitive engagement in politics.

Nevertheless, the association between cognitive abilities and political trust might also be spurious. For example, living in poor socioeconomic conditions (e.g., poverty, parental unemployment) adversely affects the development of children's verbal cognitive abilities (Sampson, Sharkey, & Raudenbush, 2008). At the same time, people coming from lower socioeconomic classes tend to have lower political trust because they do not feel that politicians and political institutions work for their benefit (e.g., Schoon et al., 2010). Consequently, it is possible that adolescents' cognitive abilities and political trust are both correlates of socioeconomic status of adolescents' families and do not have any mutual relation. Hence, we considered as necessary to rule out this alternative explanation in our analyses.

The present study

Having identified two characteristics of early adolescents that could be associated with political trust (cognitive ability and perceived parental warmth), our main research question was whether these two characteristics predict greater political trust in late adolescence. We differentiated between verbal and nonverbal cognitive abilities and expected that verbal ability would be more closely related to political trust. Next, we tested whether the effects of cognitive abilities and perceived parental warmth on political trust could be explained by more positive relations between schools and parents and by adolescents' greater cognitive political engagement. Parental education, understood as an indicator of family's socioeconomic status, was controlled for in all analyses.

A vast majority of studies investigating antecedents of political trust in adolescence come from Western and Northern Europe or from the United States. By contrast, our study was conducted in the Czech Republic, which is a Central European post-communist country. Generally, we assumed that basic socio-political conditions of adolescent development do not differ dramatically across these contexts, considering the fact that the Czech Republic has become a high-income economy and a member of the European Union in the past decade (see also Macek, Lacinová, & Polášková, 2011; Macek & Marková, 2004). However, some contextually specific patterns still might be present. Most importantly, cross-national studies on adolescents' political trust suggest that young people from post-communist countries typically have rather distrustful views on political authorities and institutions (Amadeo et al., 2002; Torney-Purta et al., 2004). Therefore, we expected that the differences in political trust between people with low and high cognitive political engagement would be particularly pronounced in our findings.

Next, it should be acknowledged that previous studies did not employ uniform conceptualizations of political trust. The key difference lies in whether they focused exclusively on the domain of politics (e.g., Bynner & Ashford, 1994) or captured broader

beliefs that included also trust in other social authorities and institutions, such as courts or police (the authors often refer to *institutional trust* in these cases; e.g., Torney-Purta et al., 2004). Our study employed the former, narrower, conceptualization, which means that the following results pertain to adolescents' beliefs about the political environment, while their more general beliefs about social institutions were not explicitly investigated.

Method

Participants and procedure

We analyzed data from the psychological branch of the broader European Longitudinal Study of Pregnancy and Childhood (ELSPAC), which focused on risks to healthy and optimum development. The original sample comprised almost all families (5,549) with a child born between March 1, 1991 and June 30, 1992 in medical institutions in the Czech city of Brno (400,000 inhabitants). The psychological examinations started at the age of eight on a subsample of 883 families who were randomly drawn from the original sample (Ježek, Lacinová, Širůček, & Michalčáková, 2008). Additional participants were randomly recruited from the original sample during the course of the project to compensate for attrition. We employed data from three biennial examinations: 2002-03 (age 11; N = 876), 2006-07 (age 15; N = 554), and 2008-09 (age 17; N = 480). Regarding family configuration (reported at age 15), 74 % participants were living with both biological parents, 15 % with one parent, and 10 % with one parent and a stepparent.

The dataset was characterized by a large amount of missing data due to attrition and the additional recruitment of participants. A total number of 1,116 adolescents (50 % girls) participated for at least one examination; however, only 255 were present for all three examinations. Because analyzing all available information is considered as superior to data deletion (Enders & Bandalos, 2001), we tested our models on all 1,116 cases using the full information maximum likelihood estimator (FIML) in Mplus 6.1 software. However, small

proportions of valid data were present for some combinations of variables (covariance coverage from 14 to 78 %, mean 34 %). Although the data met the Mplus requirement of a minimum coverage value of 10 % per coverage (Muthén & Muthén, 2010), such amount of missing data may still yield biased estimates of standard errors (Schlomer, Bauman, & Card, 2010). Therefore, we further re-estimated all models with a subsample of 346 cases (49 % girls) who participated in at least the first and last waves to obtain more reliable results (covariance coverage from 43 to 100 %, mean 70 %). Results obtained from this subsample are presented in square brackets in the following text.

