

The Intergenerational Transmission of Collectivistic Traits:

Evidence across Millions of Historical European Families

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Abstract

Theoretical work has long proposed that cultural traits are passed along from parents to children and influenced by other role models in society. This paper examines the transmission of collectivistic cultural traits across and between more than four million North European families that I observe in historical population census records from the period 1703-1910. I find that parents adhere to the cultural values inherited from their childhood homes and pass them on to their own children. The transmission is not perfect and parents appear to be influenced by the average cultural traits of the surrounding population. I provide evidence of circumstances that strengthen the transmission process, including interfamily characteristics and minority status. This suggests that parents actively socialize their children, but are in possession of limited resources and view socialization by society as a substitute. Findings on marriage, settlement, and fertility patterns support these interpretations.

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1 Introduction

Research on the formation of individual preferences, attitudes, and values is central to several fields in economics. Wide agreement exists that such traits are initially inherited early in life from one's parents and subsequently influenced by other members or circumstances of society. While the theoretical literature on the mechanisms of cultural transmission is well developed (Cavalli-Sforza and Feldman, 1981; Bisin and Verdier, 2000), existing empirical evidence is scarce and based on data samples of moderate size with important examples being Dohmen et al. (2012) and Chowdhury et al. (2018). Understanding how traits are transmitted across generations is important because they impact a large range of economic outcomes. Studies have for instance linked collectivistic versus individualistic traits to the propensity to innovate, cooperate, form democratic institutions, and migrate (Markus and Kitayama, 1981; Mokyr, 1992; Greif, 1994; Gorodnichenko and Roland, 2011; Buggle, 2017; Knudsen, 2018).

In this paper I study the intergenerational transmission of collectivism across more than four million families, involving ten million parent-and-child links, in historical population censuses from Sweden, Norway, Iceland, and the United Kingdom at various points in time during the period 1703-1910. I find a positive and significant correlation between the intensity of collectivistic traits inherited from home and the collectivistic traits passed along to new generations. On top thereof, I document a significant influence on the formation of individuals' traits of the predominant culture in society. Culture is transmitted from the adult population outside the family, first when the parent is a child, but especially later when the parent becomes an adult itself. I then assess the importance of various determinants of efficient cultural transmission. I find that children with culturally dissimilar parents, higher birth order, and more siblings are less likely to experience a cultural upbringing according to their parents' traits. Conversely, children with minority parents appear to more strongly inherit the traits of their parents.

Traditional indicators of culture based on surveys or experiments do not exist for historical periods. Instead, I measure the intensity of collectivistic traits inherited from home by the commonness of one's first name relative to the cohort of people born in the same decade and district. This is based on extensive research in social psychology that has established that first names are an important source of cultural information (Zelinsky 1970, Lieberman 2000), and that their commonness captures a preference of the name-givers for the child to fit in as opposed to stand out (Schonberg and Murphy 1974, Zweigenhaft, 1981; Twenge et al. 2010; Emery, 2013). The balance between group and independent identity captured in the commonness of first names thereby reflects the fundamental difference between collectivism and individualism as it is defined in the literature (Heine and Ruby, 2010). I construct additional cultural indicators on religiosity and regional identity.

The first main result of the paper is that inherited collectivistic traits correlate posi-

tively and significantly between parents and children. The correlation identifies the sum of probabilities that the parent has adhered to the cultural traits learned from home, and that the parent passes his or her traits on to the new generation. The results are robust to a number of control variables, including ancestral diversity and economic class, and they are not driven by the prevalence of spelling mistakes nor by any particular country.

A second main result concerns the impact of regional culture on the formation of cultural traits at the individual level. I find that the prevalence of collectivistic traits in the surrounding district population is correlated with the parents' choice of child names. A weak cultural influence from the adult population in childhood can be detected for fathers, but more important is the contemporary cultural impact of the parents' own generations. This indicates that the role played by for instance childhood teachers is smaller than the role played later in life by similar-aged friends, colleagues, and the like. This remains true if I add family fixed effects so that the variation in district culture comes from families that have migrated between child births. Interestingly, there is no evidence of a general cultural influence from subgroups of the peer population such as the wealthy, the urban, the working, and the religious. Instead, individuals appear to be influenced by the people that are similar to themselves and live in the same local community.

Having shown that transmission of cultural traits takes place within and outside the family, I proceed to examine the mechanisms underlying this process. First, I document an impact of family structure. For example, I find that the intergenerational transmission of collectivistic traits is stronger for children with lower birth order and fewer siblings. This could indicate that parents are less concerned with or lack the resources to efficiently socialize a growing number of children. I also find that the transmission is weaker if parents differ in their inherited cultural traits. While this could be a result of the parents abandoning their inherited cultural traits, it could also reflect the compromise made between dissimilar parents regarding the initial cultural upbringing of their children.

Second, I study the impact of parents' ancestral and cultural minority status on the interfamily transmission of collectivistic traits, and I find that transmission is stronger in both cases. This indicates that the socialization of children that takes place at home and in society can be seen as substitutes. Parents that differ from the surrounding population try harder to shape the cultural traits of their children because they cannot expect them to encounter similar traits in society. To better understand the above results I examine how individuals adjust their own circumstances in terms of marriage, settlement, and fertility. I find evidence of general positive assortative marriage and residential self-segregation. People of minority status, however, appear to either search more intensively for suitable spouses and communities, or to moderate their number of children to ensure enough resources to efficiently socialize all of them.

Taken together, the results of this paper support the view that cultural developments are not merely a product of genetic evolution. Traits are transmitted from parents to

children, but the transmission is not perfect and appears to be molded by circumstances of the family and society.

Related Literature This study is related to several strands of literature. Opening the black box of preference, value, and attitude formation has attracted attention in especially cultural, political, and behavioural economics. Early contributions to this understanding rely on theoretical models. Cavalli-Sforza and Feldman (1981) identify three channels of cultural transmission: Vertical (from parent to child), horizontal (among members of the same generation), and oblique (among members of different generations) transmission. The underlying idea is that a child initially inherits a set of cultural values from its parents but as it grows up and interacts with members of society, a convergence towards their set of values takes place with an exogenous probability.

Further theoretical work by Bisin and Verdier (1998, 2000, and 2001) endogenize the probability of vertical transmission to depend on the intensity of parental socialization effort. Parents are assumed to exert some degree of *'imperfect empathy'* by which they prefer their children to attain cultural values that are similar to those held by themselves. Other assumptions are that socialization is costly, and that family and society are substitutes in the socialization process. This predicts that parents will socialize their children more intensely, if the traits that they want to transmit are only common to a minority of the population. Vice versa, parents that belong to the cultural majority will not spend much resources on direct socialization, since their children with high probability will encounter and acquire these traits from the general population. People of minority status are also predicted to more intensely search for spousal partners with similar cultural traits, because this maximizes the probability of passing on own traits. Similarly, they will be more likely to settle in locations with likeminded people, and adjust the number of offspring in order to socialize them more intensely.

In this paper, I identify the three main channels of vertical, horizontal, and oblique cultural transmission that have been highlighted in the theoretical literature. I provide evidence that socialization is costly, and I find support for the view of parental and societal socialization being substitutes by confirming that minority people behave according to the theoretical predictions.

