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ORIGINAL PAPER

Political Socialization in Context: The Effect of Political Competition on Youth Voter Turnout

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Abstract Adolescence is an important time for political development. Researchers have concentrated on the family as the sole socializing agent of youths; however, as Campbell, Gimpel, and others have shown, political contexts also matter for young citizens. Using the National Education Longitudinal Study of 1988, the Record of American Democracy, and election outcomes data, I find that adolescents who resided in politically competitive locales or states have higher turnout years later compared to those who lived in uncompetitive contexts. These effects are not mediated by the home political environment and act through political socialization. This research adds to a growing literature on the influence of political contexts on political behavior and is the first to explore how political competition during adolescence influences voter turnout in young adulthood.

Keywords Youth voter turnout · Political socialization · Political competition · Political context

During adolescence citizens learn about their democratic responsibilities and also acquire political attitudes that translate into adult political behavior and opinions (Beck and Jennings 1982; Jennings and Markus 1984; Alwin and Krosnick 1991). Researchers have traditionally concentrated on the family as the major socializing agent, finding that political discussion within the home, parental voter turnout, and political resources significantly impact political participation in young adulthood (Verba et al. 2005; Brady et al. 1995).

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While the family is important for youth voter turnout, recent research suggests that the political context also matters. Gimpel et al. (2003) and Campbell (2006) argue that electoral competition can increase positive political attitudes and cue youths into important community norms. However, little is known about how political competition influences turnout in young adulthood. It is also unclear how political contexts compare with important home influences on turnout. How does a young citizen reconcile the political information learned from several "simultaneous bases of social experience" (Huckfeldt et al. 1993, p. 366)? Which context is most important for youth voter turnout, the home, the state, or the locale?

In answering these questions, I go beyond previous contextual studies in the following ways. First, I use a developmental model in which political competition *during adolescence* is linked to turnout years later in citizens' first two presidential and midterm elections. Using the National Education Longitudinal Study of 1988 (NELS) and contextual data derived from the Record of American Democracy (ROAD), I show that political competition during adolescence increases voter turnout in young adulthood. By including extensive measures of the home environment, I examine both direct and indirect pathways from political competition to turnout. I find that the positive effects of political competition on youth voter turnout are not mediated by the home political environment.

Second, to understand how youths reconcile information learned from simultaneous political contexts, I explore political competition measured at two levels of aggregation—the locale and the state. I find that local political competition is unrelated to state political competition. As a result, each type of political context has its own independent and roughly equal effect on youth voter turnout. This suggests that the mechanisms that link political contexts to political behavior may depend on the level of aggregation. And, researchers should consider various levels of aggregation when conducting contextual analyses.

Finally, I consider whether the effect of adolescent political context on youth voter turnout is a function of political socialization or a byproduct of the current political context. I find that the effect of local political competition on youth voter turnout acts primarily through political socialization. Results are mixed in regards to the state political context. I argue that contexts experienced during political development are as important to understanding political behavior as contemporaneous political contexts.

Home Resources and Politics

Research on youth voter turnout dating back to the early 1960s focused on the home (Hyman 1959; Milbrath 1965; Hess and Torney 1967; Jennings and Niemi 1968, 1974, 1981; Tedin 1974). And, that focus continues today (Jennings et al. 2001; Plutzer 2002; Sandell and Plutzer 2005; Verba et al. 2005). Researchers look at how various aspects of the home environment, such as parental political participation, parent–child political discussions, and parental socioeconomic status, influence adolescent political development and voter turnout in young adulthood. The mechanism that links the home environment to youth voter turnout depends on the

stimulus. For instance, parent–child political discussions directly increase levels of political knowledge and political interest among youth, which in turn increase voter turnout in young adulthood (Gimpel et al. 2003; Verba et al. 2005). Parents can also act as positive political role models when they vote, which adolescents may choose to emulate in young adulthood. Both of these processes suggest that political socialization occurs via a learning model; parents either explicitly or implicitly teach adolescents about politics from their own political orientations and behavior.

The most important role of the home, however, is not political, but socioeconomic. Parental socioeconomic status has both direct and indirect influences over youth political development. High SES families are more likely to have the political resources, such as newspapers, for positive political development (Verba et al. 2005). Highly educated parents are also more likely to participate in politics and create a home conducive to political discussions (Verba et al. 2005). Parental socioeconomic status indirectly influences offspring voter turnout by providing the resources for youths to continue their educational attainment past high school. Parental educational attainment is the most important determinant of voting in one's first election (Plutzer 2002) and a youth's own education (highly correlated with parental education) is widely accepted as the most important factor of voter turnout throughout the life cycle (Rosenstone and Hansen 1993; Miller and Shanks 1996).

While the family is influential to political development, scholars have recognized that other environments are also important. These environments include schools (Hess and Torney 1967; Niemi and Junn 1998; Nie et al. 1996), temporal events (Alwin et al. 1991; Sears and Valentino 1997; Verba et al. 2005), cohort experiences (Firebaugh and Chen 1993; Miller and Shanks 1996), and various contexts, such as the neighborhood (Gimpel et al. 2003; Campbell 2006) or the state (Wolfinger et al. 2005). Not only can these other environments independently influence youth voter turnout, but they may also modify the relationship between the home and adolescent political development. I consider how local and state contexts in conjunction with the home influence youth voter turnout as I describe below.

A Contextual Model of Youth Political Development

Contexts are important for political behavior (Huckfeldt 1979, 1986; Huckfeldt and Sprague 1995). Mounds of evidence suggests that individuals who live in highly competitive contexts are more likely to participate in all levels of electoral politics by voting (Campbell 2006; Gimpel et al. 2004; Rosenstone and Hansen 1993; Patterson and Caldeira 1983; Hill and Leighley 1993), volunteering (Campbell 2006), and campaigning (Kenny 1992; Rosenstone and Hansen 1993). However, nearly all research on electoral competition has been conducted on adult samples.

