**Sibling Similarities in Electoral Participation**

# Sibling Similarities and the Importance of Parental Socioeconomic Position in Electoral Participation

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We studied the impact of an individual's family and community background on their voting propensity in the 2015 Finnish parliamentary elections by employing a sibling design on an individual-level register-based dataset. The results showed that a quarter of the total variance in voter turnout was shared between siblings. Considering the dichotomous nature of the turnout variable, this implies that background has a strong effect which is almost comparable to sibling similarity in education. Parental socioeconomic position and voting, in turn, are equally important factors by explaining one-third of this shared part of the likelihood of voting. Mothers and fathers make roughly equal contributions. The results suggest that future studies of inter-generational effects in political participation, whenever possible, should use information from both maternal and paternal characteristics and multiple indicators of parental socioeconomic position simultaneously. We conclude by underlining that as people cannot choose their background, voting propensity is strongly influenced by factors beyond an individual's own control, which is problematic for the functioning of inclusive democracy and equality of opportunity.

## Introduction

Far from being only an isolated periodic act, political participation, including voting in elections, is an outcome of a person's overall level of well-being, social integration, networks, resources, and life situation. In addition to an individual's personal socioeconomic position, one's family background plays a considerable role in determining who participates in elections. The inter-generational transmission reveals a problem embedded in biased participation: regardless of the almost universal suffrage, voters are already "unequal at the starting line"

(Verba, Burns, and Schlozman 2003, 45) depending on their parental political, socioeconomic, and other resources.

Although the importance of childhood and adolescent background on an individual's political activity is widely recognized in the literature on participation (e.g., Beck and Jennings 1982; Bhatti and Hansen 2012; Gidengil, Wass, and Valaste 2016; Jennings and Niemi 1981; Plutzer 2002; Verba, Schlozman, and Burns 2005), the question of how much it matters altogether has not been rigorously tested. This limitation has followed on from the type of data applied that has restricted the analyses to covering only observed family background characteristics (such as parental education or voting), but it is also likely to underestimate their total effect. This is because siblings share a very large number of factors that are potentially important for voting, such as partially shared genetic inheritance, socioeconomic, and other resources, a home environment and child-rearing practices, activities that fostered cognitive skills and political interest, and exposure to the same community norms and school experiences. All of these factors that siblings share cannot be realistically observed in any dataset.

This leads to the first aim of our study. By employing a sibling design, we assess the effect of an individual's background on his/her voting propensity. In addition to the observed parental factors, our research design enables us to estimate unobserved influences that are shared by siblings within the same family. Hence, our analysis produces a more comprehensive picture of the importance of pre-adult factors in voting than that has been explored to date.[1]

The second aim of this study is to assess the contribution of an individual's socioeconomic background on voting. Although admittedly only one among the many factors that siblings share, linking the inter-generational transmission of voting to an individual's socioeconomic background is of theoretical and practical importance, since it is directly related to the social inequality in opportunity which is at the core of the problems arising from inter-generational persistence in voting. 'Brady, Schlozman, and Verba (2015) have argued that the literature on the inter-generational transmission of participation has focused too much on political socialization, that is, learned behavioral and psychological factors at the expense of material resources, social networks, and human and cultural capital. Previous research has acknowledged the importance of socioeconomic family background on voting, but it has often been assumed that controlling for any of the commonly available family background characteristics, such as education, social class, or income of either mother or father, will capture the essence of family background. In order to understand the importance of the multi-dimensional nature of an individual's socioeconomic background better, we assess the relative contribution of different socioeconomic measures on voting, as well as the relative contribution of fathers' and mothers' characteristics separately. Although these characteristics tend to be correlated, they still matter for slightly different reasons and thereby also reflect different theoretical mechanisms. Moreover, we are able to observe the voting of parents and contrast it to the observed effect of socioeconomic family background and any other unobserved factors related to family background. Such an approach helps us to build a more

comprehensive understanding of the connections between an individual's social background and his/her voting.

In the next section, we discuss the interrelations between observed factors in our study, namely, parental education, social class, income, and voting, and briefly describe the context of the study, the 2015 Finnish parliamentary elections. After that, we introduce the data, which consist of the full data from those electoral wards that utilized electronic voting registers, covering 24.2 percent of the individual-level electorate residing in Finland. Using personal identity codes, this information was combined with several indicators related to an individual's (and his/her siblings') socioeconomic origins and parental voting gathered from several administrative registers. The data do not suffer from many biases common in more conventional survey data, such as respondent self-selection and overreporting due to social desirability or faulty recall (Selb, and Munzert 2013), the latter being an especially relevant problem in assessing intergenerational effects (Brady, Schlozman, and Verba 2015). The multi-level modeling used in the sibling design is then introduced. The results section show that an individual's family and community background play a substantial role in stratifying his/her electoral participation, and just under one-third of this background effect can be attributed to observed parental characteristics. We then discuss the main contributions of our analysis, which are twofold: first, to put the importance of an individual's family and community background into context, by, for instance, comparing it to the results obtained with a similar design on other outcomes, and second, provide elaborate description of the multidimensional nature of the individual's socioeconomic background to voting by using several indicators on both the father and mother. Based on these observations, we offer various recommendations for future studies, and close by discussing the normative challenges they raise.

## Pathways between Parental Education, Social Class, Income and Voting, and Offspring Turnout

Socioeconomic family background has been understood in various ways in the previous literature. We approach it here as an umbrella concept (cf. Lareau and Conley 2008) that we observe empirically through the commonly available indicators of parental education, occupational social class, and income. The factors can be arranged quite neatly in a causal chain: parental education influences a person's occupation, which determines his/her income (cf. Erola, Jalonen, and Lehti 2016). These three socioeconomic factors may, in turn, affect parental likelihood of voting, which can be considered a proxy for parental behavioral example and the political socialization of the family (Gidengil et al. 2016; Wass 2007), thus affecting the voting propensity of the offspring.[2] Figure 1 illustrates the expected relationships between our observed variables. Although these three socioeconomic indicators are correlated, they can also be expected to reflect somewhat different mechanisms affecting voting. In the following, we discuss the potential mechanisms related to each of them in more detail.

**Figure 1. The observed factors in our study**
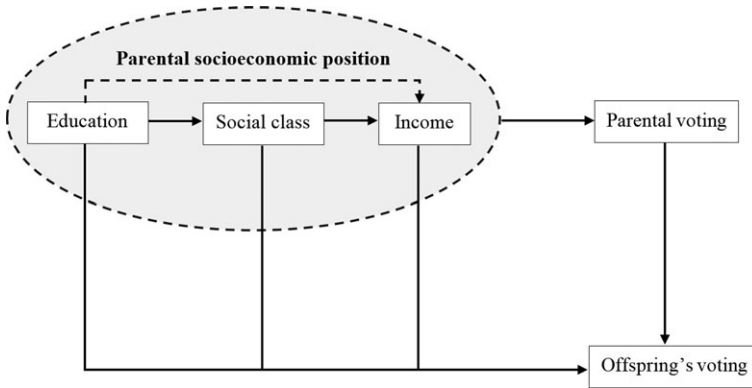


Current research considers parental education the most important socioeconomic factor in explaining the inter-generational persistence of political participation (Beck and Jennings 1982; Gidengil et al. 2016; Plutzer 2002; Verba et al. 2003, 2005). Parental education is closely related to the human and cultural capital embedded in the childhood family. Individual educational attainment has been associated with civic duty, civic skills, political knowledge, and political efficacy (Jackson 1995). Parents may try to pass these assets on to children or simply contribute to the family cultural environment in such a way that children learn to value political participation as a civic virtue. An alternative approach in the literature has been to consider the effect of education as relative or "positional," so that the value of education for participation depends on whether others also have it. In this view, the ultimate effect of education is more related to social status and social networks that correlate with education than to skills and assets learned in education itself (Tenn 2005; for a review, Persson 2015). Parental educational level may also play a role, reflecting both what parents teach their children as well as the kind family environment that prevails at home.