Empirical evidence in support of parts of the theoretical literature has already been produced, and this most comprehensively by Dohmen, Falk, Huffman, and Sunde (2012). They use data from the German Socio-Economic Panel to document how risk and trust attitudes of 3,751 children are positively correlated with those of their parents (vertical transmission) and district of residence (horizontal and oblique transmission combined). Evidence of assortative mating is also found among married couples. Analyzing the impact of parental characteristics, they furthermore find that culturally homogenous parents are associated with stronger vertical transmission, and that weaker transmission is present

in households with more children. These results have been replicated and confirmed on a sample of 911 Bangladeshi children and their parents by Chowdhury, Sutter, and Zimmermann (2018), who focus on time, risk, and social preferences that they measure through incentivized experiments. A number of other studies have produced similar evidence of cultural similarities between children and one or both parents (Kosse and Pfeiffer, 2012; Bauer et al., 2014; Alan et al., 2017; Deckers et al., 2017, Brenøe and Epper, 2018).

I contribute to the existing empirical evidence in a number of ways. First, I validate their results with a dataset that cover entire populations in multiple countries and time periods. Second, I construct cultural indicators based on first names that measure the traits passed on to an individual by its parents at the time of its birth. These indicators are predetermined to the later behavior of the individual carrying the name. Reverse causality stemming from children impacting the cultural values of their parents is thereby not a concern, which it potentially is in the related studies where actual cultural traits are measured at the same point in time for all individuals. The only other paper to use cultural indicators measured at different points in time is that by Brenøe and Epper (2018), who identify the transmission of time preferences on a sample of 3101 Danish children and their parents. Third, I expand on existing empirical results. In particular, I distinguish between the cultural horizontal and oblique influence from different groups in society, study the cultural transmission in families of minority status, and consider how the choice of residence and number of children depend on cultural traits.

Related to my results on minority people is the research by Fouka (2018), who find that discrimination towards people of German descent in the United States after World War I generated a backlash in the sense that cultural identity was heightened among the German minority. She confirms that parental and societal socialization of children operate as substitutes, since the backlash was stronger in states where Germans constituted a smaller minority.

The rest of the paper proceeds as follows. Section 2 presents the data and measures. Section 3 documents the presence of transmission of cultural traits from parents to children, and section 4 examines the cultural influence of the surrounding population. In section 5, I study the mechanisms underlying the transmission of cultural traits. Section 6 concludes.

2 Data

To investigate the intergenerational transmission of cultural traits, I use a set of comprehensive historical census records on the Northwestern European populations that are made available by the Minnesota Population Center (2017). The countries included are the United Kingdom, Sweden, Norway, and Iceland. Due to a long history of producing population statistics the quality of especially the Scandinavian historical data is known

to be high. Thus, while the United Kingdom is represented by just one census where 2% of the population was sampled, a minimum of three full censuses are included for the other countries. The data cover the period 1703-1910, but most records are concentrated around the turn of the 20th century.¹

2.1 Measuring Collectivistic Traits

Collectivism is commonly associated with values that centre on maintaining group connectivity and harmony. Individuals are viewed as interdependent units that derive their identity from the social environment. In contrast, individualism emphasizes the independent self and inner attributes, and people of individualistic mindsets value personal autonomy and achievement (Heine and Ruby, 2010).

I measure collectivism by the commonness of first names. First names are generally acknowledged to closely signal the cultural and social preferences of the name-givers (Zelinsky 1970, Mateos 2013). Research in social psychology has documented how giving a common name is connected to a desire for a child to fit in rather than stand out (Schonberg and Murphy 1974, Zweigenhaft, 1981, Twenge et al., 2010, Emery, 2013). In his seminal work, Lieberman (2000) argues that commonness is the most important parameter in first name choice as it balances independent and group identity. Thus, in a historical period where no cultural indicators can be constructed based on standard questionnaire or experimental methods, extracting the cultural content of first name patterns provides a comparable alternative. The predetermined nature of first names furthermore offers a useful source of identification. This predeterminedness relies on the fact that first name properties reflect the endowment of cultural traits inherited from home. A child has no active influence over its name-giving, and when growing up it may evolve a different set of traits as it interacts with other members of society.

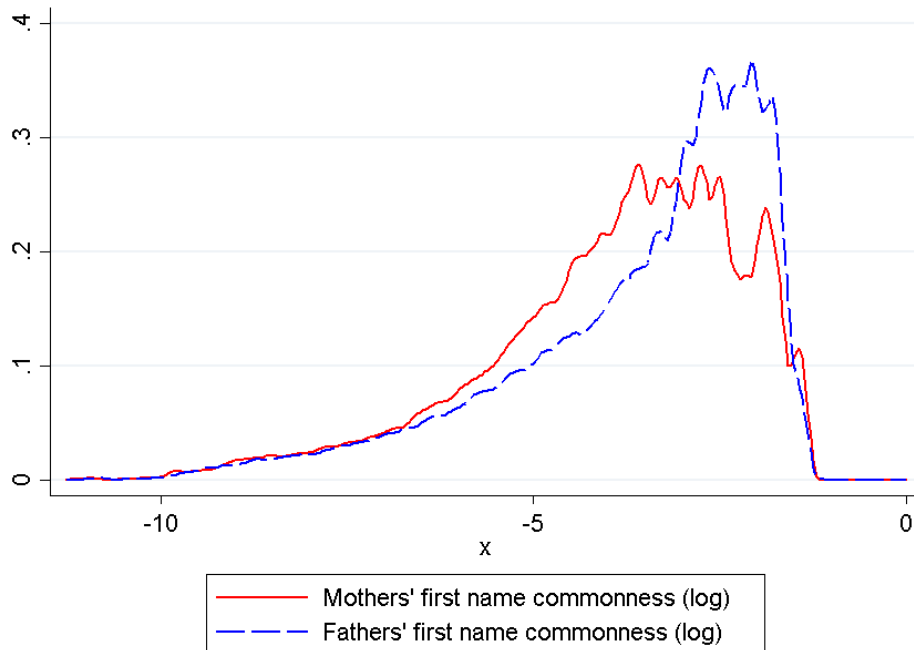
I have previously used individual and aggregate measures of first name *uncommonness* to study the relationship between individualism and migration in Scandinavia during the 19th century (Knudsen, 2018). Part of that study validated the cultural content of the indicator by documenting strong and significant correlations between contemporary first names patterns and a set of widely-used indicators of individualism and collectivism across and within countries.

In the present study, I measure the commonness of the first name of an individual as the *share of his or her birth cohort that carries the same first name*. This is different from Knudsen (2018), where I construct a dichotomous variable based on carrying one of the ten most common first names of the cohort. The reason that I use the continuous indicator

¹The exact censuses included are for the UK in year 1851 (2%), Sweden in year 1880, 1890, 1900, and 1910, Norway in year 1865, 1875 (2%), 1900, and 1910, and Iceland in year 1703, 1729, 1801, and 1901. These and more are can be downloaded at nappdata.org. Of the available census record, I disregard those with no information on first names.

here is simply to allow for more variation in the measure. I check the robustness of main results using the dichotomous variable. Cohorts are defined by birth decade and birth district.^{2,3} Birth decades are used rather than birth years to ensure enough observations to calculate precise measures. Furthermore, I focus on just the first given name of an individual, and consider the full list of first names in robustness checks. As spelling errors are naturally present in archival material, I construct another indicator for robustness that is based on the phonetic spelling of first names, whereby small discrepancies in spelling (i.e. *Christian* versus *Kristian*) are eliminated.⁴ Figure 1 shows the kernel distribution of all mothers and fathers in the sample and their log-transformed inherited collectivistic traits, measured as the uncommonness of their first names. Spikes reflect differences between each population census and cohort-specific scale effects, which I account for with census and, in some places, cohort fixed effects.

Figure 1: Inherited collectivistic traits of mothers and fathers



Notes: Kernel densities of the log-transformed commonness of first names of all mothers and fathers in the sample.