Participants came to the research institute to complete self-report questionnaires and take part in face-to-face interviews. Perceived parental warmth (age 11) and parental alienation (age 15) were measured using paper-based questionnaires, and relation to school (age 15) and political trust (age 17) were measured using computer-based questionnaires. Tests of cognitive abilities (age 11) were administered by specially trained research assistants. Measures of cognitive political engagement (age 17) were derived from records of broader identity interviews. Information on parental education was provided by the participants' mothers at the child's age of 11.

Measures

Political trust (age 17). We assessed adolescents' perceived trustworthiness of the political environment in terms of politician's service to the public and moral qualities. The scale was previously piloted and used among Czech adolescents (Agger, Goldstein, & Pearl, 1961; Šerek & Macek, 2010). Participants indicated their agreement to six items on a four-point response scale "completely disagree" (=1), "somewhat disagree" (=2), "somewhat agree" (=3), "completely agree" (=4). The items were as follows: (1) "Although it may seem they do it differently, politicians pay respect to basic principles of decency and morality;" (2) "It is a typical feature of politics that it attracts individuals with bad character;" (3) "Those

who want to advance in politics must learn to hide their true beliefs;” (4) “A decent person has no chance to succeed in politics;” (5) “Politicians more often fight for the interests of the whole society than for their own interests;” and (6) “In reality, politics is directed by a couple of manipulators in the background.” The alpha reliability was .73.

Cognitive abilities (age 11). Two subtests of the Czech translation of the Wechsler Intelligence Scale for Children, third UK edition were used to assess verbal and nonverbal cognitive abilities (Wechsler, 1996). Verbal ability, represented by verbal reasoning, was measured by the subtest Similarities. This subtest captures the capacity for forming concrete, functional, and abstract concepts, and abilities in generalizing and abstract thinking. Participants were asked to explain how two different things or concepts were similar (19 items). Responses were scored from 0 to 2 based on quality. Nonverbal ability was represented by perceptual reasoning and measured by the subtest Block Design. The subtest captures nonverbal problem-solving skills such as part-to-whole organization, spatial visualization, nonverbal concept formation, and manipulative abilities. Participants were asked to replicate two-dimensional geometric patterns using red and white blocks within a specified time limit (12 items). Performance on both subtests was scored by trained research assistants in accordance with the standard scoring procedure. Weighted scores were employed in the analyses.

Perceived parental warmth (age 11). The warmth of parental behavior, as perceived by the adolescent (parents’ interest in child’s activities, emotional support, sharing pleasant experiences, and respecting child’s dignity) was assessed by a 10-item subscale from the Czech Parenting Styles Questionnaire (Čáp & Boschek, 1994). Adolescents assessed their mothers (alpha = .77) and fathers (alpha = .82) separately using a three-point response scale “no” (=1), “partially” (=2), “yes” (=3). Sample items included “She/he is friendly toward me”

or “She/he really cares about my wishes and worries.” Assessments of mothers and fathers were strongly correlated ($r = .62$).

Relation to school (age 15). Adolescents’ general attitudes toward school were captured by the Inventory of Risk Behavior, which measures this construct using two items (Širůček & Širůčková, 2008). Item 1 was “How would you describe your relationship with school?” The response scale for this item was “the worst enemy” (=1), “rather an enemy” (=2), “hard to say” (=3), “rather a friend” (=4), “the best friend” (=5). Item 2 was “I am satisfied with my school performance.” The response scale was “never” (=1); “rarely” (=2), “hard to say” (=3), “mostly” (=4), “always” (=5). The correlation between these items was .38.

Alienation from parents (age 15). Alienation from parents, understood as anger at and isolation from parents, was measured using the eight-item subscale Alienation from the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987; Širůček & Lacinová, 2008). All items referred to parents and did not distinguish between mothers and fathers. Five-point response scales was “never or almost never” (=1), “seldom” (=2), “sometimes” (=3), “often” (=4), “always or almost always” (=5). A sample item is “I feel angry with my parents.” The alpha reliability was .78.

