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Inequality across Three Generations under Pressure from Sovietization Policies

Forcing Discontinuity between Two Generations to Strengthen the Impact of Grandparents

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Abstract

This article explores the multigenerational impact of Sovietization policies on the reproduction of educational inequalities in Estonia. Estonia provides an opportunity to assess the multigenerational effect under conditions of regime changes after transitioning from the independent Estonian Republic to Soviet Estonia and thence to the newly independent post-Soviet Estonia. During Sovietization, a wide range of measures involving repressions and positive discrimination were applied to abruptly hinder intergenerational continuity. Analysis based on retrospective data from the Estonian Family and Fertility Survey 2004 indicates grandparents' social positions are associated with grandchildren's attainment of higher education. Their influence is only partially mediated through the parental generation. Overall, the Sovietization policies have not reduced either the two or three-generational reproduction of inequality. Moreover, these policies produced unintended consequences, facilitating the transmission of advantage in three generational perspectives. Our findings argue in favour of the importance of contextual sensitivity and a multigenerational perspective in research of social stratification.

Keywords

multigenerational effect – higher education – Sovietization policies – grandparents

1 Introduction

Education and social inequality and the role of parental resources in its reproduction is an important strand of stratification research, which has recently examined the transmission of educational attainment, social position and income across three or more generations (see for example Bol and Kalmijn 2016; Chan and Boliver 2013; Chiang and Park 2015; Erola and Moisio 2007; Fiel 2019; Hertel and Groh-Samberg 2014; Hällsten 2014; Knigge 2016; Mare 2011; Pfeffer 2014; Sheppard and Monden 2018; Warren and Hauser 1997; Zeng and Xie 2014; Ziefle 2016). The main issue is whether grandparents' resources have a direct effect on grandchildren's attainment or whether the resources of the parents mediate this effect.

The empirical evidence of a direct grandparent's effect, net of that of the parents', is so far mixed (see review by Anderson et al. 2018). A number of studies seem to indicate a Markovian process, which means that any association between higher levels of grandparents' resources and better outcomes of their grandchildren occurs only via the parent's generation, and with the transfer of resources directly from one generation to the next (Bol and Kalmijn 2016; Engzell et al. 2020; Erola and Moisio 2007; Warren and Hauser 1997). Several other studies have showed there is a direct effect of grandparents on grandchildren (Chan and Boliver 2013; Deindl and Tieben 2017; Hertel and Groh-Samberg 2014; Modin et al. 2013; Pfeffer 2014; Zhang and Li 2019).

However, there are good reasons to expect multigenerational mobility processes to differ across countries and time-periods. Differing institutional arrangements may impact on multigenerational transmission of advantages and disadvantages (Mare 2011; Pfeffer 2014). Previous analyses of grandparent effects have been done in a range of Western countries, including the USA, Great Britain, France, Sweden, Finland, Germany, the Netherlands, as well as Taiwan and China. The ambiguity of the results suggests that it is important to extend the research on this issue beyond Western societies. As Mare (2011) indicates, a fruitful context for the research of the grandparent effect includes societies that underwent massive social transformations during the middle and late 20th century. He mentions that especial attention should be paid to Central and Eastern Europe (CEE) countries to examine '... the potential

effects of grandparents who lived primarily in the pre-Soviet era on grandchildren who came of age in the post-Soviet era' (Mare 2011: 17).

In this analysis, we examine the impact of grandfathers on their grandchildren's and children's educational attainment in Estonia. The low level of crystallization of stratification divisions in Estonian society makes it a particularly interesting context to assess the multigenerational effect. Before the Second World War (WWII), Estonia's elite was a tiny group, consisting mainly of members of one generational cohort, the concentration of wealth was quite low, networks spanned across social positions and political parties, as did devotion to ethnic Estonian culture, while gaps between class-specific cultures had not yet widened (Leppik 2008; Mertelsmann 2007). Accompanying the annexation of Estonia before WWII and its subsequent reoccupation after WWII by the Soviet Union, the country was exposed to strong Sovietization policies introduced to abruptly hinder the political, cultural and social continuity of the Estonian Republic. Estonians perceived these policies not only as an interruption of ethnic continuity, but also a threat to the survival of Estonians as an ethnic group, so that their cultural and educational development was considered to be of high importance,¹ even viewed as an act of resistance (Ruutsoo 2002). Intergenerational continuity in a demographical sense is still of great importance even in the 21st century: Estonia features a higher prevalence of multigenerational ties beyond adjacent family generations when compared with many other European countries (Puur et al. 2011).

We explore the impact of Sovietization policies (including repressions) on multigenerational transmission of educational advantage, first of all – to what extent the goal was attained, i.e. to what extent was this intergenerational advantageous linkage between generations destroyed. Previous analysis (Helemäe et al. 2000) was based on the longitudinal data of the life-course of the advantageous segment, i.e. those who attained at least secondary education, of the 1948 birth cohort and the results indicated Soviet policies failed to eliminate social and educational reproduction. In the families that were repressed, the next generation fared about the same as unrepressed Estonians in the terms of access to education, professional mobility, and even membership of the Communist Party (Johnson and Titma 1996). But these data had certain limitations. First, parents of this birth cohort attained education before

1 It is best illustrated by the statement of notable Estonian folklorist, theologian, and linguist, one of the most important figures of Estonian national awakening Jakob Hurt (1839–1907) '... since the Estonians cannot become great in number, they must become great in spirit' (Kodres 1995: 1137).

Sovietisation, i.e. it is impossible to trace the multigenerational impact of these policies. Second, respondents belonging to the highly educated part of the birth cohort might influence the results.

We use retrospective data from the Estonian Family and Fertility Survey 2004. The examined birth cohorts were selected to better catch the short and long-term impact of Sovietization policies on the multigenerational transmission of educational advantage.