Additional Cultural Indicators This paper focuses on the intergenerational transmission of collectivistic traits. For comparison I run robustness checks on two other cul-

²Historical districts refer to 20 Norwegian provinces, 24 Swedish counties, 30 Icelandic counties, and around 100 British counties.

³The early Icelandic and Norwegian censuses (in and before 1801) contain no information on birth district. Instead I construct measures of first name commonness based on national naming patterns. These censuses are dropped in robustness checks.

⁴89% of the children in the sample have first names that appear on official lists of first names used by the contemporary populations of these countries (obtained through behindthename.com). This indicates that spelling mistakes are only relevant for small part of the sample. These are dropped from the sample in a robustness check.

tural aspects in name giving. A dichotomous variables of religiosity is constructed based on carrying a first name of biblical, and regional identity is measured by how common a first name is in the district compared to the country as a whole.⁵

2.2 Identifying Channels of Cultural Transmission

The population censuses register interfamily links between individuals of the same household. Children are identified if they co-reside with their parents. A positive correlation in the commonness of first names between a child and its parents implies the presence of intergenerational transmission of collectivist traits. Specifically, the correlation reflects how the level of collectivism inherited from home impacts the traits that the parent seeks to instill in the children.

In addition to the vertical transmission of traits from parents to children, I assess the importance of the channels whereby culture is transmitted between non-family members of society. Here I am interested in how the parents' cultural values have been impacted since childhood. Contrary to existing empirical work, I approximate the horizontal and oblique transmission of collectivistic traits. Oblique transmission is measured as the correlation between a child's first name commonness and the average first name commonness of the parents' birth cohorts. A positive correlation here suggests that the parent has been impacted by the cultural traits of older generations around the place and time of own birth. Similarly, the impact from horizontal transmission is given by a correlation between the commonness of the first name of the child and the average commonness of the child's cohort. This reflects a cultural influence on the parents of the general parent generation around the time and place of the child's birth. With these measures I can identify whether the collectivistic traits of a parent are influenced by older role models when growing up, or by similar-aged people that the parent is more likely to engage with in adult life.

Table 1 summarizes how I identify the main channels of cultural transmission. When I calculate the average first name properties of a birth cohort, I leave out the child or parent of focus. Scale effects that stem from the commonness of the first name being calculated relative to the birth cohort may bias the impact of regional culture. I validate the estimated parameters using additional cultural indicators that are not defined in relation to a specific group of people.

To study how various determinants may impact the strength of cultural transmission, I focus on the impact of family characteristics and minority status. Empirically, I interact measures of these determinants with all regressors, where the focus is on the interaction terms with variables connected to cultural transmission (listed in Table 1). Finally, I verify the presence of endogenous marriage and settlement from the correlation in com-

⁵Specifically, regionalism is measured as the fraction of first name commonness in the district relative to the country. Lists of first names that are used in the Bible are obtained from behindthename.com.

Table 1: Cultural Correlations and Their Interpretation

Correlation in first name commonness	Channel of cultural transmission
Between the child and its parents	Vertical: The degree to which a parent adhere to inherited cultural traits and pass them along to their children.
Between the child and the child's cohort	Horizontal: The degree to which parents are influenced by the contemporary culture of its peers, reflected in the culture that they pass along to their children.
Between the child and the parents' cohorts	Oblique: The degree to which parents are influenced by the culture of the adult population from their childhood, reflected in the culture that they pass along to their children.

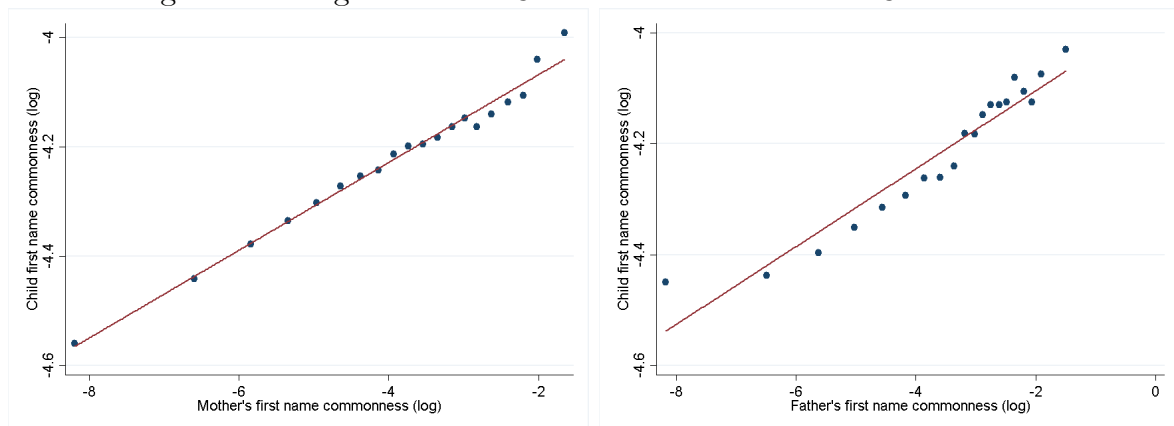
Notes: Summary of how the three main channels of cultural transmission are identified in the data.

monness of first names across spousal links and between an individual and the population in the chosen residence district. Endogenous fertility is given by a correlation between the cultural traits of parents and their number of children.

3 Cultural Transmission from Parents to Children

The first part of the empirical analysis focuses on the vertical transmission of cultural traits from parents to children, disregarding any outside influence. Figure 2 presents binned scatter plots of the first name commonness of a child in relation to the first name commonness of its parents. Here, values of child first name commonness are grouped in to equal-sized bins and a weighted regression is run on the means of included variables. The positively sloping fitted regression lines indicate that intergenerational transmission of collectivistic traits takes place for both mothers and fathers. The following empirical analysis verifies the statistical significance and robustness of these illustrations.

Figure 2: Intergenerational Correlation in First Name Commonness



Notes: Child's first name uncommonness as a function of its mother's (right) and father's (left) first name uncommonness. The binned scatter plot groups the x-axis variable into equal-sized bins, computes the mean of the x-axis and y-axis variables within each bin, then creates a scatterplot of these data points. The underlying regression controls for census fixed effects.

Table 2 reports the results of regressing the commonness of the first name of a child

on that of its parents. All regressions include population census fixed effects, and standard errors are clustered at the child’s district of birth level. Identification relies on the predeterminedness of first name properties as they reflect the cultural values inherited from home. Accordingly, I interpret the estimated parameters on the commonness of parents’ first name as the strength of intergenerational transmission of collectivism in two dimensions: The probability that the parent sticks to the cultural traits inherited from his or her childhood home, and the probability that the parent instills these traits in the child at the time of its birth.

In column (1) I only consider the cultural transmission of collectivistic traits on the mother’s side. Inherited collectivism of the father is included in the regression in column (2), since both parents naturally have influence over the name-giving and upbringing of the child. In column (3), I add baseline controls. These include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the commonness of the last names of both parents, and the size of the cohorts that share the same birth decade and district as the child and both parents. Among other things, these controls account for the fact that first name patterns may differ across birth order and gender, and the fact that ancestral homogeneity (captured by the commonness of last names) may impact the choice of distinct first names.⁶ In column (4), I add a fixed effects for decades and districts of birth of the child and both parents to account for potential scale effects in the measurement of collectivism.

The results confirm that a transmission of collectivistic traits takes place from parents to children. Parents tend to maintain the cultural mindset implanted in them from childhood and pass it along to their own children. The coefficients are fairly stable throughout the columns, but the difference between the coefficients on mother’s and father’s inherited trait is not consistent. Thus, I cannot say anything about the persistence of cultural traits for mothers versus fathers. The coefficient values are around half the size of the transmission parameters on risk and trust attitudes found in Dohmen et al. (2012). They are, however, very similar in size to transmission parameters on time preferences found in Brenøe and Epper (2018) and on time preferences, egalitarianism, and altruism found in Chowdhury et al. (2018).