From the few studies conducted on youth, it is clear that political competition is an important influence over adolescent political attitudes. Gimpel et al. (2003) interviewed students in 29 high schools around Maryland and showed that political competitiveness is positively related to political efficacy, political interest, political discussion, political knowledge, and the intention to vote among adolescents.

Gimpel et al. (2003) argue that political competition increases political stimuli, which promote positive political attitudes.

Campbell (2006) argues that political competition influences political attitudes, not through political stimuli, but through community norms. Campbell (2006) contends that politically diverse contexts (those with a relatively equal number of Democrats and Republicans) encourage the belief that political participation is effective and worthwhile, thus affecting attitudes that are based on political motivations. Communities that are lopsidedly partisan and politically congruent place an emphasis on voting as a civic duty, thus affecting attitudes that are based on civic motivations. Consistent with his argument, Campbell (2006) finds that youths living in politically homogeneous communities had higher levels of civic duty, measured as the percentage of high school seniors who report that voting is a requirement for good citizenship. Politically heterogeneous communities encouraged political efficacy and tolerance among youths. Campbell's (2006) conclusions are more implicit when looking at the effect of political competition on turnout in young adulthood. He finds that high school seniors who went to schools with high levels of civic duty were more likely to turn out fifteen years later. While the political environment of the school predicts levels of civic duty, it is unknown whether political competition as measured by Campbell (2006) directly influences voter turnout in young adulthood.

Hence, while researchers agree that political competition influences political attitudes during adolescence, less is known about how and under what conditions political competition may influence youth voter turnout. In particular, we do not know how competition may operate in conjunction with the home political environment. Besides being the most important determinant of turnout in young adulthood (Plutzer 2002; Verba et al. 2005), the home political environment may also serve as a mediating factor, as I describe below.

Political Competition Versus Home Politics

Should we expect both the home and contextual measures of political competition to be equally influential for political development? If youths are rational and purposive in their search for political information, as suggested by Downs (1957), they probably look to different social contexts for cues and information about various civic and political attitudes (Huckfeldt and Sprague 1995). In this article, I focus on the differential effects that home politics and political competition have on youth voter turnout. If home politics and electoral competition both increase youth voter turnout years later what various relationships might we see between these socializing forces?

There are two possibilities to consider[1]:

[1] I also consider an interaction between political competition and the home political environment on voter turnout. However, the hypotheses concerning the direction of the interaction effect are unclear. Moreover, in models not reported here, interaction variables were not statistically significant at conventional levels.

H1: The effects of home politics and political competition independently and directly increase youth voter turnout.

H2: Political competition increases voter turnout indirectly by increasing home politics.

Consider the first hypothesis. It is possible that home politics and political competition have separate, independent, and positive effects on youth voter turnout. Youths who are politicized in the home may have their political values strengthened when they live in highly competitive environments. Youths are taught about the values of voting in the home and are witness to the benefits of voting in elections throughout their political surroundings. Conversely, highly politicized youths living in non-competitive areas may be politically interested, but have little reason to turnout in elections that do not garner much attention. This type of additive relationship, however, raises the question, which context is more influential: the home or the political context?

Huckfeldt (1986) suggests that home politics, which is grounded in political discussion, is more influential for turnout than the political context because voting is an individual act. Individual political acts, such as writing letters to representatives or voting, are carried out in isolation and, consequently, less influenced by the social context. Context matters more for socially based participation, such as attending rallies, because such participation requires participants to interact with others (Huckfeldt 1986). Kenny (1992, p. 266), using the South Bend Study, finds that voting is dependent on the activity of their political discussants; "the likelihood of respondent participation increases for all forms as the tendency for discussants to participate increases". Kenny's (1992) analysis narrows the definition of political context to political discussants hence the distinction between individual and social acts may still be accurate when looking at larger political contexts. This suggests that home politics, which is grounded in political discussion, will be more influential than the electoral climate for youth voter turnout.

The second hypothesis suggests that the political environment increases youth voter turnout through home politics. An area with high levels of political competition spurs political discussion in the home (Gimpel et al. 2003) and increases the probability that a youth's parents will vote (Rosenstone and Hansen 1993). The increased discussion and parental participation then encourage civic engagement among the adolescents (Plutzer 2002; Brady et al. 1995). Therefore, the contextual effects may disappear after controlling for the home environment.

Defining the Political Context

Individuals live in multiple contexts simultaneously. An adolescent may live in a non-competitive neighborhood, a competitive county, and a competitive state at the same time. The fact that youths live in multiple contexts concurrently creates methodological and theoretical challenges for scholars. Many data limitations, including privacy restrictions, force scholars to use larger than ideal levels of aggregation (such as using counties instead of neighborhoods) or to only focus on

one level of aggregation. The costs of collecting original data at the neighborhood level have led leading scholars to limit their studies to particular cities or states. Several of the most influential studies, for example, have studied Buffalo (Huckfeldt 1979), South Bend (Huckfeldt and Sprague 1995), and Maryland (Gimpel et al. 2003).

Theoretically, having multiple contexts drives scholars to consider the different mechanisms that link environments at varying levels of aggregation to political behavior. To this end, scholars have suggested that the effect of political competition measured at a lower level of aggregation (such as the neighborhood) on turnout is a result of social interaction across neighbors and the enforcement of social norms (Huckfeldt and Sprague 1995; Campbell 2006). On the other hand, the effect of political competition at a higher level of aggregation (such as the state) on turnout is a result of political mobilization and political stimuli, which both act to reduce the costs and increase the benefits of casting a vote (Rosenstone and Hansen 1993; Gimpel et al. 2007). The difficulty in identifying these mechanisms results because it is entirely plausible for social norms especially in the form of political culture (Erikson et al. 1993) to operate at higher levels of aggregation and for political mobilization to function at lower levels of aggregation (Smith and Zipp 1983). Due to these challenges, few studies have compared the influence of multiple contexts on political behavior (though see Huckfeldt et al. 1993).

