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Introduction

The expansion of tertiary education has been a significant development around the world since the 1980s. The growing educational enrollment and attainment of younger people has also created various types of social change, both in Sweden and worldwide (Schofer and Meyer 2005). In Sweden there has been a rapid growth in the number of men and women completing tertiary degrees, women’s level of tertiary educational attainment has nearly tripled and men’s nearly doubled between the 1965 and the 1980 birth cohorts (Högskoleverket 2011). As education is a major driver of geographic mobility it is reasonable to expect that educational expansion has led to a reconfiguration of family geography. This paper aims to identify the role educational expansion has played in changing distances between generations in Sweden since the 1980s.

The role of education on intergenerational proximity has so far been studied from a micro-perspective, where it is known that for individuals higher education is associated with larger distance to family members. More young people now attend university and partner with other university educated people than ever before, but the macro-level role of growing educational attainment over time has not been studied in relation to patterns of family geography. As more young people reach higher levels of education and move further away from their parents, the aggregate patterns of family proximity may change significantly.

Proximity to family is important for concrete patterns of family support, obligations and care, as well as for the broader experience of kinship. Geographical distance between adults and their ageing parents has been a focus of research in the last decades, and proximity has been

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associated with a number of indicators of family cohesion including frequency of contact, emotional proximity, provision of child care and old age support (Lawton et al. 1994). Distance between parents and children have been linked to lower levels of communication and both financial and non-financial support (Mulder and van de Meer, Michielin et al. 2008). These family relationships may be particularly important when young adults have their own children, as the new parents seek family support and interaction.

Sweden is an interesting case for the study of family proximity. Sweden has a very low rate of inter-generational co-residence and a culture which stresses autonomy rather than family obligation (Sundstrom 1987, Glaser, Tomassini and Grundy 2004). Sweden tends to rank low on inter-generational proximity and intensity of contact with kin, while Swedes are more likely to be in regular contact with kin, when compared to other European countries (Hank 2007, Bordone 2009). Nevertheless, most Swedish people do not live inaccessibly far from their parents. Studies focusing on older adults (Lundholm and Malmberg 2009, Bordone 2008) have shown that roughly 50% of adults 55+ live within 25km of a child. In a society with a low emphasis on family obligations, educational expansion is likely to have a significant impact on family proximity, as young people do not feel compelled to stay near their family, or return after they complete their education. Analysis of Swedish registry data by Lundholm and Malmberg confirms that factors important for inter-generational proximity in Sweden are similar to those found elsewhere. People with less education are more likely to live within 50km of their parents, though men and partnered individuals or those who have children are also more likely to live close by. According to these observed relationships, Swedish couples who experience a first birth are likely to live near at least one set of grandparents, and these are likely to be the man’s parents.

Geographic proximity is acknowledged to be key for structuring opportunities for interaction and support between family members (Bengston 1991, Tomassini 2003, Rossi and Rossi 1990). Young adults are also able to take advantage of “location-specific capital” built up when they were younger, such as social networks, when they live close to their parents. For these reasons, family networks have an acknowledged role in the residential decisions of young adults, and changes to family proximity patterns are important for research (Mulder 2007, Michielin, Mulder and Zorlu, Pettersson and Malmberg 2009).

This study will compare the proximity of young couples to their two sets of parents over the years 1980-2007. Drawing on Swedish registry data, all couples who have a first child in the
study period are linked to their two sets of parents. The comparison over this long time period makes it possible to examine how changing patterns of educational attainment are related to changes in intergenerational proximity. The study will describe the changes that have occurred in the patterns of distance, and then decompose the change to study the impact of educational expansion. Couples are the unit of analysis rather than individuals, and distances are measured at the time of the birth of a couples’ first child. The rising educational enrolment over the last thirty years has changes the location decision-making process of young couples, and this study focuses exclusively on the way changes in education have affected inter-generational proximity.

The followings sections of the paper will: provide a background discussion on educational expansion; introduce the research design; review the data and method used in the study; present the results; and discuss the findings.

