



Turun yliopisto  
University of Turku

# LIFE COURSE APPROACHES TO INTERGENERATIONAL INEQUALITY

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## **Abstract**

This dissertation examines intergenerational inequalities from a life course perspective. Different outcomes and paths to outcomes are analyzed using register data. The thesis consists of four research articles and a conclusion.

Intergenerational inequality is one of the most researched subjects in sociological literature. We know that family background impacts practically every major decision and event in a person's life. Even in the Finnish context of an extensive welfare state, we can only mitigate intergenerational inequality, not eliminate it. One could say that parents' will and ability to transmit advantages to their children to different extents is almost as fundamental as the inevitable inequality in societies and social systems.

In this dissertation, the transmission of inequalities is studied from the life course perspective over many outcomes. The aim is to provide a comprehensive and holistic picture of intergenerational transmissions. Outcomes range from more traditional educational and economic ones to family formation patterns and homeownership. In all cases, family background has a clear impact.

Two register-based data sets from Statistics Finland are used in the articles (Finnish Growth Environment Panel and Finnish Census Panel). Both include information on the siblings and parents of the sample persons. Because they are register based, the data sets are comprehensive and reliable. We not only can match people with their relatives but also have detailed information on siblings and parents with respect to studied phenomena and background information.

In the first article, we established that early day care is associated with higher educational outcomes in early adulthood. We did not find any parental education-based variation in the strength of the association. In the second article, we found that early socioeconomic trajectories are influenced by family background. Although parental education and income in one's childhood family are leading determinants of intergenerational transmissions, a large share of the family background effect remains unexplained. Furthermore, we show that only about half of the family of origin effect on early socioeconomic trajectories is associated with the end outcomes at age 35. Therefore, family background has a clear effect on early socioeconomic trajectories that could not be observed by analyzing the end outcomes. In the third article, we found that family formation trajectories are affected by family background, disadvantaged paths the most. We could not identify a large share of the family background determinants underlying the effects. In the last article, which analyzes homeownership, we found a strong overall effect of family background in the form of sibling correlations. We also found that for men, the effect varied between those living with or without a partner. The strongest sibling correlations were found for men living alone. Overall, social origin broadly influenced many aspects of a person's life course.

**Keywords:** Intergenerational inequality, intergenerational mobility, day care, family formation, homeownership, sibling models, sibling correlations, sequence analysis

## Tiivistelmä

Väitöskirja käsittelee ylisukupolvista eriarvoisuutta elämänkulun näkökulmasta. Erilaisia elämän osa-alueita käsitellään sekä päämäärien että näihin päämääriin johtavien polkujen näkökulmasta. Väitöskirja koostuu neljästä artikkelista ja yhteenvetona toimivasta johdannosta.

Ylisukupolvinen eriarvoisuus on yksi sosiologian tutkituimmista aiheista. Tiedämme perhetaustan vaikuttavan käytännössä kaikkiin merkittäviin päätöksiin ja tapahtumiin ihmisten elämässä. Edes Suomen kaltaisen kattavan hyvinvointivaltion kontekstissa perhetaustan vaikutus ei katoa, vaikka se pieneneekin. Vanhempien halu ja kyvykyys saavutettujen etujen siirtämisessä seuraavalle sukupolvelle on lähes yhtä vääjäämätön fakta kuin kaikissa yhteiskunnissa ja sosiaalisissa järjestelmissä esiintyvä eriarvoisuus.

Tässä väitöskirjassa tarkastellaan sosiaalisen aseman periytymistä elämänkulun näkökulmasta monia eri ilmiöitä tarkastellen. Tavoitteena on antaa kattava ja holistinen kuva ylisukupolvista vaikutuksista. Tarkastellut ilmiöt vaihtelevat perinteisemmistä tarkastelun kohteista kuten koulutuksesta ja taloudellisesta asemasta perheen muodostukseen ja omistusasumiseen. Kaikissa tapauksissa perhetaustalla on selkeästi merkitystä.

Tutkimuksissa käytetään kahta eri Tilastokeskuksen rekisteripohjaista aineistoa (Finnish Growth Environment Panel ja Finnish Census Panel). Molemmista on tietoja otoshenkilöiden lisäksi heidän sisarusistaan ja vanhemmistaan. Rekisteripohjaiset tiedot ovat kattavia ja luotettavia. Meillä on ollut paitsi mahdollisuus tarkastella otoshenkilöiden sukulaisia myös sisarusia ja vanhempia koskevaa yksityiskohtaista tietoa tutkituista ilmiöistä ja taustatekijöistä.

Ensimmäisessä artikkelissa vahvistimme että varhainen päivähoito on yhteydessä suurempaan todennäköisyyteen kouluttautua pidemmälle aikuisena. Yhteyden vahvuus ei vaihdellut vanhempien koulutustason mukaan, kuten olisi joidenkin aikaisempien tutkimusten perusteella voinut odottaa. Toisessa artikkelissa osoitimme että perhetausta vaikuttaa varhaisiin sosioekonomisiin polkuihin. Vanhempien koulutus ja lapsuuden perheen tulot ovat pääasialliset polkuihin vaikuttavat tekijät, mutta suurta osaa yhteyden taustalla olevista tekijöistä emme pystyneet identifioimaan. Näytämme myös että noin puolet perhetaustan vaikutuksesta sosioekonomisiin polkuihin on yhteydessä tuloihin tai koulutukseen tarkastelujakson lopussa 35-vuotiaana. Perhetaustalla on siis vahva vaikutus polkuihin, jota ei havaittaisi tarkastelemalla lopputulemia. Kolmannessa artikkelissa osoitimme perhetaustan vaikuttavan myös perheenmuodostuspolkuihin. Vaikutus oli vahvin rikkonaisen perheenmuodostuksen kohdalla. Suuri osa syistä yhteyden takana ei selvinnyt. Viimeisessä omistusasumista käsittelevässä artikkelissa löysimme vahvan perhetaustan vaikutuksen sisaruskorrelaatioita käyttäen. Lisäksi perhetaustan vaikutus vaihteli miehillä sen mukaan asuivatko he parisuhteessa vai yksin. Vahvin perhetaustan vaikutus kohdistui yksinasuviin miehiin. Kaikkiaan havaitsimme perhetaustalla olevan merkitystä laajasti ihmisten elämänkulkuun monilla elämänalueilla.

**Asiasanat:** ylisukupolvinen eriarvoisuus, ylisukupolvinen liikkuvuus, päivähoito, perheenmuodostus, omistusasuminen, sisarusmallit, sisaruskorrelaatio, sekvenssianalyysi

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Reading the literature related to the dissertation I have learned that most modern philosophers do not hold determinism and free will as mutually exclusive, but rather coexisting positions. Therefore, I wish to express once more my gratitude for all of the great people who I have around me, but at the same time take the full responsibility for any possible mistakes I have made in the dissertation.

## List of Original Publications

### **I Home sweet home? Long-term educational outcomes of childcare arrangements in Finland**

Aleksi Karhula, Jani Erola, Elina Kilpi-Jakonen

*Published in Blossfeld, H. - P., Kulic, N., Skopek, J. & Triventi, M. (eds.), Childcare, Early Education and Social Inequality – A Cross-national Perspective. Cheltenham, UK and Northampton, MA, USA: Edward Elgar.*

### **II Destination as a Process: Sibling Similarity in Early Socioeconomic Trajectories**

Aleksi Karhula, Jani Erola, Marcel Raab & Anette Fasang

*Submitted to journal*

### **III Sibling Similarity in Family Formation**

Marcel Raab, Anette Fasang, Aleksi Karhula & Jani Erola

*Published in Demography*

### **IV The Overall Effect of Family Background on Homeownership during Early Life Course**

Aleksi Karhula

*Published in Housing Studies*

## **Introduction**

Often the research and results in social sciences are matters of political debate, with varying views on the subject. In the case of intergenerational inequality as a research subject, the situation is slightly different. There is a broad political consensus on equality of opportunity: people should receive a start in life that is as equal as possible. This is probably one of the reasons for the extensive literature on this topic across the social sciences. This dissertation builds on this literature and hopes to advance it further by employing life course perspectives.

The meaning of the term “Life Course” in this thesis is threefold. First, people have both past and future. Past is not irrelevant to the future, but it is embodied in people (Abbott 2016). In its simplicity, this notion is the foundation of the “Life Course” concept in the social sciences. Earlier events affect later ones during the life course. Quite often, the concept is used when analyzing the effects of past events on different outcomes. This is the simple perspective of the first article of this dissertation. We analyzed the association between early day care and later educational outcomes. Does the parental day care decision affect their children’s educational achievement in adulthood?

The second meaning of the term “Life Course” is that we aim to analyze the entire life course holistically, not just at single points in time. We attempt to make sense of the entire sequence of events, not a single event or even a relationship between two events. We aim to analyze the entire sequence simultaneously. This perspective, which takes holistic paths or sequences of events as outcomes, is employed in the second and third articles of this dissertation. We analyze early socioeconomic trajectories (ESETs) and family formation trajectories in early adulthood. We are interested in whether these trajectories are affected by the family of origin. In the case of socioeconomic trajectories, we even explicitly study how much of the effect on trajectories would be missed by looking at single outcomes. The fourth article of the dissertation is located somewhere between these two perspectives. The effect of family background on homeownership is analyzed and the differences in this association at different ages are studied. This approach is not as holistic as sequence approaches in the second and third articles because the outcome is still a singular one, although we study how the effect changes with time. That said, as we analyze the change of this effect in relation to age, we draw closer to a holistic view.