I contribute to previous contextual literature by measuring political competition at both the state and local levels to predict youth voter turnout among a nationally representative sample of eighth graders. For this article, the local context refers to minor civil division groups, which correspond roughly to towns or cities.[2] Although I am unable to identify the mechanisms that link local and state political contexts to youth voter turnout, I am able to address (1) whether local political competition differs in its influence on youth voter turnout compared with state political competition and (2) whether political competition at these two levels acts directly on youth voter turnout or indirectly through the home political environment.

Data and Methods

The individual level variables are from the National Education Longitudinal Survey, 1988–2000 (NELS). The NELS is produced and distributed by the National Center for Education Statistics (NCES). The spring 1988 NELS baseline survey is a nationally representative sample of eighth-graders attending 1,052 schools, both public and private, across the United States. The completion rate for the initial wave was 93% (Curtin et al. 2002, p. 195). A random subset of the respondents was selected for follow-up interviews in 1990, 1992, 1994, and 2000 and 79% of those students selected for follow-up actually completed the entire panel (Curtin et al. 2002, p. 205). In addition to surveying the students, NCES also surveyed one of the

[2] Due to the nature of the ROAD dataset, however, the measurement of local political competition corresponds to different levels of aggregation depending on the state. "Local" corresponds to counties for 1,520 respondents, minor civil divisions for 2,962 respondents, minor civil division groups for 4,510 respondents, and census block groups for 1,109 respondents (see Appendix for more details).

child's parents in 1988 (87% response rate) and again in 1992 (with a 92% retention rate).

Contextual level variables are from three sources: the NELS restricted dataset, the Record of American Democracy (ROAD; King et al. 1997), and David Leip's Political Atlas website (http://www.uselectionatlas.org/). The NELS restricted dataset includes variables from the 1990 U.S. Census matched with the students' residential zip codes during the 1988 survey. With permission from NCES, these variables were used to recover the actual zip codes of each respondent in 1988, permitting the matching of political variables derived from the ROAD and Political Atlas data sets. The ROAD data set includes political contextual information across the United States for elections in 1988. Although collected at unusually low levels of geographic aggregation, the level of aggregation in the ROAD depends on the state (see Appendix for more details). After calculating the local political competition measure, ROAD was used to estimate contextual values for all US zip codes, which were then match merged with the NELS restricted dataset. David Leip's website was used to obtain electoral results for the 1988 presidential election at the state level.

Data from ROAD and Political Atlas were merged with the residential zip codes and states from 1988 for the following reasons: 1988 is when respondents are adolescents, which is a particularly important time for political development (Beck and Jennings 1982; Jennings and Markus 1984; Alwin and Krosnick 1991), 1988 was a presidential election year, and the 1988 dataset measures the political environment prior to the measurement of the dependent variable, turnout. More details on how the ROAD data were converted to zip codes are included in the Appendix.

Dependent Variable

The dependent variable is based on questions during the third and fourth follow-ups in the spring of 1994 and 2000. During the 1994 follow-up survey, respondents were asked retrospectively about their voter turnout in the 1992 presidential election and in any state or local election in 1993. Respondents were asked about their voter turnout in the 1996 presidential election, any elections during 1998 or 1999, and their registration in 2000 during the 2000 follow-up—roughly 12 years after the initial base year survey in 1988. Based on reliability analyses,[3] I added the responses from each election to form a voter turnout index. Each respondent could report voter turnout in up to four elections plus being registered in the spring of 2000, yielding an index ranging from 0 to 5. To ease interpretation, I then multiplied the index by 20 in order to get a dependent variable that ranges from 0 to 100 that reflects the percentage of the five acts with an affirmative report. This measure is

[3] Factor analyses from polychoric correlations provide evidence of unidimensionality. The first eigenvector explains 61% of the variance, the second factor has a eigenvalue of .56 (indicating one factor), and the factor loadings are uniformly high (.74–.88). Thus, there is no methodological evidence that presidential elections are distinct from other elections. Reliability is also high, as indicated by a Cronbach's alpha of .88.

identical that used by previous scholars using NELS to study youth voter turnout (Sandell and Plutzer 2005; Pacheco and Plutzer 2007). The mean score on turnout is 52% with a standard deviation of roughly 33%.

Independent Variables

Political Competition

To capture political competition at the state and local levels, I create a measure, which is based on the number of votes cast for the two major political parties (Gimpel et al. 2003). Both state and local political competition are based on votes cast in the 1988 presidential election. Competition is operationally defined as:

$$\text{Political Competition} = 100 - (\text{absolute value}\,(\%\ \text{Democratic Vote} - 50))$$

Hence, low values represent no competition and high values represent locales or states in which all elections end in a 50–50 split between the major parties.[4] Both measures of political competition were then rescaled to range from 0 to 1 to ease statistical interpretation.

Competitive locales are less likely to be ethically diverse compared to non-competitive locales. There is a negative correlation between the competitiveness of a locale and percent foreign born ($r = -.19$) as well as percent Hispanic ($r = -.11$). Competitive locales, however, are no more likely to be of high socioeconomic status compared to non-competitive locales. The correlation between local competition and percent with a BA degree or higher is a mere $-.01$ while the correlation between local competition and contextual income is $-.04$. Competitive locales are also no more likely to be urban ($r = -.02$) compared to non-competitive locales.

A comparison of means suggests that competition is a function of the level of aggregation with higher levels of aggregation having the potential for more competition ($\mu = .85$ for state political competition) than lower levels of aggregation ($\mu = .76$ for local political competition). This is consistent with evidence that individuals tend to live in towns that are relatively homogeneous in terms of income, education, and race, all of which are related to the vote. On the other hand, there is much diversity in vote choice across states (Erikson et al. 1993). There is a weak connection between local political competition and state political competition ($r = .06$). This suggests that many citizens live simultaneously in an uncompetitive locale and a competitive state (or vice versa).