Although less commonly addressed as a socioeconomic indicator than education or income in the voter turnout literature (Smets and van Ham 2013), some studies have found a connection between parental social class and an offspring's propensity to vote (Denny and Doyle 2008, 2009). Social class is usually measured by classifying occupations into specific groups, which makes it an indicator of an individual's childhood family's position in the economic system in terms of relations in the labor market and production units (Chan and Goldthorpe 2007). Mechanisms associated with parental social class that affect the offspring's voting can include occupation-linked skills and the resources of the family (Brady, Verba, and Schlozman 1995). As with education, social class is associated with the parents' social capital, such as the social circles the parents are connected to through their work (Lin 1999), membership of various associations (Pichler and Wallace 2009), or social networks consisting of people who are likely to vote (Savage 2015: Chapter 4), and in trust in institutions and

politicians (Kouvo 2010). Furthermore, the world of politics is culturally closer to middle-class experience, and arguably increasingly so, while individuals socialized in the working-class culture are alienated from it. This alienation is seen, for example, in that the political representatives with working-class backgrounds have declined considerably during recent decades (Evans and Tilley 2017: Chapter 6; Heath 2016), and the political actors have also become more professional rather than being voluntary activists (Skocpol 2003). Campaign professionals, in turn, are more likely to contact potential voters with advantaged socioeconomic positions (Enos et al. 2014; Rosenstone and Hansen 2003). The left-wing parties overall have arguably shifted their strategies away from attracting their traditional working-class constituency into gaining electoral support from the middle classes, as also seen in the decline of the association in the class and party choice (see Evans and Tilley 2017; Goldthorpe 2002; Jansen, Evans, and de Graaf 2013). This has led to a political vacuum and elevated working-class voting abstention rates.

Numerous analyses have shown that citizens with a higher income are more likely to show up at the polling booths, and some studies have also found a similar relationship between parental income and voter turnout (Smets and van Ham 2013). Income is a straightforward indicator of the material resources of the childhood family. Access to political information can depend on a family's affluence, for example, since higher income families can afford newspaper subscriptions or maintain more efficient Internet connections more easily (Gonzales 2016). Moreover, parental income affects the neighborhood in which the offspring grow up, and this context may have an effect on political participation (Huckfeldt 1979). For instance, there may be better schools as well as more attempts to mobilize political actors in more affluent neighborhoods.

As discussed so far, the four observed factors in our study—parental education, social class, income, and voting—are likely to have somewhat different direct influences on the offspring's voting propensity. Yet some of their effects are likely to be indistinguishable. Social status is a potential candidate for capturing the mechanism that explains the *shared* effect of these three socioeconomic factors. Social status refers to social order understood as the "structure of relations of perceived, and in some degree accepted, social superiority, equality, and inferiority among individuals" (Chan and Goldthorpe 2007). It is often measured through occupations but, by definition, it does not have to be so, since we may just as well argue that it consists of the joint effects of the key socially stratifying factors. As an aggregate psychological effect of socioeconomic position, perceiving high social status may empower a person's internal political efficacy (self-confidence in assessing the ability to understand politics) and external political efficacy (the feeling that the individual is able to influence what the government does); while on the other hand, perceiving low status may build a sense of "disqualification" as a political citizen (Bourdieu 1984, 405–17; Laurison 2015, 2016). The status of the childhood family may have lasting independent effects on individual habitus in addition to an indirect effect via the intergenerational transmission of socioeconomic position.

## Gender Effects

Traditionally, as often the main breadwinners of the family, social class position of men has been argued to be more important in the life chances of their family members than that of women (for an example in class voting, Erikson and Goldthorpe 1992; for a review, Sørensen 1994). Even though this approach has lost much of its popularity (e.g., Beller 2009), there is still a lack of empirical information on the relationship between social stratification and gender. The case of Finland fits well for assessing this, since the labor force participation rates of men and women are almost the same (OECD 2012), and thus it can perhaps be considered to be a forerunner of a worldwide trend toward a converging employment gap between the genders (ILO 2016). On the other hand, a mother's important contribution as the primary caretaker and socialization agent in her offspring's political participation has also been underlined in a number of studies (for a review, Gidengil et al. 2016). Therefore, it may be expected that both mother and father matter in terms of inter-generational transmission in political participation, with the father's effect, perhaps being more pronounced in the contribution of socioeconomic factors and the mother's effect in her propensity to vote.

## The Finnish Context

Finland is an extensive welfare state with highly progressive taxation, which has resulted in relatively small overall socioeconomic differences (Kvist 2012). Reflecting free of charge education at all levels and widely employed income redistribution, the rate of social mobility between parents and their offspring in education (Hertz et al. 2008; Pfeffer 2008), social class (Erola 2009), and income/earnings (Björklund et al. 2002; Jäntti and Jenkins 2015; Solon 2002) is high by international comparison. However, although narrowing socioeconomic inequality and promoting social mobility have been explicitly pursued aims in Finnish politics, substantial gaps in political participation persist. Socioeconomic differences in voter turnout in Finland vary from average-to-high in education (Gallego 2010), social class (Caínzos and Voces 2010), and income (Kasara and Suryanarayan 2015) in comparative settings. Finally, a strong association between the voting propensity of parents and offspring has also been found in the previous analysis conducted in Finland (Gidengil et al. 2016), although we are not aware of any studies that directly compare the strength of this association between countries.

Finland has an open-list proportional electoral system and, after the 2015 elections, the 200-member unicameral parliament was shared between eight parties. In recent years, voter turnout in parliamentary elections has fluctuated around 70 percent (70.1 percent in 2015). The level of political interest is relatively high, but at the same time, many voters find the Finnish electoral system complicated and hard to understand (Rapeli and Borg 2016). These observations fit well with the character of the fragmented party and candidate system that offers a plenty of options. On the other hand, the political system can be

considered as being rather predictable and is perceived by citizens as having fairly high legitimacy (Karvonen 2014).

## Data and Methods

### Data and Study Population

The dataset used in this study is a register-based sample of individuals in the electoral wards of Finland that utilized electronic voting registers in the 2015 parliamentary elections. These registers were used in 402 electoral wards and 115 municipalities, covering 24.2 percent of the individual-level electorate. Using personal identification codes, the information derived from these registers was combined with several administrative registers with information on demographic and socioeconomic factors as well as information on voting in the 1999 parliamentary elections on the full electorate that was manually linked to population registers from paper-format voting lists in the early 2000s. The data also contain a linkage between siblings and their parents. The sibship was primarily defined between individuals who shared both biological parents, as usually officially registered at their birth. In rare cases where an individual was adopted, then adoptive parents were used. In order to be included, an individual had been born between 1980 and 1989, and have at least one sibling identified in the data born between 1980 and 1989. In addition, an individual must have parental information from around the time of the 1999 parliamentary elections; i.e., both parents must have been alive and residing in Finland during the elections. The sample in our main analysis, containing 34,628 individuals and 16,353 families, consisted of cohorts born between 1980 and 1989.

The data have obvious strengths in inter-generational studies as well as in studying voter turnout including no bias due to faulty recall, self-selection of the respondents or social desirability. Despite this, the data also have their weaknesses. The study population does not constitute a random sample of the Finnish electorate as the municipalities could choose which wards would participate in the electronic register pilot. According to our diagnostics, rural areas in northern Finland are to some extent overrepresented and the capital city of Helsinki underrepresented in the data. However, with very few exceptions (e.g., working in the electoral administration), individuals do not know whether their ward was utilized in the electronic or traditional paper lists. As there is no individual-level self-selection of the study population, large systematic biases in the relationships of variables should not be expected. This is also partly demonstrated in table A1 in the appendix where the age and gender distributions of the study population resemble numbers obtained from the full Finnish census.[3]

Although we do not expect substantial systematic biases in the relationships between variables at the individual level, the way the data were collected raises possible concerns specifically regarding the sibling design. The size of the original dataset is considerable, but the majority of individuals in our study have no siblings in the data, and the siblings of roughly one-third of those who have were excluded because they had not been born between 1980 and 1989.