Cognitive engagement in politics (age 17). Cognitive engagement, defined as paying attention to politics, was expected to manifest in adolescents’ following political news, intention to participate in the political process, and having formed political opinions. More specifically, following political news was regarded to represent a common way of collecting political information. Intention to participate in the future was understood as a manifestation of one’s motivation to occupy oneself with politics, which creates the potential for further exploration in this area (e.g., Norris, 2000). Having formed political opinions indicated that a young person was undertaking at least basic cognitive exploration in political

domain. Hence, answers on three questions were used as a measure of cognitive engagement. First, participants were asked how often they followed political news. A five-point response scale was “never” (=1), “a couple times a year” (=2), “a couple times a month” (=3), “a couple times a week” (=4), “daily” (=5). Second, adolescents were asked whether they planned to vote in the next parliamentary election (voting intention). This variable was dichotomous (“no” = 0; “yes” = 1), with answers “don’t know” or “maybe” coded as missing values. Finally, participants were asked whether they knew which political party they would support in the election (voting decision), regardless of their voting intention. If participants mentioned some political party or political orientation (e.g., leftist), they were coded as being decided (=1), otherwise they were coded as undecided (=0).

Parental education. Parental education was captured by two dummy variables that referred to two important thresholds present in the Czech educational system: (1) whether at least one parent had completed secondary education with the graduation exam and (2) whether at least one parent had completed tertiary education (university or college). Scores were based on mother’s report at the child’s age of 11.

Data analysis

Before the main analysis, we computed a set of *t*-tests and χ^2 -tests to determine whether adolescents who did and did not participate in all three waves significantly differed in the measured variables. Next, bivariate correlations between scale means were computed and a measurement model that assumed no directional associations between latent variables was tested.

Several structural equation models were computed to test our hypotheses (Mplus 6.1 software; full information maximum likelihood estimator). Most constructs were treated as fully latent variables (political trust, relation to school, alienation from parents, perceived parental warmth, and cognitive political engagement). If not stated otherwise, error terms of

the indicators were not allowed to correlate. Alienation from parents was measured by a well established scale with known one-dimensionality (in the present study, standardized factor loadings from exploratory factor analysis ranged from .42 to .68). Therefore, the eight indicators were reduced to four parcels using an item-to-construct balance procedure, which distributes the items according to their exploratory factor loadings (Little, Cunningham, Shahar, & Widaman, 2002). Because perceived warmth of mothers and fathers strongly correlated, we treated these variables as representing a single latent construct (exploratory standardized factor loadings ranged from .48 to .59 for mothers' warmth and from .47 to .62 for fathers' warmth). Ten items that represented the perceptions of each parent were transformed into two parcels (item-to-construct balance procedure) and perceived parental warmth was estimated from the resulting four indicators. Finally, both verbal and nonverbal cognitive abilities and parental education were treated as manifest variables.

Initially, we estimated a model that directly predicted political trust (age 17) from adolescents' early characteristics (i.e., parental education, perceived parental warmth, and both cognitive abilities) at age 11 to test whether our basic expectations were supported. Next, we added general relation to school (age 15), alienation from parents (age 15), and cognitive political engagement (age 17) to the model. We scrutinized whether the effect of early characteristics on political trust remained direct or became indirect (i.e., mediated by the added variables). Indirect effects were assessed by bias-corrected bootstrapped (1,000 random samples with replacement) confidence intervals (Preacher & Hayes, 2008; Shrout & Bolger, 2002). Finally, all non-significant paths were removed and the final model was estimated. Using a multiple group analysis, we tested whether the structural paths in the final model differed between boys and girls.

Model fit was assessed using the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the χ^2 statistic. A good model fit is indicated

by CFI > .95, RMSEA < .06 (Hu & Bentler, 1999), and a non-significant χ^2 -test. However, since the χ^2 -test can be too strict in larger samples (Jöreskog & Sörbom, 1993), we also accepted models with significant χ^2 -tests if the ratio between χ^2 and degrees of freedom was smaller than two.

Results

Missing data analysis

A comparison between participants who did (n = 255) and did not take part in all waves showed that the level of participation was not associated with the level of the measured variables (see Table 1). The only exception occurred with the first item that measured relation to school and parental secondary education. The analysis showed that participants who took part in all waves indicated slightly more positive relation to school (M = 3.19, SD = 0.90 compared to M = 3.04, SD = 0.83) and their parents had more often completed secondary education (93 % compared to 87 %). Because the differences were rather small, we did not consider them to be a serious limitation.