**Background**

**Educational expansion**

There has been significant educational expansion across the world in the second half of the twentieth century. Though in 1900 just about one percent of college-aged people around the world were enrolled in higher education, by 2000 this number had grown to 20% of college-age people (Schoefer and Meyer). Most of this growth has occurred since 1960, and has happened not only in wealthy and industrialized societies, but around the world. Tertiary education is also much less (though still significantly) restricted by class background, and while women were previously almost completely excluded from higher education, their enrollment numbers surpass men’s in many countries. Tertiary education enrollment and completion in Sweden has risen quickly since the 1960s. Figure one shows the proportion of men and women in Sweden who have earned a tertiary diploma.

As this figure shows, the number of women earning a tertiary degree by age 30 has more than tripled in Sweden between the 1948-1986 birth cohorts, and the number of men earning a degree by age 30 has nearly doubled. The growth of tertiary education has meant that it plays a larger role in young adulthood and provides a reason for more young adults to leave home. Academic studies in Sweden tend to be more drawn out in time when compared to other countries. Tertiary education is free in Sweden and there are government subsidies to cover living expenses for up to 12 academic terms. University education thus continues over a
longer period than in other countries, as it is combined with periods of work. Many young adults who take the opportunity to attend university thus integrate into their college environment, and spend a significant amount of time away from their home towns, meaning they may be unlikely to return when they complete their education.

Figure 1: Proportion of men and women in Sweden graduating from a tertiary program. (Högskoleverket 2011).

Notes on Swedish education policy

Tertiary educational expansion has been a part of official Swedish policy, and the government had set objectives that 50 percent of each birth cohort should attend higher educational institutions (HSV). In the mid 1940s, Sweden had two universities, two university colleges, and some professionalized institutions (for medicine, technology, and economics). Currently, there are about 50 institutions in Sweden which have the right to grant degrees up to the doctorate level. Educational expansion in Sweden has been the product of specific policy to make education more accessible. One aspect of this policy has been the explicit regionalization, wherein tertiary educational institutions have been opened across the country in order to increase access to tertiary education.

The Swedish government has strived to increase tertiary enrolment in the post-war period. One of the objectives of this policy was to make it easier to attend university in different regions in Sweden, and educational expansion in Sweden was characterized by increasing regionalization of tertiary education.
Growth in education in Sweden mostly happened in the 1960s (prompting a policy for expansion in the number of educational institutions) and during the 1990s (after the number of universities were dramatically expanded in the end of the 1980s). Though new colleges were also opened in the late 1970s, the reform was not as successful, and the number of students enrolled did not begin to grow until after the 1980s. While there were 150,000 students during the 1980s, there were about 300,000 students in 1999. The new colleges opened during this time grew very quickly, thus making students less geographically concentrated in the university in or near the core urban regions of Sweden. While increasing educational expansion in Sweden opened up opportunities for tertiary education for a larger share of the population, the increasing regionalization over time also made it easier to attend a university closer to the region of origin. The effect of educational expansion in Sweden therefore could both have increased and decreased intergenerational proximity.

**Figure 2: Enrolled students in old and new (regional) tertiary education institutions**

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**Education and migration**

The expansion of higher education is tied to the distance between parents and children due to the observed patterns of geographic mobility associated with university studies. Becoming a university student has long been associated with geographic mobility, due to the clustering of academic activity in small university towns. Young adults have typically migrated long
distances to attend university and tend to settle densely around university areas while they are in school (Patiniotis and Holdsworth, Duke-Williams, Belfield and Morris, Statistics Sweden 2003). As more young people pursue post-secondary education, the relationship between education and migration has become more important (Craig 1981, Schofer and Meyer 2005). Governments have supported growth in the number and geographic dispersal of higher educational institutions as demand for higher education has grown. Nevertheless, the largest universities in Sweden continue to attract students from across the country. Because many students have already left their home towns, they may not be able to or want to return after they complete their education. Furthermore, people with a university education are likely to be more mobile than those without and education. People who have received specialized training are inclined to be more flexible geographically when looking for work. For this reason, education is associated with migration, and expansion of education is likely to lead to greater migration.