When considering the thesis as a whole, we arrive at our third definition of “Life Course”. This dissertation’s goal is to examine life as series of subsequent and parallel events. “Life Course” not only includes the temporal aspect of our lives but also shifts our attention to the interrelatedness of different zones of it, our life as a whole. Everything in our lives is indeed interrelated: our labor-market success, family formation, wealth acquisition and even happiness are all related to each other. Family background influences on one sphere of life are also reflected in other spheres. Unemployment can affect family formation, family formation disrupts the attainment of socioeconomic status, both are

heavily linked to entry into homeownership, and happiness lies somewhere between and within all of the above.

Life course research has been a hot topic in intergenerational research for some time. If we follow the first definition of life course as a general notion that the past affects future outcomes, the idea has existed since the beginning of research on intergenerational inequalities. The essence of intergenerational effects lies in childhood and genetics influencing later outcomes and causing unequal opportunities. More explicit studies of various childhood conditions have long existed, growing stronger with the variety of methods related to event history analysis that became more common in the 1980s (Blossfeld, Hamerle, and Mayer 2014 [1989]). One could argue that the availability of data has been one of the factors driving the emergence of these methods.

More recently, it has been noted that a disadvantage in life is largely cumulative in nature (DiPrete and Eirich 2006; Heckman 2006). This view is related to a trajectory view of the life course. Not only do specific life course events in the past affect outcomes, but the trajectories leading to these outcomes play a major part in their transmission. The longer a person travels down the wrong road, the worse his or her situation becomes. DiPrete and Eirich (2006) borrow the concept of the Matthew effect from Robert Merton (1968), who applied it to the case of scientific careers. The Matthew effect relates to the biblical verses “Whoever has will be given more, and they will have an abundance. Whoever does not have, even what they have will be taken from them.” The disadvantaged will become even more disadvantaged and the advantaged will become even more advantaged. In part related to cumulative disadvantage and the mechanisms behind it and in part related to the more complex analysis of life courses, it has also been stressed that a more holistic view, often explicitly associated with sequence analysis, could provide additional insights in the study of life courses (Mayer 2009).

Nevertheless, surprisingly little research on intergenerational inequalities has been conducted from a holistic perspective. This might be partially attributable to restrictions based on computational power, data availability and underdeveloped methodology, all of which have hindered the use of life course methods in previous decades. It is also possible that the inertia of the scientific system has played a role: new ideas take time to be published in journals. All of the articles in this dissertation employ high-quality register based samples from Statistics Finland. These data sets offer reliable panel data enabling the study of life course perspectives. As recently as a decade ago, many of the methods used, especially sequence analysis, would have been difficult to employ on big datasets because of a lack of computational power. Furthermore, without the development of statistical packages such as TraMineR (Life Trajectory Miner for R) the employment of these methods would have been practically impossible.

The studies in this thesis are presented not in the chronological order of their publication, but in the chronological order of human life. We come from a childhood with family, leave to study or work, form our own families and purchase our own homes. In the first article, we look at childcare in early childhood and its long-term consequences

for education. The first article of the dissertation employs a more traditional life course approach, examining a specific factor in childhood and youth that influences later outcomes. In the second paper, we move on to examine the effect of family background on early socioeconomic trajectories (ESETs). The third paper looks at family formation, adopting a similar approach. These two articles employ sequence analysis to analyze paths as outcomes. The fourth paper examines how overall family background affects entry into homeownership across early adulthood.

The focus of the articles has been on the topics to which it has been possible to make relevant contributions to the existing literature employing novel statistical methods and Finnish datasets. In the case of the long-term outcomes of day care, we study the effects in the context of Finnish day-care policies. Finland is an interesting case not only for Finns but also more generally because Finnish children tend to enter day care relatively late compared to other Nordic countries despite the availability of heavily subsidized, high-quality childcare. The three subsequent articles contribute to the discussion by offering holistic perspectives on topics that have previously been the subject of a great deal of discussion. In the second and third articles, we study intergenerational effects on trajectories. Both family formation and socioeconomic status have been extensively researched internationally, and these studies' important contributions are found in the more holistic life course approach that they adopted. In the case of the fourth article, sibling correlations are used to study the effect of family background on homeownership. In this case, the main contribution is the study of unobserved variability compared to previous studies using only specific family background determinants. The large register data set allows us to examine family background effects across the entire early life course.

## **Research on Intergenerational Inequalities**

### **Injustice and Intergenerational Inequality**

Next, we will turn to discussions relating inequalities to injustice. Although the two concepts are hardly identical, Abbott (2016) notes that often when sociologists speak of “inequality” they actually mean “injustice”. He makes the case that historically, social scientists referred to “injustice” through the 1950s and 1960s, until the term was replaced by the more scientific and neutral sounding “inequality”. Although the desire for more objective terminology should perhaps receive more credit than Abbott gives it, it is difficult to argue with the fundamental point that “inequality” indeed obtains much of its power and appeal as a sociological concept from “injustice”. As noted in the introduction, inequality of opportunity is almost always seen as injustice. This might be why intergenerational stratification research has been and is one of the most researched fields both in sociology and in the social sciences in general.

Nevertheless, intergenerational inequality does not always mean inequality of opportunity or injustice. Many would agree that differences in inheritance of socioeconomic status based on motivation, preferences or even abilities should not be considered an injustice (for a more nuanced discussion, see Roemer and Trannoy 2013). When considering holistic sibling models that capture everything in the family background that siblings share, it should be noted that this includes aspects of inequality that are not unanimously agreed to be injustice. Siblings are likely to share preferences for certain lifestyles for which they strive. Because people willingly follow different paths in life, it can be argued that not all sibling similarities are linked to inequality of opportunity. However, excluding approaches specifically designed for the analysis of equality of opportunity, sibling models perhaps come the closest to measuring these inequalities (Björklund, Jäntti, and Roemer 2012).

Another problem for the identification of injustice arises if the outcomes measured are not ordinal in the normative sense. Especially in the case of family formation, it is not straightforward to place all of the end states on an ordinal scale ranging from worst to best. Many siblings’ similarities might be explained by similar preferences that cannot easily be viewed as better or worse. However, it is clear that inequalities exist, i.e., people do not have equal opportunities. Family formation highlights this distinction, but the same argument holds for any intergenerational transmissions, albeit to a lesser extent. It is easier to see educational level or socioeconomic status as something that everybody strives for, but it is clear that this argument might not always hold. Especially as the level of wealth increases in modern societies, it might be that occupational status or earnings increasingly lose their meaning and are not universally ordinal. Differences become just differences in occupation or earnings without implications of injustice. Nevertheless, in the cohorts studied here, it is likely that this occurs only rarely, and the assumption of sibling similarities reflecting inequalities and injustice holds relatively well.

Helpful in understanding the distinction between inequality and injustice is the important—but often ignored—distinction between predetermination and injustice. The sibling similarities studied in three of the four articles in this dissertation tell us an unquestionable story of predetermination. If there is something that siblings share guiding them to the same path in life, their paths are predetermined. As noted above, however, this does not necessarily always imply injustice. On the one hand, siblings sharing an artist uncle and following his career path of low earnings are hardly experiencing injustice in a traditional sense. On the other hand, siblings applying for university and failing because of a lack of cultural capital accumulated in childhood certainly are. Predetermination does not always mean something that can be unanimously agreed on as injustice.

Still, it is important to stress that in most situations the family background effect is strongly linked to injustice. In modern society, education, occupational position and income are strived for by most people. The sibling similarity, and therefore the dissimilarity of families, tells us whether or not this is achieved.

### **Life Courses and the Cumulative Nature of Advantages**

One of the interesting conclusions that Ganzboom, Treiman and Ultee (1991) make in their article examining the history of the research on intergenerational mobility is the following: “We conclude that the field has progressed considerably with respect to data collection and measurement [...] with respect to problem development and theory formulation the field has become excessively narrow”. In their follow-up work, they note that in the 1990s, the stratification research indeed turned to broader questions (Treiman and Ganzeboom 2000). One new theoretical direction is the holistic life course perspective. Although theoretically motivated, it is (unsurprisingly) accompanied by the new methodology, emerging from a tradition of event-history models to the new world of sequence analysis.

The idea of considering life course in the study of intergenerational inequality is not a new one. It has been around at least since Blau and Duncan’s (1967) seminal analysis of mediating effects of education. The studies using path models (e.g., Bäckman and Nilsson 2011; Blau and Duncan 1967) or (later on) event history analysis involve traditional methods of life course research. More holistic approaches to life courses have been less common. One of the methods approaching sequence analysis is that of *growth curve modeling*. For example, Härkönen and Bihagen (2011) employed Swedish data to analyze career progress with this method. Their results showed that career progress occurs during the first 5 to 10 years and flattens out around the age of 30 to 40. Manzoni et al. (2014) applied the same method in their German Life History Study. The findings underlined the role of education as a mediating factor and the importance of initial labor market status when examining career advancement.