--- Table 1 about here ---

Correlations between scale means

Bivariate correlations (see Table 1) indicated that political trust (age 17) was weakly, but significantly associated with verbal reasoning (age 11), alienation from parents (age 15), and some measures of perceived parental warmth (age 11), relation to school (age 15), and cognitive political engagement (age 17). No association between political trust and perceptual reasoning (age 11) was found.

Measurement model

Confirmatory factor analysis revealed that hypothesized latent constructs were well represented by the measures. A model that included all latent variables and their indicators was a good fit ($\chi^2_{140} = 208.66$, $p < .01$; CFI = .97; RMSEA = .02). One correlation between

the errors of two items that measured political trust had to be allowed ($r = .34$). Similarly, the errors of parcels that measured perceived mother's ($r = .41$) warmth had to be allowed to correlate. Standardized factor loadings of items that measured political trust ranged from .39 to .72; standardized loadings of parcels that measured parental warmth ranged from .56 to .90; standardized factors loadings of items that measured relation to school were .51 (Item 1) and .74 (Item 2); standardized factor loadings of parcels that measured alienation from parents ranged from .65 to .75; and standardized factor loadings of items that measured cognitive political engagement were .60 (following news), .48 (voting intention), and .35 (voting decision). In line with our expectations, all measures captured one-dimensional latent constructs.

Predicting political trust from early characteristics

A model that predicted political trust (age 17) from early characteristics and parental education was estimated (Figure 1). The results indicated that political trust was positively predicted by verbal reasoning (age 11) and perceived parental warmth (age 11). Parental education (completed secondary education or completed university or college) was a weak predictor of political trust. Finally, perceptual reasoning (age 11) was independent from political trust.

--- Figure 1 about here ---

Full model

In the next step, relation to school (age 15), alienation from parents (age 15), and cognitive political engagement (age 17) were added to the model and set to predict political trust (age 17). Based on the previous results, perceptual reasoning (age 11), which was independent from political trust, was omitted from the model. Parental secondary education and parental university or college education were allowed to correlate with perceived parental

warmth (age 11) and verbal reasoning (age 11), and predict relation to school, cognitive political engagement, and political trust (see Figure 2).

--- Figure 2 about here ---

The results showed that while greater perceived parental warmth still predicted greater political trust, the effect of verbal reasoning on political trust disappeared. Next, alienation from parents was predicted by less-perceived parental warmth and lower verbal reasoning; this variable did not predict political trust. Further, relation to school was positively predicted by verbal reasoning; the variable did not predict political trust. Finally, cognitive political engagement was positively predicted by verbal reasoning; cognitive political engagement, in turn, positively predicted political trust.

Mediation analysis

The positive effect of verbal reasoning (age 11) on political trust (age 17) was fully mediated by cognitive political engagement (age 17). After removing the non-significant direct effect of verbal reasoning on political trust ($\Delta\chi^2_1 = 1.00, p = .31$ [$\Delta\chi^2_1 = 0.25, p = .62$]), indirect effects were scrutinized. Bootstrap estimates of 95% bias-corrected standardized confidence intervals showed a significant indirect effect of verbal reasoning on political trust as mediated by greater cognitive political engagement (.01; .22 [.03; .24]). On the other hand, alienation from parents (-.03; .05 [-.04; .07]) and relation to school (-.04; .12 [-.05; .17]), both measured at the age of 15, did not mediate the effect of verbal reasoning because these variables did not predict political trust.

On the contrary, the effect of perceived parental warmth on political trust was direct and not mediated. The direct effect of perceived parental warmth at the age of 11 was significant, although alienation from parents at age 15 was present in the model. In other words, earlier perceived parental warmth was a better predictor of political trust than was later alienation from parents.

Final model and gender differences

Final model without non-significant paths is shown in Figure 3. This model represented the data adequately and was not a worse fit than the full model ($\Delta\chi^2_3 = 7.06, p = .07$ [$\Delta\chi^2_3 = 5.56, p = .14$]).