Education may not be responsible for the majority of distance between parents and children, as most young people leave the parental home after finishing their secondary education or before starting a family (Billari et al 2001). Sweden is characterized by strong patterns of low levels of intergenerational co-residence in adulthoods, both today in the past (Hajnal 1982; Dribe 2000; Dribe and Stanfors 2005). The median age for leaving parental home in Sweden is a little over age 20 for women and a little before age 22 for men, for cohorts born 1965 to 1975 (Statistics Sweden 2008). However with the exception of moves related to tertiary education, most young adults leaving the parental home do not move far away (Statistics Sweden 2008). Those with post-secondary degrees tend to live further away from their parents than average, and this distance is likely to have an impact on the quality of family relationships.

**Research Design**

The aims of this study will be two-fold: to show changes in distance between adult children and their parents over time, and to isolate the role of educational expansion in these changes. We want to examine how increasing educational enrollment may have resulted in growing distance. Due to social and economic changes, it’s possible that distances between family members have increased over this period in a way not related to education. An aim of this study is to identify the role of education in changing distances.
The index population used will be couples who have had a child together. The distance between generations will be presented descriptively. As the couples’ parents may no longer be together, distance will be measured to each of the four known parents. Couples will be the unit of analysis, as single-sex analysis seems inappropriate for the study of family-networks which involve partnerships. There are several reasons why couples are more appropriate than individuals for this analysis. The main reason is that for a partnered individual, both an individual’s proximity to their own parents and to their partner’s parents matters. Whether a person or their partner’s parents live close by, the couple is likely to have some sort of relationship with the parents. If a couple benefits from time spent together, some sort of financial or in-kind transfers, or grandparent child care assistance, living near one set of parents may be enough. It’s not clear that it would be twice as beneficial in this case for a couple to live close to two sets of parents. In any case, a person living far away from their parents, but close to their partner’s parents, should not be analyzed as not having any family in the proximity.

Furthermore, including both sets of parents in the analysis allows for the study of asymmetrical family relationships. In the case where one partner has proximate parents, those parents will most likely be involved more intensively than the more distant parents. This is true of benefits and shared activities, but it is also true of costs to the couple. Though research shows that resources tend to flow from the older to the younger generation, younger people may still spend time and resources to care for older parents. In this case, the couple will allocate more of their resources to care for the proximate family, thus creating an asymmetrical investment. This inequality in access to parents makes it important to study patterns of family proximity by gender and educational level. If certain individuals (such as women, or more highly educate people) are more likely to live further away from their parents, then partnerships will be systematically asymmetric in multi-generational relationships. For these reasons, distances in the study will be measured from the couple to each of four parents. Distances are measured at the time of the birth of a first child as this is a stable point for comparison over a thirty year time period when ages at union formation and childbirth have steadily increased.

In order to discuss the role of education has played in family changes, descriptive distance results will be followed by a decomposition analysis. This analysis will help reveal which part of changes in family distance have been due to greater mobility at every educational level, and which part is due to more people being in the more mobile educational categories.
This analysis is important as it is not clear whether educational expansions by itself has affected geographic family networks. Over the last decades, there has also been secular change in family distances. There are a number of factors which may be motivating this change: increased labor market migration, changing urban-rural migration dynamics, growing openness to living further apart, changes in their values and so on. However, it is also possible that people’s increased mobility due to educational enrollment has played a large role in changing family geography, regardless of all other changes. The decomposition analysis will help see how the rates of educational attainment have changed distances.

Data

To measure and analyze the changes in family proximity patterns, we use Swedish administrative registry data, analyzing information on both partners in all couples who had a first birth in the years 1980-2007. Using first births allows the analysis to capture cohabiting as well as married couples in order to more completely describe relationships in Sweden. We only look at biological births and couples who shared residence at the time of the birth. The data were assembled using Swedish registers to link generations and include municipality geographic co-ordinates of the couple and the four respective parents associated with the relationship. Though there are more detailed geographic measures, municipalities are the smallest geographical area for which we have comparable time series with starting in the 1980s. The data make it possible to measure whether the couple live in the same region as one or both sets of parents and if not, the distance to each of the four parents of our index couple. Data is also available on the age and educational level of both partners in the couple. Educational level is collected from administrative registries and measures any amount of primary, secondary, or tertiary education in 2007.

