

The Perpetuity of the Past: Transmission of Political Inequality across Multiple Generations

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It is a well-established fact, from decades of research on political socialization, that the children of politically active parents are more likely to become politically active themselves. This poses a challenge for democracy, as it means that inequalities in political influence are reproduced across generations. The present study argues that this problem may be more severe than has hitherto been acknowledged. The reason for this is that previous research on the topic has focused almost exclusively on political transmission between parents and their children, whereas the role played by more distant forebears, such as grandparents, has been largely neglected. In this study, we use Swedish register data to analyze multigenerational associations in electoral participation. The empirical results clearly indicate that the traditional two-generation approach to the study of political transmission tends to underestimate intergenerational persistence in voting behavior and that this excess persistence has both genetic and social roots.


Procedural democracy requires that all citizens have “adequate and equal opportunities” to take part in the political process and to voice their views on policies (e.g., Dahl 1982, 6). This does not mean all citizens must be equally active politically—only that they must have the same opportunities to engage in politics should they so prefer. Procedural democracy thus rests on the principle of *equality of opportunity* rather than on that of *equality of outcomes*. Like all important concepts, the exact meaning of equality of opportunity is contested; however, according to one influential account, this principle requires that the distribution of outcomes not depend on circumstances outside the direct control of the individual (Roemer 2012). Viewed from this perspective, differences in political participation that depend on factors beyond individual control point to political inequality.

Admittedly, scholars will never be able to reach complete agreement on what the circumstances are over which the individual lacks control, but few would dispute that the power to choose our parents is a power that all of us lack. From the standpoint of democracy, then, it is a troublesome fact that decades of research on political socialization have shown that most children grow up to resemble their parents—not just socially and economically, but politically as well. Whereas the main focus in this literature has been on parent–offspring congruence in political attitudes (e.g., Jennings and

Niemi 1968; Jennings, Stoker, and Bowers 2009; Westholm 1999), a smaller number of studies have also documented an intergenerational persistence in patterns of political participation (Beck and Jennings 1982; Cesarini, Johannesson, and Oskarsson 2014; Gidengil, Wass, and Valaste 2016; Jennings and Stoker 2009; Oskarsson et al. 2022; Oskarsson, Dawes, and Lindgren 2018).

However, as Brady, Schlozman, and Verba (2015, 149) lament, we still have—notwithstanding this research and the importance of the topic—a rather limited understanding of the mechanisms underlying the intergenerational persistence of patterns of political participation. The reason for this, these authors argue, is that scholars working on these issues have focused too narrowly on the transmission of political attitudes and culture and paid too little attention to the role played by the within-family transmission of economic and human capital (Brady, Schlozman, and Verba 2015, 152).

Moreover, as Gidengil et al. (2021) point out in a recent study, previous research has been too limited in another respect as well: it has been almost entirely dominated by a *two-generation view* of intergenerational influence (Mare 2011). That is, the sole focus has been on studying the transmission from parents to their children, whereas the potential effects of grandparents and other forebears have been neglected. This is understandable from a practical perspective because studying political transmission across multiple generations is extremely demanding in terms of data. Nevertheless, the two-generation approach is substantively problematic because it is likely to understate the intergenerational persistence of political inequality, thereby yielding an inaccurate description of the mechanisms through which persistence occurs (Mare 2011, 20).

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Above all, by restricting the analysis to two generations, those who take this approach implicitly assume there is no influence from grandparents (or from generations further back) beyond that which is mediated by parents.

The present study seeks to fill this gap in the previous literature by using Swedish register data to analyze multigenerational associations in electoral participation. More precisely, we study intergenerational transmission in voting in up to four consecutive generations, using population-wide validated turnout data from five elections covering the 1970–2018 period. Our study is related to a recent study by Gidengil et al. (2021), who use Finnish administrative data to study how the propensity to vote varies with grandparental turnout. The present study breaks important new ground, however, as it differs from the one mentioned in several important respects.

First, the two studies have rather different empirical foci. For instance, Gidengil et al. (2021) attempt to determine whether it is voting or nonvoting grandparents who exert greater influence on their grandchildren's voting habits. In contrast, we treat voting and nonvoting as two sides of the same coin because we focus on intergenerational transmission coefficients in voting. A central advantage of intergenerational transmission coefficients is that they are directly related to central concepts such as intergenerational mobility and equality of opportunity (Roemer 2004). Thus, they offer a direct means of assessing the extent to which the traditional two-generation approach underestimates intergenerational persistence in voting (Lindahl et al. 2015).

A second contribution of the present study is that it explicitly addresses the crucial issue of genetic confounding, which plagues all studies of intergenerational transmission, both theoretically and empirically. On the theoretical side, we develop a general dynamic model that shows that controlling for parental voting is generally not enough to rule out the risk of genetic confounding when it comes to estimating grandparental effects on voting. Empirically, in order to distinguish between genetic and socialization effects, we use two alternative methods. The first blocks the genetic pathway by examining multigenerational associations in voting among adoptees; the second shuts off the socialization pathway by tracing correlations between individuals whose grandparents died before they were born.

A third and final strength of our study lies in the richness of our data. We have access to population data on voting from five elections spanning a period of nearly 50 years. One advantage of this is that we can link voting behavior across not just three generations but four. By studying the association in voting patterns between individuals and their great-grandparents, we can take the multigenerational perspective even more seriously.

Our empirical results clearly indicate that the traditional two-generation approach tends to underestimate intergenerational persistence in voting behavior. Correlations in voting behavior between individuals and

their grandparents and great-grandparents are considerably larger than a simple extrapolation of the parent–child correlation would lead us to believe. Our subsequent analyses indicate that this excess persistence has both genetic and social roots: in other words, we find evidence for both a genetic and a socialization pathway linking the voting behavior of grandchildren and of their grandparents. Furthermore, our extended analyses show that the transmission of voting propensities from grandparents to their grandchildren is substantially stronger when the parents are nonvoters. Thus, our results indicate that active grandparents may compensate for inactive parents. This is an interesting finding because it suggests that there is also a positive side of grandparental influence. The more politically active are the grandparents, the smaller will be the turnout gap between children with voting and nonvoting parents.

The rest of this article is organized as follows. We begin with a theoretical discussion of different mechanisms that may underlie intergenerational persistence in voting patterns, among them both social and genetic factors. Next, we develop a general statistical model and derive the conditions under which the parameters of interest can be identified. We then describe our data, present our empirical results, and discuss the added insights yielded by a multigenerational perspective. Finally, we conclude with a discussion of our main findings and their implications.

WHY IS THERE INTERGENERATIONAL PERSISTENCE IN VOTING?

The family has long held a central place in the research on political socialization. Scholars have debated how the influence of the family compares with that of other important agents of socialization, but few have doubted there is a substantial transmission of political behavior and outlook within families (Jennings and Niemi 1968; Neundorf and Smets 2017).