2 Multigenerational Transmission of Educational Advantage

Two models of grandparents' effect of grandchildren have been presented: the Markovian model and the non-Markovian model, which presumes that children profit from grandparents' resources only in an indirect way. Empirical results have been mixed. The review of the literature presented by Anderson, Sheppard and Monden (2018) indicates 58% of analyses have been in favour of non-Markovian model: they report that grandparents' socioeconomic characteristics are associated with grandchildren's educational outcomes, independently of the characteristics of parents.

Aligned with data availability and modelling choices, these inconsistencies in results have also been explained by geographic and institutional variation (e.g. Anderson et al. 2018; Engzell et al. 2020) and also the position of family in the social hierarchy (Bol and Kalmijn 2016; Erola and Moisiu 2007; Warren and Hauser 1997). Overall the fundamental issue is, as Mare (2011: 7) argues, 'whether a two-generational.... or a multigenerational view of mobility and inequality is closer to the truth should, in considering any particular population, be matter of empirical investigation'.

The literature mentions several mechanisms that account for multigenerational transmission of educational inequality: direct transfer of material and cultural resources (Pfeffer 2014), culturally transmitted norms, values and dispositions (Zhang and Li 2019), opportunities accessed through social networks and the effect of genetics (Liu 2018). While Mare (2011) contends social institutions might give rise to multigenerational effects due to their key feature of outlasting people. Mare (2011) also suggests the need to think about family resources in terms of their perishability: whether or not they have the potential to last over several generations. Policies and institutions of socialist and especially Soviet Union countries were designed to void multigenerational effects, which makes them especially interesting objects of research.

Economic resources (wealth, social class or occupational incumbency), enable grandparents to facilitate grandchildren's educational attainment

(Sheppard and Monden 2018). A broad range of possible mechanisms (e.g. purchasing, insuring, fostering pro-education norms) have been suggested to explain the effect of family economic resources (especially wealth) on offspring's educational outcomes (e.g., Hällsten and Pfeffer 2017). Grandparents may *pay* for school and university fees, accommodation and maintenance costs, extra-curricular activities, tutoring etc. They may also *provide insurance* for various types of failures, for example allowing educational decisions to be guided by grandchildren's interests rather than external restrictions (Pfeffer and Hällsten 2012). Economic resources may exert intergenerational influence through *fostering pro-education norms* that emphasize higher education as a way to increase the ability to preserve family wealth. The peculiarity of wealth compared with the familial impact of other economic resources, is that the former tends to last over several generations.

Social transformations after WWII in CEE countries legally restricted both accumulation and heritability of wealth, rendering irrelevant this most long-lasting factor of family impact on educational attainment. Moreover, Sovietization policies in pre- and post-WWII Baltic countries included the direct expropriation of private property of 'social alien elements'. Consequently, the context of the socialist state, especially former Soviet Union countries, is hardly supportive of the mobilisation of economic resources to secure multi-generational advantage.²

Grandparents transmit their *cultural resources* to parents but additionally they may transmit their cultural resources directly to grandchildren. They may also provide a stimulating learning environment, help with homework, organize cultural activities or act as role models in ways that shape grandchildren's attitudes, educational preferences and academic achievements (Hertel and Groh-Samberg 2014; Jæger 2012; Møllegaard and Jæger 2015). At the societal level, cultural mechanisms are certainly long-lasting. Thus, Wong (1998) argues that the strong tradition of intelligentsia in many socialist countries explains why cultural capital continued to play a role, even under socialism.

Intergenerational continuity between the pre-war generation and their children was brutally targeted by Sovietization policies, which increased the perishability of family cultural resources. Especially during the early years of Sovietization, belonging to the intelligentsia might even be a negative resource

2 Even with regard to the two-generational view on educational inequality, researchers concur there was almost no room to take advantage of (scarce) economic resources under socialism. This consensus is, however, far from unanimous. Some researchers note, that although higher education was free, the decision to enter university was still costly (e.g., Hazans et al. 2008: 722 refer to such direct costs as preparation and bribery, and also the loss of forgone earnings).

as it brought about a higher risk of repressions, restricted access to secondary and higher education, etc. (Tomusk 2000). The aspect that might make a difference, i.e. operate as an 'advantage' related to cultural resources, were the skills of how to learn, the experiences of learning and the ability to support descendants in the formation of these skills. These features of cultural resources of pre-war white-collar workers might turn into a favour to their grandchildren, when belonging to the intelligentsia no longer had negative consequences.

Given the perishability of economic resources under Sovietization, cultural mechanisms and especially social networks are the best candidates to exert the pre-WWII generation's influence on educational attainment of grandchildren.³

3 Sovietization as an Estonian Context of Multigenerational Educational Inequality

The Estonian Republic considers itself the continuation of the first Republic of Estonia, which existed between 1918 and 1940. The Soviet Union annexed Estonia in June 1940. For fifty years between 1940 and 1991 (practically two generations) Estonia was part of the Soviet Union, except for 1941–1944 when the nation was occupied by Germany. During the periods of the first Soviet occupation (1940–1941) and the second (1944–1991), there were different waves of measures aimed at strengthening the political dominance of the Soviet Union and to ensure loyalty to a regime that targeted various social groups of the Estonian population. The strategy was to start by taking power in political and later on, in all spheres of life, by using coercive measures: to replace 'previous' (local) elites by 'new' (having an 'unsuspicious' background) authorities and to destroy the Estonian elite altogether. Sovietisation policies also aimed at the transformation of the social profile of both the administrative and professional elites. The goal was to restrict (directly and through education) access to these positions for certain categories of population deemed disloyal and unreliable and to support access to these positions and education for the most trustworthy category of population (e.g., offspring of blue-collar workers) (see Boyadjieva 2013 for the Bulgarian case). In this article we distinguish two main kinds of such restrictive policies: direct repressions (arrests, deportations) and restrictions through admission policies to higher education institutions.