Nevertheless, these studies fall short of giving us a more holistic picture of intergenerational transmissions. For some time, sequence analysis has been advocated as a method for the study of holistic trajectories (Abbott 1995; Mayer 2009). This call has been partially answered. Most of the studies employing sequence analysis have concentrated on family formation (Elzinga and Liefbroer 2007; Fasang and Raab 2014; Jalovaara and Fasang 2015; Liefbroer and Elzinga 2012), but there are also a few studies on career and socioeconomic trajectories (Brzinsky-Fay 2007; Dlouhy and Biemann 2015; Dorsett and Lucchino 2014; Pollock 2007). These themes naturally overlap. Pollock (2007) even claims that the family formation and labor market trajectories are largely determined by housing tenure trajectories. Even if one does not go that far, it is easy to see how all three interact and overlap each other. An intergenerational perspective on holistic trajectories has been scarce.

I suggest that the call for more holistic measures of outcomes is partially associated with the abovementioned questions of inequality and injustice or predetermination and injustice. This suggests that it is not enough to measure inequalities as an adult. Instead, we should also concentrate on the paths to those outcomes. Alternatively, if one recalls the history of stratification research with its long tradition on studying at least the mediating effects of education, one could claim that the drive for holistic measures is motivated by the feeling that this research was insufficient. Perhaps the origin-education-destination (OED) triangle is just the tip of the iceberg in the study of mechanisms that reproduce inequalities. If all you have is a hammer, everything looks like a nail. Might it be that the limited depth of the data, computational power and methods resulted in the simplified cross-country comparisons that were dominating the field of stratification research into the 1980s? I think that the intergenerational process that has been studied is indeed very complex and perhaps the expanding array of reliable longitudinal data and applicable methods allows us to recognize this for the first time. If we do not comprehend what occurs during the process of becoming disadvantaged, we might indeed confuse inequality with injustice. Furthermore, we might not even estimate the full extent of inequality, as shown in the article that focuses on early socioeconomic status (article 2).

With respect to the more holistic perspective, the international literature explains that inequalities are *cumulative* (DiPrete and Eirich 2006). As noted in the introduction this cumulative nature of inequality is often referred to as the *Matthew Effect*: “Whoever has will be given more, and they will have an abundance. Whoever does not have, even what they have will be taken from them.” This cumulateness works in at least two ways. First, earlier events tend to determine later ones and therefore age can correlate negatively with the strength of the effects. Second, because life is multifaceted, different spheres of life affect each other. In this dissertation, many overlapping spheres of life are analyzed, although the connections between them have not been studied in detail.

Overall, the more holistic life course perspective aims to more closely examine the mechanisms and processes of inequality mentioned above. In turn, these mechanisms



and processes are linked to the distinction between injustice and inequality. Without a view of mechanisms and processes, we cannot make an empirical distinction. As the world becomes more complex and values diverge, the lack of an empirical foundation for the proposition that inequalities reflect injustice makes this argument increasingly shaky. New datasets and methods open up inequalities to closer examination. The promises of holistic approaches remain partially unfulfilled in this dissertation. However, one can hope that future research building on its results and other life course approaches will eventually give us answers that are increasingly clear.

## **Social Stratification Research**

### *Social Stratification Research*

The intergenerational transmission of inequality has been and is both relevant and one of the most researched fields in sociology and the social sciences in general. In today's societies, it is unlikely that its relevance will wither. Grusky and Ku (2008) list recent developments that have underlined its relevance: income and wealth differences have once again increased in many Western countries, many forms of inequality have proved to be more resilient than previously thought, and the influence of inequalities and poverty on people's lives has become increasingly apparent.

Often a distinction between absolute and relative mobility is made (Ganzeboom et al. 1991). Absolute mobility refers to the straightforward comparison of parents and children's socioeconomic status. As educational expansion elevated the entire population's average educational level and occupational status, it was much more likely that children would surpass their parents' education, occupational status and earnings. Absolute mobility is contrasted to relative mobility, which refers to the change in the relative position of one's educational level or socioeconomic status. To illustrate, one can think of a line of 100 people representing society and ordered from lowest to highest status. Parents and their children have their own lines based on their birth cohorts. The question of relative mobility asks whether the children are higher in their own line than their parents are in their own line. This illustration works well with continuous outcomes such as income, but the situation is slightly more complicated in the case of categorical outcomes such as education and occupational status. In the case of categorical variables, we must rely on less precise placing in the line. If the outcome is not ordinal—i.e., if we cannot form a line because the order of statuses is unclear—we have to rely on a completely different kind of reasoning, expressed in methods such as mobility tables and loglinear modeling, neither of which are employed in this dissertation.

Sibling models employed in this dissertation do not measure unambiguously absolute nor relative mobility. Indeed, in a strict sense sibling models do not measure mobility as such, although they do measure the effect of social origin. Comparing the similarity of siblings to that of unrelated persons draws closer to relative mobility in the sense that we are making comparisons inside the children's cohorts. However, because we do not

measure parental distributions in comparison to children, we are not concentrating on social mobility, but examining the effect of social origin.

In their 1991 review of the international literature on intergenerational mobility and inequality Ganzeboom, Treiman and Ultee (1991) distinguished three generations of sociological research corresponding to prevalent questions and methodological shifts. The first (post-war) generation of broad social stratification studies concentrated on examining social mobility with mostly row inflows and outflows from social classes. This was a time when sociologists still spoke of injustice instead of inequality. The question of intergenerational mobility was the question of intergenerational injustice. This generation concentrated on total intergenerational fluidity and cross-national comparisons. The aim was to examine the extent of injustice by measuring it in different institutional contexts.

The second generation expanded the questions of interest with path models studying the mediating effects of education. The question was the strength of the effect of origin (O) on destination (D) and the extent to which it was mediated by education (E). The OED triangle became the dominating theoretical perspective. It would be tempting to assume that the elaboration of the intergenerational transmission process leads to the theoretical distinctions between injustice and inequalities, but based on Abbott (2016), this seems unlikely. Sociologists merely began to talk of inequalities instead of injustice.

The third generation returned to mobility questions and international comparisons using log-linear models better suited for comparisons across time and space than the methods employed in the 1950s and 1960s. The results of intergenerational comparisons became more reliable as a result of better methods and datasets (e.g., Pöntinen 1983).

Later, a fourth generation of intergenerational studies was identified (Treiman and Ganzeboom 2000). This generation has been characterized by comparative designs either over time or cross-nationally. The generation has also returned the theoretical focus to examining how intergenerational transmission is affected by different institutional arrangements.

This rich literature, ranging in research and researcher generations, comprise the foundation upon which this dissertation is built. We know a great deal about intergenerational inequalities. Advances in both data sets and research methods have allowed a more precise examination of intergenerational transmission than ever before. I will briefly review the most essential findings of the tradition regarding *class, education, income, housing and wealth*, and *family formation*. The association between social origin and class, education and income is the most researched association in the traditional intergenerational mobility research, as illustrated by Ganzeboom et al. (1991). How much, when and through which mechanisms social origin affects occupational destination or earnings in adulthood is, of course, at the heart of discussions of an equal or just society. Housing and wealth are less researched, but this is caused at least as much by the lack of available data as it is by this perspective on social inequalities being less

important than the more traditional analysis of socioeconomic status. The popularity of, e.g., Thomas Piketty's analysis on wealth accumulation (Piketty 2014), tells us that there is a broad interest in the issue. Because homeownership is a major path to wealth accumulation in many European countries, it plays a central role in wealth accumulation. Family formation has traditionally been and still is more researched on the field of demography, but its importance and connection to the more general social origins literature has recently been emphasized. It is clear that family formation has direct effects on inequalities through assortative mating (Esping-Andersen 2007) and indirect effects through multigenerational processes. I will connect the literature on all of these topics with the life course perspective.

### *Class, Education and Income*

Starting with the first generation of social mobility research, an extensive literature has shown that social status is transmitted from generation to generation in wide range of modern societies. Traditionally, sociologists studying intergenerational inequality and mobility have used occupational classifications to measure class mobility. In the studies in this dissertation, we also use occupation-based class classifications. The earliest scholars (roughly the first generation of stratification researchers) used many occupational classifications (Ganzeboom et al. 1991). Quite understandably, this practice resulted in problems in comparative research. In the following decades, the creation of standard occupational classifications such as the international prestige scale (Treiman 1976), EGP (Erikson, Goldthorpe, and Portocarero 1979), and ISEI (Ganzeboom, De Graaf, and Treiman 1992) represented one of the most important advances in the study of social mobility (Ganzeboom et al. 1991). These studies of occupational mobility have given us many insights. Perhaps the most pressing insight, underlined by Hout and DiPrete (2006), is that although countries differ in the strength of their social mobility, the pattern of that mobility is similar across countries (e.g., Breen 2004; Erikson and Goldthorpe 1992). This means that patterns of mobility remain constant, although the scale of mobility varies. In practice, occupations are inherited in all modern societies. Erikson and Goldthorpe (1992) argued that many societies achieved constant flux in mobility rates in the 1970s. Richard Breen (Breen 2004; Breen and Jonsson 2005) later argued that fluidity has been increasing in most European countries. Later, it became increasingly difficult to determine whether intergenerational mobility will rise or fall. In some contexts it has been falling, whereas in others it has been rising.