Although the number of level two units (*n*:16,353) is still reasonably large compared to more conventional survey-based multi-level datasets, some bias in the results can potentially arise from the fact that sibling groups are always linked if they live in the same electoral ward. Siblings living close to each other may have more contact with each other than those living far apart (White 2001) and are possibly more likely to share common characteristics. In addition, studies conducted in the UK and the Netherlands indicate that those with lower education or lower educated parents are more likely co-reside or live close to their parents (Chan and Ermisch 2015; Michielin and Mulder 2007). Overall, the effect of the observed parental factors may be more pronounced for those living close to them. However, electoral wards in Finland, each of which includes one polling station, are small, and thus the number of siblings living in the same wards is likely to be limited. This is especially likely in Finland, which has a low median age for moving away from parents (Billari, Philipov, and Baizán 2001; Mandic 2008). In addition, as a robustness check, we have compared distributions of the observed parental characteristic between our study population and singleton clusters as well as coefficients of determination in single level linear probability models. The results in appendix A2 do not provide consistent evidence that our data are biased toward individuals with disadvantaged backgrounds. The results in appendix A3, in turn, show that the observed parental factors do explain more variation for those with siblings identified than singleton clusters, although the difference is not large. We thus conclude that this bias, although likely to exist, is unlikely to be strong.

## *Variables*

Our outcome variable was voting in the Finnish 2015 elections (did not vote/voted). Individual-level variables were gender (man/woman), age (dummies for each year in 2015), and native language (Finnish/Swedish/other or unknown). Table A1 shows the distributions of individual-level variables and turnout in each group in the Supplementary information.

Observed parental characteristics were education, social class, income, and voting in 1999. The measure of education is based on the highest degree the parent has achieved (basic/secondary/lowest tertiary/lower tertiary/higher tertiary). Social class was measured according to the seven-class Erikson–Goldthorpe–Portocarero scheme (I: higher-grade professionals, administrators, and officials; managers in large industrial establishments; large proprietors/II: lower-grade professionals, administrators, and officials, higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employees/$III_a$: routine non-manual employees, higher grade (administration and commerce)/$III_b$: routine non-manual employees, lower grade (sales and services)/$IV_{a+b+c}$: self-employed/V+VI: lower-grade technicians; supervisors of manual workers and skilled manual workers/$VII_{a+b}$: semi-skilled and unskilled manual workers). Income is measured as quintiles and voting in 1999 in three categories (yes/no/ineligible). Parental education and income were measured as at the end of 1998, social class as at the end of 1995 (before 2007, social class was updated in the

Finnish census only at five-year intervals) or retrospectively based on the previous occupation if not employed then. Using income as quintiles provides a better model fit than using the linear or logged form of it. Distributions of the parental characteristics are shown in table A2 of the Supplementary information.

## Family Variance Decomposition Method

For estimating the family-related effects, we fitted a number of two-level random intercept linear probability models with maximum-likelihood estimation.[4] Level 1 contains individuals; level 2 contains siblings in the same family. Following the notation of Rabe-Hesketh and Skrondal (2012, 127–128), our models take this form:

$$y_{ij} = \beta_1 + \beta_2 x_{2ij} + \ldots + \beta_p x_{pij} + \zeta_j + \varepsilon_{ij},$$

where $y_{ij}$ is the estimated probability of voting in 2015 for an individual $i$ in family $j$; $\beta_1$ is the constant; $\beta_2 x_{2ij} + \ldots + \beta_p x_{pij}$ are independent variables; $\zeta_j$ is the family-level residual term for family $j$, and $\varepsilon_{ij}$ is the individual-level residual term for individual $i$ in family $j$. In our main analysis, we focused on residual parameters $\zeta$ and $\varepsilon$, and more specifically on their variances $\psi$ (variance of $\zeta$) and $\theta$ (variance of $\varepsilon$). For the corresponding regression coefficients, see table A4 in the Supplementary information.

Our analysis began with an "empty" model adjusted for an individual's gender, age, and native language and for no family-level variables. We then added models containing different combinations of the observed father's factors (education, social class, income, and voting in 1999). Next, we fitted identical models, except that the father's information was replaced by the mother's information. Third, we fitted similar models with information on both father and mother and their interaction.

The analysis was undertaken in two phases. First, we specified the proportion of total variance between individuals that unobserved family variance accounts for. These statistics are called intra-class correlations, or in this specific design, sibling correlations, which are calculated as follows:

$$\rho_{\text{model\_}n} = \frac{\psi_{\text{model\_}n}}{\psi_{\text{model\_}n} + \theta_{\text{model\_}n}},$$

where $\rho$ is the sibling correlation in model $n$, $\psi$ is the variance of the family-level residual term, and $\theta$ is the variance of individual-level residual term in the corresponding models.

Second, we compared how large a proportion of unobserved family-level variance ($\psi$) is reduced by adding parental variables. This statistic can be interpreted as the proportion of level-2 variance explained or the level-2 coefficient of determination $R_2^2$ (Rabe-Hesketh and Skrondal 2012, 136; Raudenbush and Bryk 2002, 74). We measured both the contribution that is shared with other factors

as well as the direct contribution of each factor. The shared contribution for factor $n$ was calculated as follows:

$$R^2_{2,\text{shared}\_n} = \frac{\Psi_{\text{model}\_e} - \Psi_{\text{model}\_n}}{\Psi_{\text{model}\_e}},$$

where model $e$ is the "empty" model including only individual-level controls (gender, age, and native language) and model $n$ is the parent's gender-specific (father, mother, or both) model containing parental factor $n$. Direct contributions were calculated as follows:

$$R^2_{2,\text{direct}\_n} = \frac{\Psi_{\text{model}\_f \backslash n} - \Psi_{\text{model}\_f}}{\Psi_{\text{model}\_e}},$$

where model $f$ is the parent's gender-specific full model and model $f\backslash n$ is the full model excluding factor $n$. For direct and shared contributions, 95 percent confidence intervals were obtained by bootstrapping (500 replications of cluster-level samples).

# Results

## Main Analysis

Table 1 shows that between-family variance ($\psi$) accounted for ($\rho$) 24.7 percent of the total individual-level variance ($\psi + \theta$) of voting in the 2015 Finnish parliamentary elections. This can be seen in the "empty" model in which an individual's gender, age, and native language were controlled for but no parental factors. Adjusting models for parental characteristics decreased the between-family variance ($\psi$), but not the residual variance ($\theta$). This is not surprising since parental characteristics are shared between siblings. In the fully controlled model, unobserved between-family variance accounted for 18.4 percent of the total variance. We can attribute 31.2 percent of the total between-family

**Table 1. Model Characteristics of the "Empty" Model with No Parental Characteristics and Full Parental Models (Adjusted for Parental Education, Social Class, Income, and Voting in 1999).**

| Model | $\psi$ | $\theta$ | $\rho$ | $R^2_2$ | Log likelihood | df | AIC | BIC |
|---|---|---|---|---|---|---|---|---|
| "Empty" | 0.058 | 0.177 | 0.247 | | −23,467 | 15 | 46,964 | 47,091 |
| Father | 0.045 | 0.177 | 0.204 | 0.216 | −22717 | 31 | 45,496 | 45,758 |
| Mother | 0.044 | 0.177 | 0.198 | 0.244 | −22,614 | 31 | 45,292 | 45,554 |
| Both | 0.040 | 0.177 | 0.184 | 0.312 | −22,359 | 119 | 44,957 | 45,963 |

*Notes*: $\psi$: within-family variance, $\theta$: between-family variance, $\rho$: sibling correlation, df: degrees of freedom, $R^2_2$: proportion of $\psi$ reduced relative to "empty" model. AIC, Akaike information criterion; BIC: Bayesian information criterion.

variance to the observed paternal and maternal characteristics of education, social class, income, and voting in the 1999 parliamentary elections.