3 Results of previous research in Estonia reveal the strong effect of parental, cultural and educational resources on children's educational attainment during the Soviet period (Saar 2010; Saar and Aimre 2014; Saar and Helemäe 2017).

The repressive measures of the **first Soviet occupation (1940)** started with arrests⁴ and were followed by deportations.⁵ These measures were targeted mostly against the political, intellectual and cultural elite of Estonia. The **second Soviet occupation (autumn 1944)** also started with arrests.⁶ In March 1949, the forced collectivization was accompanied by a second mass deportation from Estonia.⁷ The main targets of this deportation were Estonian farmers as ‘class enemies’ (being owners of land and sometimes employers of a few workers) (Johnson and Titma 1996). The 1950 March Plenary Session of the Central Committee of the Estonian Communist Party launched the fight against ‘bourgeois nationalism’, during which a purge was carried out among Estonia’s intelligentsia. Many educated Estonians were dismissed from work and many were arrested. The waves of repressions targeted various social groups, and consequently as previous studies show the severe repressions impacted a relatively large segment of Estonia’s population (Sakkeus et al. 2017).

An important instrument of Sovietization policies was to restrict educational and professional opportunities of offspring of the admittedly disloyal population (the former urban and rural elites or those whose extended families had been deported – Pilve 2017). The restrictions operated through explicit bans on access to higher education based on a set of social and political criteria. One very important type of restriction operated through an assessment of the applicants’ and their relatives’ political trustworthiness. It referred not only to the applicants’ personal qualities but also to their parents’ social involvements and political activities (Veskimägi 2005). In order to gain academic entry to every institution of higher education, in addition to providing a CV and a statement on the material situation, every potential student had to pass a background check conducted by a special credential committee (*mandatnaya komissiya*). This committee made highly restrictive admission

4 In six months of 1940, at least 1082 persons were arrested (Sarv and Varju 2005).

5 According to estimates, 48,000 Estonians were deported (Sarv and Varju 2005). In June 1941, more than 9,000 people were deported from Estonia of whom around 2,400 are known to have been killed (Pettai and Pettai 2015).

6 In 1944–1945, around 10,000 people were imprisoned (Rahi-Tamm 2005). In addition to arrests and deportations, the flight of the educated, professional and political elite of independent Estonia (mostly to neighbouring Sweden and Finland) was also a consequence of the repressions. In the last days of the war, around 80,000 people who belonged predominantly to the educated, professional and political elite of Estonia (Sarv and Varju 2005) fled the country.

7 The victims of this deportation numbered 32,536, which included 10,331 non-deported outlaws who had lost their homes and lived under the constant persecution of the KGB (Rahi-Tamm 2005). About 15% of the victims died in Siberia and Central Asia (Mertelsmann and Rahi-Tamm 2009).

decisions regarding students with 'suspicious backgrounds' between 1945 and 1955 (Veskimägi 2005).

After the death of Stalin, the number of repressive acts gradually decreased. In the second half of the 1950s, political prisoners were set free. The Soviet authorities continued to employ policies and practices that imposed a relative disadvantage on a person depending on the political and social criteria (particularly, the group or class to which that person belonged – see also Boyadjieva 2013). Through such regulation of access to higher education, the downward mobility of applicants whose parents were not considered loyal or had the greatest amount of economic and educational resources before 1944 was promoted and they were excluded from the new social elite. The admittedly loyal groups of the population (former soldiers in Red Army, labourers, paupers etc.) were privileged in gaining access to higher education.

The period **between 1960 and 1965** has been characterized as the '**thaw**' period, which refers to Khrushchev's de-Stalinization, and was a period of moderate political liberalization. The crude measures against the higher levels of the social hierarchy made room for measures of positive discrimination in favour of industrial (and agricultural) workers. The status of a student became more important compared with their family background. Quotas were determined for admission to higher education institutions, which favoured young people who had already been working as well as those with worker origins (Matthews 1982). To provide working youth with better chances to attain higher education, additional pathways (part-time evening and distance learning programmes) to university were created. Preparatory courses for youths of working class or peasant origin were organized. Those courses were controlled by the supreme party authorities and were explicitly justified by the need to create a new kind of elite.

Political selection into higher education had especially far-reaching consequences, given that during this period (from the 1960s to the mid-1970s) expansion of education at the secondary level outstripped enrolments at the higher education level, which means opportunities for young people with secondary education to attain higher education did not increase. This makes competition for access to higher education much tighter and the outcome of interplay between official policies and more visible familial (mainly non-economic) resources. Previous analysis based on the longitudinal data on the life-course of those 1948 birth cohort members who attained secondary education, indicated that despite Sovietization policies educational inequality persisted (Helemäe et al. 2000).

4 Hypotheses

According to the corpus of literature, an association between the social position of grandparents (G_1) and grandchildren (G_3) could be due to a direct effect of grandparents on grandchildren ($G_1 \rightarrow G_3$) or an indirect effect through parental generation ($G_1 \rightarrow G_2 \rightarrow G_3$). Sovietization policies aimed to interrupt intergenerational continuity between the higher levels of pre-WWII Estonian's Republic social hierarchy (G_1) and their offspring (G_2).⁸ Following Mare's (2011) contention that the pre-Soviet, Soviet and post-Soviet eras in CEE countries potentially created circumstances, in which socioeconomic achievements for some birth cohorts' individuals might depend more on grandparental than parental resources, we suggest different mechanisms and degree of continuity between within-family generations according to the historical periods in Estonia. Transmission of advantage between pre-Soviet (G_1 – grandparents of G_3 who are our respondents) and Soviet birth cohorts (G_2 – parents of G_3) is different as compared to transmission of advantage between (G_2 and G_3), resulting in considerable impact of G_1 on G_3 .

More concretely we hypothesize that Sovietization policies, which aimed to interrupt intergenerational continuity between higher levels of Estonian's Republic social hierarchy, effectively randomises educational attainment of the parental generation.

Hypothesis 1: There is no association between grandparents' (G_1) social position and attainment of higher education of parental generation (G_2).