Robustness Appendix Table A.1 shows that the results are robust to accounting for factors that reflect economic status (living in urban areas, living on a farm, employment status of parents, and the number of servants employed in the household), migration status of each parent (living outside of one’s district of birth), and other cultural traits (religiosity and regionalism). While some of these variables are endogenous, they may

⁶The number of siblings and birth order are measured with error since I only observe children that live in the same household as the parents. The inclusion of control variables for the age of the child and parents accounts for this to some extent, as older children are more likely to have moved out of the household.

Table 2: The Intergenerational Transmission of Collectivistic Traits

	(1)	(2)	(3)	(4)
Dep. variable	Collectivistic traits passed on to the child (log)			
Mother's inherited collectivism (log)	0.078*** (0.004)	0.076*** (0.005)	0.068*** (0.005)	0.057*** (0.000)
Father's inherited collectivism (log)		0.066*** (0.016)	0.062*** (0.015)	0.063*** (0.000)
Baseline controls	N	N	Y	Y
Cohort fixed effects	N	N	N	Y
Population censuses	13	13	13	13
Observations	10,358,974	10,358,974	10,358,974	10,358,974
R-squared	0.07	0.08	0.11	0.12

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

have impacted the culture of parents or the pool of first names that they were exposed to. The results also hold on samples restricted to including firstborn children, population censuses after the year 1801, children below the age of 15, and children with first names found on official lists of first names.⁷ The latter rules out that the results should reflect the transmission of spelling mistakes.

In Appendix Table A.2 the regression from column (3) in Table 2 is repeated with other cultural indicators. Using alternative measurements of inherited collectivism (based on full names, phonetically spelled names, and a collectivism dummy) produces results similar to the main results. I also find evidence of intergenerational transmission of religiosity and regional identity.

Finally, the main results are not driven by any country in particular. Regressions in Appendix Table A.3 exclude each country at the time and ends with a regression on the full sample, where all regressors are interacted with country fixed effects.

4 The Impact of Regional Culture

I now investigate the influence of regional culture on the intergenerational transmission of collectivistic traits. In Table 3, I re-estimate the specification from column (3) in Table 2 (the one with baseline controls but without cohort fixed effects) and include the average

⁷A list of all names used in the countries of this paper (along with varieties in their spelling) is obtained from behindthename.com.

intensity of collectivism of the surrounding population. The associated parameters reflect an impact of regional collectivism on the cultural traits that the parents seek to pass on to their children. All regressions include population census fixed effects, and standard errors are clustered at the child's district of birth level.

For comparison, column (1) repeats the results on intergenerational transmission with no regional cultural impact. In column (2) I add the average commonness of the first names of the child's cohort. This variable controls for the collectivistic traits of the fellow parent generation at the time and place of the child's birth. I include equivalent measures of the average commonness of the first names of each of the parent's birth cohorts in column (3) to control for the collectivistic traits of the parents' own parent generation at the time and place of their birth. As noted in section 2.2, these variables distinguish between the influence of horizontal (within-generation) and oblique (across-generation) cultural transmission respectively. I consider this the baseline specification of this paper. In column (4) I include fixed effects for every pair of parents to validate that the impact of horizontal transmission is not driven by unobserved parental characteristics. Here, the variation in contemporary district culture comes from that have moved between the births of their children.

The results show a considerable cultural influence coming from the similar-aged adult generation at the time and place of birth of the child. These people constitute the peers to the parents, and they are likely the people that the parents most frequently interact with through work relationships or friendships. The cultural influence from the adult population in childhood, which would involve teachers and friends to the family, is only marginally significant on the father's side. This indicates that collectivistic traits evolve as an individual grows up and interacts with other members, and especially his or her peers, of society. Although the coefficient drops considerably in column (4), the impact of horizontal cultural transmission remains strong and significant when accounting for all parental characteristics.

Appendix Figure A.1 shows the binned scatter plots on the estimated impact from the baseline regression on the first name commonness of the child from that of the mother, father, and parents' peers.

Robustness Again, I repeat the regressions for each alternative cultural trait, including other indicators of collectivism and indicators of religiosity and regionalism in Appendix Table A.4. This exercise produces comparable estimates. The impact of regional culture is even greater when considering the transmission of religiosity, which indicates that the main results on collectivism are not driven by scale effects stemming from this trait being measured relative to the district population. The baseline results on the impact of the regional culture in childhood are, however, not robust in this exercise.

Excluding each country and running a regression that interacts regressors with country

Table 3: The Impact of Regional Collectivism

	(1)	(2)	(3)	(4)
Dep. variable	Collectivistic traits passed on to the child (log)			
Mother's inherited collectivism (log)	0.068*** (0.005)	0.059*** (0.003)	0.058*** (0.003)	
Father's inherited collectivism (log)	0.062*** (0.015)	0.061*** (0.010)	0.060*** (0.010)	
Regional collectivism (log) of parents' peers		0.852*** (0.049)	0.777*** (0.073)	0.262*** (0.010)
Regional collectivism (log) of mother's childhood			0.047 (0.031)	
Regional collectivism (log) of father's childhood			0.079* (0.044)	
Parent fixed effects	N	N	N	Y
Population censuses	13	13	13	13
Observations	10,358,972	10,358,972	10,358,972	10,358,972
R-squared	0.11	0.12	0.12	0.46

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual. Regional collectivism is measured as the average first name uncommonness of the child's and parents' birth cohorts. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

fixed effects in Appendix Table A.5 rules out that the results are driven by a single country.

4.1 Subgroup Cultural Influences

Some groups in society may be culturally more influential than others. I examine the horizontal transmission of collectivistic traits from different subgroups of peers by accounting for their collectivistic traits (measured as the commonness of first names chosen for their children) in the baseline specification from column (3) in Table 3. I focus on the horizontal transmission because the above results indicated this to matter more for the formation of cultural traits than oblique transmission.⁸

The results are shown in Table 4. In column (1) I consider the influence of the peers of the parent that live in the same sub-district community as the parents.⁹ As expected, I find that the cultural influence of the very local community dominates the broader influence of the district population.

⁸Moreover, I do not observe the characteristics of the parents' own parents, whereby I cannot identify all subgroups.

⁹The communities are parishes in Sweden and Iceland, municipalities in Norway, and counties in the United Kingdom. My data contains no information on birth parish in the United Kingdom, and I therefore use the county-level measures in this analysis.

In column (2), I instead include the average collectivistic traits of the urban parent population of the district. The results show that there is no significant impact on the general sample of parents from this subgroup. This changes in column (3) where I interact all regressors with a variable that indicates if the parents belong to the considered subgroup or not. Here, the interaction between subgroup culture and subgroup membership is positive and significant, and the interaction between broader district culture and subgroup membership is negative. This suggests that parents that live in urban areas are culturally impacted by the other urban population, and that this substitutes for the influence from the general district population. Vice versa, the rural population is culturally more influenced by the general district culture than the urban culture.

This pattern is repeated for other subgroups of the parent population. In columns (4)-(9), I consider the impact of parents that are employed, wealthy, or religious, which I define by the father's employment status, the presence of servants in the household, and the biblical content of the first name of the child. Parents are influenced by the subgroup that they themselves belong to. These findings suggest that while the cultural traits of a parent are shaped by the environment in which he or she lives, the influence is particularly strong from groups of peers that are similar to the parent on other characteristics. Again, this makes sense as these groups likely represent the people that the parent interacts and identifies with.