Previous studies have reported that adolescent males and females can have different approaches to politics in terms of their political interest or developmental identity status (Amadeo et al., 2002; Goossens, 2001; Solomontos-Kountouri & Hurry, 2008). Therefore we tested whether our final model applied equally to both groups. A multiple group analysis showed that the assumption of identical structural effects in boys and girls did not yield a worse model fit ($\Delta\chi^2_{18} = 16.04, p = .59$ [$\Delta\chi^2_{18} = 16.97, p = .53$]) compared to the model where the structural effects were freely estimated for both groups. Hence, our analysis suggested no differences between boys and girls regarding the effects in our final model.

--- Figure 3 about here ---

Discussion

The results of this study show that young people who have better developed verbal abilities and perceive greater parental warmth in early adolescence report greater political trust when they reach late adolescence. The positive association between verbal abilities and political trust is explained by the fact that adolescents with better developed verbal abilities pay more attention to politics, which is related to greater political trust. At the same time, young adolescents with more developed verbal abilities also have more positive relations to school and parents; however, this does not explain their higher levels of political trust. Overall, these findings support our initial assumptions that some early characteristics play a role in the formation of political trust.

The finding that greater verbal abilities enable adolescents to become more cognitively engaged in politics, which is associated with greater political trust, is in line with

our expectations. Because politics is a complex and abstract topic that many young people perceive as distant from everyday life (Henn et al., 2005; Šerek & Macek, 2010), deeper comprehension may require a higher level of verbal abilities on the part of adolescents. Additionally, having low political trust is a norm in many of today's democratic societies including the Czech Republic (Linek, 2010; Norris, 2011). Therefore, we suppose that only those young people who are able to explore, understand, and discuss political issues can replace the generalized political mistrust inculcated by society with a more nuanced view that would allow for the existence of both positive and negative aspects of the political environment. As a result, the political trust of these young people is higher compared to those who do not engage in deeper exploration of political issues and may rather accept the social norm of mistrust. Moreover, because the association between cognitive engagement and political trust is likely to be bidirectional, adolescents' exploration of political issues can be further motivated by their greater political trust.

However, the finding that greater political trust is predicted by greater cognitive political engagement should be generalized to other sociopolitical contexts with caution. According to cross-national comparisons, Czech adolescents show relatively low political trust (Amadeo et al., 2002) and they reject uncritical loyalty to political authorities (Klicperová-Baker et al., 2007). Their views of the politicians reflect a broader political culture of the Czech Republic because political distrust and low satisfaction with politics have diffusively spread among the whole population in the last decade (Linek, 2010). Historically, this feature of Czech political culture may stem from democratic traditions (the Czechoslovak Republic in the 1920s–1930s or the “Prague Spring” in the late 1960s), combined with a long period of authoritarian communist rule, involving violent totalitarianism in 1950s and untrustworthy corrupted “gerontocracy” in 1980s (Klicperová-Baker, 1999). Hence, we suppose that young Czechs tend to accept this wide-spread norm of

political distrust unless they actively seek and understand additional political information. On the other hand, this effect might not be present in countries with different political cultures where adolescents have generally high trust in their political leaders (e.g., Nordic countries, see Amadeo et al., 2002). Moreover, the association between cognitive political engagement and political trust might be even reverse in countries with unstable or really untrustworthy institutions. As shown by Torney-Purta et al. (2004) in Bulgaria, adolescents with greater political knowledge (which is likely associated with greater cognitive political engagement) can be less naïve regarding political authorities and have lower political trust compared to their less knowledgeable peers. Therefore, further investigation in countries with diverse political cultures is strongly recommended.

Our finding that a more positive relation to school (held by adolescents with higher verbal abilities) does not transform to higher political trust is seemingly inconsistent with the public institutional hypothesis, which suggests that experiences with public institutions shape adolescents' political beliefs and behaviors (Amnå & Zetterberg, 2010). Related research has shown that political trust among adolescents is enhanced by some specific characteristics and practices that are present in the school environment such as open classroom climates and school democracy (Claes et al., 2012; Gniewosz et al., 2009; Torney-Purta, et al. 2004). Unfortunately, these aspects were not distinguished in our study; rather we focused solely on general attitudes toward school. Therefore, it is possible that specific school practices (e.g., democratic functioning) not the general evaluation of school by adolescents, have a positive impact on the development of their political trust. This explanation could be the reason why we found only small effects of school. Another important implication of our results is that the correlation between political trust and positive relation to school might be spurious in studies that do not control for verbal ability. Adolescents with higher verbal ability tend to

have more positive relation to school and higher political trust, although the two are independent from each other.

