Educational institutions as mating markets
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Educational institutions are considered one of the most important structured settings in which partners meet (Kalmijn & Flap 2001), and meeting in educational institutions is one of the key explanations for educational homogamy. The structure and social composition of these institutions can obviously also shape assortative mating according to other characteristics, such as age, ethnicity, and class background. Despite the theoretical importance and general interest in the effects of mating market characteristics on assortative mating, there are few studies that measure the characteristics of eligible partner candidates, identify relevant mating markets, or otherwise consider the features of these settings (Schwartz 2013).

The objective of this study is to contribute to the analysis how educational institutions function as mating markets. We focus on Sweden, where we track the educational histories of an entire birth cohort (born 1970) with population register data on which high schools and universities the members of this cohort attained and when. We analyze assortative mating according to various socioeconomic and demographic characteristics.

More specifically, we look at with whom members of our cohort had their first child. Most first children in Sweden are born outside marriage (though often in a cohabiting partnership), and therefore this outcome measure serves as an appropriate indicator of family formation in this context. Furthermore, assortative mating distributes resources to children and thus shapes inequalities in their life chances.

We address the following questions. First, we provide descriptive information on the share of all couples, and of educationally homogamous couples, which overlapped in a high school or university. This gives us an upper-bound estimate of how many couples met in educational institutions and tells about the extent to which educational endogamy is actually school endogamy.

Second, we model how the sex ratio and the class background, age, and ethnic composition of educational institutions affect the likelihood of meeting a partner in educational institutions and assortative mating according these characteristics. We expect that an unbalanced sex ratio in favour of the opposite sex increases the chances of finding a partner within an educational institution. Furthermore, we expect that age homogeneous educational settings promote age homogamous mating patterns. Finally, we expect that the ethnic and class background composition of educational institutions affect the likelihood of mating along these lines, shaping both homo-/endogamy and intermating. Since university education occurs later in the life course, and closer to the age of family formation, we can additionally expect that contextual characteristics of universities matter more than those of high schools.

Analysis
We use Swedish population register data from the "Sweden in Time: Activities and Relations" (STAR) database, compiled by Statistics Sweden for Stockholm

University. These data cover the entire Swedish population and include various demographic and socioeconomic variables. They allow us to reconstruct educational life courses as they include identifiers for the educational institutions attained. This information allows us to assess whether both partners (here, parents of a child) attended a given educational institution at the same time and to construct contextual level indicators of the compositional characteristics of these institutions.

Our research design is the following. We start from the cohort born in 1970 (N=140,079), to which we refer to as the "index cohort" and whom we follow until year 2007, when the cohort members were 37 years old. We reconstruct their educational careers after the 9 years of compulsory education and focus on high schools ("*Gymnasium*", typically lasting two or three years) and universities. High school attendance was identified based on information of applications, admissions and graduation from these schools. In case of drop out (in which case we did not observe when the student dropped out from high school), we assigned the individual as attending the first year of high school. University attendance was identified through annual information on enrolment in tertiary institutions. At this stage of the analysis, we use contextual information on the first university attended, in case the student attended multiple universities. School identifiers enabled us to determine which high school or university the individuals attended.

We follow the index persons until the year in which they had their first child, or year 2007 (age 37). Those who emigrated or died before these events were excluded from the analysis. If the index person had a child, we know who the other parent of the child was. We used the information to assess the characteristics of the partner and thus, in our analyses of assortative mating.

As mentioned, the school identifiers enable us to construct contextual level measures of the educational institutions the index cohort members (and their partners) had attended. We construct a measure of the sex ratio of the high schools and universities (defined as % men), their age compositions (% of student up to three years older or younger), ethnic compositions (% of Swedish background), and class compositions (% hailing from the upper service class (EGP I), according to the Erikson-Goldthorpe schema (Erikson and Goldthorpe 1992)). In subsequent stages of the research, we will construct more specific contextual measures (such as more detailed measures of ethnic composition).

In the first part of the analysis, we describe the data and the shares of our index cohort who overlapped with their partner in educational institutions, and how much this can explain of observed educational homogamy.

In the second part of the analysis, we analyze the probabilities of having a child with apartner with whom one overlapped in an educational institution by age 37, and of having a Swedish partner, an age homogamous partner (who is up to 3 years junior or senior), and a partner with an upper service class background. We use multilevel logistic regression analyses with our contextual variables with controls for being a native Swede and for class background. We run the analyses separately for men and for women, and for high schools and universities.

In subsequent analyses, we will additionally run event history models, which enable us to look closer into when the cohort members had their first child. Mating processes are highly life course dependent, and it has been argued

that the likelihood of educational homogamy decreases by time since leaving education as people are increasingly exposed to other partner candidates (Mare 1991; Blossfeld and Timm 2003). With event-history models, we can assess this hypothesis more directly and analyze whether the hazard of having a first child with someone one overlapped in school with decreases by time since leaving the educational institution, and whether the contextual effects of school wane over time. These findings have implications for assortative mating and the effects of contextual characteristics of educational settings in a context in which attendance in tertiary education is rising and family formation postponed. We will also construct more detailed individual level and contextual level measures for a better assessment of the effects of school characteristics and of whose matching behaviours they are most likely to affect.

