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Sibling Similarity in Entry into the Labor Market

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Introduction

The effect of family background on labor market outcomes is the founding question in the research on intergenerational mobility. If social origin plays a significant role on labor market outcomes, we have failed to achieve one of the most universally accepted goals of every society: the equality of opportunity. Indeed the association between social origin and occupational destination often enforced through education has been one of the most studied in all social sciences.

However, the complete pathways of labor market entry have been researched surprisingly little with a holistic approach. Most of the existing literature concentrates on the final outcomes, i.e. the education or labor market outcomes at a certain age at which it is reasonable to assume that they have stabilized. This gives us an accurate picture of how the family background affects e.g. education (Branigan, McCallum, and Freese 2013; Breen and Jonsson 2005; Sieben, Huinink, and De Graaf 2001), labor market outcomes (Björklund et al. 2002; Erikson and Goldthorpe 2010; Solon 1992) and in more elaborate cases labor market outcomes through education (Blau and Duncan 1967; Hauser and Mossel 1985). In the first two cases these studies tell us very little, if anything at all, of the pathways to these final outcomes. Even in the case of education mediating the effect of family background, the description of trajectories is often very rough. The studies analyzing the educational and labor market trajectories holistically as a single entity are all together rare although there are some notable exceptions (e.g. Brzinsky-Fay 2007; Pollock 2007).

In this paper we return to this founding question of intergenerational mobility research analyzing the effect of family background on combined educational and labor market trajectories. Our aim is to analyze how much family background influences these trajectories in the early adulthood (from the age of 16 to 35). Furthermore we study how well the observed family background characteristics account for the total family background effect and what kind of trajectories are most strongly linked to family background. Last we claim that the use of labor market trajectories can broaden our view on intergenerational inequality and further show how much of the intergenerational transmission of inequality through trajectories would remain unseen analyzing only the outcomes at certain age as is often done. We utilize high quality yearly register data and the latest methodology of sequence analysis.

Research questions and design

To identify the family background effect we use a sibling comparison design as is often done in the research on social mobility (e.g. Björklund et al. 2002; Conley and Glauber 2008; Erola 2009; Mazumder 2008; Solon 1992). Most of the studies employing sibling methods use sibling correlations, but as this is not possible when considering sequences we employ dyadic regression approach we have previously applied on family formation (Raab et al. 2014).

We aim to expand the classical origin-education-destination (OED) -framework into holistic analysis of whole educational and occupational sequences. This way we can see the family background effect

on the whole career pathways in young adulthood instead of concentrating on the outcomes at certain age. We are interested in four research questions:

(1) Are entry into labor market trajectories of siblings more similar?
(2) Can observed parental background characteristics account for sibling similarity?
(3) In which way is siblings' labor market entry more similar?
(4) How much of the sibling similarity in trajectories would we miss by just looking at the outcomes at age 35?

In our research design we first compare the differences in siblings' trajectories to differences in trajectories between one of the siblings and randomly assigned unrelated person (Figure 2). If the distances to siblings are smaller compared to distances to randomly assigned unrelated persons, we can conclude that family background has an effect on early career trajectories (RQ 1). Furthermore by matching the randomly assigned persons conditionally on family background characteristics in our quasi experimental design, we can see whether or not the measurable family background accounts for the smaller amount of differences (RQ 2). After analyzing the first two research questions we turn to third one by clustering the sequences and analyzing whether certain clusters are strongly influenced by family background, i.e. analyze whether the siblings are more likely to reside in same clusters in certain cases. Last but not least we match the sibling dyads with randomly assigned dyads with similar outcomes. This gives us an estimate of the family background effect on trajectories even, if the outcomes are identical between the dyads and thus the association with family background would be unseen without sequence measure.

We define the career trajectories as sequences with seven different states: studying, unemployed, otherwise outside workforce and income in four categories. The study category contains people who are studying fulltime according to registers. The unemployment is defined as being unemployed at the last work week of the year. People considered to be outside the workforce are those with no clear employment, unemployment or studies. These people consist mainly of parents staying home with children and in case of men people serving the mandatory military or civilian service (6 to 12 months). Four income groups are defined relative to the income quantiles at the age of 35 in our cohorts.