Previous research of three generations based on a longitudinal study indicated that despite the first Soviet generation's downward mobility, their children tended to rise to the position of their grandparents ('Generation of the Estonian Republic') (Helemäe et al. 2000). Social inertia might reveal itself only later, with the social position of the next generation changing 'back' to that of the previous social position (counter-mobility) (see also the same processes in Hungary Andorka 1997). We hypothesize that grandparental cultural resources (e.g. the skills of how to learn and the experience of learning) as well as intelligentsia traditions were strong enough to exert long-lasting impact,

8 If Sovietization policies were effective (i.e. educational attainment of G_2 proves to be effectively randomised), it would make Estonia the best candidate for finding the direct impact of G_1 on the attainment of higher education by G_3 . If this occurred, it would indicate non-Markovian multigenerational process.

i.e. representing evidence for a direct (non-Markovian) effect of grandparents' resources on grandchildren educational attainment.

Hypothesis 2: There is a significant association between grandparents' (G₁) social position and attainment of higher education of grandchildren (G₃).

To reveal the importance of repressions and positive discrimination as aspects of Sovietization policies, we approach differences in attainment of higher education between non-repressed categories of the population (G₂). They are suggestive primarily of outcomes of positive discrimination (particularly admission policies), while differences between the repressed and non-repressed categories of population (especially of white collars) are seen as indications of the impact of repressions.

In the 1950s, youths whose families had been deported had less educational opportunities. Strict educational limits were set for young people from the former elites. We hypothesize that repressions had a negative effect on attainment of higher education by the parental generation (G₂) and especially on these social categories who were most impacted by repressions.

Hypothesis 3: All repressed G₂ had a lower probability to attain higher education compared to non-repressed G₂, but the hypothesis holds especially true for G₂ with a white-collar background.

Measures of positive discrimination influenced admission to higher education institutions in favour of young people with worker origins. As a result, these measures should decrease the impact of social origin on their children's attainment of higher education.

Hypothesis 4: Non-repressed G₂ with a white-collar origin had no advantage over G₂ with other social background in attainment of higher education.

However, we suppose that the impact of repressions was not long-lasting. Previous analysis had also not revealed any long-term negative impact of the repressions: respondents who came from repressed families had educational and occupational careers similar to their peers (Johnson and Titma 1996).

Hypothesis 5: Repressions had no impact on attainment of higher education by G₃ irrespective of their grandparents' (G₁) social position.

5 Data, Variables and Methods

We use retrospective data from the Estonian Family and Fertility Survey 2004 to explore the multigenerational impact of Sovietization on the social reproduction. We analyse three generations: respondents (G₃), their parents (G₂) and their grandparents (G₁). To secure an important condition – that G₁ attained their social position in the Estonian Republic before WWII, we estimated the

relevant birth years of G2 to be 1922–1954. Among G2, we also distinguish three cohorts (1922–31, 1932–41 and 1942–54) as the control variable to reflect the changing nature of the societal context. Two of these cohorts were born in the pre-war Estonian Republic, while most of them reached the age of attainment of higher education during the Soviet period. Respondents (G3) whose parents belong to the two older cohorts (1922–31 and 1932–41) attained higher education during the Soviet period, while those respondents whose parents belong to the younger cohort (1942–54) did so during the demise of the Soviet Union and re-establishment of independent Estonian Republic. Appendix Table A1 summarises the parental cohorts as well as their children, which could be affected by the Sovietization policies of the 1960s.

The subsample includes respondents whose parents were born between 1922 and 1954 and who had at least one grandfather who was born in Estonia. The final sample comprised 1,682 men and 1,804 women belonging to the parental generation.

The highest levels of education attained by respondents and their parents are our key dependent variables. The following scale was used in the questionnaire: no primary education; primary education; basic education; secondary education; specialised secondary; higher education; academic degree. In the analysis, we focused on the attainment of higher education by respondents as well as their parents. The study uses a dichotomous measure (attainment of higher education = 1, otherwise = 0). The same dichotomous measure is used for parental education when it is included as an independent variable into the model of the respondent's educational attainment. A major independent variable is the grandfathers' social position in the pre-war Estonian Republic. We changed the initial 10-level occupation scale (*italicised*) into a more manageable 3-level scale: white collar (*employer; self-employed; intellectual; higher official; clerk; military officer*); farmer (*farmer*); blue collar (*skilled worker; unskilled worker; agricultural worker*). The main idea is that white-collar workers and farmers, and also their descendants were the main targets of repressions, but at the same time they differed in terms of several aspects of cultural resources (the longevity and variety of learning experiences, development of skills of how to learn, etc). The questionnaire included two questions about repressions: one about the occurrence and the time of the repressions (answers: yes, in the parent's childhood; yes, in the parent's adulthood, before the respondent was born; yes, in the parent's adulthood, after the respondent was born; no) as well as the type of repressions (murdered/died in prison or in deportation; long-term imprisonment; deported/sent to exile; forced evacuation; short-term imprisonment; could not attain education; could not work in her/his profession; other). We considered all types of repressions and use the dichotomous

measure in the analysis: father and mother suffering from repressions (yes = 1, no = 0), because there were insufficient cases to separate the types of repressions. As we noticed above, peculiarities of societal context were taken into account in our control measure of parental birth cohorts: 1922–31, 1932–41 and 1942–54. The descriptive measures are presented in Appendix Table A2.

Our analysis included several steps. First, we analysed the impacts of both the grandfather's (G₁) social position and the repressions on educational attainment of parents (G₂). Secondly, we analysed the impact of the grandfathers' social position, parental education and repressions on the respondents' (G₃) educational attainment. In both steps, separate logistic regression models for the lineage of the mother and the father included interactions of the grandfather's social position with the measures of the repressions. By following Mize's (2019) methodological approach, we tested for interaction effects using the predicted probability metric and report average marginal effects (AME). The major advantages of AME for logistic regressions are that they enable the study to compare effects across models and groups (Mood 2010) and due to having estimates as predicted probabilities, results of interactions can be interpreted more correctly (Mize 2019).

