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Exploring the Other: Analysing Programme Formations, Recruitment Patterns, and Gender in Swedish Upper Secondary School

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ABSTRACT

The aim for this study is to investigate the role of large-scale data in the formation of Swedish upper secondary programme structures, in relation to gender. In the analysis we draw from theories of hegemonic power relations and the concept of assemblage. The results suggest that large-scale evaluations have taken part in forming a two-by-two recruitment matrix, where the science and technology areas are valued over “other” areas. By our policy analysis together with our analysis of Swedish registry data, we suggest that the continuous re-organisation of Swedish upper secondary programmes as either “science or social” contributes to the persistent gender biases in student recruitment, and that this should be accounted for in future reforms.

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Gender; policy; recruitment; assemblage; upper secondary education

Introduction

Large-scale data are highly influential for national education policies and local practices in most school systems. Data collected and stored by cross-national organisations, as well as in national repositories, are used to evaluate and compare the efficiency and equity of education in different contexts (Hartong, 2018). In this article, the democratic functions of educational systems are discussed by analysing how education policy making interact with and depend on large-scale data to organise education in specific ways and for particular reasons.

Our example has been taken from the reform history of Swedish upper secondary school, analysed in relation to large-scale data from the Swedish population registry, and the national education registry. Upper secondary education in Sweden is a voluntary school form that comprises both academic preparatory and vocational education for 16 year-olds who attain sufficient grades in lower secondary school. The current upper secondary school system has developed from the integration of post-sixteen academic, vocational, and special study programmes in 1970 into one organisation (Swedish Ministry of Education and Research [SMER], 1963, 1968). The integration of all post-sixteen education was however early criticised for being highly differentiated by social class, as well as for being insufficient in relation to the shifting needs of the labour market in an emerging knowledge economy (c.f. Lundahl, 2002). Consequently, during the 1980s and 1990s, a series of policy informing, large-scale, evaluation research was carried out, investigating the impact of social background factors on upper secondary programme choice and student completion (SMER, 1980, 1989). Consequently, a major reform was followed through in the early 1990s (SMER,

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1991). In the 1990s and the 2000s, the organisation and content of upper secondary education were however continuously criticised for being socially biased, and more so for being inefficient in relation to labour market structures and demands. In 2011, Swedish upper secondary education was reformed in line with ideas of labour market applicability and employability (SMER, 1997, 2008; c.f. Lundahl et al., 2010; Nylund et al., 2017).

The critique towards Swedish upper secondary education has been directed towards both specific programmes and larger subject areas. Some programmes have been subjected to change by the demands of increased technological skills presented by sectoral representatives (e.g., the Construction programme, SMER 2000, p. 304). Others have been reformed, or even withdrawn from curriculum, while having a too vague connection to the labour market (e.g., the Media programme, implemented in 1994 and subsumed in other programmes in 2011, see SMER, 2008). Also, subject domains including for example the Humanities, the Arts, and the Social Sciences, have repeatedly been criticised for having weak connections to labour market demands (e.g., SMER, 1989, 2008, 2020).

In the most recent public report on Swedish upper secondary education, SMER (2020), the question of how to adjust the programme supply seems to be deeply embedded in the efficiency and employability discourse that has taken hold in Swedish educational policy over the last decades (Beach & Dovemark, 2011; Fjellman et al., 2019; Lundahl, 2002). For example, it is proposed that unlike the present dimensioning based on the programme enrolment of previous cohorts, new guide lines should continuously be developed on the basis of on the one hand large-scale evaluations of students' programme completion, transitions to higher education and labour market establishment, and on the other hand on labour market prognoses (SMER, 2020, p. 486). Also, it is recommended in the report that educational planning should consider young peoples "demands" (*efterfrågan*) instead of their "desires" or "wishes" (*önskemål*), as in current practice. The committee specifies the concept of "demand" as an "informed decision on educational choice, where the pupil has adequate knowledge about programme content, what it prepares for, and what former students do after completion" (SMER, 2020, p. 485).