Other Contextual Variables

I control for other local level variables in the adolescent context (i.e. in 1988 when youths were in 8th grade) that may influence youth voter turnout and levels of

[4] Campbell (2006) argues that political competition has a curvilinear relationship on turnout. I measured political competition as suggested by Campbell (2006) by splitting the variables into two measures and including the separate measures in the analyses, but the analyses remain essentially unchanged. Hence, I conclude that political competition has a linear effect on youth voter turnout levels.

political competition. I control for ethnic diversity by measuring the proportion of non-Hispanic Black and foreign born residents.[5] I also control for community resources by measuring the proportion of residents with a BA degree or higher. All of these control variables are important to include as Gimpel et al. (2003) find that many matter for youth civic development (see also Huckfeldt 1979).[6]

Home Politics

Ideally, a measure of the home political context would include the level of political discussion within the home and parental voter turnout. Unfortunately, parents were asked no questions about their turnout. Instead, I use two measures of political discussion to estimate the home political context. Both students and parents were asked how often (never, sometimes, often) they discussed current events with one another in the 1992 survey. These two measures were combined to create a political discussion index with a reliability score, as indicated by Cronbach's alpha, of .61. The political discussion score was then rescaled to range from 0 to 1 in order to ease statistical interpretation.

There is no systematic relationship between a youth's home political environment and levels of political competition. The correlation between home political discussion and local political competition is quite small ($r = .01$) as is the correlation between home political discussion and state political competition ($r = -.04$). This indicates that respondents who live in political homes are no more likely to live in politically stimulating local contexts or states compared to respondents with limited home political discussions.

Other Individual Variables

Family income, the number of books within the home, and whether or not a family receives the daily newspaper also influence political socialization within the home (Verba et al. 2005). I create an index of home resources, which includes total family income in 1987 (values ranging from 1 for no income to 15 for $200,000 or more), parent's highest degree earned (1–6), the number of books within the home asked in 1988, and whether the family receives the daily newspaper also asked in 1988, with a reliability score as indicated by Cronbach's alpha of .63. This measure was then rescaled to range from 0 to 1.

I account for additional factors at the individual level that can influence the turnout of young citizens. I control for gender (female = 1), race, with the omitted

[5] Percent foreign born is highly correlated with percent Hispanic ($r = .73$). Community income is highly correlated with community education ($r = .76$). I only include percent foreign born and community education as control variables in order to prevent multicollinearity. Models that include percent Hispanic instead of percent Black are essentially unchanged as are models that include community income instead of community education.

[6] As suggested by a previous reviewer, a measure of urbanicity in 1988 was also added to the models; however, it was not statistically significant using conventional levels.

category being non-Hispanic whites (compared to non-Hispanic blacks and Hispanics, regardless of race), number of residential moves during adolescence between 1988 and 1992 (if missing, values were set to 0), and church attendance in 1990 (not at all, several times a year, about once a month, 2–3 times a month, about once a week, more than once a week).

Finally, I measure later educational attendance in 2 and 4 year colleges following the methods used by Sandell and Plutzer (2005; see also Pacheco and Plutzer 2007). These two measure ranges from 0 (indicating that a respondent did not attend either a 4 year or 2 year college) to 1 (indicating full time status in either a 2 or 4 year college). I believe these measures are better than traditional indicators of degrees earned because they capture educational experiences *before* three of the five components of the turnout scale and is roughly coterminous with a fourth component. Moreover, these two variables separate out the effects of a 2 and 4 year college, which Pacheco and Plutzer (2007) find is an important distinction for youth voter turnout.

Methods

Methodologically, the data structure is of a multilevel nature; respondents are clustered within schools and locales, which are clustered within states. Using Ordinary Least Squares (OLS) to analyze clustered data structures produces unbiased, but inefficient estimators warranting methods that take into account the within cluster homogeneity. Homogeneity is typically described by the intraclass correlation coefficient (ICC) which takes a value of 0 when the clusters are irrelevant (100% of the variation in the dependent variable is within clusters) and a value of one when all of the variance in the dependent variable is between clusters. Robust standard errors and the suite of methods called Hierarchical Linear Models (HLM) both seek to correct this. OLS is comparable to HLM when the majority of the variability of the dependent variable is at the lowest level and when individual level effects are fixed (do not vary randomly across clusters). If individual level variables vary systematically across clusters, these can be modeled as interactions in the robust OLS case or as fixed "level-2" cross-level interactions within HLM. OLS may be preferred to HLM, however, when the complexity of the data causes problems of convergence.

As detailed in the Appendix, the ICC in this data set is very small (0.05 at most). Moreover, HLM models that used survey weights (essential due to oversampling of certain groups) or that evoked a three level model did not converge. However, the Appendix describes how HLM and robust OLS produced nearly identical results with unweighted data in the two level case. This is consistent with simulation studies showing that the standard errors estimated via robust OLS are similar to those produced by HLM in two- and three-level data structures (Cheong et al. 2001). Given these diagnostics, I believe that analyses using robust standard errors (as shown in the following sections) yield valid inferences.

Results

In the first model, I test *H1* by isolating the impact of political competition on youth voter turnout. I model voter turnout as a function of typical demographic control variables (at the individual and contextual levels), local political competition, state political competition, and home resources. To explore *H2*, whether the impact of either political competition variable is mediated by home political discussion, I add the home discussion scale in the second model.