6 Results

6.1 *Descriptive Measures*

This section provides basic descriptive measures. Table 1 shows that the grandfathers' (G₁) social position has an impact on attainment of higher education by their grandchildren (G₃) who are the study's respondents: The difference between white-collar and blue-collar workers is more than twofold both for the mother's and the father's lineages. The percentage of farmers' grandchildren with higher education lies between these two extremes, being closer to blue-collar's descendants. The differences for respondents' parents (G₂) are also noteworthy, being especially pronounced in case of fathers: 43% of fathers whose own father (G₁) was a white-collar worker had attained higher education while only 10% of fathers with a blue-collar background (i.e. more than fourfold difference). A slightly smaller difference is evident for respondents' mothers (35% versus 10%).

Altogether, 8% of respondents reported repressions against their fathers and 6% against their mothers.⁹ The repressions concentrated on individuals whose

9 There are important differences between parental birth cohorts. Parents of the 1922–31 birth cohort were repressed mainly in their adulthood. By contrast, the trend was reversed for

TABLE 1 Attainment of higher education of parents and respondents by grandparents' social position (%)

	Grandparents' (G1) social position							
	Maternal lineage*				Paternal lineage**			
	White collar	Farmer	Blue collar	Total	White collar	Farmer	Blue collar	Total
Parental (G2) education								
Higher	35	13	10	14	43	15	10	16
Respondents' (G3) education								
Higher	39	23	17	22	37	23	16	21
N	232	626	946	1804	218	580	884	1682

* For mothers born in 1922–1954; ** For fathers born in 1922–1954.

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

fathers had white-collar backgrounds (15%) or farmers (10%) compared blue-collar workers (5%), and whose mothers had white-collar worker background (8%), farmers (8%) and blue-collar worker (5%).

Repressions do not have a significant negative impact on attainment of higher education by parental generation: 14% of mothers whose families were not repressed attained higher education compared to 11% of mothers whose families were repressed (see Table 2). For fathers there is no effect at all: the respective percentages are both 16%. The impact of repressions on respondents' attainment of higher education is positive: 34% respondents whose paternal grandparents were repressed attained higher education and only 20% of respondents whose grandparents were not repressed. The differences

the 1932–41 parental birth cohort, i.e. these parents were repressed mainly in their childhood. Parents in the youngest birth cohort (1942–54) were less frequently repressed. The type of repressions has also changed across the cohorts. Around half of repressed fathers of the 1922–31 birth cohort were sentenced to imprisonment. For parents of other birth cohorts, the dominant type of repression was deportation. Around a sixth of repressed parents of the youngest birth cohort reported restrictions in access to education or work. Unfortunately, the small sample size does not allow us to take these differences into account in our models.

TABLE 2 Attainment of higher education of parents and respondents by frequency (%) of repressions of parents or their family

	Maternal lineage			Paternal lineage		
	Repressed	Not repressed	Total	Repressed	Not repressed	Total
Parental education						
Higher	11	14	14	16	16	16
Respondents' education						
Higher	32	21	22	34	20	21
N	109	1695	1804	127	1555	1682

* For mothers born in 1922–1954; ** For fathers born in 1922–1954.

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

in respondents' higher educational attainment according to maternal grandparents are about the same (32% versus 21%).

6.2 *The Effect of Grandparents' Social Position and Repressions on Parental Education*

Average marginal effects (AMES) from bivariate logistic regression models using the grandfather's (G₁) social position and the incidence of repressions are presented in Table 3. These AMES show the average change in the predicted probability of an attainment of higher education by respondents (G₃) resulting from a discrete change in the respective independent variable included in the model. Model 1 only includes information on the G₁'s social position. We find that this position matters for attainment of higher education by respondents' mothers and fathers (G₂). A white-collar background G₁ has a significantly higher positive effect on the schooling of the G₂ generation as compared to blue-collar workers (net advantage for mothers around 23% and for fathers around 28%), but also compared to farmers (net advantage for mothers around 25% and for fathers around 33%), meaning that Soviet policies to interrupt intergenerational continuity proved ineffective, which holds true for both mothers and fathers. According to Model 2, the gross effect of repressions was negligible on the attainment of higher education by either of the parents. A small number of respondents (G₃) whose parents experienced repressions might partly explain this statistical non-significance. Still,

the magnitude of impact is rather small, indicating that those who survived the repressions, managed to overcome administrative restrictions. According to the basic Model 3, inclusion of the cohort control variable did not change the inferences made based on Model 1 and Model 2. Contrary to H1, G1's social position mattered for attainment of higher education of both mothers and fathers: for mothers having white-collar father gave a net advantage of around 20% in the probability to attain higher education as compared to a farmer's background and 24% as compared to a blue-collar worker's background, for fathers the respective net advantages are 26% and 32%. But (contrary to H2) repressions did not decrease the probability of attainment of higher education by G2.