Previous research has highlighted two broad theories for explaining how the family environment shapes the political character of adolescents (Gidengil, Wass, and Valaste 2016; Neundorf and Smets 2017). The first is the widely embraced *social learning theory*. According to this line of thought, children learn political behavior from their parents through instruction and observation (Jennings and Niemi 1974). For instance, the children of politically active parents may become politically active themselves upon hearing their parents preach the importance of civic engagement or observing them take part in political activities such as voting or attending political meetings. Viewed from this perspective, parents transmit their views on politics to their offspring by acting as teachers and role models. The social learning model is a general theory of how people learn from one another. In the literature on political socialization, however, it has been applied almost exclusively to the parent–child relationship.

A second explanation for intergenerational associations in political attitudes and engagement is the *status*

transmission theory (Bengtson et al. 2009; Verba, Burns, and Schlozman 2003). The core argument here is that children tend to inherit the social and economic standing of their parents, which in turn has downstream effects on their political development. Or as Brady, Schlozman, and Verba (2015, 163) conclude when summing up the findings of their previous research on the topic,

a striking fact is the degree to which the level of political participation from one generation to the next is determined by the processes by which socio-economic stratification is reproduced from one generation to the next.

Compared with this mechanism, the authors maintain, the learning processes stressed in social learning theory are only “of secondary importance” (Schlozman, Verba, and Brady 2012, 186). There is therefore, as Brady, Schlozman, and Verba (2015) see it, an imminent need to broaden the research on the intergenerational transmission of political attitudes beyond the narrow focus on culture and social learning.

Although we agree with Brady et al. on the need to broaden the research on political transmission, we find their proposal as well to be somewhat narrow, in that they repeatedly refer to transmission as occurring from “one generation to the next” (as they put it in the quote above, for instance). Like the advocates of social learning theory, they are stuck in what we have termed the two-generation paradigm of intergenerational influence.

However, there is no a priori reason why influence cannot extend over multiple generations. Robert Putnam, for instance, has recently acknowledged this fact, when speculating about the growing importance of grandparents for the widening opportunity gap between American youths.

Grandparents today are often more important in their grandchildren’s lives than their counterparts were a half century ago, because grandparents are healthier and wealthier than they used to be. This trend plays out very differently in upper-tier and lower-tier families, however. Generally speaking, lower-tier grandparents mostly donate time, replacing parental resources, whereas upper-tier grandparents mostly donate money, supplementing parental resources... . In short, taking grandparenting into account magnifies the growing youth class gaps. (Putnam 2015, 132–3)

The two mechanisms mentioned by Putnam fit nicely with the two theories of intergenerational influence discussed above. On the one hand, time should be of the essence from a social learning perspective. When grandparents devote time to their grandchildren and interact with them on a regular basis, they are likely able to serve as teachers and role models in much the same way that parents do.

For the status transmission theory, on the other hand, the key is the transfer of socioeconomic resources and status across generations. Obviously, there is no reason to expect such transfers to be restricted to adjacent generations. To the extent, therefore, that intergenerational

associations in political attitudes and behavior are driven by the transmission of economic and social resources, grandparents can clearly be important. From a theoretical point of view, the difference between parents and grandparents is one of degree rather than of kind. Just as parental investments in their children in terms of time and resources can be expected to influence children’s political development, so too can grandparental investments in their grandchildren.

In light of this, an important follow-up question is whether parental and grandparental investments are substitutes or complements in the process of nurturing skills, interests, and norms conducive to political participation. If the investments of the two generations are substitutes in the production of political participation, this means that having politically active grandparents can help compensate for having politically inactive parents. That is, the difference in political participation between those with politically active and inactive parents will be smaller the more politically active are the grandparents. On the contrary, if the investments of parents and grandparents are complements in the socialization process the difference in participation between those with active and inactive parents will increase with grandparents’ political activity. In the related literature on education and political participation, these two theoretical possibilities have been referred to as the *compensation* and *acceleration* hypotheses (Campbell 2008; Lindgren, Oskarsson, and Persson 2019).

However, status transmission and social learning are not the only theoretical mechanisms that can give rise to multigenerational correlations in voting behavior. Contrary to what is sometimes assumed, higher-order correlations—such as those between children and their grandparents—may also have genetic causes. In recent decades, the traditional interpretation of many findings on political socialization has been challenged in the literature on genetics and politics (Stoker and Bass 2011). A central insight of the latter perspective is that intergenerational correlations in political attitudes and behavior can have genetic as well as social causes. Parents do not just shape their children’s political environment; they also pass on their genes to their offspring.

There is now a voluminous literature documenting genetic influence on a wide range of political attitudes and behavior (e.g., Alford, Funk, and Hibbing 2005; Oskarsson et al. 2015). More specifically, results from adoption studies indicate that both nature and nurture are important for parent–child similarities in patterns of political participation (Cesarini, Johannesson, and Oskarsson 2014; Oskarsson et al. 2022; Oskarsson, Dawes, and Lindgren 2018). If we refrain, consequently, from controlling for the possible influence of genetic endowments passed from parents to their children, there may be an upward bias in our estimate of the effect of familial socialization (Stoker and Bass 2011).

Naturally, any genetic transmission from grandparents to their grandchildren is channeled through the parents. It might therefore be argued that, if intergenerational

correlations in political participation are due entirely to genetic inheritance, then the political participation of grandparents and their grandchildren should prove to be unrelated once parental participation is controlled for. However, this view has been called into question recently in a widely discussed model of social mobility proposed by Gregory Clark. This model is based on the idea that children inherit important traits from their parents and that observed outcomes—for example, wealth or social status—are often imperfect manifestations of these latent traits (Clark 2015; Clark and Cummins 2015).¹

More formally, the Clark model can be described with the following two equations:

$$y_{i,t} = \rho e_{i,t} + \eta_{i,t}, \quad (1)$$

and

$$e_{i,t} = \lambda e_{i,t-1} + v_{i,t}, \quad (2)$$

where $e_{i,t}$ denotes the latent factor inherited from parents to child i , v and η are two uncorrelated random components, λ measures the degree of heritability in the latent trait e , and ρ governs the rate at which this factor translates into the outcome of interest (here voter turnout).

Even if the Clark model follows a simple first-order Markov structure, where the latent trait is transmitted from one generation to the next, it can nevertheless give rise to higher-order dependencies in the data. This is because grandparent outcomes—for example, their voting behavior—provide information on the true value of the latent factor among parents (Clark and Cummins 2015, 64). Alternatively, from the standpoint of the Clark model, the problem with the traditional two-generation model of political transmission is that voting in any generation will be an error prone measure of the underlying latent trait. This measurement error, as we show in the next section, will attenuate standard measures of multigenerational persistence.

This section has shown, then, that there are good theoretical reasons to move beyond the two-generation approach that has dominated previous research on the intergenerational transmission of political attitudes and behavior. Above all, an important implication of both the Clark model and the multigenerational socialization model is that the standard two-generation approach to the study of political transmission is likely to underestimate intergenerational persistence in voting patterns. Yet, an important difference between the Clark model and the socialization model is that the former assigns no causal role to grandparents. Ultimately, however, it is an empirical question whether the multigenerational approach can contribute to our understanding of the intergenerational persistence of political attitudes and behavior or whether the standard

two-generation approach suffices in practice. It is to this question we now turn.