Our main outcome variable is distance between municipalities of residence for the index couple and the parents. For the sake of analysis we use two strategies when presenting this data. The first is the calculation of mean geographical distance for every year for couples with different ages and educational levels. We also look at the distribution of geographical distances by categorizing distance the following way; 0 (same municipality), 0-20km, 20-50 km, 50-300 km, 300-1000km, and 1000+km. We also examine different combinations of

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3 In 2007 Sweden has 9,174,464 inhabitants living in 299 different municipalities. The median municipality population was 15,297, and the median area was 673 square km.
educational levels for the man and the women in the couple, in total creating 9 different possible educational combinations.

**Methods**

The first section of the results is of a descriptive character, and includes frequency graphs and plots of average distances between family members. The definitions of the relationships and the distances have been discussed above. The study period is 28 years, and groups have been separated into three “periods”: 1980-1989, 1990-1999, and 2000-2007. Since this study is cross-sectional, rather than longitudinal, there may be much random variation in distances year to year. Therefore, most comparisons are done between the three period groups.

The second step in the study is the decomposition analysis. The purpose of this decomposition is to better understand the components of change. In this study, distance between parents and children increased over the study period, as well as educational enrolment. However, it’s possible that distances between generations increased due to greater propensity of individuals to move at every educational level. Over the study period (1980-2007), it’s possible that labor market mobility increased for individuals irrespective of educational level. The classic method of decomposition, expressed by Kitagawa (1955) separates the average contribution of changes in the components from the changes in the weights of the components. In the case of this study, the changes in the average distance \( d \) for each group with educational attainment \( edu \) can be separated from the change in the relative weight of the educational group \( n_{edu}/n \) between one time period \( t \) and another \( t_2 \). The decomposition formula is as follows:

\[
\sum_{edu} \left( \frac{n_{edu}(t_2)}{n(t_2)} - \frac{n_{edu}(t_1)}{n(t_1)} \right) + \left( d_{edu}(t_2) - d_{edu}(t_1) \right)
\]

\[
+ \sum_{edu} \left( \frac{d_{edu}(t_2) + d_{edu}(t_1)}{2} \right) \left( \frac{n_{edu}(t_2)}{n(t_2)} - \frac{n_{edu}(t_1)}{n(t_1)} \right)
\]

The first part of the decomposition shows the change in the average distance by educational group, whereas the second term shows the change in the compositional effect of each group. The analysis will be carried out to decompose the changes in the average distance from parents within educational groups from the impact of educational expansion and rising educational attainment in Sweden. Distances to the mother’s mother and the father’s mother will be decomposed by the unique educational combinations in a couple. These combinations are based on grouping education into primary, secondary, and tertiary, and grouping couples
by the men’s and women’s education attainments (e.g., woman secondary, man secondary or woman tertiary, man secondary).

**Results**

We begin by showing descriptive graphs on the changes in mean distance to the woman’s and the men’s parents between 1980-2007. We only show results for distance to the woman’s mother and the father’s mother, the results for the couple’s father is very similar. In Figure 3 we can see the change over time in distances to the mother’s and father’s mother. The data shows share of couples within different categories of distances. Overall distances are similar to both men’s and women’s mothers, though men tend to live closer. For the entire period at least half of all couples have both the man’s and woman’s parents within the same municipality. When examining the change over time one can see big continuities but also an increasing fraction of couples who live rather far away from their parents. There is evidence that there has been a decline in intergenerational geographical proximity over time.

**Figure 3: Distance to the woman’s mother and the man’s mother. Swedish couples who had a first birth between 1980 and 2007.**

In Table 1 we show couple level educational combinations over time. The table is grouped by primary, secondary, and tertiary education, for the man and woman (a total of 9 different educational categories). The table has three sections, the 1980s, the 1990s, and the 2000s. The table clearly shows the effect educational expansion has had on educational levels in Sweden. Couples in which either partner had a tertiary education increased from 43% in the
1980s to 58% in the 2000s. Couples with only secondary and primary education consequently declined. Though it is important to note that this table reflects only couples who have children, rather than all couples, it is interesting that the majority of children born between 2000-2007 were born to at least one tertiary-educated parent. The table also shows how women typically have higher educational levels than men in Sweden throughout the period, and consequently that women more often have higher education than their partner. To examine how these educational expansion has affected overall geographical distance, we examine the change in intergenerational proximity by educational level.

Table 1: Educational combinations within a couple in the 1980s, 1990s, and 2000s. Swedish couples who had a first birth between 1980 and 2007.