Following extensive studies on occupational mobility in different contexts, the second generation of intergenerational stratification the focus of the research shifted to the mediating role of education in the status attainment process (Ganzeboom et al. 1991; e.g., Blau and Duncan 1967). Education is often the strongest predictor of a person's occupational status and main factor in the reproduction of status from generation to generation (Hout and DiPrete 2006). The effects of parental education and occupation largely overlap (Bukodi, Erikson, and Goldthorpe 2014; Erola, Jalonen, and Lehti 2016). This is not surprising because occupational classifications naturally overlap with

education, by definition in some classifications. For example, ISEI is defined as an occupational scale that maximizes the indirect effect of education on income through occupation while minimizing the direct effect (Ganzeboom et al. 1991). Because this occurs when the occupational scale correlates strongly with both education and earnings, the result is—by definition—correlation with education and income. Of course, this is also the aim of the indexes, and practically all of the occupational indexes correlate strongly with both education and earnings.

Intergenerational correlations in education are usually found to be stronger than intergenerational correlations in the inheritance of occupations (Conley and Glauber 2008; Hauser and Mossel 1985). There are at least two straightforward reasons for this observation. First, education tends to be a more stable measure of a person's social status because education never fluctuates downward. Second, parental education is usually achieved earlier than occupational status or income levels (Breen and Jonsson 1997). This means that the benefits of education are more likely to be present from the birth of one's child, conferring advantages from early on.

The third most-often researched factor of intergenerational inheritance is earnings or income. Earnings refer to the money earned from paid labor or one's own firm; in contrast, income is a broader concept that includes capital income. This research has been dominated by economists, because sociologists have more often been interested in occupational mobility or education. The research is quite consistent with the research on occupations and education. One of the leading methods of estimating the effects of family background on earnings or income is that of the sibling correlation model (Björklund et al. 2002; Conley and Glauber 2008; Mazumder 2008; Österbacka 2001). In Finland, siblings are found to have a clear resemblance in the case of income (Björklund et al. 2002; Österbacka 2001). The sibling correlation estimated for brothers was 0.25 and for sisters it was 0.10 (Österbacka 2001).

Another measure of the effects of origin on income is the association between fathers and sons' earnings. Using this measure, mobility has been shown to be stronger in the case of the lowest and highest income quintiles in the Finnish context (Sirniö 2016; Sirniö, Martikainen, and Kauppinen 2013). Indeed, if we wish to analyze the classic "American Dream" of a poor child attaining riches, this is an excellent way of measuring inequality (Corak 2013). Compared to sibling models, we measure downward and upward mobility directly in a theoretical framework similar to the mobility tables and loglinear models employed by the classical sociological research on occupational mobility. Unlike sibling models, however, we measure parental background only one dimensionally using either income or earnings. A sibling comparison allows us to capture the effect of the origin in a more holistic fashion.

The family of origin effect on education is usually assumed to stabilize around the age of 30 and between 30 and 40 in the case of occupation and earnings. For educational qualifications, there are multiple critical steps related to the educational system in question. In Finland, entry to upper secondary education and later to higher education

are crucial transitions affected by the family of origin (Kilpi-Jakonen, Erola, and Karhula 2016). Furthermore, not all students complete their degrees, and the family of origin also affects this process. Because education is a crucial mediator in the transmission of social status (Blau and Duncan 1967; Torche 2011), educational transmissions are very significant for the transmission of occupational status and income. However, the family of origin contributes to at least the first achieved job and usually to one's subsequent career (Barone and Schizzerotto 2011; Blau and Duncan 1967; Sirniö, Kauppinen, and Martikainen 2016).

Status attainment in the form of occupation status or earnings is not independent of family formation. In the labor market, it has been demonstrated that whereas women suffer from motherhood, men (at least in some cases) might benefit from fatherhood (Correll, Benard, and Paik 2007). This reality, combined with the fact that family formation usually interrupts the labor market trajectories of women more than men, leads to a clear interplay between family formation and labor market trajectories. The link to homeownership and housing is even more straightforward, as earnings are known to directly influence tenure decisions (Blaauboer 2010; Helderma and Mulder 2007).

### *Housing and Wealth*

As mentioned above, the inheritance of housing and wealth is closely linked to the inheritance of socioeconomic position. In many countries, including Finland, the primary method of wealth accumulation is through mortgages and homeownership. Both an individual's own economic situation and parental economic situation can affect the possibilities of homeownership and the accumulation of wealth.

The housing literature has clearly shown that family income and number of earners in the family has a positive effect on homeownership (Åsberg 1999; Blauboer 2010; Clark, Deurloo, and Dieleman 1997; Deurloo, Dieleman, and Clark 1997; Haartti, Martikainen, and Remes 2015; Raya and Garcia 2012). This is not surprising: economic restrictions are the most obvious barriers to homeownership. It is clear that the intergenerational inequalities related to housing are thus mediated partly by the intergenerational transmission of socioeconomic status discussed above. The stronger the intergenerational transmission of socioeconomic status, the stronger we can expect intergenerational effects on homeownership to be.

Parental wealth and income also have a direct influence on an individual's homeownership. This has been shown in the case of both parental homeownership and higher parental socioeconomic status (Blaauboer 2010; Boehm and Schlottmann 1999; Helderma and Mulder 2007; Öst 2012; Smits and Mulder 2008). Parents enable homeownership either by making direct transfers of wealth or by enabling mortgages.

Perhaps slightly less intuitive is the strong role that family formation plays in this process. Family formation and homeownership are strongly linked: couples and families with children are far more likely to make the transition to homeownership (Blaauboer

2010; Clark et al. 1997; Feijten and Mulder 2002; Haartti et al. 2015; Raya and Garcia 2012). Considering that family formation in general and disadvantaged family formation trajectories in particular are affected by family background (e.g., Raab et al. 2014), the indirect influence of family background on homeownership can be very significant.

Socialization to housing tenure and type is much more difficult to explicitly show with register-based data but is likely to play a role in the intergenerational processes related to housing. It has been shown that the value and tenure of parents' housing affects the value and tenure of their children's housing, even after controlling for other economic factors (Helderman and Mulder 2007; Smits and Michielin 2010). An association most likely explained by socialization to a specific environment has been shown in the case of rural and urban environments (Blaauboer 2011; Feijten, Hooimeijer, and Mulder 2008). Because housing tenure varies regionally with prices and possibilities of homeownership, it is likely that indirect socialization probably plays a role in the effects of family background on homeownership.

During their life course, people transition to homeownership throughout adulthood (from age 20 to 50), but usually before age 35 in Finland (Official Statistics of Finland (OSF): Families [e-publication] 2009). The transition is often linked to family formation, either moving into a relationship or having children (Blaauboer 2010; Mulder 2003; Smits and Mulder 2008). At least in Finland, family formation is the strongest predictor of homeownership. Usually, family formation motivates homeownership and living in a relationship partially enables the economic ability to own a home. Direct economic resources and even one's potential economic situation also play a crucial role in the transition (Helderman and Mulder 2007; Öst 2012).

### *Family Formation*

Most studies on family formation from an intergenerational perspective find a modest, but statistically significant association between parents and their children's family formation behavior. It has been shown that children's fertility behavior resembles that of their parents (Kolk 2014a, 2014b; Murphy 2013; Murphy and Knudsen 2002). This is, of course, linked to other family formation behavior. It has been shown that there are intergenerational effects on marriage behavior. The timing of marriage is somewhat inherited from one generation to the next (Jennings, Axinn, and Ghimire 2012; Poppel, Monden, and Mandemakers 2008). Furthermore, parental attitudes affect the timing of marriage (Jennings et al. 2012).

Additionally, children from disrupted families have a higher risk of divorce (Amato 1996; Diekmann and Engelhardt 1999; Feng et al. 1999). This seems to hold especially if both spouses' parents are divorced (Amato 1996). When comparing genders, weaker and not statistically significant results of parental divorce have been found for men (Amato 1996; Feng et al. 1999). These children have lower overall rates of marriage (Erola, Härkönen, and Dronkers 2012), despite an elevated risk of teenage marriage (Wolfinger 2011). Parents' family experiences shape their preferences for their children's family

trajectories. The cultural transmission of values and norms is a factor that shapes family formation (Jennings et al. 2012). Divorced parents seem to be more tolerant of nontraditional family forms (Axinn and Thornton 1996; Cunningham and Thornton 2006).

Children of divorced families risk living in a single-parent family. This further indicates a risk of economic disadvantage (Amato 1996), potentially leading to lower status attainment that then increases marital instability (Amato 1996; Jalovaara 2003). In Finland, the unemployment of one or both partners is especially likely to lead to a higher risk of divorce (Jalovaara 2003). The husband's higher income level decreases this risk, but the wife's income increases the risk, especially if it exceeds the husband's income (Jalovaara 2003). Thus, the family formation process is by no means independent of other life course events. The different paths of status attainment and family formation have multiple intersections.

In Finland, women's average age at first birth has increased from approximately 26 in the 1980s to approximately 29 in the 2010s (SVT 2017). The same trend can be observed in first marriages. For which the change has been even more rapid. At the beginning of the 1980s, the age was still below 25; in the 2010s, it has risen to over 31 (SVT 2017). As noted above, family formation is closely associated with homeownership and socioeconomic status.