This far, our analysis has shown that the family and community background matters, as siblings share one-quarter of the total variance in voting. The next obvious question concerns whether this is a large or small effect. As such, the effect sizes are possibly best investigated by comparing them with results obtained with other outcomes in our data. We tested sibling correlations of two other factors, namely, education, and having children. Education is known to be strongly dependent on social origins (Björklund and Salvanes 2011; Erola et al. 2016; Kivinen, Hedman, and Kaipainen 2007), and family formation moderately dependent on it (Lyngstad and Prskawetz 2010; Raab et al. 2014). It should be noted that there is a technical limitation in our analysis that is likely to bias our results in the more conservative direction, as binary outcome variables usually cannot produce a very large overall fit in linear prediction (Cox and Wermuth 1992). In addition, binary outcomes tend to bias intra-class correlations downwards, as demonstrated via Monte Carlo simulations in appendix A5. Therefore, to facilitate comparability, we dichotomized these variables to indicate the completion of tertiary education (34 percent of the study population) and having at least one child (46 percent of the study population, cf. 39 percent of the study population did not vote).

The analysis with these outcomes in table 2 implies that family and community background exert a strong effect on voter turnout. Between-family variance accounts for 27 percent of the total variance in education and 15 percent of the variation in having at least one child.[5] Comparing this with the corresponding

**Table 2. The Contribution of Family Background in Voting Relative to Completing Tertiary Education and Having Least One Child**

| | $\psi$ | $\theta$ | $\rho$ | $R_2^2$ | log likelihood | df | AIC | BIC |
|---|---|---|---|---|---|---|---|---|
| **Voting in 2015** | | | | | | | | |
| "Empty" | 0.058 | 0.177 | 0.247 | | −23,467 | 15 | 46,964 | 47,091 |
| SEP-adjusted | 0.046 | 0.177 | 0.206 | 0.207 | −22,734 | 111 | 45,691 | 46,629 |
| **Tertiary degree** | | | | | | | | |
| "Empty" | 0.056 | 0.156 | 0.266 | | −21,552 | 15 | 43,134 | 43,261 |
| SEP-adjusted | 0.035 | 0.156 | 0.184 | 0.380 | −20,088 | 111 | 40,397 | 41,336 |
| **Reproduction** | | | | | | | | |
| "Empty" | 0.032 | 0.187 | 0.147 | | −22,667 | 15 | 45,365 | 45,491 |
| SEP-adjusted | 0.029 | 0.187 | 0.134 | 0.100 | −22,436 | 111 | 45,095 | 46,033 |

N: 34,628 individuals; 16,353 families.

**Notes:** $\psi$: within-family variance, $\theta$: between-family variance, $\rho$: sibling correlation, df: degrees of freedom, $R_2^2$: proportion of $\psi$ reduced relative to "empty" model. AIC, Akaike information criterion; BIC, Bayesian information criterion.

"Empty" models include individual's age, gender and native language; SEP-adjusted model include education, social class and income from both parents and their interaction.

figure in voter turnout (25 percent), we can conclude that siblings are considerably more similar in terms of voting than in having children and only slightly more different than in their educational achievement. Correspondingly, the proportion of the between-family variance in voter turnout explained by both parents' socioeconomic position (21 percent) is between the corresponding statistic of completing a higher degree (38 percent) and having a child (10 percent).

Figure 2 (for the corresponding table, see appendix A6) illustrates the contribution of each of the observed parental factors in explaining the between-family variance. As mentioned, we could explain 31.2 percent of the total between-family variance in voter turnout of the 2015 Finnish parliamentary elections. Figure 2 shows that among socioeconomic variables, education and social class had roughly equal effects on explaining family variance, whereas the effect of income was small. This was the case especially with direct effect, i.e., the contribution of each variable independent of a parent's other socioeconomic factors and his/her voting. Although the direct effect of each of the socioeconomic factors is relatively small, they are not negligible as the explanatory power is nevertheless increased when all three socioeconomic factors are added to the model at the same time, as seen in the bars of the "SEP combined" block in figure 2. For example, using all three socioeconomic variables from both parents explained 46 percent more between-family variance than using only education; 45 percent more than using only social class and 195 percent more than using only income.

**Figure 2. Proportion of unobserved between-family variance of voting in the 2015 Finnish parliamentary elections explained by models including different parental variables ($R_2^2$) with 95 percent confidence intervals.**
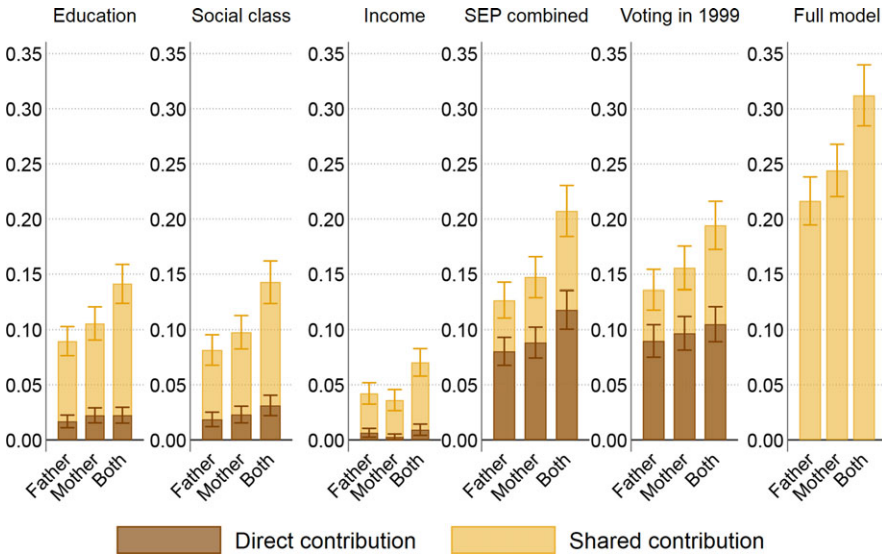


N: 34,628 individuals; 16,353 families.
**Note:** SEP combined includes education, social class, and income in the same model.

Moreover, figure 2 shows that the socioeconomic positions of both parents had their independent contributions, as controlling for both parents explained 41 percent more between-family variance than using only a mother's indicators of socioeconomic position separately and 64 percent when using only a father's.

Parental voting explained an equal amount of between-family variance as parental socioeconomic position (13 vs. 14 percent if estimated either from father only; 15 vs. 16 percent from mother only; 21 vs. 19 percent from both parents). This observation also demonstrates the advantage of sibling correlation as a broader measure of an individual's background over the inter-generational correlation of voting. Even voting of both parents could only account for one-fifth of the variance that siblings share.[6]

Again, the voting propensities of both parents made their independent contributions. The contribution of the mothers' observed factors was slightly larger than the fathers' factors in all cases except income. However, differences were small, and no comparisons were statistically significant at the conventional 95 percent level. Having information on both parents in all observed factors explained 28 percent more shared family variance than using only a mother's information and 44 percent than using only a father's information.

### Additional Analyses

We conducted three series of additional analyses that serve partly as robustness checks, as well as providing a fuller picture of the pre-adult background of electoral participation. The first additional analysis (appendices A7–A9) was done by stratifying offspring by gender into groups of brothers and sisters, and then conducting analysis identical to the main analysis (tables 1 and 2 and figure 2). This showed that intra-class correlations are slightly larger among same-sex sibling groups than in all sibling groups (0.271 for brothers and 0.277 for sisters in "empty" models). This is hardly a surprising observation, since same-gender sibling groups are almost necessarily more homogenous than mixed-gender groups, given that the same-gender siblings share one factor (gender) that the mixed-gender siblings do not share. However, there are practically no gender differences in the relative effects of individual parental socioeconomic factors or voting. Neither did we manage to replicate the results of some of the previous analyses, which had indicated that a mother's effects on daughters are more pronounced than in other parent–child gender combinations (Gidengil, O'Neill, and Young 2010; Owen and Dennis 1988).