HOW TO MODEL INTERGENERATIONAL PERSISTENCE AND ITS SOURCES

The intergenerational transmission of patterns of political participation has typically been studied by estimating a first-order autoregression (AR[1]) model in which an outcome $y_{i,t}$ for an individual i in the child generation t is regressed on the corresponding outcome among his or her parents $y_{i,t-1}$:

$$y_{i,t} = \alpha + \gamma_1 y_{i,t-1} + \varepsilon_{i,t}. \quad (3)$$

The coefficient γ_1 measures the extent to which differences in political activity between parents are transmitted to their children, and ε is an error term. An implicit assumption of the AR(1) model, depicted in Equation 3, is that the persistence in political inequality across generations follows a geometric process. This means that a temporary shock to the political activity of the individuals in one generation can be assumed to disappear rather quickly. For instance, assuming all variables have been standardized, the AR(1) model implies that the intergenerational correlation coefficient between children and parents will equal γ_1 , that between children and grandparents it will equal γ_1^2 , that between children and great-grandparents will equal γ_1^3 , and so on. Consequently, if political transmission follows a first-order Markov process, political mobility can be fairly high in the long run even if parent-child mobility is low. For example, a fairly strong parent-child correlation amounting to 0.3 implies much weaker correlations between grandparents ($0.3^2 = 0.09$) and great-grandparents ($0.3^3 = 0.027$) and their grandchildren.

However, a common finding in the related (and quickly growing) literature on multigenerational social mobility is that the AR(1) model in Equation 3 tends to underestimate the intergenerational stability in social status. Using information on multiple generations, scholars have found the higher-order associations in the data—for example, between children and grandparents—to be considerably higher than the simple iteration of the parent-child estimates in Equation 3 would suggest (Braun and Stuhler 2018; Lindahl et al. 2015).

One of the objectives of the present study is to investigate whether a similar “excess persistence” can be observed with respect to voting. In the theoretical section, we discussed three different reasons why this could be the case. First, according to the status transmission theory, grandparents can transfer socioeconomic resources or status to not only their children but also their grandchildren, which in turn can produce an intergenerational persistence in voting. Second, grandparents can help socialize their grandchildren into their own voting patterns by preaching the importance of civic engagement or by

¹ In the present case, one example of such latent traits may be personality traits related to an individual’s sense of civic duty (Weinschenk and Dawes 2018).

acting as political role models for their grandchildren. Third, potential excess persistence in voting behavior may be due, as the Clark model suggests, to the (genetic) inheritance of latent traits or endowments that are imperfectly captured by manifest parental behavior.

To capture these different sources of persistence across three generations, we can posit a two-equation model of the following form:

$$y_{i,t} = \alpha + \gamma_1 y_{i,t-1} + \gamma_2 y_{i,t-2} + \beta_1 \mathbf{X}_{i,t-1} + \beta_2 \mathbf{X}_{i,t-2} + \rho e_{i,t} + \varepsilon_{i,t}, \quad (4)$$

and

$$e_{i,t} = \lambda e_{i,t-1} + v_{i,t}, \quad (5)$$

where $y_{i,t-1}$ and $y_{i,t-2}$ are the voting behavior of parents and grandparents, e denotes the latent factor conveyed by parents to their children, \mathbf{X} is a vector measuring parents' and grandparents' socioeconomic status, and ε and v are two random components.

The socialization pathway is of particular concern in this study: that is, we are interested in whether grandparents' political behavior has a direct influence on the voting behavior of their grandchildren. However, ascertaining this requires that we account properly for alternative sources of excess persistence.

If we have data on social status, a simple way to account for the status transmission mechanism is to control directly for the social status of parents and grandparents in Equation 4 and to focus on the partial relationship between the voting behavior of various generations. Provided we have standardized all variables, the partial transmission coefficients— γ_1 and γ_2 —will be closely related to the partial intergenerational correlation coefficient. Mathematically speaking, the partial regression coefficient and the partial correlation coefficient measure the same unique effect while representing two alternative but very similar ways of standardizing the raw regression coefficients. More precisely, we can obtain the partial correlation coefficient from the (standardized) partial regression coefficient by multiplying the regression coefficient by $\sqrt{1-R_x^2}$, where R_x^2 is the coefficient of determination when the independent variable of interest (i.e., $y_{i,t-1}$ or $y_{i,t-2}$) is regressed on all other right-hand-side variables of Equation 4.

The partial transmission coefficient will thus equal the partial correlation coefficient whenever there is only one independent variable in the model or when the independent variable of interest is uncorrelated with the other right-hand-side variables. In all other situations, the partial regression coefficient and the partial correlation coefficient will differ by a factor of $\sqrt{1-R_x^2}$. In this study, we present the results in terms of (standardized) intergenerational transmission coefficients for reasons of convenience.

Unfortunately, the conditioning strategy that can be used to account for status transmission does not

work for the genetic pathway. This is because the latent trait, e , cannot be observed directly. Consequently, if we estimate Equation 4 without controlling for the latent trait, our estimate of the grandparental transmission coefficient will capture both the socialization and the genetic mechanism. We show this more formally in the Appendix, where we derive the intergenerational correlation structure for a slightly simplified version of the model presented here (see Section A.2.1 in the Appendix). Two important implications follow from this analysis. First, there will be excess persistence in voting patterns if the behavior of grandparents directly influences that of their grandchildren or if voting is affected by a latent trait conveyed by parents to their children. Second, even if we have data on voter turnout for four different generations, there still will not be enough information to distinguish empirically between the socialization and the genetic mechanism. That is, an estimate of the grandparental effects will still pick up both the direct influence of grandparents on their grandchildren and the effects of the imperfectly measured latent trait.

To make progress on this important problem, we need either to gather data on additional generations or to analyze groups of individuals in whose case we can assume one or the other of the two mechanisms to be absent. In the second part of our empirical analysis, we focus on two such groups.

First, extending the approach of Cesarini, Johanneson, and Oskarsson (2014), we examine intergenerational transmission among adoptees. The idea behind this approach is simple. Adoptive children are not genetically related to their (adoptive) parents and grandparents, so any remaining intergenerational transmission in the adoptive sample cannot be explained by prebirth mechanisms, such as genetic inheritance; rather, it must be due to postbirth factors—that is, socialization and social learning. That is, we can assume λ in Equation 5 equals 0, which enables us to obtain an unbiased estimate of γ_2 .²

Second, we zoom in on individuals who never got to interact with their grandparents because the latter died before their grandchildren were born (Adermon 2013; Braun and Stuhler 2018). In this case, the idea is the opposite of that underlying the adoptee approach: we now seek to shut down the opportunity for direct grandparental socialization in order to measure the influence of the latent trait. The assumption is thus that γ_2 in Equation 4 is 0 for individuals who lost their grandparents before birth, which is sufficient to identify the remaining parameters. We thus proceed with our empirical analysis in two steps. In the first step, we look for evidence of excess persistence in voting behavior that is not captured by the traditional two-generation model of political transmission. Second, we attempt to distinguish between various potential sources of such excess persistence by comparing multigenerational persistence in voting patterns in

² This assumes there is no correlation in latent traits between biological and adoptive parents.

different subgroups. The next section describes the data we use.