The main coefficients on the intergenerational transmission of collectivistic traits on the individual mother's and father's side remain significant throughout all columns in Table 4. The interactions with subgroup membership, however, indicate that the inter-family transmission is stronger in urban and wealthy families, and weaker in employed and religious families.

Table 4: The Horizontal Cultural Influence of Peer Subgroups

Subgroup	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Community	Urban	Employed	With servants	Religious				
Dep. variable	Collectivistic traits passed on to the child (log)								
Mother's inherited collectivism (log)	0.049*** (0.003)	0.059*** (0.003)	0.054*** (0.003)	0.058*** (0.003)	0.076*** (0.004)	0.058*** (0.003)	0.051*** (0.003)	0.058*** (0.003)	0.054*** (0.002)
* subgroup member		0.006* (0.003)	-0.019*** (0.004)		0.018*** (0.004)				-0.004 (0.004)
Father's inherited collectivism (log)	0.052*** (0.009)	0.060*** (0.010)	0.052*** (0.011)	0.060*** (0.010)	0.087*** (0.005)	0.059*** (0.010)	0.052*** (0.010)	0.059*** (0.010)	0.064*** (0.008)
* subgroup member		0.031*** (0.011)	-0.028*** (0.008)			0.028*** (0.009)			-0.038*** (0.007)
Peer collectivism (log)	-0.482*** (0.067)	0.759*** (0.084)	0.913*** (0.087)	0.437** (0.221)	2.390** (1.003)	0.798*** (0.159)	0.928*** (0.141)	0.799*** (0.075)	0.805*** (0.071)
* subgroup member		-1.743*** (0.084)	-2.250* (1.195)			-0.858*** (0.144)			-0.400*** (0.132)
Subgroup collectivism (log)	1.280*** (0.043)	0.019 (0.046)	-0.093* (0.056)	0.337 (0.223)	-1.615 (0.998)	-0.024 (0.129)	-0.108 (0.125)	-0.019 (0.035)	-0.136*** (0.034)
* subgroup member		0.187*** (0.030)	2.248* (1.249)			0.493*** (0.139)			0.504*** (0.071)
Population censuses	13	13	13	13	13	13	13	13	13
Observations	10,326,747	9,976,623	9,976,623	10,358,941	10,358,941	10,222,146	10,222,146	10,358,645	10,358,645
R-squared	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.19

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual. Regional collectivism is measured as the average first name uncommonness of the child's birth cohorts. Subgroups are based on the parental characteristics of the same child cohort. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. The culture of the place and time of birth of each parent is also controlled for, but the coefficient are not reported here. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1.

5 Mechanisms of Efficient Parental Socialization

Having documented that cultural traits are transmitted from parents to children and among peers, the purpose of this section is to shed more light on the underlying mechanisms. Based on the theoretical literature on this subject, I focus on the impact of interfamily structures and parent minority status on the intergenerational transmission of collectivistic traits. To do this, I run regressions where I interact measures of a proposed mechanisms with all regressors of the baseline specification on cultural transmission from column (3) in Table 3. To save space, I do not report results on the oblique transmission of traits in parents' childhood as these were associated with limited influence (these results are reported in Appendix Table A.6 instead).

Regression results are shown in Table 5. In column (1), I consider parents with dissimilar inherited collectivistic traits, which I measure as the difference in commonness of their first names divided by the average standard deviation in first name commonness of their birth cohorts. The results show that the transmission from parents to children depends negatively on spousal dissimilarity since both interaction terms are negative and significant. Instead, this appears to be replaced by a stronger influence of the surrounding population, where the interaction is positive. On the one hand, this could be a result of the dissimilarity measure capturing parents that have diverted from their inherited cultural traits. On the other hand, it could reflect the compromises regarding child rearing that dissimilar parents would be expected to make. The latter interpretation is more likely, as the results hold for both fathers and mothers.

In columns (2)-(4), I examine how the strength of cultural transmission depends on other family characteristics, which are the gender of the child, the number of children in the family, and the birth order of the individual child. In column (2), the positive and negative interaction terms between the child being male and the father's or mother's inherited traits, respectively, imply that fathers are more influential in the cultural upbringing of boys and that the opposite is true for mothers and daughters. This results speaks to the existence of traditional gender roles. In columns (3) and (4), the negative interaction terms on both parents' inherited traits indicate that the cultural transmission from parents to children weakens when the number of siblings or the birth order of the individual child increases. This supports the idea of families having limited resources for socialization, and that they prioritize the socialization of firstborns, who were more frequently viewed as family representatives. The negative interaction term between peer culture and these mechanisms could suggest that names are chosen more at random for children of higher birth order.

The alternative to parents teaching their children what is right and wrong is to let the child be influenced by other members of society. Following the theoretical literature, I expect parents to be more likely to take advantage of this opportunity if they share

traits with the surrounding population. In columns (5) and (6), I examine the impact of each parent having a common last name, which reflects *similarity* in ancestry to the general population. Regardless of whether the mother or father is of ancestral majority, the transmission of both of their cultural traits is weakened (indicated by the negative interaction terms). Instead, the impact of peer culture is strengthened.

In column (7) and (8), I focus on cultural *dissimilarity* measured by the difference in the commonness of the first names between the parent and his or her birth cohort divided by the standard deviation of the latter. Here, the transmission of both parents' cultural traits is strengthened by the mother being of cultural minority. In the case of the father being of cultural minority, maternal transmission is strengthened. These results implies that parents with an inherited (ancestral or cultural) dissimilarity to the surrounding population are more likely to stick to the cultural traits inherited from home and pass them along to their children, instead of assimilating to the dominant culture.¹⁰

The results of this section suggest a cultural transmission mechanism in which parental and peer socialization are substitutes. Parents of ancestral or cultural minority status put more effort into shaping each child's formation of traits as they cannot expect their children to encounter these traits in broader society. Parents' resources are limited, and the socialization becomes weaker as the number of children grows. Below I test the validity of these findings by analyzing the actions that individuals may take to ensure the transmission of own cultural traits.

¹⁰An exception perhaps being the father of cultural minority, who appears to assimilate to the culture of the mother.

Table 5: Mechanisms of Efficient Cultural Transmission

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mechanism	Parent dissimilarity	Male child	No. of children	Birth order of child	Mother common last name	Father common last name	Mother cultural minority	Father cultural minority
Dep. variable	Collectivistic traits passed on to the child (log)							
Mother's inherited collectivism (log)	0.063*** (0.003)	0.077*** (0.005)	0.063*** (0.004)	0.066*** (0.004)	0.024*** (0.005)	0.037*** (0.005)	0.041*** (0.008)	0.053*** (0.002)
X mechanism	-0.007*** (0.002)	-0.035*** (0.005)	-0.002*** (0.000)	-0.003*** (0.001)	-0.006*** (0.001)	-0.004*** (0.001)	0.015* (0.008)	0.006*** (0.002)
Father's inherited collectivism (log)	0.064*** (0.009)	0.030*** (0.011)	0.068*** (0.011)	0.071*** (0.011)	0.009 (0.019)	0.006 (0.020)	0.051*** (0.011)	0.099*** (0.021)
X mechanism	-0.008*** (0.002)	0.058*** (0.007)	-0.003*** (0.001)	-0.005*** (0.001)	-0.010*** (0.002)	-0.010*** (0.002)	0.009*** (0.002)	-0.035 (0.024)
Peer culture (log)	0.754*** (0.066)	0.732*** (0.092)	0.884*** (0.072)	0.987*** (0.075)	1.295*** (0.072)	1.521*** (0.093)	0.792*** (0.071)	0.771*** (0.047)
X mechanism	0.015* (0.009)	0.084 (0.082)	-0.031*** (0.004)	-0.076*** (0.007)	0.103*** (0.008)	0.144*** (0.014)	-0.019 (0.015)	-0.019 (0.038)
Population censuses	13	13	13	13	13	13	13	13
Observations	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587
R-squared	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual. Variables that capture potential determinants of cultural transmission are interacted with all regressors. Baseline controls include the age and gender of the child, the age at the birth of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. Regional collectivism, measured as the average first name uncommonness of the child's and parents' birth cohorts, is also controlled for. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1.