Table 1 shows the OLS regression results and robust standard errors for the influence of state political competition and local political competition on youth voter turnout. The first model in Table 1 shows that political competition—measured at both the state and local levels—is positively related to youth voter turnout. Consistent with prior research, home resources have a strong, positive effect on youth voter turnout. In fact, the level of home resources is the largest predictor of turnout among young people. Residential mobility is negatively related to youth voter turnout, while educational attainment (in both two and four year colleges) and church attendance are positively related to youth voter turnout. These results are consistent with previous research (Pacheco and Plutzer 2007).

Local educational attainment is negatively related to youth voter turnout, which goes against previous findings on the role that contextual education has on positive political attitudes (Gimpel et al. 2003) and adult voter turnout (Huckfeldt 1979, 1986). The discrepancy may be a function of multicollinearity with home resources. The home resources measure, as expected, is correlated with contextual educational attainment ($r = .39$). Indeed, the effect that local educational attainment has on voter turnout is not significant in a model without the home resources variable.

The second model includes the home political discussion score to see whether the effect of state political competition or local political competition is mediated through the home political environment (*H2*). The inclusion of the home political discussion score does little to change the effect of political competition on youth voter turnout. The effects of both measures of political competition remain robust after accounting for political discussion within the home.[7] From Model 2, political competition measured at the state and local levels and home political discussion exert a direct influence over youth voter turnout although it appears that home political discussion has more influence than political competition (discussed more below). Compared to Model 1, all other coefficients are essentially unchanged with the inclusion of the home political discussion measure except for the effect of home resources; the effect of home resources decreases in magnitude (though it is still statistically significant) suggesting that home resources is indirectly related to youth voter turnout via home political discussion (Verba et al. 2005).

Figure 1 presents the predicted values of voter turnout for youths across levels of home political discussion, state political competition, and local political competition

[7] The positive, significant results of the local political competition remain unchanged when analyses are split based on the exact level of aggregation (county, minor civil division, minor civil division group, and census blockgroup).

keeping all other variables constant at their means (see Table A1 for mean values and standard deviations). High levels of home political discussion, state political competition, and local political competition are one standard deviation above the mean values (.84, .96, and .93, respectively). Low levels indicate one standard deviation below the means (.26 for home discussion, .74 for state political competition, and .59 for local political competition).

From Fig. 1, we see that the home political environment is a stronger determinant of youth voter turnout than state or local political competition. For instance, a youth who lives in both a competitive state and locale, but is from a home with low political discussion has turnout levels of 51%, which is *lower* than a youth who lives in both an uncompetitive state and locality, but who comes from a home with high levels of political discussion (55%). Hence, political contexts cannot completely substitute for a non-political household. While the home political environment continues to be the strongest predictor of youth voter turnout, political contexts—at both the local and state levels—also increase youth voter turnout with a joint effect of 5 percentage points.

Table 1 OLS regression slopes on voter turnout: local political competition, state political competition, and home political discussion

Independent variable	1 *B*	2 *B*
Adolescent local political competition, measured in 1988	8.57** (3.41)	8.15* (3.54)
Adolescent state political competition, measured in 1988	8.54* (5.30)	9.59* (5.44)
Home political discussion, measured in 1992		15.14* (1.80)
Individual level controls		
Home resources, measured in 1988	38.97** (4.88)	32.46** (5.15)
Non-Hispanic Black	5.62** (2.40)	6.55** (2.53)
Hispanic, regardless of race	−2.46 (2.05)	−1.65 (2.04)
Female	1.39 (1.03)	1.55 (1.04)
Number of residential moves (0–3), measured from 1988 to 1992	−3.80** (.59)	−3.96** (.62)
Sophomore status 2 year college, measured in 1994	14.50** (1.54)	13.83** (1.52)
Sophomore status 4 year college, measured in 1994	11.70** (1.26)	10.38** (1.27)
Church attendance (0–5), measured in 1990	1.65** (.28)	1.54** (.29)
Local context controls, measured in 1988		
Non-Hispanic Black	−2.69 (4.18)	−2.79 (4.41)
Foreign born	−2.18 (5.49)	−3.48 (5.44)
BA degree or higher	−10.07* (4.41)	−11.05** (4.50)
Constant	10.54* (5.58)	6.44 (5.78)
R^2	.12	.13
N	8620	8461

Note: Dependent variable is a voter turnout index. Robust standard errors in parentheses. All variables range from 0 to 1 unless otherwise noted

* $p < .05$; ** $p < .01$ with one-tailed tests

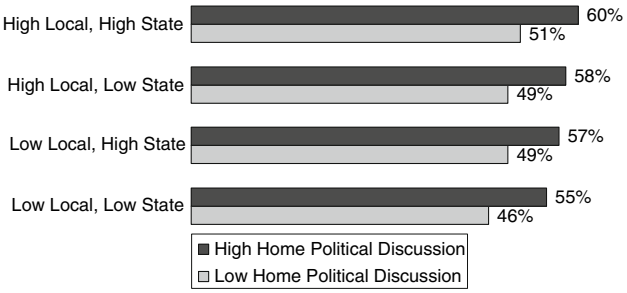

Fig. 1 Predicted values of youth voter turnout across home political discussion, local political competition, and state political competition (From Model 2 in Table 1: All other variables held at their mean values)

Political Socialization in Context

Results provide strong evidence that an adolescent's political context exerts a positive influence over turnout levels in adulthood after controlling for the home environment. However, the results may be an artifact of the respondent's current political context. Because the dependent variable is an index of voting in several elections, it is impossible to know whether youth turnout is influenced by political competition experienced in adolescence or political competition of the current election. Disentangling the effects of adolescent political competition from contemporaneous political competition is crucial to understanding whether political contexts exert a lasting influence over youths.