MEASURING INTERGENERATIONAL PERSISTENCE ACROSS MULTIPLE GENERATIONS

As discussed in the introduction, our empirical analysis addresses the Swedish context. Admittedly, this choice is mainly governed by the availability of data; however, given its track record for social equality Sweden does offer a very interesting testing ground for theories of intergenerational associations.

To ascertain the strength of intergenerational linkages in voting behavior, we use data from various administrative registers maintained by Statistics Sweden. Most importantly, the Multi-Generation Registry contains identifiers that can be used to link most individuals born from 1932 onward to their parents. With the repeated use of these indicators, we can then create multigenerational family trees connecting up to three or four generations; however, the main requirement is that the next oldest generation be born no earlier than 1932. In what follows, we refer to the youngest generation in the family tree as children (C) and to earlier generations as parents (P), grandparents (GP), and great-grandparents (GGP), respectively. We restrict our attention in the child generation to individuals born between 1970 and 2000. Moreover, we drop all individuals (about 4% of the sample) who experienced the death of one of their parents before the age of 18 because grandparents may have assumed more of a parental role in such cases.³

In our next step, we use unique personal identifiers to match our multigenerational dataset with detailed information from other administrative sources on various demographic and socioeconomic characteristics of the individuals from the different generations. To measure parental and grandparental socioeconomic status (SES), we rely on three standard measures available in our registers: income, education, and occupational status. Education refers to years of completed education. Income has been ranked according to percentile (by cohort and sex) in order to increase comparability, as the income measure varies over time. To measure occupational status, we rely on the frequently used *International Cambridge Scale* (Prandy and Jones 2001), which ranks the status of various occupations on a scale from 0 to 1, with higher values indicating more prestigious occupations (see the Appendix for a more detailed description of these measures). For individuals in the child generation, we only use education when controlling for socioeconomic status, as many such individuals are still engaged in higher education during the period we can observe in our data. This makes

income and occupational status rather poor proxies for their underlying social status.

However, data on voter turnout are not available from any administrative register; instead, we have collected it by scanning and digitizing the information in publicly available election rolls. Currently, data have been digitized for the general elections held in 1970, 1982,⁴ 1994, 2010, and 2018. The coverage of the digitized turnout data is high, ranging from about 75% for the 1970 election to over 95% for the 2010 and 2018 elections, and it has been shown to possess very high reliability (Lindgren, Oskarsson, and Persson 2019).⁵

We then construct an overall turnout measure for each of the three or four generations in our data by averaging turnout over the elections and individuals belonging to a particular generation. We use only nonmissing values. That is, whereas turnout is measured at the individual level in the child generation, turnout for the other generations is measured as average turnout across all observed parents, grandparents, and great-grandparents, respectively. By averaging turnout across several individuals and elections, we smooth out transitory shocks that might otherwise bias the intergenerational transmission coefficient downward.⁶

For persons born before 1977, the dependent variable can thus be based on up to three elections. It can be based on two elections for those born between 1977 and 1992 and on one election for those born after 1992. In the three- and four-generations sample, respectively, individuals with turnout information from three elections make up 19% and 1% of all observations, those with two elections make up 52% and 47%, and those with one election make up 29% and 52%. Average turnout is fairly similar across these different groups, ranging from 88%–91% in the sample with three generations and from 86%–90% in the four-generation sample.

In total, our three- and four-generation samples include 2,733,689 and 1,092,423 children, respectively. Table 1 provides basic descriptive statistics for the two samples used in the analysis (see the Appendix for a more detailed description of the data and codings). As can be seen, voter turnout is high in all generations, varying from 86% to 91%. Moreover, the distribution of individual characteristics looks very similar across the two samples, except that the individuals are younger and intergenerational spacing is smaller in the four-generation sample.

⁴ The data for this election were collected, and generously shared with us, by Magnus Carlsson and Dan-Olof Rooth.

⁵ Despite some missing data, overall turnout in the digitized data is very close to official turnout. The difference between digitized and official turnout in 1970 is 0.3%, in 1982 0.1%, and in 1994, 2010, and 2018 it is close to 0%.

⁶ For individuals who were born in Sweden during the period 1970–2000 and who had two Swedish born parents, we were able to link turnout across at least three generations in 97% of the cases, whereas the corresponding coverage rate for individuals of immigrant background is about 36%.

³ However, all estimates remain very similar if we keep these individuals in the data.

TABLE 1. Descriptive Statistics

	Three-generation sample		Four-generation sample	
	Mean	SD	Mean	SD
<i>Child generation</i>				
Turnout	0.88	0.27	0.87	0.30
Gender	0.49	0.50	0.49	0.50
Education	12.96	2.09	12.44	1.94
Immigrant background	0.13	0.34	0.09	0.28
Year of birth	1984.82	8.77	1991.46	5.86
<i>Parental generation</i>				
Turnout	0.91	0.17	0.90	0.18
Income	0.53	0.13	0.50	0.10
Education	12.00	2.14	12.15	1.80
Occupational status	0.49	0.11	0.48	0.10
Year of birth	1955.39	9.00	1963.22	5.49
<i>Grandparental generation</i>				
Turnout	0.89	0.16	0.90	0.14
Income	0.46	0.14	0.47	0.12
Education	9.08	1.97	9.80	1.89
Occupational status	0.44	0.10	0.45	0.09
Year of birth	1926.10	11.10	1936.20	6.52
<i>Great grandparental generation</i>				
Turnout			0.86	0.20
Income			0.42	0.15
Education			7.49	0.97
Occupational status			0.39	0.09
Year of birth			1909.85	6.19
Observations	2,733,689		1,092,423	

IS THERE EXCESS PERSISTENCE IN VOTING?

Table 2 reports the basic results for the main sample including three generations. All models include controls for the sex, immigrant background, and birth year of persons in the child generation, as well as the average birth year for each generation of maternal and paternal forebears.⁷ All turnout measures have been standardized to have a mean of zero and a standard deviation of one.

In the first column of the table, we report results from the type of two-generation analysis that has dominated previous research on parent–child concordance in political traits. As expected, there is a strong relationship between (adult) children’s turnout and that of their parents. The intergenerational transmission coefficient amounts to 0.26, indicating that persons whose parents

usually vote are much more likely than other people to vote themselves.⁸

However, a primary purpose of the present study is to try to determine whether two-generation models of this type are sufficient to capture the intergenerational persistence in patterns of political participation or whether there is a need to take additional generations into account. To this end, Model 2 regresses child voting on the turnout of grandparents. As can be seen, there is a fairly strong relationship in turnout between children and grandparents. The transmission coefficient here is about 0.11, which indicates that turnout is considerably higher among children with voting grandparents.⁹

⁸ If we look at the unstandardized regression coefficients (not reported here), we find that if we compare two (otherwise similar) individuals—one whose parents always vote and one whose parents never vote—the expected turnout is more than 40 percentage points higher in the case of the former person.

⁹ In terms of the unstandardized regression coefficients, we find that an individual whose grandparents always vote is about 19 percentage points more likely to vote than an otherwise similar individual whose grandparents never vote.

⁷ Complete results for all regression tables, including the coefficients of the control variables, have been uploaded to the American Political Science Review Dataverse (Lindgren and Oskarsson 2022).