In addition, we found that political trust relates to verbal reasoning, but not to other types of cognitive ability, such as perceptual reasoning. This finding helps explain why older research studies that have focused mostly on a general one-factor cognitive ability, found only a small impact on adolescents' political socialization (for a review, see Gallatin, 1980). Moreover, our results support and expand those by Hillygus (2005) who found that verbal ability (measured by Scholastic Aptitude Test) predicts conventional political participation by college students, but math proficiency does not. Our study shows that not only conventional political participation, but also political trust (an important predictor of adolescents' conventional political participation; Bynner & Ashford, 1994; Torney-Purta et al., 2004) is related to verbal ability. Therefore, further studies on political socialization should carefully differentiate between various cognitive abilities because only verbal abilities seem to be substantially related to political development during adolescence.

Next, our results revealed that early adolescents who experience more parental warmth report higher political trust when they reach late adolescence. Thus, positive perceptions of parental authorities, regarding their respect and support, seem to shape adolescents' generalized trust to other social and political authorities during late adolescence. These longitudinal results corroborate the cross-sectional findings of Gniewosz et al. (2009) who found that authoritarian parenting, characterized by parental rigorousness and the absence of parental warmth toward children, predicts the political alienation of adolescents. The described effect can be explained in the context of attachment theory, which assumes that a person's expectations about broader social relationships (internal working models) are formed in childhood, based on the mental representations as modeled by caregivers (Bowlby, 1973; Bretherton & Munholland, 1999). Consequently, these internal working models of

parental authorities might be activated when adolescents form views concerning other types of social authorities, particularly those that are not encountered personally, such as political figures. Another postulate of attachment theory states that the internal working models are formed early in the life and remain relatively stable into adulthood (Fraley, 2002; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). This idea is consistent with our findings because perceived parental warmth in early adolescence was a better predictor of political trust than was alienation from parents in middle adolescence. Hence, it is possible that early attachment to parents sets the general expectations regarding authorities and is reflected in later political trust.

Limitations

A number of limitations need to be noted regarding the present study. First, we measured relation to school and alienation from parents on a very general level. Additionally, our measure of relation to school was only a two-item measure. Although these generalized attitudes are important, future studies should focus on more particular aspects of adolescents' school and family perceptions that might be more directly related to political trust (e.g., open classroom, as suggested above). Second, parental sociopolitical beliefs were not measured in our study. Because both parenting practices and political beliefs shared in a family might stem from some parental social beliefs (e.g., regarding obedience to authority), their inclusion could shed more light on the investigated processes. Third, our analysis was not fully longitudinal (Cole & Maxwell, 2003); all variables were measured only at one time point and cognitive engagement and political trust were measured at the same age. Therefore, any interpretation must be cautious regarding causality. On the other hand, the predictions from the ages 11 to 17 allow for stronger interpretations than would a mere cross-sectional study. Fourth, socioeconomic status was operationalized as parental education in this study, which provides only limited information on the actual situation of the family. Fifth, it must be

considered that our finding that warm parenting predicts adolescents' political trust and the similar finding by Gniewosz et al. (2009) both come from post-communist areas where the role of state has become weakened, which shifted the responsibility for socialization between family and state to families (Tomasik & Silbereisen, 2012). Therefore, further studies are needed to confirm whether the association has the same strength in other sociopolitical contexts.

Conclusions

Taken together, the present findings enhance our understanding of the origins of political trust in adolescence. Specifically, the findings reveal that cognitive abilities and parent-child relationships are indispensable factors in adolescents' political socialization. In one comprehensive model, we showed that early adolescents who have lower verbal ability and who perceive less warmth from their parents become less trusting of politics in late adolescence. These young people enter adulthood more cynical about political processes than do their peers. We acknowledge that political mistrust is not necessarily negative and can be beneficial when facing corrupt or authoritarian politicians. Nevertheless, the generalized form of political mistrust targeted in our study could turn into political apathy (Bynner & Ashford, 1994) and prevent young people from engaging in a political life before it actually starts. More seriously, generalized political mistrust in adolescence is also correlated with support for extremist political parties (Kuhn, 2004). Therefore, we suggest that research pay greater attention to these young people and their political development. In addition, seemingly "non-political" developmental experiences must be considered to understand adolescents' approaches to the political sphere.