# Research Questions, Data and Methodology

## Research Questions and Methods

### *Research Questions*

The overarching research question in all of the articles in this dissertation asks *how family background affects us in various areas of life*. The previous literature clearly demonstrates that family background affects us in many ways. Not only do family background influences continue into adulthood across the life course, but many early influences accumulate over time (DiPrete and Eirich 2006). More specifically, the main research question in the studies is as follows: *What fruitful insights can a life course perspective offer to research on intergenerational inequality and mobility?*

The papers' research questions are presented in Table 1. The first paper represents a more traditional life course study analyzing the impact of day care on children's later educational outcomes. The second and third papers address the overall effects of social origin on early socioeconomic trajectories and family formation. The fourth paper concerns the overall family effect on homeownership and its variation across life course and sex.

In the first article the first and foremost research question was whether the early day care is associated with later educational outcomes. The association was modeled using logistic regression models with day care as the primary independent variable and different educational variables in early adulthood as the dependent variables. We included sex, mother's and father's education, mother's and father's unemployment, and household income in early childhood as control variables.

The second article addressed the question of sibling similarity in early socioeconomic trajectories (ESETs). Sibling similarity was used to measure the effect of family background on those trajectories. There were three research questions. First, the similarity in siblings' trajectories was established. We further studied which parental characteristics accounted for that similarity. Third, we were interested in how much of the similarities in trajectories would be missed by looking only at the final outcomes.

The research questions of the third article are similar. This is because the second article employs a similar research design for a different phenomenon. The theme of the third article is family formation and trajectories linked to it. As in the second article, we first established that the family formation trajectories are influenced by family background. Second, we analyzed whether some observed family background factors explain the family background effect. Third, we described typical paths of family formation and identified the paths that are more strongly linked to sibling similarity.



**Table 1. Research questions, main results, primary contribution to existing literature, data used and methods**

Name	Research Questions	Results	Main contribution to the literature	Data	Birth cohorts	Methods
<b>1 Home sweet home? Long-term Educational Outcomes of Child-care Arrangements in Finland</b>	(RQ1) Does early day care have positive or negative effects on later educational outcomes?  (RQ1) Are siblings' early socioeconomic trajectories (ESETs) similar? (RQ2) How much do observed parental background characteristics account for sibling similarity? (RQ3) How much sibling similarity is unassociated with outcomes?	(RQ1) Yes, there is a positive association. This association is almost fully mediated by family income in childhood.  (RQ1) Yes. (RQ2) Observed family background explains relatively little of the family background effect, but similar factors are involved as in the transmission of outcomes. (RQ3) Much of the variation is unassociated with outcomes.	Established that day care in early childhood has a small and positive association with later educational outcomes.	Finnish Growth Environment Panel	1989-1990	Logistic regression models
<b>2 Destination as a Process: Sibling Similarity in Early Socioeconomic Trajectories</b>	(RQ1) Is the family formation of siblings similar? (RQ2) How much do observed parental background characteristics account for sibling similarity? (RQ3) In which ways is siblings' family formation more similar?	(RQ1) Yes. (RQ2) Observed parental background accounts for even less of the similarities than in the case of ESETs. (RQ3) The sibling similarity is strongest in the disadvantaged trajectories.	Found that we are missing a large share of family background effects if we only examine end outcomes. Established that we know very little about the factors underlying sibling similarity although the identified factors are in line with previous research on outcomes.	Finnish Growth Environment Panel	1970-1975	Sequence analysis, dyadic regression analysis
<b>3 Sibling Similarity in Family Formation</b>	(RQ1) How large is the overall effect of family background on homeownership? (RQ2) Are there differences in the family background effect based on partnership status and sex? (RQ3) Are there changes in this effect across the early life course?	(RQ1) Relatively large: approximately 10 to 15 percent of the variation in the probability of entering homeownership can be attributed to shared family background. (RQ2) Yes. For men, the family background effect is much stronger if they are not living with a partner than if they are living with a partner (RQ3) Sibling correlations were surprisingly stable throughout the early life course.	Found sibling similarity in overall family formation trajectories, not only in specific family formation events. Developed methods for analyzing family background effects in the sequence analysis framework.	Finnish Census Panel	1969-1977	Sequence analysis, dyadic regression analysis
<b>4 The Overall Effect of Family Background on Homeownership during Early Life Course</b>			Estimated first-time sibling correlations for homeownership.	Finnish Census Panel	1962-1972	Sibling correlations

The fourth article concerns sibling comparisons, but in the methodological framework of sibling correlations. The primary research question is how much of the probability of homeownership is linked to family background. After estimating the overall family background effect, we moved on to examine whether this effect varies across sex and relationship status. The effect was also followed throughout early adulthood to see if the strength of the overall effect changes.

In all of the articles except for the first one, family background effects are identified through sibling similarity. Traditionally, sibling similarity has been used in the sibling correlation models (e.g., Björklund et al. 2002; Conley and Glauber 2008; Mazumder 2008; Solon 1992). These models identify family background through intraclass correlations calculated by contrasting family-level variance to total variance consisting of family- and individual-level variances, or possibly even family-, individual- and observation-level variances. In the first case, this can be formalized as follows:

$$(1) \rho = \frac{\sigma_{\delta i}^2}{\sigma_{\delta i}^2 + \sigma_{\epsilon i}^2} = \frac{Var_{family}}{Var_{family} + Var_{individual}}$$

This identification strategy enables us to include everything shared by siblings in the effect of family background. We are no longer dependent on specific family background variables and their measurement. This gives us “an omnibus measure of family background” (Solon 1992).

Because sibling correlation measures everything shared by siblings, it is a very broad measure of the family of origin effect. Although it measures, e.g., inequality of opportunity reasonably well (Björklund et al. 2012), as a measure of family background it includes many things that might not initially be intuitive. These include neighborhood effects, peer effects, and mutual influences between siblings. To the extent that siblings share these influences, they can be seen as outside the siblings’ control and reflecting the influence of social origin. However, it should be kept in mind that sibling models identify effects attributable to mechanisms outside one’s measured background.

Furthermore, sibling correlations do not measure unshared family background. Parents might treat their children differently, the growth environment might differ for the crucial periods of childhood as most siblings are born at varying times, and siblings (except for monozygotic twins) naturally do not share all of their genetics. Thus, our estimates do not cover the entire family background, although they are much more holistic than single indicators.

### *Sequence Analysis*

Sequence analysis is a method for comparing and analyzing trajectories of events. It aims to analyze holistic sequences instead of single events. It is not the only method that aims for a holistic view. Indeed, more traditional path models and growth curve analysis also

offer holistic measures. This approach can be used to analyze sequences ranging from traditional dance patterns (Abbott and Forrest 1986) to labor market sequences (Brzinsky-Fay 2007, Halpin and Cban 1998). Using varying methods to calculate distances between sequences, the analysis concentrates usually on clustering or comparing distances between or within groups, in our case comparing the distances between unrelated and sibling dyads. The sequence approach used in the second and third articles is similar to sibling correlations in measuring the family background effects with sibling similarity. Because the sequence analysis operates through distances between sequences, the framework differs from the regression framework upon which the sibling correlation models are based. In the dyadic regression analysis employed in the articles, the dependent variables are already distances between sequences. Because the distances themselves measure sibling similarity, they are in one sense analogous to the variance components in the sibling correlation models. We contrast the distances between unrelated persons, i.e., total variability between persons, to the distances between siblings, i.e., variability inside families. However, one should note that sibling correlations divide the total variance into variance between families and variance between siblings. Strictly speaking, our approach compares the variability in unrelated persons' trajectories and siblings' trajectories. We do not measure variability between families, because this is not possible in the framework we use. Of course, because the method of comparison is different, the estimates cannot be directly compared.

In the articles employing sequence analysis, we used many distance measures to test the robustness of the findings. In both articles, the final results are presented based on a combination of theoretical and data-driven distances calculated using optimal matching. Optimal matching is a method for measuring distances between trajectories that measures dissimilarities through the changes needed to make two sequences identical (Abbott and Forrest 1986). There are two basic operations to achieve this. First, one can change one state to another. This requires a definition of substitution costs across the state space (Abbott and Forrest 1986). In both of the articles in this dissertation, this is done by combining a theory-based substitution cost matrix with time-specific substitution cost matrices that are based on the transition rates between the states. We believe that theoretically, a combination of the two is the most feasible solution. Second, one can insert or delete states from the sequences (Abbott and Forrest 1986). This option was not used in this dissertation's articles, because we wanted the distances between sequences to be sensitive to the timing of events. In the case of fertility transitions or unemployment, the issue of whether an event occurs at the age of 18 or at the age of 30 is crucial.

Different distance measures and state definitions produce different distances. Although there is discussion of how to standardize the distances (Elzinga and Studer n.d.), there is often no absolute right way—or at least no consensus on the right method for doing this. In both articles, we have rescaled the distances to range from 0 to 100. Even after rescaling, the different distance measures differ in their variance and distances from

different distance measures should not be directly compared. Because we use the distances to proportionally compare the average distances between groups, e.g., siblings and non-related persons, we sidestep this problem in the analysis. However, the problem of comparability between models remains. There is no clear method of comparing whether the sibling similarity in family formation is stronger than the similarity in early socioeconomic trajectories. In a sense, this is natural: the phenomena are very different and one might argue that they are not measurable on the same scale.

*Holistic Approaches*

Because the aim of the new life course approaches is often to provide a more holistic view of old questions, one could ask whether the research setups and methods used here are holistic. I separate two dimensions in this respect: on the one hand, the measure of family background; and on the other hand, the outcomes studied (Table 2).