The second set of additional analyses (appendices A10–A12) was again identical to the main analysis, except in that the study population consisted of cohorts born in between 1970 and 1979 instead of 1980–1989. This analysis shows that between-family variance accounts for a somewhat smaller amount of total variance ($\rho = 0.199$ in the "empty" model) than among the younger cohort. This is not surprising either, given that the time spent with the childhood family is more distant for the older population. However, we can attribute a larger share of the between-family variation to observed parental factors or an older cohort (36.5 percent; cf. 31.2 percent for the 1980–1989 cohort). On the other hand, there

was little difference in the contribution of the observed family characteristics in explaining total variance (7.3 percent for the 1970–1979 cohort, cf. 7.7 percent for the 1980–1989 cohort). Finally, the effect of parental voting relative to the socioeconomic position was perhaps a little more pronounced in the 1970–1979 than the 1980–1989 cohort.

The third set of analysis (appendices A13–A15) was conducted by including those individuals with no sibling identified in the data (*n*: 122,917 individuals; 104,642 families). The overall results were robust between this and the main analysis, as only very minor changes were observed in the estimates.

## Discussion

In this study, we have assessed how much the shared observed and unobserved factors of the childhood family and community background of an individual matter in his/her propensity to participate in the 2015 Finnish parliamentary elections by utilizing a sibling design on high-quality individual-level register-based data with nuanced indicators of the parental socioeconomic position. We found that between-family variance accounts for one-quarter of the total individual-level variance in voter turnout. Just below one-third of this shared variance between siblings could be attributed to the socioeconomic position of the father and mother and their voting in the 1999 parliamentary elections.

The results support the perception that an individual's pre-adult background has a major impact on his/her voting propensity. Based on our data, sibling correlations on voting were only slightly lower than in education when dichotomized, which in turn has one of the largest known sibling correlations among the sociological factors, even approaching the sibling correlation of height in some analyses (Björklund and Jäntti 2012; Björklund and Salvanes 2011; Mazumder 2008; Silventoinen 2003). It should also be noted that sibling correlations give the lower bound of the estimate of family and community background, as there are factors originating from it that siblings do not share. This is the case, for example, if there are major changes in the living environment of the family over time, or if parents treat siblings differently. For instance, if one sibling shows much more interest in politics, parents may encourage this behavior, whereas other siblings are supported to pursue other interests. Finally, our additional analysis provided tentative evidence that sibling similarities may weaken as the siblings grow older. This is something that future studies could address in a more detail.

Turning our attention to our second research aim, the contribution of family socioeconomic position and voting, the results imply that electoral participation is a phenomenon in which both the parental socioeconomic position and their voting are important. The contribution of the parent's socioeconomic variables combined and his/her voting was equal in their size. The contribution of parental socioeconomic position in explaining sibling similarities in voting is comparable to its contribution in explaining economic outcomes of siblings in Denmark, Sweden, and the US (Andrade 2016; Björklund, Lindahl, and Lindquist 2010; Mazumder 2008), but less than the occupational prestige or income in previous

Finnish studies (Erola et al. 2016; Österbacka 2001), or occupational prestige and education in a historical analysis of various countries (Sieben and de Graaf 2001). Furthermore, the findings stress the multi-dimensionality of socioeconomic position. Our study showed that although most of the effects of parental education, social class, and income are shared with each other, using all three indicators explains around 40 percent more shared variation than using only education or social class and even more when compared only to income. As different socioeconomic factors have somewhat separate pathways, we recommend using a multiple-indicator approach in measuring them whenever possible.

The importance of these indicators—education, social class, and income—have also been recognized at the conceptual level in the political participation literature (Laurison 2016; Leighley and Nagler 1992; Verba, Burns, and Schlozman 2003; Verba, Schlozman, and Burns 2005), but using each of them in empirical analyses of turnout has been quite rare. This is particularly evident when measuring the position of an individual's childhood family (however, for an exception, see Plutzer 2002). Thus, the recommendations of Brady et al. (2015) to adopt similar approaches to research on political reproduction that are used in research on social stratification, where such a multi-indicator strategy is more established, seem warranted.

In assessing the contribution of distinct socioeconomic factors, perhaps the most interesting observation in our analyses was that parental social class was as important a factor in accounting for the offspring's voting as parental education.[7] This contributes to the conventional view of the status transmission theory which has considered parental education to be the driver in the inter-generational reproduction of participation (Beck and Jennings 1982; Gidengil et al. 2016; Plutzer 2002; Verba, Burns, and Schlozman 2003; Verba, Schlozman, and Burns 2005). However, this observation is in line with the conclusions of Janoski and Wilson (1995), emphasizing the profession-related factors in the inter-generational transmission of self-oriented participation in general. It also resonates with recent suggestions that social class could be utilized more widely in investigating inter-generational transmission of political participation (Brady, Kay Schlozman, and Verba 2015; Lahtinen et al. 2017).

The results also show that father and mother both matter. With the exception of income, mother's observed factors perhaps slightly exceeded fathers, but none of the differences between father's and mother's observed factors were statistically significant. This observation is interesting since it is in contrast both with results obtained in studies of social mobility, where the father's position often tends to play a more crucial role (Erola et al. 2016), and with previous studies that have noted the importance of mothers in the transmission of political participation (Gidengil et al. 2016; Gidengil, O'Neill, and Young 2010). The observation of roughly equal importance between mother and father further stresses the multi-dimensionality of the socioeconomic position of the individual's childhood family. Hence, we recommend using information from both parents whenever possible, in addition to multiple measures of socioeconomic position.

Further studies with comparative settings are needed to assess the generalizability of our findings to other country contexts. As the associations between

parental voting, socioeconomic background and offspring's voting have been shown to be fairly robust, at least among the established democracies in economically advanced countries, we expect our general findings to hold relatively well elsewhere. However, there are factors which suggest the relationship may be stronger in some other contexts. First, Finnish culture is usually considered as comparatively individualist in contrast to more family-centered cultures (Mandic 2008). Second, Finland is characterized by a relatively extensive welfare state, which has aimed to reduce the importance of an individual's family background in constraining his/her life changes. At least in terms of economic outcomes, sibling correlations are relatively low by international comparison (Björklund et al. 2002). Third, there may also be context-sensitivity in the observed parental factors. For instance, parental income may play a more important role in countries with less income equality.

Moreover, the strong contribution of parental social class was an observation that warrants further testing in other contexts. There has traditionally been a strong social class cleavage in the Finnish party politics (Jansen et al. 2013; Westinen 2015) as well as strong culture of consensual decision making and corporatism, such as influential labor unions (Allern, Aylott, and Christiansen 2007), that provide breeding ground for class-based political participation. However, it is not clear how should this affect our results. On the one hand, strong class-structuration in political system could lead to a strong political tradition also in working-class families which, in turn, may weaken the discriminatory power of social class background in turnout. On the other hand, the weakening link between class and party (Jansen et al. 2013) and declining role of trade unions during recent decades (Allern, Aylott, and Christiansen 2007), particularly as venues of political participation (Julkunen 2009), could also have led to a decline in political socialization between generations in working classes.

Finally, most of the resemblance between siblings was left unexplained. We observed only parental characteristics, although parents are only one among many agents of political socialization. Other potential socialization agents that siblings may share include the siblings themselves, grandparents and other relatives, school, peers, media, neighborhoods, voluntary associations, and electoral contexts (see Abendschön 2013; Pacheco 2008). In addition, the contributions of the different candidate mechanisms of the parental socioeconomic factors discussed in the introduction could be further studied.