TABLE 3 Impact of grandfather's (G1) social position and repressions on attainment of higher education for parents (G2), binary logistic regression models

	Mother's higher education			Father's higher education		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Grandfather's social position (Referent: White collar)						
Farmer	-0.228*** (0.035)		-0.204*** (0.035)	-0.276*** (0.038)		-0.262*** (0.038)
Blue collar	-0.255*** (0.034)		-0.241*** (0.033)	-0.328*** (0.036)		-0.323*** (0.036)
Repressions (Referent: No)						
Yes		-0.038 (0.030)	-0.031 (0.030)		0.000 (0.035)	-0.013 (0.033)
Cohort (Referent: 1922–31)						
1932–41			0.041* (0.019)			0.077*** (0.021)
1942–54			0.114*** (0.020)			0.105*** (0.021)
R square	0.055***	0.001	0.080***	0.076***	0.000	0.094***
N		1804			1682	

Note: Standard errors in parentheses Average marginal effects (AMES) on the predicted probability of attainment of higher education. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

At the next step, we added the interaction between the grandfather's G₁ social position and repressions to the Model 3 (see Appendix Table A₃). In Table 4, the respective AMEs are presented. As noted above, we consider repressions and positive discrimination as two dimensions of Sovietisation policies. So that with regard to higher education, both repressions and positive discrimination were enacted to restrict access to higher education of offspring of 'previous' elites (primarily white-collar workers who were a 'disloyal' to the 'Soviet' category). Positive discrimination was used to support access to higher education of offspring of the newly 'dominant' category of blue-collar workers. Table 4 shows that contrary to our expectations, repressions did not significantly lower the probabilities of higher education attainment for those having a white-collar worker's origin in case of neither fathers nor mothers (G₂) of our respondents (G₃). But for both maternal and paternal lineage from farmers'

TABLE 4 Probability of attainment of higher education by parents (G₂) by grandparents' (G₁) social position and by repressions: marginal effects of repressions and differences in effects of repressions across grandparents' social position

	Mother's higher education				Father's higher education			
	Repressed	Non-repressed	First differences ^[a] Gap (AME of repressions)	Second differences ^[b]	Repressed	Non-repressed	First differences Gap (AME of repressions)	Second differences
<i>a</i> : White collar	0.402 (0.119)	0.332 (0.032)	0.070 (0.123)	–	0.333 (0.086)	0.434 (0.037)	–0.101 (0.093)	–
<i>b</i> : Farmer	0.055 (0.032)	0.142 (0.015)	–0.087* (0.036)	–	0.086 (0.041)	0.171 (0.017)	–0.085+ (0.044)	(<i>b</i> – <i>c</i>) –0.123+ (0.068)
<i>c</i> : Blue collar	0.044 (0.031)	0.101 (0.010)	–0.057+ (0.032)	–	0.135 (0.051)	0.097 (0.010)	0.038 (0.052)	–

[a] First differences represent the gaps in AMEs of grandparents' (G₁) social position between repressed and non-repressed parents (G₂). A negative sign means a lower probability to attain higher education for repressed G₂ of respective social position of G₁ compared to non-repressed G₂ with the same social background.

[b] The second differences show which gaps between repressed and non-repressed parents are significantly different across grandparents' (G₁) social position. A negative sign means that there is a larger decline in the probability to attain higher education because of repressions for respective G₁'s social position as compared to certain other G₁'s social position.

Note: Standard errors in parentheses. * $p < 0.05$; + $0.05 \leq p < 0.1$

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

background negative effect occurred: for both lineages, regressions brought about net disadvantage around 9%. For those who had workers' background, regressions negatively impacted attainment of higher education only in case of mothers (net disadvantage around 6%). At the same time, the test of second differences showed that the gaps between repressed and non-repressed mothers did not significantly differ across their social backgrounds. In the case of fathers, there was a larger decline in probability to attain higher education because of regressions for farmers as compared to blue-collar workers (respective difference in net disadvantages that were brought about by regressions made up around 12%). Thus, contrary to our H₃, regressions did not decrease the probability of attainment of higher education for G₂s with white-collar origin, while regressions did prove to be harmful for other (farmers or blue-collar) backgrounds.

Turning to the non-repressed parents of our respondents (Table 5), we can see that positive discrimination policies were totally non-effective: there was considerable advantage in probability to attain higher education for both mothers' and fathers (G₂) with a white-collar background as compared to other social origins (i.e. around 24% for farmers and around 21% for blue-collar workers in case of mothers, for fathers the respective figures are 34%

TABLE 5 Probability of attainment of higher education among non-repressed parents (G₂) by grandparents' (G₁) social position: marginal effects of G₁'s social position

Social position of G ₁	Mother's higher education			Father's higher education		
	Probability	First differences		Probability	First differences	
		Farmer	Worker		Farmer	Worker
White collar	0.346 (0.033)	0.244*** (0.035)	0.214*** (0.036)	0.436 (0.037)	0.337*** (0.039)	0.277*** (0.041)
Farmer	0.132 (0.014)		0.030 ⁺ (0.018)	0.159 (0.016)		0.060** (0.019)
Worker	0.102 (0.010)			0.099 (0.011)		

Note: Standard errors in parentheses. First differences represent the gaps in AMES of respective social backgrounds (i.e. G₁'s social positions) for non-repressed parents (G₂). *** p < 0.001; ** p < 0.01; * p < 0.05; + p < 0.01

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

and 28%). We interpret this finding as indicating that non-material resources did matter. At the same time the farmer's background (despite its 'lower political trustworthiness' compared to a blue-collar background) proved to be even slightly (by about 3%) more advantageous than having a blue-collar worker's background. Consequently, our analysis led us to reject our fourth hypothesis.

6.3 *The Effect of Grandparents' Social Position and Repressions on Education of Grandchildren*

Table 6 shows AMES of logistic regressions estimating impact of G₁'s social position and repressions on attainment of higher education of grandchildren. Model 1 indicates a statistically significant gross association between the grandfather's (G₁) social position and the respondents' (G₃) attainment of higher education for both maternal and paternal lineages: having white-collar grandparents brings about a substantial advantage compared to descendants of farmers (net advantage about 16% for mothers and 14% for fathers) or blue-collar (net advantage of 22% for both mothers and fathers). Model 2 provides an estimate of the significant gross effect of the G₂'s repressions on G₃'s higher education, which holds true for both maternal and paternal lineages. Estimates of basic Model 3 that includes in addition to G₁'s social position and repressions also independent variable of parental education and control for birth cohort, in general support preliminary inferences made on the basis of Models 1 and 2: having white-collar grandparents confers significant (from around 6% for a farmer's background to 15% for a blue-collar worker's background) advantage in terms of probability to attain higher education, while repressions matter as well.