TABLE 2. Political Transmission across Three Generations

	Outcome: turnout, children				
	Model 1	Model 2	Model 3	Model 4	Model 5
Turnout P	0.257*** (0.001)		0.242*** (0.001)	0.206*** (0.001)	0.205*** (0.001)
Turnout GP		0.112*** (0.001)	0.048*** (0.001)	0.035*** (0.001)	0.035*** (0.001)
SES controls	No	No	No	Yes	Yes
Context controls	No	No	No	No	Yes
Mean turnout	0.88	0.88	0.88	0.88	0.88
N obs.	2,733,689	2,733,689	2,733,689	2,733,689	2,733,689

Note: All models include controls for the sex, immigrant background, fixed effects for the birth year of the child and the (rounded) average birth year of the parents, and fixed effects for the number of parents observed in the data. Models 2 to 5 also include fixed effects for the (rounded) average birth year of grandparents and fixed effects for the number of grandparents observed in the data. Standard errors are clustered on mother–father pairs and shown in parentheses. Complete model results are included in the files uploaded to the *American Political Science Review* Dataverse; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

However, if the transmission dynamics follow a first-order Markov process, meaning that the influence of grandparents on their grandchildren is fully transmitted through the parents, then the two-generation model nevertheless contains all of the necessary information. The results in Model 3 suggest this is not the case. Although the transmission coefficient of grandparents is reduced by more than 50% when parental voting is controlled for, the second-order transmission coefficient is still large, even when parental voting is taken into account. We find evidence, then, for higher-order associations in the data.

However, this raises the question of what the mechanisms are that give rise to these dependencies. As discussed in our theoretical section, scholars have traditionally focused on the role of social learning when attempting to explain the intergenerational congruence in political attitudes and behavior (Neundorf and Smets 2017). As Jennings, Stoker, and Bowers (2009, 783) point out, however, children and parents may also become similar due to “other influences they share, including their socioeconomic circumstances and their local political context.”

In column 4 of Table 2, therefore, we add controls for the socioeconomic position of children, parents, and grandparents. As mentioned in our data section, child SES is captured by years of education, whereas we use income, education, and occupational status to capture the effect of SES in the older generations. All three SES measures are averaged across all individuals in a particular generation.

From Model 4, we see that the intergenerational transmission coefficients fall by about a quarter when the socioeconomic position of the various generations is controlled for. This may indicate that the intergenerational persistence in voting is partly accounted for by within-family transmission in socioeconomic status, as suggested by the status transmission theory (Brady, Schlozman, and Verba 2015).

That said, the intergenerational transmission coefficients remain large even when the socioeconomic status of forebears is controlled for. In column 5, we examine the extent to which the remaining correlation may be due to the fact that individuals from the same family tend to share a local political context (Jennings, Stoker, and Bowers 2009). We do this by adding a control for average voter turnout in an individual’s municipality of residence in the elections available in our data (we only include elections in which the individual was eligible to vote). Like the other measures, the individual measures are averaged across the individuals who make up the different generations. As can be seen from Model 5, however, the political context does not appear to be very important for explaining the intergenerational congruence in voting. The transmission coefficients of both parents and grandparents are virtually unchanged when the contextual controls are added.

We find clear evidence, then, that the voting behavior of individuals in the child generation is related to that of their grandparents even when parental voting is controlled for. The results are thus in line with those reported by Gidengil et al. (2021). On the basis of Finnish data, Gidengil et al. find that the expected difference in turnout between persons whose four grandparents all vote and those whose grandparents do not is about 28 percentage points when SES and parental turnout are not controlled for and about 12 percentage points when those controls are added to the model. If we restrict our attention to the subset of our sample for which we have turnout data for all four grandparents, we find that the corresponding differences in the Swedish case are 26 and 8 percentage points, respectively.

However, the results presented in Table 2, as well as in the study by Gidengil et al. (2021), raise the question of whether it suffices to consider three generations or whether we need to extend the model even further if we are to measure the intergenerational persistence in voting accurately.

TABLE 3. Political Transmission across Four Generations

	Outcome: turnout, children				
	Model 1	Model 2	Model 3	Model 4	Model 5
Turnout P	0.235*** (0.001)		0.232*** (0.001)	0.195*** (0.001)	0.195*** (0.001)
Turnout GP	0.058*** (0.001)		0.054*** (0.001)	0.039*** (0.001)	0.038*** (0.001)
Turnout GGP		0.041*** (0.001)	0.011*** (0.001)	0.006*** (0.001)	0.006*** (0.001)
SES controls	No	No	No	Yes	Yes
Context controls	No	No	No	No	Yes
Mean	0.87	0.87	0.87	0.87	0.87
N Obs.	1,092,423	1,092,423	1,092,423	1,092,423	1,092,423

Note: See notes for Table 2.

In an attempt to shed light on this issue, Table 3 displays the results for a set of analyses based on the subset of our main sample for which we can observe the voting behavior of four consecutive generations. To facilitate comparison, the first column of the table replicates Model 3 from Table 2 for this restricted sample. We see that the transmission coefficient for parents is slightly lower in the four-generation sample, whereas that for grandparents is instead slightly larger. However, the main pattern is very similar across the two samples.

The second column of the table reports the association in voting behavior between individuals of the child generation and their great-grandparents when the turnout of parents and grandparents is not controlled for. The transmission coefficient between children and their great-grandparents is 0.04, indicating that the voting behavior of persons in the child generation is indeed related to that of their great-grandparents. In the third column, however, we see that the transmission coefficient associated with great-grandparents falls by almost three-quarters once the turnout of parents and grandparents is taken into account. That is, the lion's share of the relationship between the voting behavior of the children and that of their great-grandparents seems to be channeled through the intermediary generations. This impression is further corroborated by the results of models 4 and 5, which add controls for socioeconomic position (Model 4) and for the local political context (Model 5). In these models, the transmission coefficient of great-grandparents drops to 0.006.

Unlike grandparents, then, great-grandparents appear to have little or no direct influence on the voting behavior of the child generation. One reason for this may be that great-grandparents, if they are alive at all, are typically rather old when their great-grandchildren are born. In our sample, the average age difference between great-grandparents and their great-grandchildren is about 80 years (see Table 1). In a supplementary analysis, therefore, we examine whether the strength of the transmission depends on how old the (great-) grandparents are when their

(great-) grandchildren are born. To judge from these results (see Table A.11 in the Appendix), this is true to some extent in the case of grandparents but not in that of great-grandparents. This indicates that advanced age is not the only reason why great-grandparents appear to have little direct influence on the voting behavior of their great-grandchildren. An alternative explanation would be that great-grandparents, regardless of their age, have less direct interaction with their great-grandchildren than they once had with their grandchildren.

Overall, the results presented in Tables 2 and 3 support the view that the standard two-generation model of political transmission likely underestimates the intergenerational persistence in patterns of political participation. Excluding great-grandparents from the analysis appears to have little effect, but omitting grandparents from the picture is clearly more consequential.