Limitations must also be addressed. First, the estimates of the observed parental factors are not causal. It is likely that there are genetic confounders that affect both parental socioeconomic position/voting and their offspring's voting (e.g., Cesarini, Johannesson, and Oskarsson 2014). In future studies, our results could be complemented by assessing the extent to which biologically heritable factors contribute in the inter-generational transmission. Second, having information on several consecutive elections would overcome the limitation of low model fits with binary outcomes. This could reduce also the noise attributable to sudden tangible factors such as temporary sickness and traveling that may prevent voting in particular elections. For similar reasons, the contribution of parental voting should increase if information on it over many elections were available. The

explanatory power of income would also likely be larger if it was measured over several years, as the random fluctuation in it would be smaller as well (cf. Erikson and Goldthorpe 2010; Solon 1992, 1999).

## Conclusions

In one sense, voting in elections is a poignantly individualistic act, even performed in an isolated booth. However, as one cannot choose one's childhood family, our study has demonstrated that a large proportion of the differences in this act paradoxically originates from factors that are beyond an individual's own control. This is an excellent example of the classical dilemma of the complex interplay between structure and agent in sociology. The contradiction is only superficial when inspected more closely, however. The political engagement of an individual is not an isolated factor but is closely related to social integration (Blais 2000, 54), well-being (Allardt 1976; Stiglitz et al. 2010), and exclusion (Burchardt, Le Grand, and Piachaud 1999; Evans and Tilley 2017). Furthermore, as one's political voice (see Verba, Schlozman, and Brady 1995) is essentially the power to influence society, the notion that it is distributed unequally between socioeconomic groups seems even more evident. This inequality in the political voice is also seen in the parliamentary representation which partly stems from that those in the lower socioeconomic positions simply vote less (Leighley and Nagler 2013).

Social inequalities are not only reflected in the political decision-making, but the inequality is also maintained and increased or decreased with political decisions. Political representatives tend to promote the interests of their voters, and perhaps even have a moral obligation to do so. If the disadvantaged do not vote, political decision-making will follow the interests of the advantaged. This can cause policies that increase the social distance between winners and losers even further (see Franko, Kelly, and Witko 2016). A vicious circle is established if policies that increase inequality lead to increasing cynicism towards representational democracy among the disadvantaged, and thus to even less willingness to participate in it. Our findings have underlined the importance of an additional twist in this circle, namely that (un)willingness to participate is further transmitted from one generation to the next. This raises concerns for functioning of both the representational system and civil society (see also Putnam 2015).

As this and other studies have shown, since voting inequality is a complex and multi-dimensional phenomenon, an easy and simple way to untangle this skein is not likely to exist.[8] However, narrowing social distances between socioeconomic groups has some potential to decrease differences in participation. For example, a recent study has shown that intra-generational social mobility is a mechanism that reduces the differences between socioeconomic groups in voter turnout (Lahtinen, Wass, and Hiilamo 2017). At a more grassroots level, there is promising evidence of the efficiency of face-to-face political mobilization and mobilization through personal social networks for the low-turnout groups (for a review, Laurison 2016). Finally, the solution may also come from the supply side. The individuals with low socioeconomic positions constitute an untapped

base of support for those political actors that manage to mobilize them. Channeling this unaddressed demand may partly explain the rise of the populist groups in many countries, as they have gained support especially among the members of the working class (Evans and Tilley 2017: Chapter 8; Morgan, and Lee 2018; Oesch 2008).

## Notes

1. However, despite the broader interpretation, sibling designs produce a lower bound estimate of the overall effect of an individual's background, as there are many pre-adult factors that siblings do not share.
2. A reverse relationship between parental and offspring's voting is also possible, i.e., politically active children may mobilize their parents (Dahlgaard 2018). However, in this study, this potential endogeneity is minimized since parental turnout was measured sixteen years before the offspring's turnout, when most of them were still underage.
3. However, the distributions regarding the language differ, which is not surprising as both an individual's parents had to have been able to vote in the 1999 elections. Finland has a relatively short history of receiving a substantial number of migrants. Hence, there are very few second-generation Finns in the cohorts born between 1980 and 1989. In addition, there is some overrepresentation of individuals in the middle of the age distribution. This is explained by the fact that they are more likely to have siblings that were also born between 1980 and 1989. Such an overrepresentation disappears when singleton clusters are included.
4. A linear probability model has been chosen instead of a more common logistic model since the latter do not contain an individual-level error term. Hence, the comparison of the variances between levels 1 and 2 in a logistic model and changes in them between different models can be problematic. For example, since the individual-level variance is assumed to be constant ($\pi^2/3$), it cannot change between models.
5. Measuring education in four categories, the sibling correlation was $\rho = 0.33$. Measuring the number of children in a continuous form, in turn, yields the sibling correlation $\rho = 0.23$ in our data.
6. More precisely, squared inter-generational correlations of voting were $r^2 = 0.034$ for father-offspring pairs; $r^2 = 0.039$ for mother-offspring; and multiple $r^2 = 0.048$ from voting of both parents. The unadjusted sibling correlation, $\rho = 0.245$, was roughly five times as high (the negligible difference in table 1 is due to not adjusting for age, gender, and language). This is not surprising, as the sibling correlation contains the squared inter-generational correlation plus other shared factors between siblings that contribute to their voting uncorrelated with parental voting (for a formal derivation, see Solon 1999).
7. Education was measured in five groups whereas social class was measured in seven. However, collapsing the social class scheme further by combining classes I and II, as well as V+VI and VII did not change the picture.
8. Even such a radical reform as making voting compulsory would not necessarily lead to lower levels of stratification in turnout (Quintelier, Hooghe, and Marien 2011; however, for a contrary result, see Fowler 2013).

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## Supplementary Material

Supplementary material is available at *Social Forces* online.

## References

Abendschön, Simone. 2013. "Chapter One—Introductions: Political Socialisation in a Changing World." In *Growing into Politics. Contexts and Timing of Political Socialisation*, edited by Simone Abendschön, 1–10 Colchester: ECPR Press.

Allardt, Erik. 1976. "Dimensions of Welfare in a Comparative Scandinavian Study." *Acta Sociologica* 19 (3):227–39.

Allern, E. H., N. Aylott, and F. J. Christiansen. 2007. "Social Democrats and Trade Unions in Scandinavia: The Decline and Persistence of Institutional Relationships." *European Journal of Political Research* 46 (5):607–635.

Andrade, Stefan Bastholm. 2016. "Class Origin and Sibling Similarities in Long-Term Income." *Acta Sociologica* 59(4):309–31.

Beck, Paul Allen, and M. Kent Jennings. 1982. "Pathways to Participation." *American Political Science Review* 76(01):94–108.

Beller, Emily. 2009. "Bringing Intergenerational Social Mobility Research into the Twenty-First Century: Why Mothers Matter." *American Sociological Review* 74(4):507–28.

Bhatti, Yosef, and Kasper M. Hansen. 2012. "Leaving the Nest and the Social Act of Voting: Turnout among First-Time Voters." *Journal of Elections, Public Opinion and Parties* 22(4):380–406.

Billari, Francesco C., Dimiter Philipov, and Pau Baizán. 2001. "Leaving Home in Europe: The Experience of Cohorts Born Around 1960." *Population, Space and Place* 7(5):339–56.

Björklund, Anders, Tor Eriksson, Markus Jäntti, Oddbjörn Raaum, and Eva Österbacka. 2002. "Brother Correlations in Earnings in Denmark, Finland, Norway and Sweden Compared to the United States." *Journal of Population Economics* 15(4):757–772.

Björklund, Anders, and Markus Jäntti. 2012. "How Important Is Family Background for Labor-Economic Outcomes?" *Labour Economics* 19(4):465–74.

Björklund, Anders, Lena Lindahl, and Matthew J. Lindquist. 2010. "What More than Parental Income, Education and Occupation? An Exploration of What Swedish Siblings Get from Their Parents." *The BE Journal of Economic Analysis & Policy* 10(1):1–38.