I perform several analyses to test whether adolescent political competition influences turnout after controlling for contemporaneous political competition. First, I start with a basic model of voter turnout in the 1996 election using the same variables from Model 2 in Table 1. I then add a measure of state political competition from the 1996 presidential election (measured identically to the 1988 state political competition measure) to see if the effects of adolescent political competition remain robust.[8] Ideally I would also include a measure of contemporaneous local competition however there exist two data limitations. First, the ROAD data are unavailable for the 1996 presidential election. This prevents the measurement of local political competition at the same level of aggregation as the 1988 local political competition measure. Though I could use county level measures of political competition, NELS only provides county codes for respondents who were attending college during the 1994 survey. This leads to the second problem: a number of geocodes are missing for respondents who did not attend post-secondary education. Results for the logistic regressions predicting turnout in the 1996 presidential election are presented in Table 2.

[8] There is measurement error with the 1996 state political competition variable because it is merged with the respondent's state of residence as reported in 1994. In the event that an individual's state of residence in 1994 was missing (as is the case with several respondents who did not attend post-secondary education), the 1996 political competition measure was merged using the 1992 state as reported by respondents.

Table 2 Logistic regression slopes on voter turnout in the 1996 presidential elections: controlling for 1996 state political competition

Independent variable	1 *B*	2 *B*	ΔPredicted probabilities from model min–max (%)
Adolescent local political competition, measured in 1988	.66** (.21)	.65** (.21)	16
Adolescent state political competition, measured in 1988	.70* (.34)	.69* (.37)	8
Adult state political competition, measured in 1996		.01 (.35)	0
Home political discussion, measured in 1992	.83** (.13)	.85** (.13)	40
Individual level controls			
Home resources, measured in 1988	2.11** (.34)	2.00** (.34)	20
Non-Hispanic Black	.45** (.18)	.45** (.18)	10
Hispanic, regardless of race	.03 (.13)	.02 (.13)	1
Female	.16* (.07)	.16* (.07)	4
Number of residential moves (0–3), measured from 1988 to 1992	−.14** (.05)	−.14 ** (.05)	−10
Sophomore status 2 year college, measured in 1994	.77** (.12)	.77** (.12)	17
Sophomore status 4 year college, measured in 1994	.59** (.09)	.59** (.09)	14
Church attendance (0–5), measured in 1990	.09** (.02)	.09** (.02)	11
Local context controls, measured in 1988			
Non-Hispanic Black	−.08 (.28)	−.04 (.29)	−1
Foreign born	−.02 (.38)	−.03 (.38)	−1
BA degree or higher	−.50 (.34)	−.46 (.35)	−8
Constant	−2.88** (.38)	−2.82** (.59)	
Pseudo R^2	.07	.07	
N	8561	8500	

Note: Dependent variable is turnout in the 1996 presidential election. Robust standard errors in parentheses. All variables are scaled from 0 to 1, except as noted. Changes in predicted probabilities calculated by changing each variable from its minimum value to its maximum value while keeping all other variables at their means

* $p < .05$; ** $p < .01$ with one-tailed tests

The coefficients for local political competition in 1988 and state political competition in 1988 for Model 2 in Table 2 remain essentially unchanged with the addition of state political competition in 1996. Changes in predicted probabilities from Model 2 when values change from their minimum to their maximum values are presented in the last column in Table 2.[9] We see that local political competition increases the probability of voting in the 1996 election by 16% while state political competition increases the probability of voting by 8%. The strongest influence over

[9] Predicted probabilities for political competition presented in Table 2 should be taken with caution. The political competition variables are skewed upward, as shown by their mean values. For state political competition, 90% of the observations are higher than .70. For local political competition, 90% of the observations are above .53. Very few observations are actually at the minimum value (0) for the political competition measures.

voter turnout in the 1996 election, however, is home political discussion, which increases the probability of turnout by 40%. Nonetheless, the results in Table 2 provide strong evidence that the political environment exerts a positive influence over political socialization, which influences youth turnout years later.

I present additional analyses in Table 3. As in Table 2, Table 3 presents logistic regression analyses predicting turnout in the 1996 presidential election. I present these analyses, however, based on respondent residential mobility across state lines. Since residential state codes are given in every survey, it is possible to calculate whether respondents moved across state lines after 1988. The logic here is that if a respondent crossed state lines after 1988, it is likely that they were living in a different contemporaneous political context compared with the contexts measured in 1988. If the 1988 political competition measures remain robust for individuals who crossed state lines then there is additional evidence of political socialization. If the effects of the 1988 political competition measures are weaker or non-existent for those with high residential mobility, it is likely that the current political context is exerting more influence than the adolescent political contexts.

Because of the timing of the NELS surveys, it is impossible to know exactly where respondents resided during the 1996 election. Consequently, I calculate youths who crossed state lines any time between 1988 and 1994. This is convenient because residential mobility is measured *prior* to the 1996 turnout variable. The problem with this approach is that only 282 respondents crossed state lines from 1988 to 1994. As a result, results presented here should be taken with some caution.

Results are presented in Table 3. Local political competition in adolescence remains a robust predictor of turnout in the 1996 presidential election. Respondents who lived in a politically competitive locale during adolescence had higher levels of turnout eight years later *regardless of where they lived during the 1996 election.* Interestingly, it seems that youths who crossed state lines were *more* influenced by their adolescent local political context compared with those who stayed within their states. However, unlike local political competition, state political competition is not significant at the traditional levels for respondents who experienced a different political context in the 1996 election.

Changes in the predicted probabilities of youth voter turnout in the 1996 election when a variable is changed from its minimum to its maximum are shown in the last columns of Table 3. As can be seen from Table 3, local political competition matters more for adolescents who moved across state lines compared to those who did not move.[10] Living in a politically competitive locale during adolescence increases the probability that a youth will vote 8 years later by 14% if the youth did not cross state lines compared to 46% if the youth did cross state lines (this is going from the minimum value to the maximum value for local political competition).