Table 2. The holistic approaches of the articles

<b>Outcome measurement</b>	<b>Family background measurement</b>	
	<i>Holistic</i>	<i>Individual determinants</i>
<i>Holistic sequence</i>	2. Destination as a Process. Sibling Similarity in Early Socioeconomic Trajectories 3. Sibling Similarity in Family Formation	(2. Destination as a Process. Sibling Similarity in Early Socioeconomic Trajectories 3. Sibling Similarity in Family Formation)
<i>Single outcome</i>	4. The Overall Effect of Family Background on Homeownership during Early Life Course	1. Home sweet home? Long-term educational outcomes of childcare arrangements in Finland

Only the first article employs a traditional framework of intergenerational inequalities examining the role of a specific early life course event (childcare) on single outcomes (educational outcomes at early adulthood). Neither the measure of family background nor the outcome is measured holistically. The fourth article, which examines sibling correlations in homeownership, adopts a holistic approach to family background (sibling similarity), but examines this overall family background effect in relation to a single outcome (homeownership). The two articles employing sequence analysis are holistic in both dimensions. First, the view of family background is holistic, as it is in the sibling correlation models (sibling similarity). Second, the outcomes examined are also holistic, consisting of sequences with multiple states (early socioeconomic trajectories and family formation trajectories, respectively). This holistic approach gives us a more general view of the studied phenomena. It expands our view on both the unobserved family background and the process underlying the end outcomes.

In both of the sequence analysis articles, we argue that life course brings something new to the study of intergenerational transmissions. There is certainly a risk that by ignoring the pathways and concentrating on final outcomes, we underestimate the effect of family background. In the case of ESETs, this is clearly demonstrated with empirical data. A more holistic perspective highlights the inequalities hiding in the shadows of the final outcomes.

## **Data**

The data requirements for longitudinal analysis—and especially for sequence analysis—are very high. I am fortunate to have had excellent data sets from Statistics Finland to use throughout the dissertation. This has allowed me to follow people through time with relatively few missing values while obtaining reliable information on family background determinants.

All of the data in the dissertation are based on the Finnish population registers obtained from Statistics Finland. The data sets of the last two articles differ from those of the first two articles but are very similar. The first two articles use FinGEP-data (Finnish Growth Environment Panel) and the second two articles use FCP-data (Finnish Census Panel). Both data sets are random samples of families from the Finnish population.

The FCP is a register-based database consisting of a random sample of 1 percent of the population in 1970 (Österbacka 2004). All subsequent family members are included in the sample, resulting in a relatively large sample of families in the following cohorts. Our study cohorts are 1969 to 1977 in the case of family formation and 1962 to 1972 in the case of homeownership. The data contain extensive amount of information from many registers from 1970, 1980, 1985, and yearly from 1987 on. They include information on demographic, economic and social variables. In our case, relevant variables concern union formation, children and housing tenure, along with background variables of economic and social conditions.

The FinGEP-data can be seen as an updated version of FCP. The original dataset is a 10 percent sample of the Finnish population in 1980 to which spouses, children, and grandchildren have been linked. In the first paper, which concerns day care, we analyze the children born to the original sample in 1989 and 1990. In the second paper, which analyses ESETs, we use birth cohorts from 1970 to 1975. These data also include a wide range of demographic, economic and social variables. In addition to FCP, the most important addition is the updated information on more recent years, a slightly larger sample size and real variables that have been used as controls in the articles employing the data.

## **Finnish Context**

In the Finnish context, relatively late industrialization in the late 19<sup>th</sup> century and urbanization still later in the decades following WWII provide further motivation for examining intergenerational mechanisms. The class structure has changed later than in many other Western countries. Most of the population was still farming land only a generation or two ago. In 1920, 70 percent of the population was still working in the agricultural sector (Myrskylä 2007).

With respect to education, the expansion of the educational system has allowed upward mobility for many. Only around ten percent of over 15-year-olds had a higher degree in 1970; in 2014, the figure had risen to approximately 30 percent. Simultaneously, the share of people with at least a secondary degree rose from 25 percent to 70 percent (Statistics Finland 2016). As in many other countries, the educational expansion increased at least the absolute mobility: most children have surpassed their parents' educational level.

The late urbanization and relatively high absolute mobility attributable to previous decades of educational expansion imply the twofold importance of this research. First, because the structure of inequalities is relatively new, the importance of studies on intergenerational inequalities is highlighted. It is important to know where we stand and where we are headed in regard to intergenerational mobility. Second, because inequalities are not carved into the generations, policies aimed at reducing intergenerational transmission might be more effective. The Great Gatsby curve introduced by Alan Krueger illustrates this very well (Krueger 2012). The Great Gatsby curve shows the positive association between economic inequality and intergenerational inequality across countries. The more unequal countries are, the stronger the intergenerational effects. A statistical association does not straightforwardly mean causal association, but the result is strikingly clear. If inequalities in economic and social capital remain small, it is likely that intergenerational inequalities are also small. Indeed, sibling similarity in earnings in Finland and other Nordic countries have been found to be lower than in many other Western countries (Björklund et al. 2002). It is highly likely that this situation is easier to maintain than to achieve from a higher level of inequality. The Great Gatsby curve suggests that it becomes increasingly difficult and expensive to reduce intergenerational inequalities as a society's divisions widen. Interestingly, recent research in many countries has found grandparental effects on children (Mare 2011, 2014; Møllegaard and Jæger 2015). Perhaps in part because of the relatively small population level variance in older cohorts, these effects have not been found in Finland (Erola and Moisiö 2007).

The results of these studies are not applicable only to the Finnish context. It is likely that similar or greater associations exist in other country contexts. However, Finland has some peculiarities that do affect the international generalizability of the results. In line with other Nordic countries, the quality of Finnish day care is very good compared to

many other countries. The positive association found in this study is in line with other Nordic studies (Esping-Andersen et al. 2012; Havnes and Mogstad 2011, 2015), but it might not hold in a context with lower-quality day care. Indeed, for an overview and comparisons of European day care systems, one should refer to the book in which this article is published (Blossfeld et al. 2017).

The family of origin effect on ESETs is likely a conservative estimate because family of origin effects on earnings have been found to be lower in Nordic countries than in the US (Björklund et al. 2002). The depression encountered by our cohorts in their early 20s might have influenced their trajectories in the beginning of 1990s. It is hard to say whether this might bias the results upward or downward.

In the case of family formation, one should note that children leave the parental home in Finland earlier than in many other developed countries (Billari and Liefbroer 2010) and the formation of the first union occurs relatively early (Jalovaara 2012). Thus, life transitions in the trajectories are likely to occur later in other contexts. As is the case with ESETs, for sibling similarity in family formation, the Finnish context most likely provides comparatively low estimates, because other intergenerational transmissions are generally weaker in Finland and Scandinavian countries than in to other countries.

Housing systems vary internationally and it is likely that the results for Finland are mostly generalizable to similar contexts. Finland's homeownership rate is around the European average (Rybkowska and Schneider 2011). As in many other countries, one characteristic of the Finnish housing policy has been support for homeownership (Juntto 1990). Intergenerational transmissions might be stronger in countries with less direct support for homeownership. What is peculiar to the Finnish system is the ownership of housing company shares in the case of block houses (for details see Ruonavaara 2005). Although ownership of the majority of blockhouse apartments is mediated through housing companies, it is seen as the equivalent of ownership in the Finnish housing market (Andersson et al. 2010). It should be noted that intergenerational effects in countries with a stronger emphasis on rental housing might differ from Finland. Compared to other Nordic countries (except for Iceland), the Finnish housing system can be seen as less universal and more selective because public rental housing has largely involved individual means-testing (Bengtsson and Ruonavaara 2010). This might strengthen intergenerational effects on homeownership.

## **Results and Conclusion**

### **The Association of Day Care with Later Educational Outcomes**

In the first article “Home sweet home? Long-term educational outcomes of childcare arrangements in Finland,” we have analyzed the association between day care and educational outcomes at age 17 and 20 (Karhula, Erola, and Kilpi-Jakonen 2017). Finland is an interesting case because its day care system is similar to those of other Nordic countries: high quality and heavily subsidized. However, the average age of entry into day care is higher and the day care rates at early ages are significantly lower.

We analyzed association between day care and three different educational outcomes in early adulthood (enrollment in upper secondary education at age 17, general upper secondary qualification at the age of 20, and enrollment in higher education at the age of 20). We found positive associations for all three. The fact that highly educated parents are more likely to put their children into day care explained approximately half of this association. Based on further analysis, we conclude that the remaining association either is attributable to selection for higher parental income and unemployment or is mediated by them. Because family income is partly endogenous to the child-care decision, we were unable to separate the selection from the mediating effect. In addition, it remains unclear whether actual parental income is the source of the weakening association or something related to it, e.g., professional ties and social capital related to working.