Our finding that the level of adolescents' verbal cognitive abilities can boost or hinder their abilities to pay attention to politics is important particularly from the perspective of civic education. This finding suggests that teachers should be aware that students with

lower verbal abilities may need extra assistance to follow and understand political events. According to our results, the level of verbal cognitive ability at the age of 11 is already predictive of cognitive political engagement in late adolescence; hence students who might have difficulties with comprehending politics can be identified relatively early. Naturally, the purpose of these efforts is not to make political activists of all students. Recently, Amnå & Ekman (2013) have showed that many young citizens linger in a “standby” mode. Although they do not participate very often, they are attentive to politics, trust institutions, have positive feelings about politics, and are prepared to participate if needed. Our analysis shows that two important aspects of standby citizenship – cognitive political engagement and political trust – are positively associated with verbal cognitive ability. Therefore, we believe that civic education that is better suited to individual cognitive needs of adolescents can increase the number of young citizens who prefer standby citizenship to political disengagement.

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Table 1. Correlations and descriptive statistics of measured variables, and missing data analysis (analysis of variance).

	<i>Correlations</i>												<i>Descriptives</i>			<i>Missing</i>	
	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>N</i>	<i>t(df)</i>
1. Political trust (17)	.18**	.05	.11	.16**	.13*	.08	-.15**	.13*	.15**	.03	.13*	.09	2.15	0.51	1-3.67	442	1.30(440)
2. Verbal reasoning (11)		.38**	.16**	.11**	.11*	.25**	-.13*	.14*	.29**	.17*	.17**	.26**	12.18	3.97	2-19	758	-1.39(756)
3. Perceptual reasoning (11)			.02	-.01	.06	.09	-.02	-.02	.27**	.00	.17**	.24**	11.67	3.19	1-19	758	-1.63(756)
4. Perc. mother's warmth (11)				.62**	.15**	.12*	-.17**	.03	-.03	.13	.03	.05	2.71	0.29	1.20-3	871	-1.27(869)
5. Perc. father's warmth (11)					.05	.06	-.25**	.11	.05	.17*	.05	.06	2.61	0.35	1.10-3	813	0.91(811)
6. Rel. to school – item 1 (15)						.38**	-.19**	.04	.01	-.08	.02	.08	3.11	0.87	1-5	540	-2.10(538)*
7. Rel. to school – item 2 (15)							-.30**	.02	.09	-.20**	.02	-.02	3.51	0.84	1-5	541	-1.38(539)
8. Alienation from parents (15)								-.12	-.05	.04	-.02	.09	2.38	0.64	1-5	552	0.58(550)
9. CPE – following news (17)									.28**	.20**	.04	.19**	3.68	1.21	1-5	369	-0.95(367)
10. CPE – voting intention (17)										.12	.09	.22**	68 % yes		0-1	334	0.59(1)
11. CPE – voting decision (17)											.07	.17*	50 % yes		0-1	311	0.00(1)
12. Parental secondary educ.												.37**	89 % yes		0-1	826	4.90(1)*
13. Parental university/college													51 % yes		0-1	790	0.28(1)

Note. Higher scores mean more extreme answers in the direction of the constructs (more positive relation to school). If the variable is dichotomous, Pearson χ^2 -test is computed instead of t-test. CPE = cognitive political engagement. Numbers in parentheses after variable names indicate the ages of measurement. * p < .05. ** p < .01.

Figure 2. Full model predicting political trust.

Completely standardized full information maximum likelihood parameter estimates are reported. WM/WF = A five-item parcel representing perceived mother's/father's warmth. PT = an item measuring political trust. AP = a four-item parcel representing alienation from parents. RS = an item measuring relation to school. For greater clarity, paths regarding parental education are presented separately. Model fit: $\chi^2_{188} = 294.36, p < .01$; CFI = .96; RMSEA = .02 [$\chi^2_{188} = 256.01, p < .01$; CFI = .95; RMSEA = .03]. * $p < .05$. ** $p < .01$.