Björklund, Anders, and Kjell G. Salvanes. 2011. "Education and Family Background: Mechanisms and Policies." In *Handbook of the Economics of Education*, Vol. 3, edited by Eric A. Hanushek, Stephen Machin, and Ludger Woessmann, 201–247 Amsterdam: Elsevier.

Blais, André. 2000. *To Vote or Not to Vote?: The Merits and Limits of Rational Choice Theory.* Pittsburgh: University of Pittsburgh Press.

Bourdieu, Pierre. 1984. *Distinction : A Social Critique of the Judgement of Taste.* Cambridge: Harvard University Press.

Brady, Henry E., Kay Lehman Schlozman, and Sidney Verba. 2015. "Political Mobility and Political Reproduction from Generation to Generation." *The Annals of the American Academy of Political and Social Science* 657(1):149–73.

Brady, Henry E., Sidney Verba, and Kay Lehman Schlozman. 1995. "Beyond Ses: A Resource Model of Political Participation." *The American Political Science Review* 89(2):271–94.

Burchardt, Tania, Julian Le Grand, and David Piachaud. 1999. "Social Exclusion in Britain 1991–1995." *Social Policy & Administration* 33(3):227–44.

Caínzos, Miguel, and Carmen Voces. 2010. "Class Inequalities in Political Participation and the 'Death of Class' Debate." *International Sociology* 25(3):383–418.

Cesarini, David, Magnus Johannesson, and Sven Oskarsson. 2014. "Pre-Birth Factors, Post-Birth Factors, and Voting: Evidence from Swedish Adoption Data." *American Political Science Review* 108(1):71–87.

Chan, Tak W., and John H. Goldthorpe. 2007. "Class and Status: The Conceptual Distinction and Its Empirical Relevance." *American Sociological Review* 72(4):512–32.

Chan, Tak W., and John Ermisch. 2015. "Proximity of Couples to Parents: Influences of Gender, Labor Market, and Family." *Demography* 52(2):379–99.

Cox, David R., and Nanny Wermuth. 1992. "A Comment on the Coefficient of Determination for Binary Responses." *The American Statistician* 46(1):1–4.

Dahlgaard, Jens O. 2018. "Trickle-Up Political Socialization: The Causal Effect on Turnout of Parenting a Newly Enfranchised Voter." *American Political Science Review* 112(3):698–705.

Denny, Kevin, and Orla Doyle. 2008. "Political Interest, Cognitive Ability and Personality: Determinants of Voter Turnout in Britain." *British Journal of Political Science* 38(2):291–310.

———. 2009. "Does Voting History Matter? Analysing Persistence in Turnout." *American Journal of Political Science* 53(1):17–35.

Enos, Ryan D., Anthony Fowler, and Lynn Vavreck. 2014. "Increasing Inequality: The Effect of GOTV Mobilization on the Composition of the Electorate." *The Journal of Politics* 76(1):273–288.

Erikson, Robert, and John H. Goldthorpe. 1992. "Individual or Family? Results from Two Approaches to Class Assignment." *Acta Sociologica* 35(2):95–105.

———. 2010. "Has social mobility in Britain decreased? Reconciling divergent findings on income and class mobility." *British Journal of Sociology* 61(2):211–230.

Erola, Jani. 2009. "Social Mobility and Education of Finnish Cohorts Born 1936–1975. Succeeding While Failing in Equality of Opportunity?" In *Acta Sociologica*, 52(4):, 307–327.

Evans, Geoffrey, and James Tilley. 2017. *The New Politics of Class: The Political Exclusion of the British Working Class*. Oxford: University Press.

Erola, Jani, Sanni Jalonen, and Hannu Lehti. 2016. "Parental Education, Class and Income Over Early Life Course and Children's Achievement." *Research in Social Stratification and Mobility* 44:33–43.

Fowler, Anthony. 2013. "Electoral and Policy Consequences of Voter Turnout: Evidence from Compulsory Voting in Australia." *Quarterly Journal of Political Science* 8(2):159–82.

Franko, William W., Nathan J. Kelly, and Christopher Witko. 2016. "Class Bias in Voter Turnout, Representation, and Income Inequality." *Perspectives on Politics* 14(2):351–68.

Gallego, Aina. 2010. "Understanding Unequal Turnout: Education and Voting in Comparative Perspective." *Electoral Studies* 29(2):239–48.

Gidengil, Elisabeth, Brenda O'Neill, and Lisa Young. 2010. "Her Mother's Daughter? The Influence of Childhood Socialization on Women's Political Engagement." *Journal of Women, Politics & Policy* 31 (4):334–55.

Gidengil, Elisabeth, Hanna Wass, and Maria Valaste. 2016. "Political Socialization and Voting: The Parent–Child Link in Turnout." *Political Research Quarterly* 69(2):373–383.

Goldthorpe, John H. 2002. "Globalisation and Social Class." *West European Politics* 25(3):1–28.

Gonzales, Amy. 2016. "The Contemporary US Digital Divide: From Initial Access to Technology Maintenance." *Information, Communication & Society* 19(2):234–48.

Heath, Oliver. 2016. "Policy Alienation, Social Alienation and Working-Class Abstention in Britain, 1964–2010." *British Journal of Political Science* 48(4):1053–73.

Hertz, Tom, Tamara Jayasundera, Patrizio Piraino, Sibel Selcuk, Nicole Smith, and Alina Verashchagina. 2008. "The Inheritance of Educational Inequality: International Comparisons and Fifty-Year Trends." *The BE Journal of Economic Analysis & Policy* 7(2):1775.

Huckfeldt, R. Robert. 1979. "Political Participation and the Neighborhood Social Context." *American Journal of Political Science* 23(3):579–92.

ILO. 2016. *Women at Work: Trends 2016*. Geneva: International Labour Office.

Jackson, Robert A. 1995. "Clarifying the Relationship between Education and Turnout." *American Politics Quarterly* 23(3):279–99.

Janoski, Thomas, and John Wilson. 1995. "Pathways to Voluntarism: Family Socialization and Status Transmission Models." *Social Forces* 74(1):271–92.

Jansen, Giedo, Geoffrey Evans, and Nan Dirk de Graaf. 2013. "Class Voting and Left–Right Party Positions: A Comparative Study of 15 Western Democracies, 1960–2005." *Social Science Research* 42(2):376–400.

Jäntti, Markus, and Stephen Jenkins. 2015. "Income Mobility." In *Handbook of Income Distribution*, Vol. 2, edited by Anthony Atkinson, and François Bourguignon, 807–935. Amsterdam: Elsevier.

Jennings, M. Kent, and Richard G. Niemi. 1981. *Generations and Politics: A Panel Study of Young Adults and Their Parents*. Princeton: University Press.

Julkunen, Raija. 2009. *Uuden työn paradoksit: keskusteluja 2000-luvun työprosesseista Raija Julkunen*. Tampere: Vastapaino.

Karvonen, Lauri. 2014. *Parties, Governments and Voters in Finland: Politics under Fundamental Societal Transformation*. Colchester: ECPR Press.

Kasara, Kimuli, and Pavithra Suryanarayan. 2015. "When Do the Rich Vote Less than the Poor and Why? Explaining Turnout Inequality across the World." *American Journal of Political Science* 59(3):613–27.

Kivinen, Osmo, Juha Hedman, and Päivi Kaipainen. 2007. "From Elite University to Mass Higher Education Educational Expansion, Equality of Opportunity and Returns to University Education." *Acta Sociologica* 50(3):231–47.

Kouvo, Antti. 2010. "Luokat ja sosiaalinen pääoma." In *Luokaton Suomi? Yhteiskuntaluokat 2000-luvun Suomessa*, edited by Jani Erola, 166–181. Helsinki: Gaudeamus.

Kvist, Jon. 2012. *Changing Social Equality: The Nordic Welfare Model in the 21st Century*. Chicago: Policy Press.