Our data did not allow us to identify whether this association was a causal one. Fortunately, we had register-based, very reliable measures of family background. Thus, we can deem it unlikely that the effect of day care on children is negative, as could have been hypothesized based on some previous studies. However, this approach is consistent with Norwegian studies employing methods and data more appropriate for the estimation of causal effects (Havnes and Mogstad 2015). Furthermore, unobserved parental characteristics could lead to either upward or downward biases of the estimates. Upward biases could include parents with children in day care pushing them toward better schools or tracks inside schools and later encouraging comprehensive school and further education. Other uncontrolled positive background selection could lead to upward biases. Downward biases could result from some form of difficulty in the childhood family (e.g., health, conflict, stress) resulting in both early entry to day care and lower educational outcomes in adulthood. However, we expect these biases to be relatively small. In addition to the biases listed above, there is one major bias that remains uncontrolled in the study: the endogenous nature of parental choice on day-care entry and children’s inherent characteristics. Depending on the situation, a child’s slow development or developmental disorders may affect the parents’ day care decision. It is difficult to identify the magnitude or even direction of this bias, but we expect it to be relatively small.



Considering the possibility of different biases in the analysis, we can conclude with somewhat greater uncertainty that early day care does positively influence educational outcomes in Finland. This effect is either mediated through closer labor market ties and higher parental earnings or works directly through positive cognitive effects on children. The positive association is strongest when entering day care at the age of two. Why? There are at least two explanations. First, it might be that in early childhood, day care has both negative and positive effects. As we can see from the analysis, the positive effects are greater overall at all ages of entry. However, it could be assumed that the negative effects are greater at younger ages, especially for children under two years of age. Indeed, this is often the argument of developmental psychology studies finding the effects of stress and personality disorders on children who are not ready for public day care. Second, this might reflect the fact that younger children are more likely to be in family-based day care, which lacks the advantages of formal center-based day care.

Some studies have found heterogeneous effects of day care based on parental background (e.g., Havnes and Mogstad 2015). This is a somewhat reasonable hypothesis. It could be expected that children from advantaged backgrounds gain less from uniform day care. We did not find any heterogeneous effects. This might be related to the equalizing effect of the Finnish comprehensive school system. The heterogeneous effects might even out before the educational outcomes that we measure. It is equally possible that lower rates of day care play a role. If the child is experiencing difficulties, highly educated parents might be more likely to keep their children at home longer when the cultural environment encourages them to do so, as in the Finnish context. This could bias the impact of day care upwards for highly educated parents and hide the interaction effect.

In summary, the findings suggest positive, or at least not negative, effects of early day care in Finland compared to staying at home. The most positive association was found for children entering the day care at the age of two. The effect was homogeneous across social strata.

### **Sibling Similarity in Early Socioeconomic Trajectories**

The theoretical and methodological approaches of the second and third articles are very similar, although their topics differ. In the second article, we studied intergenerational inequality from the perspective of early socioeconomic trajectories (ESETs). We first found that siblings were more similar than random unrelated persons. The major share of the similarity could not be explained by parental characteristics, although the strongest predictors were parental education and income, as could be expected based on the previous literature on sibling similarity in socioeconomic outcomes. Second, we continued to develop the methods related to matching and the comparison of distances to show that almost half of the sibling similarity in ESETs was unrelated to final earnings or educational level at age 35.

Let us first turn to the sibling similarities that were found. To analyze family of origin effects, we created dyads of siblings and dyads of randomly selected unrelated persons. Comparing the distances in sibling dyads and random unrelated dyads, we found the siblings to be considerably more similar. Thus, clear sibling similarities in the ESETs were established. We also found that the similarity was stronger for brothers and sisters than for different-sex siblings. The strongest effect was found for brothers. This implies that family background affects ESETs and part of this effect is sex specific. Because the effect for brothers was strongest, it would seem that family background has a stronger effect on men than on women.

Because sequence analysis is a method for analyzing complex sequences and the effect sizes depend crucially on how the sequences are constructed, the relevance and strength of sibling similarity is best illustrated by comparison to other family background determinants. Even the largest effects of single-family background characteristics were at the same level as the sibling effect. The difference between highest and lowest parental education was 3.76 units and the difference between the highest and lowest childhood income quartiles was 2.36 units (Table 1, M3), compared to the overall sibling similarity of 3.75 over unrelated dyads (Table 1, M1).

There were two findings related to the family background characteristics underlying the effect. First, we could only explain a minor share of sibling similarity with observed family background characteristics. This means that we do not know where most of the family background effect originates. This is not an uncommon finding in the literature employing sibling models (e.g., Erola et al. 2016). Second, the observed family background factors worked as we could expect. Parental education and childhood family income had the strongest effect on ESETs. Other measured characteristics—including parental unemployment, divorce or separation, and region—influenced the ESETs as expected, but less strongly.

Second, we aimed to examine whether sibling similarity in ESETs is associated with sibling similarity in earnings or education. A large part of the origin effect on ESETs was associated with neither earnings nor educational level. This suggests that our approach adds a previously unstudied dimension to the transmission of inequalities. The approaches that consider the effects of sibling similarity and family background on end outcomes do not capture the inequalities associated with the effect of family background on ESETs.

### **Sibling Similarity in Holistic Family Formation Trajectories**

With the similar design of comparing siblings and unrelated persons as in the second article, we proceed in the third article to study family formation patterns (Raab et al. 2014). We found that siblings are moderately, but statistically significantly, similar to one another compared to unrelated persons. This similarity was even stronger for same-sex siblings. Observed family background accounted for only approximately 13 percent

of the differences. Sibling similarity was strongest in the family-formation patterns of “extended cohabitation, parenthood out of wedlock” and “early marriage, high fertility”. These patterns are also associated with economic disadvantage.

Observed family background affected siblings and unrelated people in the same way. Measured parental background produced the same level of similarity among unrelated and sibling dyads. However, there were two exceptions in the form of sibling-specific interactions. First, siblings born in the same year (mostly twins) are much more similar than other siblings. Genetic heritability might partially explain this (Kohler, Rodgers, and Christensen 1999, 2002), but twins share their childhood environment to a greater extent than siblings in general. We cannot separate these effects and must leave them as hypotheses for future studies. Second, high education of siblings significantly increases sibling similarity. Highly educated siblings are likely to be more similar than highly educated unrelated persons, net of parental education. This is in line with previous research showing that sibling correlations in education and earnings are strongest among advantaged families (Conley and Glauber 2008). It would seem that this also applies to family formation patterns.

Sibling similarities in family formation in other countries might be even greater than in Finland. At least sibling correlations in earnings are lower in Nordic countries (Björklund et al. 2002). Further study of whether this applies to sibling similarities in family formation would be useful. Our study shows significant sibling similarity in family formation.

For more a detailed view of sibling similarity, we clustered the sequences to describe the similarities. Sibling similarity was especially high in clusters of “extended cohabitation, parenthood out of wedlock” and “early marriage, high fertility”. This indicates that sibling similarity is associated with disadvantage in families.

In summary, our findings show sibling similarity in family formation that is not significantly explained by parental education and marital history. Both gender and a person’s own education are strongly associated with similarities in family formation for both siblings and unrelated persons. Because education and family formation are part of the same holistic life course, it is not easy to identify the causal direction. One could even claim that both are expressions of underlying determinants such as values and personal goals. Sibling status further increases the effects of both gender and education, implying family specific similarities stratified by gender and education.

### **Gender Differences of the Effect of Family Background on Homeownership in Early Adulthood**

In the fourth article, I used sibling correlation models to measure the overall effect of family background on homeownership in adulthood from ages 25 to 35 (Karhula 2015).

This was done separately for men and women and for people living with and without a partner.

The main results indicate that the overall family background effect on homeownership is approximately 11 percent. This means that 11 percent of the variation in homeownership is attributable to family background. The overall effect remained relatively constant over the early life course, ranging from 0.10 to 0.14. Gender differences were not found in overall sibling correlations. However, running the analysis separately for men and women according to relationship status showed that sibling correlations were significantly higher for men living without a partner, approximately 0.24, compared to men living with a partner, approximately 0.12. For women, no statistically significant difference by relationship status could be established. Family background is more strongly associated with homeownership among men living alone than among men living with a partner.

The reasons underlying this clear difference for men that is not observed for women was beyond the reach of the article. However, it is noteworthy that for men living alone, sibling correlations are especially high. Clearly, there is something affecting men without a partner that fades as they enter cohabitation with a partner, although it should be noted that it is entirely possible that such men have previously lived with a partner.

I further studied whether the family background effect varies across the early life course ranging from ages 25 to 35. Variation could have been expected, because many of the mechanisms leading to homeownership vary in young adulthood. However, sibling correlations remained surprisingly constant. Overall sibling correlation rose slightly, and sibling correlations for women living without a partner also increased, albeit within the confidence intervals for the latter. It is likely that the changes in various mechanisms cancel each other out given that some expectations (e.g., income, future income, and family formation) are known to change in young adulthood and could be expected to strengthen or weaken the family background effects.

One possibility is, of course, that people's interpretation of their situation does not change as much as the de facto situation changes. Earnings rise and fall, but a person's interpretation of future earnings might not change very much. This might be partially realistic and partially unrealistic, but because the will to become a home owner plays a major role in the transition, this might be one possible explanation behind constant family background effects.

Differences in family background effect between genders and partnership status were observed and should be taken account in future studies. The mechanisms of the family background effect might also vary among subgroups, and this might be a fruitful direction for further research.

## Concluding Remarks

All four articles in the dissertation demonstrate intergenerational inequalities in different spheres of life. Furthermore, especially in the case of early socioeconomic trajectories and family formation trajectories, it is shown that our *life courses* or *paths in life* are affected by family background. It is interesting to see that both in the case of outcome-related research and in the case of research using trajectories as dependent variables, it seems that the disadvantaged trajectories are affected more strongly by family background. Those who are not fortunate enough to attend it In the case of day care, the disadvantaged trajectories linked to early parenthood and parenthood out of wedlock in the case of family formation, and those living without a partner in the case of homeownership. It would be surprising if these trajectories did not overlap in a significant manner. This issue has not been analyzed here but is seen as an encouraging direction for further research.