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W=Woman, M=man, 1=primary, 2=secondary, 3=tertiary

In figure 4 we show how mean geographical distance between couples and their parents have changed over time. When looking at mean distances over time it is clearer than in figure 3 that there has been a decrease in intergenerational proximity. Mean distance changed around 15-20 km between 1980 and 2007. One can also easily observe that people with higher education live further away from their parents than couples with less educated partners. At the end of the study a couple with a tertiary educated partner lived on average 120 km away from their parents, while the equivalent number for a couple when the highest level was secondary education was a little less than 60 km. We can see that geographical distance increased within all educational categories over the study period. Of couples with a maximum primarily, secondary and tertiary education, the increase was largest for tertiary educated couples.
Figure 4: Mean distance to the woman’s mother and the man’s mother, by maximum educational level of the couple. Swedish couples who had a first birth between 1980 and 2007.

In figure 4 we examined how geographical distance between educational level changed over time. One can observe that the increase in mean distance for all couples over the period was larger than when examining couples within educational categories. This suggests that one important reason for decreasing intergenerational proximity is a compositional change, i.e. that educational expansion has increased the number of more educated, more mobile individuals. To test this hypothesis we make a formal decomposition, comparing how much of the population level decrease in intergenerational proximity can be explained by a compositional change in couple level educational combinations, and how much is due to a potential increase in migration propensity within couples with a certain education. In Figure 5 we present the decomposition for distance to women’s mothers and for men’s mothers. Overall there are only minor differences in distance to parental and maternal parents. We show the total change between 1980 and 2007, but also how much of that change that took place between the 1980s and the 1990s, and how much that took place between the 1990s and the 2000s. The results of the decomposition show that there was an increase in geographical distances between the 1980s and the 2000s. A little less than half of that change was due to increasing propensity to move, while the more important part was due the compositional effect of educational expansion. When stratifying the decomposition into an early and a late period we can see that most of the increase in geographical distances took place in the later period. In the early
period all of the increase was due to a compositional effect, while in the late period both composition and propensity can explain the increase. The second period is similar to the timing of the rapid expansion and regionalization of Swedish universities. Thus, it appears that the expansion of number of students had the predictable effect of increasing intergenerational proximity (the compositional effect). Interestingly, despite that the goal of the educational expansion was to increase proximity to tertiary education, the propensity for university educated also increase.

**Figure 5: Decomposition of geographical distance to the man’s parents and the women’s parent by educational group.** Swedish couples who had a first birth between 1980 and 2007.

**Conclusions**

Our results show a moderate increase in geographical distance between adults and their parents in Sweden between 1980 and 2007. This is in line with previous research on intergenerational proximity in Sweden. Throughout the period there were only very minor differences between distance to the man’s parents and to distance to the woman’s parents. Our research question in the study is the degree to which educational expansion had affected geographical distance the last decades. Our decomposition shows that educational expansion is an important explanation for decreasing intergenerational proximity, in particular after the 1990s. Despite a policy of regionalization, the propensity of tertiary educated individuals also increased in this later period. One explanation for this surprising finding, is that the policy increased enrollment in more remote parts of Sweden, and that the result of this new group of
students moving to tertiary education resulted in decreasing geographical proximity. While we can show that educational expansion can explain much of the increase observed distance, both before and after educational expansion most adults in family formation ages in Sweden live close to their parents.

Sweden experienced a rapid growth of tertiary education between the 1960s and today. It appears plausible that educational expansion, which has been common in developed countries the last decades, have impacted intergenerational proximity in other countries which have seen increasing geographical distances too. Our results highlight the importance of taking macro-level structural changes into account when examining individual characteristics such as distance to parents. Educational expansion is one of the larger structural changes in the last decades, and while the micro level differentials between different educational categories have been examined, few social scientists have examined the macro level consequences of increasing educational levels on family geography and family demography.

Acknowledgments

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References:


Bordone, V. (2009), Contact and proximity of older people to their adult children: a comparison between Italy and Sweden. Popul. Space Place, 15: 359380.


Mulder, C. H. and van der Meer, M. J. (2009), Geographical distances and support from family members. *Popul. Space Place*, 15: 381399. 5