Why is the effect of adolescent political competition higher for youths who moved? The answer probably lies in the fact that migrants are systematically different from non-migrants in important ways. Migrants are more likely to have attributes that make them more aware of the local political context and, therefore,

[10] As in Table 2, predicted probabilities from Table 3 should be taken with caution. See previous footnote.

Table 3 Logistic regression slopes on voter turnout in the 1996 presidential elections across levels of state mobility across state lines from 1988 to 1994

Independent variable	Did not move	ΔPredicted probabilities min–max (%)	Moved once	ΔPredicted probabilities min–max (%)
	B		*B*	
Adolescent local political competition, measured in 1988	.58** (.21)	14	2.15* (1.07)	46
Adolescent state political competition, measured in 1988	.57* (.34)	14	1.76 (1.85)	20
Home political discussion, measured in 1992	.90** (.13)	22	−.01 (.68)	0
Individual level controls				
Home resources, measured in 1988	2.04** (.35)	46	3.95** (1.62)	62
Non-Hispanic Black	.56** (.17)	13	−.78 (.83)	−19
Hispanic, regardless of race	.05 (.13)	1	−.50 (.72)	−12
Female	.13* (.07)	3	.58 (.37)	14
Number of residential moves (0–3), measured from 1988 to 1992	−.13** (.05)	−3	−.03 (.20)	−3
Sophomore status 2 year college, measured in 1994	.76** (.11)	17	.95 (1.01)	22
Sophomore status 4 year college, measured in 1994	.59** (.08)	14	.59 (.53)	15
Church attendance (0–5), measured in 1990	.10** (.02)	2	.04 (.11)	5
Local context controls, measured in 1988				
Non-Hispanic Black	−.12 (.28)	−3	−.17 (1.32)	−4
Foreign born	−.17 (.38)	−4	4.74* (2.22)	47
BA degree or higher	−.57* (.29)	−14	.60 (1.74)	10
Constant	−2.68** (.38)		−6.17** (2.05)	
Pseudo R^2	.07		.17	
N	8279		282	

Note: Dependent variable is turnout in the 1996 presidential election. Robust standard errors in parentheses. All variables range from 0 to 1 unless otherwise noted. Changes in predicted probabilities calculated by changing each variable from its minimum value to its maximum value while keeping all other variables at their means

* $p < .05$; ** $p < .01$ with one-tailed tests

more influenced by political environments (Huckfeldt and Sprague 1995). Migrants have higher levels of education and income compared to non-migrants (Brown 1988; Gimpel and Schuknecht 2001). Socioeconomic status is positively related to political interest (Rosenstone and Hansen 1993), hence, we can infer that migrants also tend to have higher levels of political interest compared to non-migrants. Consequently, adolescent migrants have the characteristics that make them more politically interested and aware of the local electoral scene, thus also making the context more influential to their political development. Exploring how political

interest mediates the influence of adolescent political context on voter turnout in young adulthood is one avenue for future research.

Discussion and Implications

The political contexts experienced during adolescence exert a positive influence on a youth's political socialization that translates into increased turnout levels years later. The effect of local political competition has important implications for youth voter turnout rates, especially since the number of competitive electoral districts have decreased during the past few decades (Cook 2006). Combined with the results in this paper, this suggests that the decline in youth voter turnout can be partially attributed to a decrease in electoral competition at the local level.

Analyses also suggest that when predicting political behavior, it is important for researchers to model the political contexts that individuals experience simultaneously and in the past. In particular, I find that both state political competition and local political competition during adolescence increase youth voter turnout years later in young adulthood. These results are consistent with Brown's (1981) findings that previous environmental experiences matter for political behavior. Related, political contexts measured at different levels of aggregation have direct and separate influences on political behavior. This implies that models of political behavior that only include one particular kind of context are underspecified. In addition, the political context may influence political behavior via different mechanisms depending on how the political context is aggregated.

Most importantly, the effect that the local political context has on youth voter turnout appears to act via political socialization. Future research is needed to identify the exact mechanism by which political contexts influence political socialization. It is plausible that political competition increases positive political attitudes, such as political efficacy (Gimpel et al. 2003), which increases youth voter turnout years later. It is also possible that competition increases political knowledge via political stimuli, which increases turnout (Delli Carpini and Keeter 1989). On the other hand, it may be that political competition translates into the enforcement of social norms that encourage voting (Campbell 2006). Even still, it is possible that political competition increases turnout in one's first election, which creates inertia for subsequent elections (Plutzer 2002). While research reported here and in recent works by Campbell (2006) and Gimpel et al. (2003) find that political competition is an important factor, there is still much to learn about how political contexts influence political socialization and political behavior. Political environments matter and political socialization is more complex than originally thought.

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Appendix

Transforming the ROAD into Zip Code Level Data

Most of the electoral data in ROAD were aggregated from the precinct level into Minor Civil Division Groups (MCDGs), which correspond roughly to towns or cities. There exists some overlap between zip codes and MCDGs; more than one MCDG can be in the same zip code and each MCDG can contain multiple zip codes. In order to match the electoral data with the NELS zip codes, each MCDG was given a political measure based on the raw number provided by ROAD and the corresponding population of the MCDG in relation to the zip code's population. The proportion of votes for each MCDG, weighed according to size, was then summed to create a new political measure for each zip code. For instance, imagine that three MCDGs overlap with zip code A: MCDG1, MCDG2, and MCDG3. MCDG1 encompasses 40% of the population of zip code A, while MCDG2 has 55%, and MCDG3 has 5%. For each MCDG, we not only know the percentage of people from that MCDG who make up zip code A, but also the total number of votes cast for each election. The total votes cast for a particular party in a particular election in zip code A can then be estimated by the following logic: (1) In MCDG1, 50 votes were cast and 30% of the MCDG lies in zip code A, (2) so it is assumed that 30% of 50 (15 votes) were cast in the portion of the zip overlapping with A and, similarly, (3) 50% of the MCDG2's votes were in the zip (30 votes) and, (4) 10% of MCDG3's votes (20 votes). So, it is estimated that $15 + 30 + 20 = 65$ votes were cast in zip code A. All valid count variables were summed in this manner, although the ultimate level of aggregation differed according to states. For instance, 1 state (CA) was merged using the Census blockgroup level, 13 states (CT, IL, IN, MA, MN, NH, NJ, NY, OH, PA, RI, VT, and WI) were merged at the MCD level, 26 states (AL, AR, AZ, CO, FL, GA, IA, ID, KS, LA, MD, MI, MN, ME, NC, ND, NE, NV, OK, SC, SD, TN, UT, VA, WA, WV) were merged at the MCDG level, 9 states (DE, HI, KY, MS, MT, NM, OR, TX, WY) were merged at the county level, and 1 state (AK and DC) was merged at the state level. Since the state level political competition measure correlated perfectly with the local political competition measure for those states that were merged at the state level, respondents from AK and DC were deleted from the analyses ($N = 50$).