Lahtinen, Hannu, Mikko Mattila, Hanna Wass, and Pekka Martikainen. 2017. "Explaining Social Class Inequality in Voter Turnout: The Contribution of Income and Health." *Scandinavian Political Studies* 40 (4):388–410.

Lahtinen, Hannu, Hanna Wass, and Heikki Hiilamo. 2017. "Gradient Constraint in Voting: The Effect of Intra-Generational Social Class and Income Mobility on Turnout." *Electoral Studies* 45:14–23.

Lareau, Annette, and Dalton Conley. 2008. *Social Class: How Does It Work?* New York: Russell Sage Foundation.

Laurison, Daniel. 2015. "The Willingness to State an Opinion: Inequality, Don't Know Responses, and Political Participation." *Sociological Forum* 30(4):925–48.

———. 2016. "Social Class and Political Engagement in the United States." *Sociology Compass* 10(8): 684–97.

Leighley, Jan E., and Jonathan Nagler. 1992. "Socioeconomic Class Bias in Turnout, 1964-1988: The Voters Remain the Same." *The American Political Science Review* 86(3):725–36.

———. 2013. *Who Votes Now?: Demographics, Issues, Inequality, and Turnout in the United States.* Princeton: University Press.

Lin, Nan. 1999. "Social Networks and Status Attainment." *Annual Review of Sociology* 25467–87.

Lyngstad, Torkild Hovde, and Alexia Prskawetz. 2010. "Do Siblings' Fertility Decisions Influence Each Other?" *Demography* 47(4):923–34.

Mandic, Srna. 2008. "Home-Leaving and its Structural Determinants in Western and Eastern Europe: An Exploratory Study." *Housing Studies* 23(4):615–37.

Mazumder, Bhash. 2008. "Sibling Similarities and Economic Inequality in the US." *Journal of Population Economics* 21(3):685–701.

Michielin, Francesca, and Clara H. Mulder. 2007. "Geographical distances between adult children and their parents in the Netherlands." *Demographic Research* 17:655–78.

Morgan, Stephen L., and Jiwon Lee. 2018. "Trump Voters and the White Working Class." *Sociological Science* 5:234–45.

OECD. 2012. *Closing the Gender Gap: Act Now*. Paris: OECD Publishing.

Oesch, Daniel. 2008. "The Changing Shape of Class Voting." *European Societies* 10(3):329–55.

Österbacka, Eva. 2001. "Family Background and Economic Status in Finland." *Scandinavian Journal of Economics* 103(3):467–484.

Owen, Diana, and Jack Dennis. 1988. "Gender Differences in the Politicization of American Children." *Women & Politics* 8(2):23–43.

Pacheco, Julianna Sandell. 2008. "Political Socialization in Context: The Effect of Political Competition on Youth Voter Turnout." *Political Behavior* 30(4):415–36.

Persson, Mikael. 2015. "Education and Political Participation." *British Journal of Political Science* 45(3): 689–703.

Pfeffer, Fabian T. 2008. "Persistent Inequality in Educational Attainment and Its Institutional Context." *European Sociological Review* 24(5):543–65.

Pichler, Florian, and Claire Wallace. 2009. "Social Capital and Social Class in Europe: The Role of Social Networks in Social Stratification." *European Sociological Review* 3(25):319–32.

Plutzer, Eric. 2002. "Becoming a Habitual Voter: Inertia, Resources, and Growth in Young Adulthood." *The American Political Science Review* 96(1):41–56.

Putnam, Robert D. 2015. *Our Kids : The American Dream in Crisis*. New York: Simon & Schuster.

Quintelier, Ellen, Marc Hooghe, and Sofie Marien. 2011. "The Effect of Compulsory Voting on Turnout Stratification Patterns: A Cross-National Analysis." *International Political Science Review* 32(4):396–416.

Raab, Marcel, Anette Eva Fasang, Aleksi Karhula, and Jani Erola. 2014. "Sibling Similarity in Family Formation." *Demography* 51(6):2127–54.

Rabe-Hesketh, Sophia, and Anders Skrondal. 2012. *Multilevel and Longitudinal Modeling Using Stata: Volume I: Continuous Responses*, 3rd edn. College Station, TX: Stata Press.

Rapeli, Lauri, and Sami Borg. 2016. "Kiinnostavaa mutta monimutkaista: Tiedot, osallistuminen ja suhtautuminen vaikuttamiseen." In *Poliittisen osallistumisen eriytyminen. Eduskuntavaalitutkimus 2015*, edited by Kimmo Grönlund, and Hanna Wass, 358–78. Helsinki: Ministry of Justice.

Raudenbush, Stephen W., and Anthony S. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*, Vol. 1. Thousand Oaks: Sage.

Rosenstone, Steven J., and John M. Hansen. 2003. *Mobilization, Participation, and Democracy in America (Classics Edition)*. New York: Longman, [1993].

Savage, Mike. 2015. *Social Class in the 21st Century*. UK: Penguin.

Selb, Peter, and Simon Munzert. 2013. "Voter Overrepresentation, Vote Misreporting, and Turnout Bias in Postelection Surveys." *Electoral Studies* 32(1):186–196.

Sieben, Inge, and Paul de Graaf. 2001. "Testing the Modernization Hypothesis and the Socialist Ideology Hypothesis: a Comparative Sibling Analysis of Educational Attainment and Occupational Status." *The British Journal of Sociology* 52(3):441–467.

Silventoinen, Karri. 2003. "Determinants of Variation in Adult Body Height." *Journal of Biosocial Science* 35(2):263–85.

Skocpol, Theda. 2003. *Diminished Democracy : From Membership to Management in American Civic Life*. Norman: University of Oklahoma Press.

Smets, Kaat, and Carolien van Ham. 2013. "The Embarrassment of Riches? A Meta-Analysis of Individual-Level Research on Voter Turnout." *Electoral Studies* 32(2):344–59.

Solon, Gary. 1992. "Intergenerational Income Mobility in the United States." *American Economic Review* 82(3):393–408.

———. 1999. "Intergenerational mobility in the labor market." In *Handbook of labor economics*, Vol. 3, edited by Orley C. Ashenfelter, and David Card, 1761–1800 Amsterdam: Elsevier.

_____. 2002. "Cross-Country Differences in Intergenerational Earnings Mobility." *The Journal of Economic Perspectives* 16(3):59–66.

Sørensen, Annemette. 1994. "Women, Family and Class." *Annual Review of Sociology* 20:27–47.

Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi. 2010. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Paris: Commission on the Measurement of Economic Performance and Social Progress.

Tenn, Steven. 2005. "An Alternative Measure of Relative Education to Explain Voter Turnout." *Journal of Politics* 67(1):271–82.

Verba, Sidney, Nancy Burns, and Kay Lehman Schlozman. 2003. "Unequal at the Starting Line: Creating Participatory Inequalities across Generations and among Groups." *The American Sociologist* 34(1–2): 45–69.

Verba, Sidney, Kay Lehman Schlozman, and Henry Brady. 1995. *Voice and Equality. Civic Voluntarism in American Politics*. Cambridge: Harvard University Press.

Verba, Sidney, Kay Lehman Schlozman, and Nancy Burns. 2005. "Family Ties: Understanding the Intergenerational Transmission of Participation." In *The Social Logic of Politics: Personal Networks as Contexts for Political Behavior*, edited by Alan S. Zuckerman, 95–114. Philadelphia: Temple University Press.

Wass, Hanna. 2007. "Generations and Socialization into Electoral Participation in Finland." *Scandinavian Political Studies* 30(1):1–19.

Westinen, Jussi. 2015. "Cleavages––Dead and Gone? An Analysis of Cleavage Structure and Party Choice in Contemporary Finland." *Scandinavian Political Studies* 38(3):277–300.

White, Lynn. 2001. "Sibling Relationships over the Life Course: A Panel Analysis." *Journal of Marriage and Family* 63(2):555–568.