In all of the articles except for the first, differences between men and women were found. Quite often it is the case, as in the second and fourth articles, that intergenerational transmission is stronger for men. This was not the case in the third article, which addresses family formation. Instead, women's family formation was more strongly influenced by family background. This might well reflect sex differences in the influence of family background on different areas of one's life course. Because we know that all of the phenomena studied here are linked (Pollock 2007), one could ask whether the intergenerational transmission of life course works differently for men than it does for women. This could reflect differing cultural norms for the sexes.

## Discussion

It has been said that everybody supports equality of opportunity until you explain what it means. This might well be the case. People do not fully comprehend the extent to which family of origin affects life course. There is a clear tendency to underestimate this effect, especially when thinking of one's own situation.

The studies presented here show the clear influence of intergenerational inheritance across the life course and spectrum. In his book *Happiness: lessons from a new science*, Richard Layard (2011) examines factors that are associated with subjective well-being. These factors are consistent with common sense but are easily forgotten. The five most correlated factors are family relations, economic situation, work, community and friends, and health. I am extremely pleased that, largely accidentally, my thesis examines all of the first three. We present a broad picture of how family background influences these subjectively important aspects of our lives. What, then, is the main result of this study? Perhaps the primary result, if not a new one, is the general notion that much of the important aspects of our lives are strongly affected by our family backgrounds. Indeed more strongly than people tend to believe.

All of the studies in the dissertation adopt the life course perspective. However, one can see that whereas the first article concerning the effect of day care on educational outcomes represents a more traditional life course approach by studying the association of two events in panel data, the later articles employ a more holistic methodology in the form of sequence analysis with sibling comparisons and sibling correlations. This allows us both to estimate overall measures of family background based on sibling similarity and (in the case of the sequence analysis articles) to use paths as more holistic outcomes.

Sibling models provide an estimate of the total origin effect (Solon et al. 1991). This is important when we want to account for unobserved family background in the models. Indeed it is clear that the origin effect captured by the sibling models is largely unrelated to observed family background (e.g., Erola et al. 2016). We would not observe it using a similar methodology, as in the first article of the dissertation. This is clearly a great advantage compared to many other studies.

The sequence analysis offers another advantage: the analysis of destination as a process (Abbott 1995, 2016; Aisenbrey and Fasang 2010). In the second article, we explicitly show that part of the origin effect on socioeconomic trajectories remains unobserved if we concentrate only on outcomes. This means that the analysis indeed brings forth something missed by most other studies.

In general, the results of the dissertation have two messages for the non-academic audience. First, I hope that this study demonstrates the emancipatory nature of knowledge. The knowledge that everybody is affected by their origins should free us, at least in part, from the judgment of both others and ourselves. In the best-case scenario, this knowledge might even free us of the repetition of the patterns and paths imposed

upon us by our family backgrounds. Second, if we wish to encourage equality of opportunity, some of the articles presented here have clear political implications.

In the case of day care our results strongly suggest that day care does not have a negative effect on children's educational outcomes. This does not necessarily mean that the effects of day care on other outcomes such as mental stability, well-being, or even cognitive ability does not exist. With the lack of other Finnish research and together with other Nordic studies employing more causal set ups (Havnes and Mogstad 2011, 2015), it does imply that the negative effects, if any, are unlikely to be drastic. It is more likely that the effects are somewhat positive and in part mediated by the parents' stronger labor market attachment. In any event, compared to the overall effect of the origins, the association was relatively weak. Nevertheless, day care's positive effects on mothers' earnings and later pensions are clear (Kosonen 2014). I hope this dissertation helps relieve the guilt of the many mothers who put their children into day care early. Based on this and earlier studies, drastic negative effects on mental wellbeing are very unlikely.

With respect to direct policy recommendations, it is clear that restricting disadvantaged families' access to day care could be a catastrophic policy. Although we did not observe differing association by parental education, as other studies have found the positive effect of day care to be stronger in disadvantaged families (Havnes and Mogstad 2011), it would be unwise to restrict such families' access. This is especially true given that the importance of children's early life events is a matter of widespread agreement across the social sciences (e.g., Esping-Andersen et al. 2012; Heckman 2000, 2006). Parents with higher education are already much more likely to use day-care services from early ages, and this divide should not be increased. On average, further encouraging families to put their child in day care earlier is likely to yield positive results for both mothers and children even when the child is less than 3 years old.

Looking at our results concerning early socioeconomic trajectories, one implication of this study should be that unusual and atypical pathways should be allowed to flourish. Indeed, other research has implied that, for example, the route to universities via polytechnics increases social mobility even though it is seldom used (Kilpi-Jakonen et al. 2016). For more specific policy implications, more detail is needed and hopefully will be sparked by this study.

In the case of family formation, the political implications are less direct. Perhaps the fact the family formation depends on family background should encourage us to support families in need. This is especially true because the family background effect is strongest in the case of disadvantaged families. Helping families in need reduces the accumulating disadvantage over generations. Indeed, if the role of social policy is seen as enabling balanced and capable living, family policies and support for a balanced family life becomes increasingly important. The current emphasis on GDP and other economic indicators does not do justice to the importance of meaningful human relations in our lives.

Homeownership is the primary method of savings in many countries, including Finland. Thus, large family background effects are also problematic from a housing policy perspective. Countries generally encourage homeownership more than renting (Englund 2003; Kurz and Blossfeld 2004), indirectly increasing intergenerational wealth inequalities. Although it could be the case that the intergenerational effects on homeownership could be even greater without extensive state support, the strong influence of family background on homeownership calls for the re-evaluation of state policies and financial support. As long as homeownership is strongly dependent on family background, financial support directly reinforces the transmission of wealth based on family background.

For the academic audience, the studies are part of the accumulating knowledge on intergenerational transmissions. The first article provides a case study of the effects of day care in an interesting context. On the one hand, Finland resembles other Nordic countries in that the availability and subsidization of day care is high (Hiilamo 2004). On the other hand, the rates of Finnish children under three years old attending day care are much lower than in other Nordic countries. The results themselves are unsurprising when considering previous research on the association of day care with outcomes in adulthood (Esping-Andersen et al. 2012; Havnes and Mogstad 2011, 2015).

The sequence analysis articles make both methodological and substantial contributions. In the first article on family formation, we constructed a setup to compare sibling similarity to that of the general population. The approach that employed matching on outcomes combined with dyadic regression is a framework that could also be applied to other situations. It would be entirely possible to compare the distances between different subgroups instead of siblings to summarize the similarities in trajectories. This circumvents many of the problems related to cluster-based analysis. We can measure the differences in trajectories directly and test statistical hypotheses. In the article examining ESETs, we further showed the family of origin effect on trajectories to be largely independent of final outcomes. This was done by modifying the original matching setup.

Other substantial contributions include the identification of social origin effects on both trajectories and establishing that the observed parental background characteristics behind the effect are similar to those related to sibling similarity in outcomes. Although this could be expected based on the studies of sibling similarity in outcomes (Björklund et al. 2002; Conley and Glauber 2008; Erola et al. 2016; Mazumder 2008), establishing it represents an important contribution. Furthermore, in the case of family formation, we showed that the intergenerational effects were strongest in the case of disadvantaged trajectories. Because the cluster solution of ESETs was not robust, a similar descriptive analysis was not possible on ESETs. The substantiation of the similarities in ESETs remains a potential expansion of the current study.

In the last article, we employed sibling correlation models in the field of housing studies, in which such models had not previously been employed. The results presented us with a first-time overall family background effect on the probability of homeownership.



Family background explained approximately 11 percent of the variation in probability. For men living alone, the amount of variance explained was even higher, rising to 24 percent. This gives us a clear sense of the variance associated with family background, contributing to previous studies that have already established many intergenerational mechanisms (Blaauboer 2011; Helderma and Mulder 2007; Öst 2012).

The especially strong family background effects at both the lower and the upper end of the socioeconomic spectrum were observed in the studies across almost all of the phenomena, as has been the case in some previous studies (Österbacka 2001; Sirniö et al. 2016). This is most likely linked to accumulating advantage and disadvantage. One could speculate that in the middle of the distribution children have advantages and disadvantages, creating mobility based on individual responses. As advantage or disadvantage grows, however, children's paths of children are much more locked. Escaping disadvantage becomes more difficult, and advantaged children are driven almost inevitably to advantaged positions in society. This is clearly a problem for disadvantaged children, but could also lead to stress and mental problems for advantaged children.

Altogether, I hope that this dissertation has provided useful insights and results on the research of intergenerational inequalities. It has been shown here that intergenerational transmission occurs in practically every part of our lives. Family background affects not only outcomes but also the paths to these outcomes. I am well aware that the complex figure drawn of holistic life courses and their potential use in the intergenerational mobility research is not fully realized here. Because the methodology is new and the data sets are expanding both longitudinally and substantially, I strongly believe that the studies explored in this dissertation are among the frontier of new life-course research that will expand with even more holistic methods in the future. Whether they will be forgotten missteps or cited references remains to be seen. I hope they are the latter.

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