5.1 Endogenous Mating and Settlement

Parents' choice of spouse, district of residence, and number of children likely reflects and impacts the effort put in to socializing their children to acquire own cultural traits. This has been motivated in theoretical literature and was indicated in the above analysis. Table 6 reports the results of a number of regressions that relate marriage, migration, and fertility outcomes to the cultural heritage and minority status of all adult individuals above the age of 15 in the population censuses. In columns (1)-(3), I estimate the correlation in inherited collectivistic traits between husband and wife across married couples, and I interact this with the minority status of the male spouse to detect heterogeneous patterns. In column (4), I look at the propensity to marry across adults and examine how this depends on the inherited cultural traits and minority status of the adult. Next, in column (5), I estimate the correlation in inherited collectivistic traits between adult individuals that lived outside their district of birth and the peers in his or her new district of residence. In column (6), I study the overall propensity to migrate. Finally, I focus on the number of children had by all married couples in column (7). In the two last regression, I include measures of minority status as controls to see how this impacts migration and fertility.

Results in column (1) suggest the overall presence of positive assortative marriage, whereby individuals seek spouses that are culturally similar to themselves. This is in line with findings in Dohmen et al. (2012). The correlation in cultural traits between spouses, however, depends negatively on the commonness of the individual's last name in column (2), denoted by the negative interaction term. This means that people of common ancestry are less likely to marry someone of similar inherited cultural traits, and this is not explained by these people being less likely to marry someone at all, which is evident from column (4). Instead, this could be explained by cultural and ancestral similarity being equally desired qualities in the choice of spouse. People of common ancestry are more likely to find someone similar to them in many dimensions, and whether or not they share the same collectivistic traits may be less important. Alternatively, people of common ancestry could be more likely to divert from inherited cultural traits as they identify with and learn from more people in society who share their characteristics. Conversely, people of uncommon ancestry must be less likely to marry, and if they do so, they marry someone of similar inherited traits. Combined with the result that a cultural similarity between spouses is associated with stronger intergenerational transmission in Table 5, this may explain why transmission is stronger for parents of uncommon ancestry, which is also a result in Table 5.

Focusing on the case of cultural minority people, results in column (3) and (4) show that they are less likely to marry, and if they do so, it will be to someone of different cultural traits. Thus, it appears that they face a restricted supply of like-minded partners that is not superseded by a potentially higher search effort. The key to understanding

why cultural minorities are then associated with stronger cultural persistence in Table 5 may lie in the finding that they get fewer children as seen in column (7). Moreover, they may exercise higher socialization effort along dimensions that I cannot observe in the data.

Finally, results in column (5) and (6) indicate the occurrence of positive residential self-segregation, and that the propensity to migrate is smaller for collectivistic people (in line with Knudsen, 2018) and higher for ancestral and cultural minorities. The latter suggests higher search effort of minority people.

Table 6: Determinants of Endogenous Marriage, Settlement, and Fertility (Full Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Endogenous marriage			Endogenous settlement		Endogenous fertility	
Dep. variable	Collectivism of female spouse (log)			Marriage	Residence collectivism (log)	Migration	Number of children
Inherited collectivism (log)	0.037** (0.014)	-0.033 (0.029)	0.114*** (0.033)	0.005*** (0.001)	0.004*** (0.001)	-0.014*** (0.002)	0.001 (0.005)
X common last name		-0.012*** (0.003)					
X cultural minority			-0.070* (0.038)				
Common last name (log)		-0.058 (0.039)	0.022*** (0.003)	0.008*** (0.001)		-0.023*** (0.002)	0.002 (0.004)
Cultural minority			-0.155 (0.186)	-0.004** (0.002)		0.007*** (0.002)	-0.013* (0.007)
Sample	Male spouses	Male spouses	Male spouses	Adults	Nonlocal adults	Adults	Male spouses
Population censuses	13	13	13	13	13	13	13
Observations	4,329,361	4,329,361	4,329,361	15,744,002	3,127,687	15,102,279	4,329,246
R-squared	0.11	0.12	0.12	0.06	0.85	0.04	0.04

Notes: Regressions with outcomes linked to marriage, residence choice, and fertility. The unit of observation is an individual in any of the historical population censuses, and the sample varies across specifications. Baseline controls include the age, number of first names, and cohort size of the individual in focus. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The results of this section add to the understanding of how and when cultural traits are transmitted across generations. Marriage, residential choice, and (to some extent) fertility appear to be factors in cultural transmission that parents adjust more or less voluntarily to ensure the persistence of own cultural traits. The results are robust to considering the female perspective in marriage, and to restricting the sample to parents with children (see Appendix Tables A.7 and A.8).

6 Conclusion

This paper examines the intergenerational transmission of cultural traits across more than four million North European families during the period 1703-1910. I find that parents hold on to the cultural values inherited from their childhood homes and pass them on to their own children. The transmission is however not perfect and parents appear to be influenced by the average cultural traits of the surrounding population. The cultural transmission outside the family is particularly strong when it comes from similar-aged peers, people of the local community, and people that belong to the same sub-group as the parent, defined in terms of urban-rural residence, wealth, employment, and religiosity. These results hold for the transmission of collectivism versus individualism and other cultural traits such as religiosity and the strength of regional identity.

I proceed to study how interfamily characteristics and the minority status of parents impact the strength of cultural transmission. Results suggest that parents are in possession of limited resources to educate their children, since the intergenerational transmission of collectivistic traits is weakened by a growing number of children. Conversely, the transmission of traits is stronger in families where parents have an inherited dissimilarity to the surrounding population in terms of ancestry or cultural traits, which indicates that parents treat parental and peer socialization as substitutes.

These findings are supported by evidence on the choices made by parents in terms of marriage, settlement and fertility. I find that positive assortative marriage and residential self-segregation takes place across the entire sample, which very likely contributes to the persistence of cultural traits within families. Parents of ancestral or cultural minority, however, seem to more actively search for spouses or communities with similar cultural traits or moderate the number of children that they get to ensure enough resources to socialize each of them more intensely.

This paper adds to and expands on the empirical literature on the subject of attitude and values transmission (Dohmen et al., 2012; Chowdhury et al., 2018). My results provide empirical support for long-standing theoretical predictions concerning not just the cultural transmission from parents and other members of society, but also on the impact of parents having limited socialization resources and being of minority status. On top thereof, my results are unlikely to suffer from reverse causality as my indicators capture cultural traits inherited from home.

The extensiveness of the data used in this paper offers opportunities for future research to better identify the channels of cultural transmission, and to analyze the impact on and from societal developments associated with industrialization, urbanization, migration, and democratization, which took place in the historical period in focus.