Siblings are linked through the mother and all the variables and information on family relations is based on register data from Statistics Finland.

Results

In the preliminary analysis we have used optimal matching with theory based substitution costs and indel cost to define the distances between persons. The distributions of distances in sibling and unrelated dyads according to sex can be seen in Figure 2. We can clearly see that the siblings resemble each other more compared to unrelated dyads (RQ 1). The sibling dyads have smaller distances especially when comparing the same sex dyads. This would imply that some of the family background effects are sex-specific. The results show clearly that family background has a strong effect on the career trajectories in early adulthood.

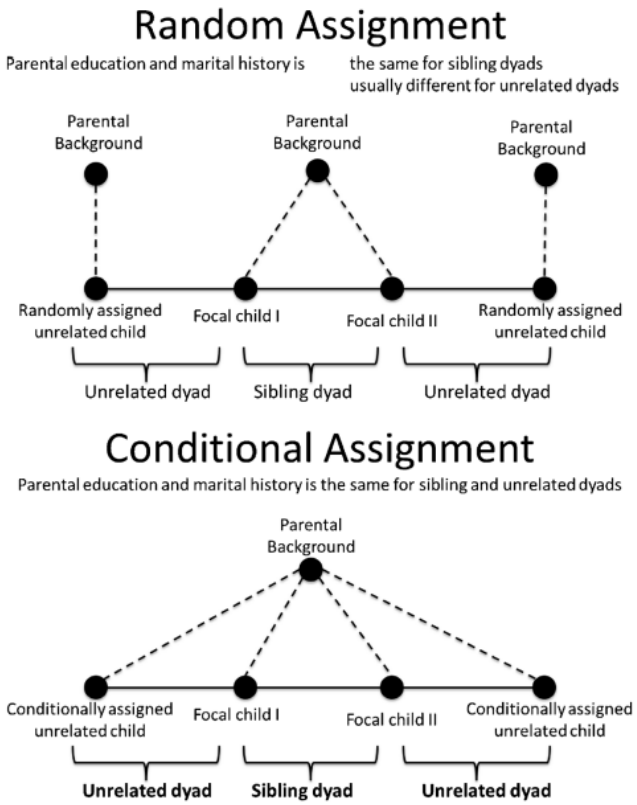

Figure 1. Random and conditional assignment of dyads (from Raab et al. 2014).