To illustrate this point further, we can consider a situation where some individuals in the grandparental generation are hit by a positive shock that increases their voter turnout by one unit. According to Model 1 in Table 2, which assumes an AR(1) process, the difference in turnout between the grandchildren of those hit by the shock and of those not hit by it will be 0.066 units ($\gamma_1^2 = 0.257$); whereas the corresponding difference according to Model 3, which assumes an AR(2) process, will be 0.107 ($\gamma_1^2 + \gamma_2 = 0.242^2 + 0.048$). Thus, the standard two-generation model in this case underestimates the intergenerational persistence of the voting shock among grandparents by almost 40%.

The results presented in this section clearly indicate, then, that the standard two-generation model of political transmission tends to underestimate the intergenerational persistence in voting behavior substantially. Unfortunately, our analyses are less informative about the exact sources of this excess persistence. A positive grandparental coefficient—for example, such as that found in Table 2—is fully compatible both with an AR(2) model in which grandparents directly influence their grandchildren and with Clark's latent factor model, in which no such direct influence occurs. If, as

TABLE 4. Political Transmission across Three Generations among Adoptees

	Outcome: turnout, children				
	Model 1	Model 2	Model 3	Model 4	Model 5
Turnout P	0.102*** (0.007)		0.098*** (0.007)	0.083*** (0.007)	0.083*** (0.007)
Turnout GP		0.034*** (0.006)	0.018*** (0.006)	0.011** (0.006)	0.011** (0.006)
SES controls	No	No	No	Yes	Yes
Context controls	No	No	No	No	Yes
Mean	0.85	0.85	0.85	0.85	0.85
N obs.	35,866	35,866	35,866	35,866	35,866

Note: See notes for Table 2.

discussed earlier, the data contain fewer than five generations, then they contain too little information to enable us to distinguish empirically between direct grandparental influence and the genetic inheritance of latent traits. However, as also discussed earlier, we may still be able to make some progress on this issue by studying subgroups for which we can assume that either the one or the other of these two mechanisms is absent. That is what we do in the next section.

WHY IS THERE EXCESS PERSISTENCE IN VOTING?

We argued earlier that one way to distinguish between the genetic and the socialization mechanism is to follow the approach taken by Cesarini, Johannesson, and Oskarsson (2014)—that is, to study the intergenerational persistence of voting patterns among adoptees. The idea behind this approach is simple. By studying adopted individuals, we block the genetic pathway—adoptees are not related genetically to their (adoptive) parents or grandparents—meaning that any remaining excess persistence in voting behavior should be due to other sources, such as direct socialization.

Extending the approach taken by Cesarini, Johannesson, and Oskarsson (2014), we examine transmission across three rather than two generations. In order to increase the sample size and reduce the risk for selective placement of adoptive children, we include both domestic and transnational adoptees in our sample. In Table 4, we replicate the results of Table 2 for a sample of 35,866 adopted children born between 1970 and 2000. About 93% of these children were adopted from abroad.

A first thing to note here is that the overall pattern of results in the adoptee sample is very similar to that in our main sample. There is clearly a discernible relationship between the voting behavior of grandparents and of their (adopted) grandchildren even when parental turnout is adjusted for (Model 3). Moreover, the strength of this relationship falls by about a third when parents' and grandparents' socioeconomic status (Model 4) and average municipality turnout (Model 5)

are controlled for. However, the magnitude of the transmission coefficients is about two-thirds smaller among the adoptees than among the biological children. This suggests that part of the intergenerational persistence in voting behavior is likely due to genetic inheritance of the type posited by the latent factor model.¹⁰ That said, we find strong evidence for higher-order interdependencies even when we block the genetic pathway.

Thus, we also find clear evidence of excess persistence in voting patterns among adoptees, who are not genetically related to their adoptive parents and grandparents.¹¹ If some individuals in the grandparental generation are hit by a shock that increases their turnout by one unit, the two-generation model in column 1 suggests that only 0.01 (0.102^2) units of that shock will persist in the grandchild generation, whereas the corresponding figure in the AR(2) model presented in column 3 is 0.028 ($0.098^2 + 0.018$) units. Consequently, even when studying families where the children are not genetically related to their parents, we find that the standard two-generation model substantially underestimates the intergenerational persistence in voting behavior.

In our methods section, we also briefly discussed an alternative method for disentangling the genetic and socialization mechanisms: restricting the analysis to individuals whose grand- or great-grandparents had died by the time they were born (see Adermon 2013; Braun and Stuhler 2018). The idea here is that the lack of interaction between grandchildren and their deceased grandparents precludes direct grandparental socialization.

In order to differentiate between the influence of living and of dead grandparents, we estimate a linear interaction model in which the turnout of each grandparent is interacted with an indicator of whether that grandparent was alive when the grandchild was born

¹⁰ An alternative explanation for the lower transmission coefficient may be that the socialization process does not work as efficiently for adopted children.

¹¹ The results remain almost identical if we exclude the small number of adoptees who were born in Sweden.

TABLE 5. Political Transmission by Grandparents' Time of Death

	Outcome: turnout, children					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Transmission <i>GP</i> - all dead	0.031*** (0.002)	0.025*** (0.002)			-0.002 (0.011)	-0.005 (0.011)
Transmission <i>GP</i> - all alive	0.048*** (0.001)	0.035*** (0.001)			0.019*** (0.006)	0.012*** (0.006)
ΔGP	0.017***	0.010***			0.021**	0.017*
Transmission <i>GGP</i> - all dead			0.009*** (0.001)	0.005*** (0.001)		
Transmission <i>GGP</i> - all alive			0.012*** (0.001)	0.007*** (0.001)		
ΔGGP			0.003*	0.002		
SES controls	No	Yes	No	Yes	No	Yes
Context controls	No	Yes	No	Yes	No	Yes
Sample	3-gen	3-gen	4-gen	4-gen	Adoptees	Adoptees
<i>N</i> obs.	2,733,689	2,733,689	1,092,423	1,092,423	35,866	35,866

Note: Apart from parental turnout, all models include controls for sex, immigrant background, fixed effects for the birth year of the child and the (rounded) average birth year of the parents and grandparents, and fixed effects for the number of parents and grandparents observed in the data. Standard errors are clustered on mother–father pairs and shown in parentheses. Complete model results are included in the files uploaded to the *American Political Science Review* Dataverse; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(we describe this model in greater detail in the Appendix). The results are presented in Table 5. To simplify interpretation, moreover, we present the results for the two extreme cases: where none of the grandparents are alive when the grandchild is born and where all of them are (complete results are available in Table A.2 in the Appendix).

The first column in the table reports the results for the three-generation sample without any controls for SES or local context. We obtain a transmission coefficient equal to 0.031 in cases where all of the grandparents died before the grandchild was born and one equal to 0.048 when they were all alive at the time of their grandchild's birth. The coefficient labeled ΔGP is simply the difference between the two estimates. If the Clark model is correct and excess persistence is solely due to imperfect measurement of the underlying latent trait, then ΔGP should equal 0. A positive and significant ΔGP can then be interpreted as indicating a direct influence by grandparents on the voting behavior of their grandchildren (i.e., γ_2 in Equation 4). In the first column this difference is 0.017; however, it shrinks to 0.010 when SES and municipality turnout (Model 2) are controlled for.