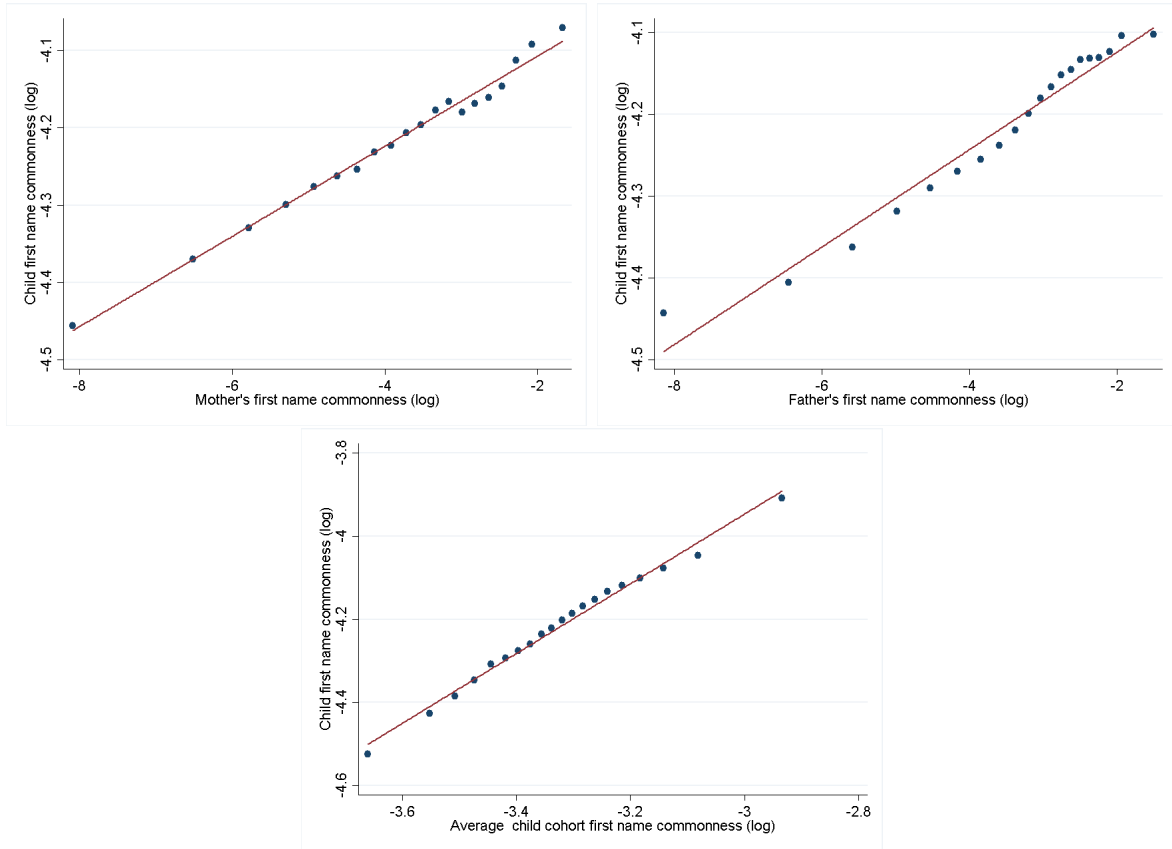
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A Appendix

Figure A.1: Intergenerational Correlation in First Name Commonness



Notes: Child's first name uncommonness as a function of its mother's (upper right), father's (upper left), and cohort's (bottom) first name uncommonness. The binned scatter plot groups the x-axis variable into equal-sized bins, computes the mean of the x-axis and y-axis variables within each bin, then creates a scatterplot of these data points. The underlying regression is that in column (3) in Table 2.

Table A.1: The Intergenerational Transmission of Collectivistic Traits: Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample	All children	All children	All children	Firstborn children	Census year >1801	Children <= 15 years	No spelling mistakes
Dep. variable	Collectivistic traits passed on to the child (log)						
Mother's inherited collectivism (log)	0.062*** (0.004)	0.051*** (0.002)	0.041*** (0.000)	0.076*** (0.006)	0.069*** (0.005)	0.065*** (0.004)	0.061*** (0.005)
Father's inherited collectivism (log)	0.058*** (0.013)	0.054*** (0.007)	0.050*** (0.000)	0.073*** (0.016)	0.062*** (0.016)	0.062*** (0.013)	0.053*** (0.015)
Baseline controls	Y	Y	Y	Y	Y	Y	Y
Economic controls	N	Y	Y	N	N	N	N
Cultural controls	N	N	Y	N	N	N	N
Cohort fixed effects	N	N	Y	N	N	N	N
Population censuses	13	13	13	13	10	13	13
Observations	10,358,974	10,358,974	10,358,974	3,383,925	10,019,235	7,746,143	9,200,356
R-squared	0.08	0.11	0.12	0.13	0.11	0.10	0.10

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. Other controls are described in section 4. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.2: The Intergenerational Transmission of Other Cultural Traits

	(1)	(2)	(3)	(4)	(5)	(6)
Trait	Collectivism	Collectivism (full name)	Collectivism (phonetic)	Collectivism dummy	Regionalism	Religiosity
Dep. variable	Culture traits passed on to the child					
Mother's inherited culture	0.068*** (0.005)	0.085*** (0.007)	0.066*** (0.005)	0.031*** (0.008)	0.060*** (0.007)	0.024*** (0.004)
Father's inherited culture	0.062*** (0.015)	0.062*** (0.012)	0.062*** (0.014)	0.035*** (0.008)	0.061*** (0.007)	0.032*** (0.006)
Baseline controls	Y	Y	Y	Y	Y	Y
Population censuses	13	13	13	13	13	13
Observations	10,358,974	10,358,974	10,358,974	10,358,974	10,358,974	10,358,974
R-squared	0.11	0.52	0.10	0.24	0.42	0.07

Notes: The unit of observation is a child observed in any of the historical population censuses. Cultural traits (inherited or passed along) are constructed based on first name properties (see section 3.1 for details) of each individual. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.3: The Intergenerational Transmission of Collectivistic Traits: Excluding Countries

	(1)	(2)	(3)	(4)	(5)
Trait	Excl. UK	Excl. SE	Excl. NO	Excl. IS	Interact w. country FE
Dep. variable	Collectivistic traits passed on to the child (log)				
Mother's inherited collectivism (log)	0.068*** (0.005)	0.055*** (0.003)	0.074*** (0.006)	0.069*** (0.005)	0.033*** (0.003)
Father's inherited collectivism (log)	0.061*** (0.015)	0.060*** (0.003)	0.062*** (0.020)	0.062*** (0.015)	0.042*** (0.002)
Baseline controls	Y	Y	Y	Y	Y
Population censuses	12	9	9	9	13
Observations	10,234,003	2,838,497	7,691,236	10,313,186	10,358,974
R-squared	0.11	0.07	0.07	0.11	0.09

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.4: The Impact of Regional Culture: Other Traits

	(1)	(2)	(3)	(4)	(5)	(6)
Trait	Collectivism	Collectivism (full name)	Collectivism (phonetic)	Collectivism dummy	Regionalism	Religiosity
Dep. variable	Culture passed on to the child					
Mother's inherited culture	0.058*** (0.003)	0.080*** (0.004)	0.059*** (0.003)	0.015*** (0.004)	0.047*** (0.006)	0.021*** (0.004)
Father's inherited culture	0.060*** (0.010)	0.065*** (0.008)	0.060*** (0.010)	0.021*** (0.004)	0.054*** (0.007)	0.030*** (0.005)
Regional collectivism (log) of parents' peers	0.777*** (0.073)	0.328*** (0.034)	0.721*** (0.094)	1.010*** (0.011)	0.663*** (0.070)	0.971*** (0.013)
Regional collectivism (log) of mother's childhood	0.047 (0.031)	-0.097*** (0.026)	0.008 (0.039)	-0.004 (0.018)	-0.102*** (0.017)	-0.034*** (0.010)
Regional collectivism (log) of father's childhood	0.079* (0.044)	-0.088*** (0.031)	0.054 (0.051)	-0.025** (0.012)	-0.048** (0.020)	0.021* (0.013)
Population censuses	13	13	13	13	13	13
Observations	10,358,972	10,358,972	10,358,972	10,358,972	10,358,972	10,358,972
R-squared	0.12	0.52	0.11	0.27	0.43	0.07