Preliminary results and discussion

Our preliminary results refer to the index population, that is, the Swedish population born in 1970 and whether and with whom they had a child by the end of 2007 (age 37). 72 % of women and 60 % of men born in 1970 had been observed to have a child by this time.

In our data, 4.2 % of the index population overlapped with ("found") their partner in high school, while 8.5 % of the population overlapped with their partner in university. Out of those who attended university (33.3 %), 25.6 % overlapped with their partner in university and out of couples in which both partners attended university, 43.1 % attended the same university at the same time. In other words, one can infer that up to 43.1 % of academically homogamous couples met in university.

Below, we show results from multilevel logistic regression models on the probability of having a child with a partner with given characteristics by 2007. The first analysis (Table 1) analyze the probability of "meeting" one's partner in a high school and university, respectively. The predictor variables are the compositional characteristics of these institutions (sex ratio, age composition, ethnic composition, and class background composition), while controlling for class background and ethnic origin (not shown). The models are run separately for men and for women.

Table 1. Characteristics of high schools (*Gymnasium*) and universities and probability to meet partner in the respective institutions.

	Partner from high school		Partner from university	
	Men	Women	Men	Women
% Men	0.97**	1.02**	0.99	1.03**
% age ± 3 yrs	1.02**	1.03**	1.05*	1.04*
% Swedes	1.04**	1.02	1.01**	1.00
% from EGP I	0.99	0.98*	1.02**	1.02**

Control variables: Native Swede, Class background; * p <0.01; ** p<0.001

The findings show generally expected findings. A higher share of men increases the women's probability of having met one's partner in high school, and decreases the probability of meeting one's partner in high school for men. However, there is no sex ratio effect of universities for men. A higher share of students of similar age likewise increases the probability of finding a partner from an educational institution, pointing to a preference for age homogamy.

Interestingly, ethnic composition affects the likelihood of "school homogamy" for men, but not for women. A higher share of students from the upper service class increases in a university increases the likelihood of finding a partner from a university, but decreases it for finding a partner from a high school (for women).

Table 2 presents the results from multilevel logistic regressions predicting partnering with a native Swede, age homogamously, and with someone from the upper service class. Ethnic composition clearly affects the probability of partnering with a native Swede, in the expected way. Somewhat surprisingly, attendance of a high school with a higher share of upper service class students decreases this probability. It also affect the likelihood of age homogamy, while surprisingly, the age composition of schools does not. Finally, the probability of partering with someone from a higher class background is affected by several of the contextual variables, at both educational levels.

Table 2. Probability of partnering with a Swede, age homogamously, and with someone from an upper service class family, by school characteristics.

	Swedish partner			
	High school		University	
	Men	Women	Men	Women
% Men	1.00	1.00	1.00	1.00
% age ± 3 yrs	1.00	1.00	1.00	0.99
% Swede	1.04**	1.06**	1.05**	1.06**
% from EGP I	0.99**	0.99**	0.99	0.98*
	Age homogamy			
	High school		University	
	Men	Women	Men	Women
% Men	1.00	1.00	1.00	1.00
% age ± 3 yrs	1.00	1.00	1.00	1.00
% Swede	0.98**	1.00	1.00	1.01
% from EGP I	0.99**	1.00**	1.04**	1.00
	Partner from EGP I			
	High school		University	
	Men	Women	Men	Women
% Men	0.99**	1.00*	1.00	1.01*
% age ± 3 yrs	1.00	1.00	0.97*	0.96**
% Swede	1.00	0.99*	1.01**	1.01*
% from EGP I	1.02**	1.02**	1.03**	1.02**

Control variables: Native Swede, Class background; * p <0.01; ** p<0.001

These preliminary findings show that the social compositional characteristics of educational institutions matter for partnering, both at earlier and later stages of the educational career. These preliminary findings lay the ground for our future, more detailed analyses of how and for whom these characteristics matter, and how they might shape patterns of assortative mating.

Literature

Blossfeld, H-P, and Timm, A. 2003. Who Marries Whom? Educational Institutions as Marriage Markets. Kluwer.

Erikson, R. & Goldthorpe, J. 1992. *The Constant Flux*. Clandendon, Oxford.

Kalmijn, M. 1998. Intermarriage and homogamy: Causes, patterns, trends. *Annual Review of Sociology* 24:395-421.

Kalmijn, M & Flap, H. 2001. Assortative meeting and mating: Unintended consequences of organized settings for partner choices. *Social Forces* 79:1289-1312.
Mare, RD. 1991. Five decades of educational assortative mating. *American Sociological Review* 56:15-32.
Schwartz, C. 2013. Trends and variation in assortative mating: Causes and consequences. *Annual Review of Sociology* 39:451-470.