This analysis builds on a very different logic from that of the adoptee approach, yet the two approaches yield almost identical estimates of grandparental influence, as can be seen by comparing the results of models 1 and 2 in Table 5 with those of models 3 and 5 in Table 4. In both cases we find, when controlling for SES and local context, a transmission coefficient of about 0.01, which is about one-third of the initial estimate obtained in Table 2.¹²

In models 3 and 4 in Table 5, we study the extent to which the transmission coefficient of great-grandparents depends on their time of death. Once we control for SES and municipality turnout, this does not seem to be the case. The value for ΔGGP is small and not statistically significant. This finding corroborates our previous conclusion that great-grandparents have little direct influence on the voting behavior of their great-grandchildren.

Finally, to check the assumption that the transmission coefficient associated with deceased grandparents is due to genetics and not to some other factor, we have also reestimated models 1 and 2 in our adoption sample. The results from these analyses are presented in models 5 and 6 of Table 5. As expected, there is no direct positive association between the voting behavior of grandparents and adoptive grandchildren when all grandparents have died before the grandchild is born. However, whereas the transmission coefficient in the “all dead scenario” is small in magnitude and statistically insignificant, the coefficient in the “all alive” scenario is instead fairly large and statistically significant. The results in models 5 and 6 thus corroborate the view that the timing of grandparental deaths can be used to disentangle the genetic and socialization pathways.

The analysis presented in Table 5 is not without its problems, however. A first potential problem is that the estimates may yield an overestimate of the genetic effect, as even dead grandparents may exert influence over their grandchildren—indirectly, through other close relatives like aunts and uncles. To establish

¹² The fact that the two approaches provide similar results also corroborates the view that the lower transmission coefficient among

adoptees is primarily due to the blocking of the genetic pathway, not to differences in socialization between biological and adopted children.

whether this is the case, we perform some additional analyses in which we control for the turnout of not only parents but also all their siblings. When we do so, the transmission coefficient of grandparents who died before their grandchildren were born falls by about 25%, although the difference between individuals with dead grandparents and those with living ones remains more or less the same when the turnout of aunts and uncles is accounted for (see Table A.8 in the Appendix). One interpretation of this supplementary analysis is that the estimates presented in Table 5 provide an upper bound for the genetic component in the intergenerational transmission of voting patterns.

Another potential objection to the analysis in Table 5 is that that political socialization is unlikely to occur at a very young age. This suggests that the threshold used for this analysis (age 0) is unnecessarily low. In the Appendix, therefore, we present the results from a more flexible interaction model where we examine the strength of the transmission of (great-) grandparents who die when their grandchild is (a) below 0, (b) between 0 and 8, (c) between 9 and 17, and (d) above 18 (Table A.9). We then find that the difference in transmission coefficients between the two polar categories is very similar to the differences in Table 5, whereas the grandparental transmission coefficients of the two middle groups fall in between these two extremes. This finding may indicate that the socialization process is gradual rather than discrete. That is, the longer time a child spends with his or her grandparents, the more his/her voting behavior seems to become similar to theirs. For great-grandparents, however, we again find that the transmission coefficient is of similar magnitude regardless of when they die.

In summary, our empirical analyses have provided clear evidence that the dominant two-generation model of political transmission underestimates the intergenerational persistence in voting patterns. If some individuals within a generation are subjected to a negative or positive shock to their voter turnout behavior, this will affect the voting behavior of generations to come, and these shocks die out at a much slower rate than the standard parent-child correlation in voting behavior would lead us to believe. Moreover, our results suggest we need to take both direct and indirect transmission

mechanisms into account if we are to explain this excess persistence.

However, before we turn to a discussion of the generalizability and robustness of these findings, we will consider one additional extension of the previous analyses. In the theoretical section we briefly discussed two different hypotheses concerning the joint influence of parents and grandparents. According to the *compensation* hypothesis, politically active grandparents can help compensate for having politically inactive parents. The *acceleration* hypothesis instead maintains that the participation gap between individuals with active and inactive parents will increase with grandparental political activity.

The analysis presented in Table 6 is an attempt to shed some light on the relative importance of the two hypotheses. The results show how the transmission coefficient of parents vary with grandparental turnout in the large three-generation sample (models 1 and 2) as well as in the adoption sample (models 3 and 4). High turnout indicates that average voter turnout in the grandparental generation is 1, whereas low turnout indicates that average grandparental turnout is less than 1.

As can be seen from Table 6, the difference in turnout between individuals with voting and nonvoting parents is more pronounced when grandparental turnout is low. In the main sample, the parent transmission coefficient is more than 40% larger in the group with low grandparental turnout, whereas the corresponding figure in the adoption sample is slightly less than 25%. The results presented in Table 6 thus indicate that having politically active grandparents may help compensate for having politically inactive parents. This finding is substantively important because it suggests that high political activity in the grandparental generation can help reduce political inequalities caused by participatory differences in the parental generation.

GENERALIZABILITY AND ROBUSTNESS

We believe these findings make an important contribution to the literature on this topic. At the same time, we are the first to admit that our analyses are far from being perfect in every respect. A first limitation lies in

TABLE 6. Political Transmission by Grandparental Turnout

	Outcome: turnout, children			
	Model 1	Model 2	Model 3	Model 4
Turnout P	0.232*** (0.001)	0.162*** (0.001)	0.092*** (0.010)	0.075*** (0.009)
GP turnout	Low	High	Low	High
Sample	3-gen	3-gen	Adoption	Adoption
N obs.	1,426,722	1,306,967	15,984	19,882

Note: The models include the same controls as Model 5 in Table 2. Standard errors are clustered on mother-father pairs and shown in parentheses. Complete model results are included in the files uploaded to the *American Political Science Review* Dataverse; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

the fact that our data are drawn from a single country. However, given that we find evidence of multigenerational influence in a relatively egalitarian and high-turnout country like Sweden, it stands to reason that similar relationships can be expected in other countries too. We provide some tentative support for this conjecture in the Appendix. Using US data from the *Youth Parent Socialization Panel Study* (Elliot 2007; Jennings et al. 2005), we connect information on self-reported voting for some 600 individuals to similar information for their parents and grandparents. Despite the small sample size, the general pattern of results is well in line with that in our Swedish sample. We find a positive association between the voting behavior of grandparents and of their grandchildren even when we control for voting patterns among the parents, and the magnitude of the transmission coefficients is similar to those observed in Sweden (see Table A.1 in the Appendix).

Another possible concern is the outcome variable. First, voting is only one of many forms of political participation that citizens can use to influence politics in contemporary democracies. The question is thus whether the multigenerational perspective is equally relevant for other forms of participation. Unfortunately, we lack the necessary data to tackle this question in the Swedish setting. Using the US data, however, we obtain very similar results when replacing voter turnout with an index based on five other forms of political participation (see Table A.1). Although the poor statistical precision in this analysis precludes any firm conclusions, the results do indicate that the multigenerational perspective may also be of relevance for political participation more generally.