Notes: The unit of observation is a child observed in any of the historical population censuses. Cultural traits are constructed based on first name properties (see section 3.1 for details) of each individual and birth cohort. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.5: The Impact of Regional Culture: Excluding Countries

	(1)	(2)	(3)	(4)	(5)
Trait	Excl. UK	Excl. SE	Excl. NO	Excl. IS	Interact w. country FE
Dep. variable	Collectivistic traits passed on to the child (log)				
Mother's inherited collectivism (log)	0.058*** (0.003)	0.048*** (0.003)	0.063*** (0.004)	0.059*** (0.003)	0.030*** (0.002)
Father's inherited collectivism (log)	0.059*** (0.010)	0.053*** (0.002)	0.063*** (0.013)	0.060*** (0.010)	0.038*** (0.003)
Regional collectivism (log) of parents' peers	0.776*** (0.075)	0.693*** (0.120)	0.820*** (0.081)	0.776*** (0.074)	1.284*** (0.045)
Regional collectivism (log) of mother's childhood	0.047 (0.032)	0.105** (0.046)	0.016 (0.035)	0.047 (0.031)	-0.100 (0.063)
Regional collectivism (log) of father's childhood	0.082* (0.045)	0.047 (0.046)	0.073 (0.055)	0.079* (0.044)	-0.062 (0.054)

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual. Regional collectivism is measured as the average first name uncommonness of the child's and parents' birth cohorts. Baseline controls include the age and gender of the child, the age at the birth of the child of both parents, the number of siblings to the child, the birth order of the child, the last name uncommonness of both parents, and the logarithm of the size of cohorts that share the same birth decade and district as the child and both parents. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.6: Mechanisms of Efficient Cultural Transmission

Mechanism	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Parent dissimilarity	Male child	No. of children	Birth order of child	Mother common last name	Father common last name	Mother cultural minority	Father cultural minority
Collectivistic traits passed on to the child (log)								
Dep. variable								
Mother's inherited collectivism (log)	0.063*** (0.003)	0.077*** (0.005)	0.063*** (0.004)	0.066*** (0.004)	0.024*** (0.005)	0.037*** (0.005)	0.041*** (0.008)	0.053*** (0.002)
X mechanism	-0.007*** (0.002)	-0.035*** (0.005)	-0.002*** (0.000)	-0.003*** (0.001)	-0.006*** (0.001)	-0.004*** (0.001)	0.015* (0.008)	0.006*** (0.002)
Father's inherited collectivism (log)	0.064*** (0.009)	0.030*** (0.011)	0.068*** (0.011)	0.071*** (0.011)	0.009 (0.019)	0.006 (0.020)	0.051*** (0.011)	0.099*** (0.021)
X mechanism	-0.008*** (0.002)	0.058*** (0.007)	-0.003*** (0.001)	-0.005*** (0.001)	-0.010*** (0.002)	-0.010*** (0.002)	0.009*** (0.002)	-0.035 (0.024)
Peer culture (log)	0.754*** (0.066)	0.732*** (0.092)	0.884*** (0.072)	0.987*** (0.075)	1.295*** (0.072)	1.521*** (0.093)	0.792*** (0.071)	0.771*** (0.047)
X mechanism	0.015* (0.009)	0.084 (0.082)	-0.031*** (0.004)	-0.076*** (0.007)	0.103*** (0.008)	0.144*** (0.014)	-0.019 (0.015)	-0.019 (0.038)
Regional collectivism (log) of mother's childhood	0.009 (0.032)	0.069 (0.043)	0.037 (0.030)	0.020 (0.032)	-0.171*** (0.057)	-0.146*** (0.042)	0.040 (0.040)	0.001 (0.031)
X mechanism	0.039*** (0.010)	-0.039 (0.051)	0.001 (0.004)	0.008 (0.005)	-0.042*** (0.007)	-0.034*** (0.007)	0.015 (0.018)	0.063*** (0.016)
Regional collectivism (log) of father's childhood	0.096** (0.042)	0.104** (0.050)	0.035 (0.041)	0.023 (0.043)	-0.238*** (0.053)	-0.177** (0.074)	0.075* (0.040)	0.074* (0.042)
X mechanism	-0.012 (0.008)	-0.044 (0.067)	0.012*** (0.003)	0.019*** (0.004)	-0.058*** (0.008)	-0.047*** (0.010)	0.004 (0.018)	-0.008 (0.020)
Population censuses	13	13	13	13	13	13	13	13
Observations	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587	10,358,587
R-squared	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12

Notes: The unit of observation is a child observed in any of the historical population censuses. Collectivistic traits (inherited or passed along) are given by the logarithm of first name uncommonness of each individual or birth cohort. Variables that capture potential determinants of cultural transmission are interacted with all regressors. All regression include baseline controls, fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1.

Table A.7: Determinants of Endogenous Marriage, Settlement, and Fertility (Female Sample)

	(1)	(2)	(3)	(4)
	Endogenous marriage			Endogenous fertility
Dep. variable	Collectivism of female spouse (log)			Number of children
Inherited collectivism (log)	0.034*** (0.012)	-0.042 (0.034)	0.157*** (0.045)	0.010*** (0.002)
X common last name		-0.013*** (0.004)		
X cultural minority			-0.104** (0.045)	
Common last name (log)		-0.192 (0.166)	0.014 (0.016)	0.018*** (0.004)
Cultural minority			-0.257 (0.192)	0.006 (0.009)
Sample	Female spouses	Female spouses	Female spouses	Female spouses
Population censuses	13	13	13	13
Observations	4,336,992	4,336,992	4,336,992	4,336,861
R-squared	0.09	0.10	0.10	0.04

Notes: Regressions with outcomes linked to marriage, residence choice, and fertility. The unit of observation is an individual in any of the historical population censuses, and the sample varies across specifications. Baseline controls include the age, number of first names, and cohort size of the individual in focus. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.8: Determinants of Endogenous Marriage, Settlement, and Fertility (Parents in Sample)

	(1)	(2)	(3)	(4)	(5)	(6)
	Endogenous marriage			Endogenous settlement		Endogenous fertility
Dep. variable	Collectivism of female spouse (log)			Residence collectivism (log)	Migration	Number of children
Inherited collectivism (log)	0.034** (0.015)	-0.033 (0.032)	0.117*** (0.034)	0.003*** (0.001)	-0.009** (0.004)	0.006 (0.004)
X common last name		-0.012*** (0.004)				
X cultural minority			-0.076* (0.039)			
Common last name (log)		-0.025 (0.033)	0.021*** (0.003)		-0.020*** (0.002)	-0.003 (0.007)
Cultural minority			-0.098 (0.138)		-0.000 (0.005)	0.005 (0.003)
Sample	Fathers	Fathers	Fathers	Nonlocal adults	Adults	Married
Population censuses	13	13	13	13	13	13
Observations	3,383,995	3,383,995	3,383,995	672,005	3,714,737	3,383,796
R-squared	0.11	0.12	0.11	0.81	0.05	0.14

Notes: Regressions with outcomes linked to marriage, residence choice, and fertility. The unit of observation is an individual in any of the historical population censuses, and the sample varies across specifications. Baseline controls include the age, number of first names, and cohort size of the individual in focus. All regression include fixed effects for each population census. Robust standard errors, clustered at the district of child birth level, are shown in the parentheses with the following significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.