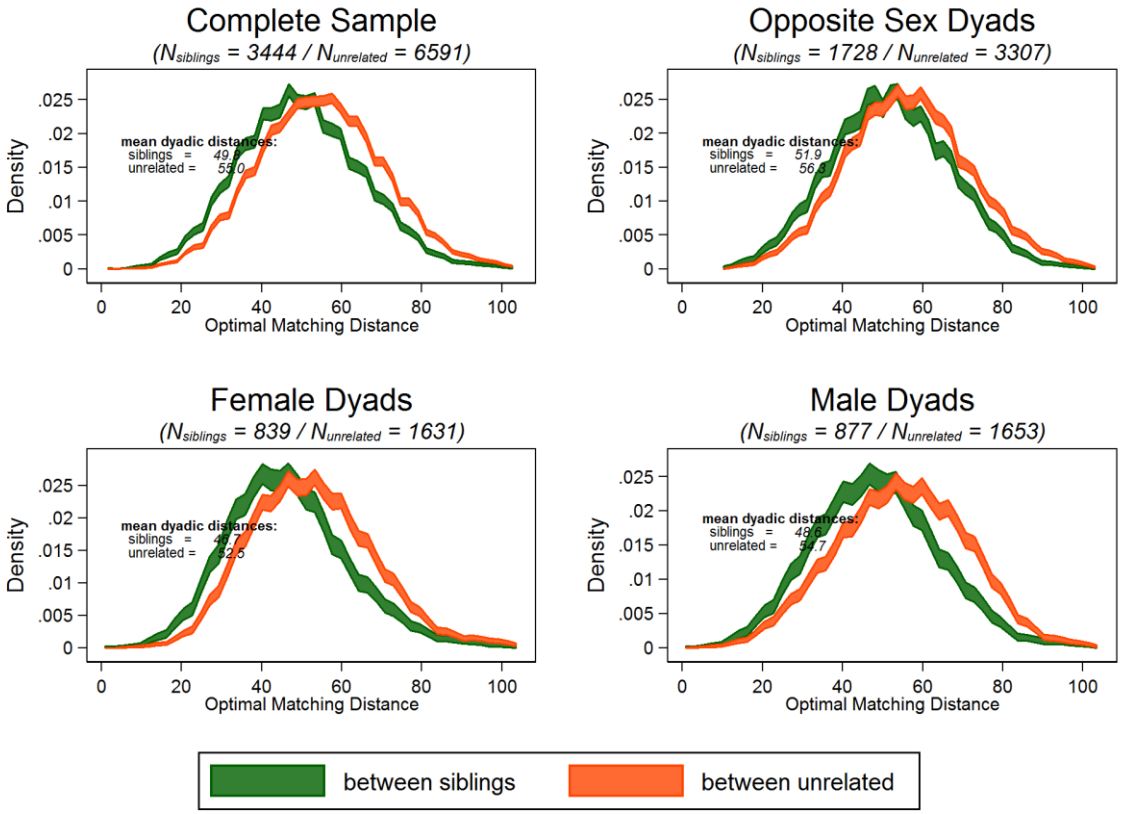

Figure 2. Distributions of distances for sibling and unrelated dyads for all, opposite sex dyads, women and men (standardized between 0 and 100).

In the case of family formation surprisingly little of the similarity between siblings was explained by the measurable family background (Raab et al. 2014). In the case of career trajectories we expect stronger effect of measurable family background. However, when looking at the sibling similarity in our models (M1 and M2 in table 1), we can see that upon conditional assignment on family background the sibling similarity compared to unrelated dyads decreased surprisingly little although significantly (19 percent).

Table 1. Similarity of sibling dyads compared to unrelated dyads in in different matching models.

	M1 Random Assignment	M2 Conditional Assignment on Family Background	M3 Conditional Assignment on earnings (at age 35)	M4 Conditional Assignment on education (at age 35)	M5 Conditional Assignment on both outcomes (at age 35)
Sibling dyad	-5.52***	-4.45***	-4,27***	-3,59***	-2,72***
	(0.17)	(0.17)	(0,15)	(0,16)	(0,15)
Observations	34,724	33,299	34712	34712	34712

In the last models (M3-M5) we can observe that matching the sibling dyad with a dyad with similar outcome at the end of our observation period at age 35, did not result into non-existing sibling effect (RQ4). It is noteworthy that in case of income (M3), education (M4) and both (M5) quite much of the sibling similarity remains in the sequences although no sibling similarity would be observed looking at the outcomes. This shows that a lot of sibling similarity would be missed when only looking at sibling similarity of the outcomes. This further implies that we do not capture intergenerational inequalities fully with only the end outcomes.

For the lack of space we do not present the results to our RQ3 (In which way is siblings' labor market entry more similar?) in detail here. It suffices to say that sibling similarity seems to be strongest when it comes to disadvantageous trajectories and lessened in academic trajectories.

If we return to the equality of opportunity mentioned in the beginning, our results of sibling similarity indeed imply lack of it. It would seem that when it comes to trajectories we cannot identify clearly the reasons behind the similarities although we can identify many family background factors associated with the similarities. Further the similarity of trajectories is stronger in disadvantaged trajectories and is likely linked to other life events and accumulating disadvantage. Last but not least the fact that much of sibling similarity in trajectories would remain hidden when looking at only the end outcomes underlines that low sibling similarity in the end outcomes does not necessarily imply equality of opportunity as is too often hastily assumed. Similarities in outcomes might result from seriously different and unequal trajectories leading to these outcomes.

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