California

The California data are organized differently from the rest of the country and at a lower level of aggregation. Unfortunately, information about the 1984 and 1988 elections in California were unattainable; instead, ROAD includes information about the 1992 presidential election. The political competition measures were created using only the 1992 election for the 1,080 respondents who lived in California during the 1988 base survey. Note that although the political competition measure for California is based on the 1992 presidential election, it was still match merged with respondent's 1988 residences. Consequently, I make

the assumption that localities in California did not change significantly in their political competition scores from the 1988 election to the 1992 election so that respondents from California can be included in the analyses. Indeed there is evidence that political competition is highly correlated from one presidential election to the next; the correlation coefficient between political competition in the 1984 presidential election with political competition in the 1988 presidential election is a strong .77 across all levels of aggregation in the ROAD dataset.

Using OLS Instead of HLM

Methodologically, the data structure is of a multilevel nature; respondents are clustered within schools and locales, which are clustered within states. Using Ordinary Least Squares (OLS) to analyze clustered data structures produces unbiased, but inefficient estimators warranting methods that take account of within cluster homogeneity. Robust standard errors and the suite of methods called Hierarchical Linear Models (HLM) both seek to correct this. OLS is comparable to HLM when the majority of the variability of the dependent variable is at the lowest level and when individual level effects are fixed (do not vary randomly across clusters). If individual level variables vary systematically across clusters, these can be modeled as interactions in the robust OLS case or as fixed "level-2" cross-level interactions within HLM. OLS may be preferred to HLM, however, when the complexity of the data causes problems of convergence.

Due to the variability of the dependent variable and the complexity of the data I decide to use OLS regression with robust standard errors. The complex nature of the data occurs because of the intersection of the sampling design (most schools have 6–12 students in the analysis) and residential zip codes used to calculate local political competition (students from multiple contexts of competition may attend the same school). Hence, the data structure is actually cross classified with students clustered within schools and local contexts clustered within states. As a result, the second level was recreated to account for both schools and residence. Students were thus clustered within "school-zipcode" combinations, which were clustered within states. I attempted to estimate a three-level model (with students clustered within school-zips clustered within states) but this three level model failed to converge suggesting a lack of variation at each level in the turnout scale.

I ran a variety of intercept-only models (also called "empty models") to assess the ICC, which partitions the variability of the dependent variable across the various levels of analyses. First, I estimated an empty model of students clustered within school-zipcodes, ignoring the states. Results indicated that 5% of the variation in the turnout scale was at the school-zipcode level. Next, I estimated an empty model of students clustered within states, ignoring the school-zipcode. Results indicated that 2% of the variation in the turnout scale was at the state level. The combination of these results suggest that *at most* 3% of the variation of the turnout scale is at the school-zip level while 2% occurs at the state level.

Because the ICC is small, it is assumed that the degree of bias in the standard errors produced by OLS is also small since bias decreases as the ICC decreases. Even in the presence of a small ICC, however, OLS still produces inefficient estimates. To correct the standard errors, I use Huber-White standard errors for clustering within school-zips while ignoring the clustering within states. States are ignored because little variation in the turnout scale occurs at this level. Simulation studies show Huber-White standard errors are similar to those estimated by HLM in the two- and three-level cases (Cheong et al. 2001).

Nonetheless, all OLS models reported were estimated with a two-level HLM of students clustered within school-zips ignoring states. These could not be estimated using survey weights so unweighted models were compared with identically specified OLS models with Huber-White standard errors. Results from the unweighted OLS model with robust standard errors and the unweighted two-level HLM model are nearly identical. Any discrepancies in the coefficients or standard errors are typically at the 10th or 100th decimal place. Most importantly, inferences drawn from both methods are identical. I conclude that the within cluster homogeneity is adequately corrected for by using OLS and robust standard errors.

Table A1 Mean values and standard deviations of independent variables

Independent variable	Mean	Standard deviation
Adolescent local political competition, measured in 1988	.76	.17
Adolescent State Political Competition, measured in 1988	.85	.11
Adult state political competition, measured in 1988	.85	.11
Adult state political competition, measured in 1996	.84	.11
Home political discussion, measured in 1992	.55	.29
Home resources, measured in 1988	.56	.12
Non-Hispanic Black	.09	.29
Hispanic, regardless of race	.13	.33
Female	.53	.50
Number of residential moves (0–3), measured from 1988 to 1992	.50	.87
Sophomore status 2 year college, measured in 1994	.13	.31
Sophomore satus 4 year college, measured in 1994	.35	.47
Church attendance (0–5), measured in 1990	2.32	1.87
Adolescent local context: Non-Hispanic Black, measured in 1988	.10	.18
Adolescent local context: foreign born, measured in 1988	.08	.11
Adolescent local context: BA degree or higher, measured in 1988	.19	.13

Note: Youths were in 8th grade in 1988

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