Moreover, the effect of parental repressions on respondents' educational attainment is positive and rather strong, which means that respondents whose parental families suffered from repressions have higher probability to attain higher education compared to those whose family did not suffer, suggesting unintended consequences of repressions.

Next we added an interaction term between the grandfather's social position and repressions to Model 3 (odd ratios are presented in Appendix Table A3). Predicted probabilities (AMES) presented in Table 7, show that for attainment of higher education by respondents whose grandfathers were white-collar workers, there were no statistically significant difference whether their mothers (or their families) were repressed or not, suggesting a lack of long-lasting effect of repressions for survivors. A note of caution is necessary – the small size of this particular sample group might influence this result. For the paternal lineage we got a different result, i.e. the importance of repressions, but the

TABLE 6 Impact of grandfather's (G1) social position and repressions on attainment of higher education for respondents (G3), binary logistic regression models

	Maternal lineage			Paternal lineage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Grandfather's social position (Referent: White collar)						
Farmer	-0.163*** (0.037)		-0.114** (0.036)	-0.142*** (0.038)		-0.057+ (0.035)
Blue collar	-0.218*** (0.035)		-0.150*** (0.035)	-0.216*** (0.036)		-0.103** (0.034)
Repressions (Referent: No)						
Yes		0.108* (0.046)	0.085+ (0.044)		0.130*** (0.044)	0.083* (0.038)
Parental education (Referent: Lower than higher)						
Higher			0.255*** (0.035)			0.285*** (0.034)
Cohort (Referent: 1922–31)						
1932–41			-0.075** (0.026)			-0.073** (0.026)
1942–54			-0.112*** (0.025)			-0.095*** (0.026)
R square	0.024***	0.003*	0.007***	0.027***	0.007***	0.086***
N		1804			1682	

Note: Standard errors in parentheses. Average marginal effects (AMEs) on the predicted probability of attainment of higher education. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

TABLE 7 Probability of attainment of higher education by respondents (G₃) by grandparents' (G₁) social position and by repressions: marginal effects of repressions and differences in effects of repressions across grandparents' social position

	Maternal lineage			Paternal lineage		
	Repressed	Non-repressed	First differences Gap (AME of repressions)	Repressed	Non-repressed	First differences Gap (AME of repressions)
White collar	0.443 (0.121)	0.331 (0.033)	0.112 (0.125)	0.424 (0.073)	0.271 (0.033)	0.153 ⁺ (0.079)
Farmer	0.346 (0.066)	0.215 (0.017)	0.131 ⁺ (0.068)	0.323 (0.063)	0.219 (0.018)	0.104 (0.066)
Blue collars	0.235 (0.068)	0.184 (0.013)	0.051 (0.069)	0.280 (0.067)	0.172 (0.013)	0.108 (0.068)

Note: Standard errors in parentheses. The column of Second differences is not represented because there are no significant second differences. ⁺ $p < 0.1$

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

impact is positive (offspring of repressed white-collar workers have the net advantage in probability to attain higher education around 15% as compared to offspring of non-repressed white-collar workers), suggesting unintended long-term consequences of repressions. There was the positive repressions gap for maternal lineage as well, but for offspring of G₁-farmers. In sum, we rejected our fifth hypothesis.

7 Conclusions

Our aim was to explore the multigenerational impact of Sovietization policies on the reproduction of educational inequalities, i.e. on educational attainment of the parents of respondents as well as the respondents themselves (multi-generational effect). This article is the first systematic study of grandparental effects on educational attainment in Estonia.

The analysis indicates that both maternal and paternal grandfathers' social positions are associated with the grandchildren's attainment of higher education. Their influence is only partially mediated through the parental

generation suggesting that having white-collar working grandparents is an important characteristic of family origin advantages (see also Zhang and Li 2019) and indicative of a non-Markovian character of the studied multigenerational process. Our results only partially support Mare's (2011) assumption that the pre-Soviet, Soviet and post-Soviet eras created the circumstances in which, for some birth cohorts, individuals' socioeconomic achievements may depend more on grandparents than parents. The effect of the grandparents was significant and important, especially given that policies were enacted with the aim of breaking the transmission of advantage between grandparents and parents.

Sovietization policies were especially targeted at certain social groups (farmers and white-collar workers) and the intelligentsia (the educated portion of the population). However, the impact of repressions on the attainment of higher education by the parental generation was not significant, especially for women. Moreover, the differences between individuals (of the parental generation) whose families suffered repressions and those who did not were not striking.

Our data show that Soviet policies aimed at eliminating intergenerational reproduction from grandparents to parents did not work, at least with regard to survivors of repressions and especially in terms of positive discrimination. Moreover, unintended consequences did emerge. Those which the Soviet system deemed to be the most 'disloyal' section of skilled workers – the repressed fathers of our respondents – were able to succeed in attainment of higher education over 'loyal' non-repressed ones, to the same extent to that of repressed white-collar workers.

Why were the policies ineffective in addressing the passing of status advantage? While consolidation of the regime in new (Estonian) territory and securing control over the population were very important, the Cold War, the arms race, the lack of ('trustful') professionals combined to put forward a more pragmatic approach to cadre policy (Johnson and Titma 1997). The struggle to control everything resulted in the building of Potemkin villages by authorised Soviet officials: superficial reports of 'results' prevailed. Consequently, measures might not be implemented as planned and the 'wrong' groups might be targeted. It is common knowledge that even during the deportations the need to meet the 'plan's' fulfilment (i.e. to report the 'right number' of deported families) was more important than ensuring 'real enemies' were deported. This enabled some members of the old elites or landowner farmers to avoid repressions.

Moreover, the impact of the repressions on the respondents' educational attainment was positive, which means that children of those who had been repressed (i.e. primarily the elites) had a greater probability to attain higher

education than children of those who were not repressed. We suggest that unrealized educational aspirations of repressed parents boosted the aspirations of their children. The effect of the grandfathers' social positions and parental education on the educational attainment of grandchildren was substantial. Repressions produced consequences, even those unintended by the Soviet authorities, contributing to the increase of intergenerational continuity among white-collar workers who survived, especially among men.