Second, Sweden is characterized by high levels of voter turnout and by a concomitantly narrow variation in the outcome variable. To check whether this coarseness in the turnout measures affects the calculation, we present results based on dichotomized turnout variables and logit estimation in the Appendix (Tables A.12 and A.13). The estimates of the logit models closely resemble the corresponding ordinary least square results presented in the main text.

The Appendix also contains a number of additional analyses and robustness checks. In order, for instance, to provide further corroboration for the view that grandparents can directly influence the voting behavior of their grandchildren, we have estimated separate transmission coefficients for different types of grandparents (see Figure A.1). We then find the strongest transmission coefficient in the case of maternal grandmothers, who according to previous research in the field tend to spend the most time with their grandchildren, and we find the weakest transmission coefficient in the case of paternal grandfathers, who tend to interact the least with their grandchildren (Coall and Hertwig 2010).

We have also examined whether the strength of the transmission varies with the geographical distance between grandchildren and their grandparents when the former are growing up. We find that the transmission coefficient of grandparents, but not that of great-grandparents, is stronger when they live closer to their

young family members (Table A.10). This finding lends additional credibility to the view that grandparents can directly influence the political behavior of their grandchildren.

In the Appendix we further show that the findings are robust to alternative operationalizations of SES and local context (see Tables A.5 and A.7). Related to this, we also use an alternative data source to examine how problematic it is that we lack information on economic wealth. Although this alternative dataset has a number of limitations, the findings of this supplementary analysis are at any rate comforting, as they indicate that adding economic wealth to the set of SES controls has a fairly marginal effect on the transmission estimates (Table A.6). Likewise, we show that our main findings also hold when we split the analysis by the number of grandparents observed in the data (Table A.3) or by the number of elections observed for the individuals in the child generation (Table A.4).

Finally, we have also estimated a marginal structure model to examine whether our main findings are unduly affected by the type of overcontrol and collider bias that could result from controlling for variables that lie on the causal path between grandparents and their grandchildren, such as parental characteristics. We do not find this to be the case (Table A.14).

CONCLUSIONS

Decades of political socialization research have furnished ample evidence that the children of politically active parents are more likely than are other people to grow up to become politically active themselves (see Neundorff and Smets 2017 for an overview). This intergenerational transmission of political behavior poses a challenge to the fundamental democratic principle of equal political voice. As Schlozman, Verba, and Brady explain, “if the propensity to participate is handed down across generations, the political advantage that accrues at any moment to well-educated and affluent activists will be perpetuated” (2012, 178).

In this study, we have argued that this problem may actually be more severe than has been acknowledged hitherto. The reason for this is that previous research on the topic has focused almost exclusively on political transmission between children and their parents, whereas the role played by more distant forebears—such as grandparents—has been largely neglected (Gidengil et al. [2021] is a rare exception). Yet, recent research on social and economic mobility in neighboring disciplines has shown that the two-generation approach to intergenerational transmission is likely to overestimate long-run mobility (Braun and Stuhler 2018; Hällsten and Pfeffer 2017; Lindahl et al. 2015).

The results of this study point in a similar direction. For example, they indicate that the standard two-generation model underestimates the intergenerational persistence of voting shocks among grandparents by at least 40%. There is one difficulty in interpreting these results, however: widely differing dynamic processes can be invoked to explain this type of excess persistence. In

this respect, we have focused on two chief candidates: one posits that the behavior of grandparents (and perhaps even of great-grandparents) directly influences that of their grandchildren; the other focuses on the imperfectly measured genetic inheritance that children receive from their parents. Our analyses suggest that both genes and socialization contribute to the intergenerational congruence in voting behavior. More research on this issue is needed, but we believe our results indicate that a fuller understanding of intergenerational political mobility requires that we take into account both genetic transmission between parents and their children and higher-order cross-generational social learning.

This study has important implications for both research and policy. Where the former is concerned, our findings show that political scientists need to move beyond the two-generation paradigm that has dominated previous research in the field and to adopt a more multigenerational perspective on political inequality. Understanding the mechanisms underlying the intergenerational persistence of political outlooks and behavior requires paying closer attention to the role played by nonparental relatives in the process of political socialization. There are some signs that researchers are beginning to do this (see e.g., Aggeborn and Nyman 2021; Gidengil et al. 2021; Lahtinen, Erola, and Wass 2019), but we hope to see more work along these lines in the future.

However, our results suggest that it is vital to take causal dynamics and genetic confounding seriously when studying political transmission between multiple generations or extended family members. Intrafamily correlations in patterns of political participation can take many different forms and arise for a multitude of reasons. To understand how political inequality is reproduced within families and between generations, we must continue to unravel the complexities of family political socialization. This is crucial if we are to understand why children's opportunities to become politically active citizens as adults still depend, after a century of democratic experience, on the families into which they are born.

We regard this study as one important step toward this end, but more research is clearly needed—particularly with respect to the underlying causal mechanisms. Our results clearly indicate that genetic inheritance, social learning, and status transmission all contribute to the intergenerational persistence in voting behavior, but detailing the intricate causal chains associated with these various factors cannot be done with the type of administrative data studied here. As we see it, therefore, the way to gaining a better understanding of the complex interplay of different factors here—genes, socialization, and the within-family transmission of economic and human capital—is to design multigenerational studies that combine data from registers, surveys, and qualitative interviews.

In going forward with this line of research, we also believe it to be important to deepen the analysis of cross-generation interactions both theoretically and empirically. Tentative results reported in this study indicate that high politically activity among grandparents can help compensate for parental inactivity, but

more research on this potential positive aspect of grandparental influence is clearly needed. Related to this, future research may also consider possible ways to follow the advice of Gidengil et al. (2021) and try to distinguish between the signals conveyed by voting and nonvoting grandparents, respectively. Although we doubt that it is possible to empirically disentangle the relative strength of voting and nonvoting signals with the type of administrative data used here, it may be possible to shed some light on this issue using alternative data and empirical approaches (we elaborate on this point in the Appendix).

The present study may also be of significant practical value. Most importantly, our findings underscore that it does not suffice, if we are to understand and ultimately to alleviate the perpetuation of political inequality across generations, to focus solely on the relationship between children and their parents. During childhood and adolescence, namely, many people have close social connections with relatives other than their parents—aunts, uncles, grandparents, and in some cases even great-grandparents—and all of these actors can influence a person's political development. Viewed from this perspective, we can expect policies directed at increasing political participation and mitigating the reproduction of political inequality across generations to be more successful if they target broad groups of the population rather than being narrowly targeted on parents and their children. In sum, we will be in a better position to combat persisting political inequalities if we adopt a multigenerational perspective on the issue of political mobility.

SUPPLEMENTARY MATERIALS

To view supplementary material for this article, please visit <http://doi.org/10.1017/S0003055422001113>.

DATA AVAILABILITY STATEMENT

Research documentation and data that support the findings of this study are openly available at the American Political Science Review Dataverse: <https://doi.org/10.7910/DVN/U56Z43>. Limitations on data availability are discussed in the Appendix.

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CONFLICT OF INTEREST

The authors declare no ethical issues or conflicts of interest in this research.

ETHICAL STANDARDS

The authors declare the human subjects research in this article was reviewed and approved by the Swedish Ethical Review Authority, certificate number Dnr 2016/164.

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