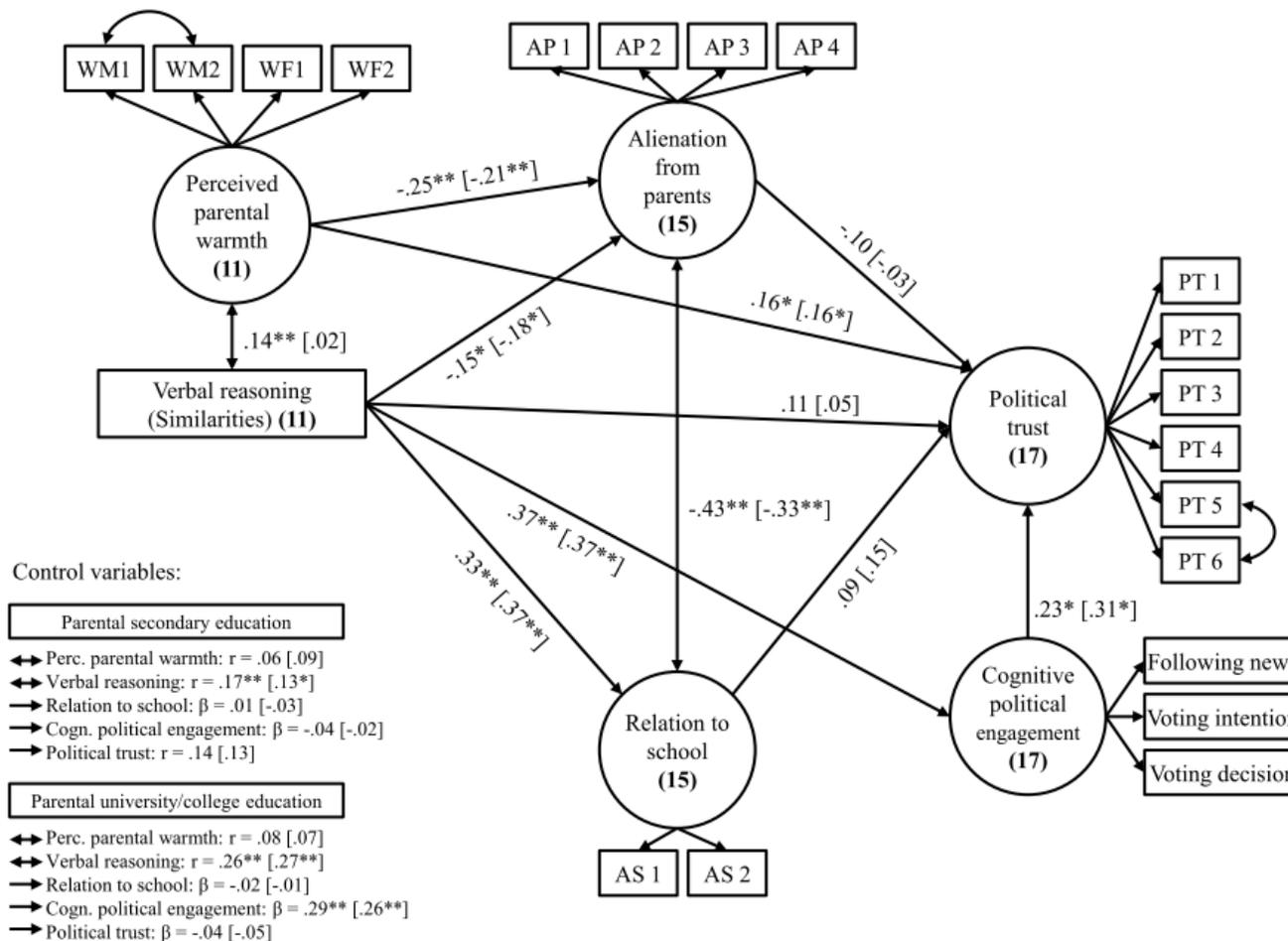


Figure 3. Final model predicting political trust.

Completely standardized full information maximum likelihood parameter estimates are reported. WM/WF = A five-item parcel representing perceived mother's/father's warmth. PT = an item measuring political trust. AP = a four-item parcel representing alienation from parents. RS = an item measuring relation to school. For greater clarity, paths regarding parental education are presented separately. Model fit: $\chi^2_{191} = 301.42, p < .01$; CFI = .96; RMSEA = .02 [$\chi^2_{191} = 261.57, p < .01$ CFI = .94; RMSEA = .03.]. * $p < .05$. ** $p < .01$.