In some way, Sovietization policy obviously facilitated counter-mobility, especially in the scenario where grandchildren from downwardly mobile families succeeded in attaining relatively high positions, just as their grandparents had held. But overall, the Sovietization policy did not reduce multi-generational reproduction of inequality, indeed it even facilitated this in three generational perspectives. Our main conclusion is that even the most disruptive changes and strictest policies in society are unable to distract intergenerational continuity, at least when implemented during the lifetime of one or two generations. The social forces that support intergenerational continuity prevailed in Estonia, while being challenged for a shorter time compared to some other post-Soviet states. Due to the lengthy time span required by strict societal policies to be effective against social reproduction, we cannot suggest in the context of Estonia, what the impact of such policies might be if they were in place over four or more generations (as in the Soviet Union, 1922–1991). But the Estonian case provides clear evidence that children can profit from grandparental resources. Our findings argue in favour of the importance of contextual sensitivity and a multigenerational perspective in research of social stratification.

Outcomes of Sovietization policies were also influenced by both active and passive resistance along with the activation of the social networks of Estonian population. Opposition between the developed unofficial 'second' society and the official 'first' society under the Communist party authority resulted in tightened social networks and the conversion of grandparental and parental resources towards grandchildren's educational attainment. The Estonian education system preserved Estonian-language education on all levels (Rõuk et al. 2018) and enabled some continuity both at the level of Estonians as an ethnic group but also at the family level.

Sovietization measures in a paradoxical way enforced the struggle for education among the whole Estonian population and supported the preferential and attitudinal component of cultural resources. But white-collar workers from the pre-WWII generation were in a better position to turn their learning experiences into the educational success of their grandchildren, contributing in this way to the continuity of multigenerational inequality.

Our study has three limitations. The retrospective data used in this study suffer from survivor and remembrance biases (Mare 2011). In terms of the repressions, we studied only those victims who survived and returned to Estonia. Our analysis does not include refugees. Many of those who would have suffered from the post-war repressions managed to flee before the Red Army invaded Estonia in 1944. Also, the grandparent generation is recalled only when there are both children and grandchildren. Unfortunately, we do not have data about the fertility and survival measures of the grandparent generation. The second limitation of our data is that we only have information on the social positions of the maternal and paternal grandfathers (nothing about grandmothers). In the relatively egalitarian society in Estonia in the early 20th century, where class boundaries were still under formation, this lack of information could lead to some underestimation of the effect of grandparents. Third, due to data limitation our study could not include all the relevant parental resources (for example material resources).

Unfortunately, because of the peculiarities of our data we are not in a position to establish, which kind of grandparents' non-material effects (cultural or social networks) were involved, but our suggestion is that both of them (or their interaction). Grandparents, as well as members of their networks, might have more time and feel more obliged to pass on to their grandchildren the 'hidden' knowledge about their experience of living in the pre-war Estonian Republic and to encourage them to take learning and attainment of higher education seriously, as a way to preserve the ethnic culture endangered by Sovietization. Future research should advance efforts to test various mechanisms, which would generate the effect of grandparents.

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Appendix

TABLE A1 Possible direct impact of repressions and educational equalization policies on different parental cohorts and on their children

	Repressions		Educational equalization policies in the 1960s
	First wave: 1940–41	Second wave: 1949–50	
Parental birth cohort			
1922–31	In childhood	In adulthood	No
1932–41	In childhood	In childhood	No
1942–54	No	In childhood	Yes
Respondents whose parents were born			
1922–31	No	In childhood	Yes
1932–41	No	No	No
1942–54	No	No	No

TABLE A2 Descriptives

	Mother	Father
Respondents' education		
Higher	22%	21%
Other	78%	79%
Grandparents' social position		
White collar	13%	13%
Farmer	35%	35%
Skilled blue collar	13%	16%
Laborer	39%	36%
Parental education		
Lower	39%	45%
Secondary	47%	39%
Higher	14%	16%
Repressions against parents		
In childhood	4%	4%
In adulthood	2%	4%
No	94%	92%
N	1804	1682

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004

TABLE A3 Impact of grandfather's (G₁) social position and repressions on attainment of higher education for parents (G₂) and respondents (G₃), binary logistic regression models with interactions (odds ratios)

	Mothers' higher education	Fathers' higher education	Respondents' higher education	
			Maternal lineage	Paternal lineage
Grandfather's social position (Referent: White collar)				
Farmer	0.0819*** (0.767)	0.259*** (0.191)	0.536*** (0.184)	0.737 (0.200)
Blue collar	0.064** (0.919)	0.134*** (0.188)	0.435*** (0.176)	0.536*** (0.196)
Repressions (Referent: No)				
Yes	0.606 (0.510)	0.814 (0.407)	1.573 (0.516)	1.799 (0.407)
Parental education (Referent: Lower than higher)				
Higher			3.638*** (0.151)	4.326*** (0.151)
Grandfather's social position × Repressions				
Farmer × repressions	3.975 ⁺ (0.791)	0.694 (0.637)	1.214 (0.605)	0.851 (0.511)
Blue collar × repressions	3.356 (0.937)	2.258 (0.602)	0.836 (0.649)	0.939 (0.537)
Cohort (Referent: 1922–31)				
1932–41	1.625* (0.213)	2.076*** (0.197)	.648** (0.148)	.636** (0.155)
1942–54	2.946*** (0.197)	2.578*** (0.197)	.501*** (0.148)	.547*** (0.161)
R square	0.117***	.140***	0.109***	0.132***
N	1804	1682	1804	1682

Note: Standard errors in parentheses. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$

SOURCE: ESTONIAN FAMILY AND FERTILITY SURVEY 2004