The emphasis on *informed choices* and pupils' responsibility to gain *adequate knowledge* about their potential outcomes, also implies that there are risky alternatives that young people should not choose if wanting to become employable. For this article we explore one of the areas that repeatedly have been articulated as problematic, being "vague" in relation to potential future trajectories (e.g., SMER, 1997, 2008), and producing a labour force surplus (e.g., SMER, 2020): the "social sciences". The "social sciences" area of Swedish upper secondary education today includes three academic preparatory programmes: the Social Sciences, the Economics, and the Humanities. According to national statistics from the Swedish National Agency of Education (SNAE, 2020), 33 per cent of the 124.801 pupils applying for an upper secondary national programme (i.e., programmes requiring sufficient grades from lower secondary school) in 2019, had one of the programmes in the "social sciences" area as their first choice.

Furthermore, a gender difference appears when stratifying the national statistics. That is, more than 40 per cent out of the 59.538 girls applying for a national programme chose a "social sciences" programme, compared for 26 per cent of the 65.263 boys. Yet, although comprising so many students, and demonstrating a gender biased student distribution, there is very little research concerning the history of the "social sciences" in Swedish upper secondary education, and how this corresponds with student recruitment. Therefore, our example has been taken from the Swedish upper secondary school reforms from 1970 to 2011, paying particular attention to how the "social sciences" has been constituted as educational programmes and options over time. Our specific aim with the article is to investigate how large-scale registry data on recruitment into Swedish upper secondary education have been involved/used over time to form policy, and programme structures. We also investigate how the implemented options relate to student stratification, and in particular divisions by gender. Our inquiry departs in the following questions:

- (1) How have large-scale data on student recruitment taken part in forming Swedish upper secondary programme structures, and particularly the “social sciences”, from 1970 to 2011?
- (2) How have the political incentives of student recruitment and upper secondary programme organisation been shaped by, as well as shaped ideas of gender and educational choice?
- (3) What potential – *other* – *alternative* understandings of relations among student recruitment, options, and gender can be discerned when analysing gender distribution over the different areas of education, and particularly within the “social sciences”?

Methodology

The Swedish upper secondary reform history is at the centre of this study, with particular attention paid to the implementation of the Social Sciences programme in 1994, and the reform in 2011 when the programme was reformed into three, separate, programmes. The analysis has spanned more than four decades: from the implementation of the “new upper secondary school” in 1970, via the vast “marketisation” reform of 1994 and the minor reform in 2000, up to the most recent major reform in 2011 (see also Fjellman et al., 2019; Lundahl et al., 2010).

Curriculum	Commission Report/Government Bill	Birth Cohort	N Birth cohort	Enrolment year*	N U. Sec.(national) programmes
1971	SOU*** 1963:42 SOU 1963:62 SOU 1968:63	1975	106,889	1991**	81,810
1994	SOU 1980:30 SOU 1981:96 SOU 1981:98 SOU 1989:10 Prop.**** 1992/93:230	1982	99,670	1999	86,096
2000	SOU 1997:107	1988	119,804	2005	103,855
2011	SOU 2008:27	1995	111,372	2012	97,165

* Students normally start their second year of upper secondary education the year they turn 17.

**Cohort data only available for first year of enrolment.

***Statens offentliga utredningar [Official reports of the Swedish Government]

****Government Bill

Figure 1. Field of investigation.

Our field of investigation (Figure 1) emanates from an extensive government whitepaper where the upper secondary programmes structures of 1970 are evaluated in relation to social selection (SMER, 1980). While both evaluative and prospective, this report is central for the subsequent reforms of Swedish upper secondary programmes. Thus, the investigation encompasses central state documents leading up to the national upper secondary reforms, where programme organisations are reshaped. Also, we paid particular attention to how recruitment data were used in these reforms. In accordance with our intention to analyse gender distributions between and within the “social sciences” area, we have also derived national registry data from Statistics Sweden with detailed information about educational choices and gender including the total population of four cohorts of Swedish youths (N 382.503), born in 1975, 1982, 1988, and 1995. In Sweden, youths move into upper secondary education the year they turn 16, primarily differentiated by grade point averages from lower secondary school. For this study we have taken interest in how students specialise in their second year (normally at age 17), but in the 1970 curriculum, students were tracked from their first year. Therefore, the birth cohorts are referred to as cohort 1991, 1999, 2005, and 2012 in order to facilitate the comprehension of the relation between cohorts and curricula.

For this inquiry we are thus approaching the large-scale analyses of student recruitment and gender in established policy formations, as well as relating them to our analyses of registry data. We depart in the concept of assemblages (Deleuze & Guattari, 1987) and embed some of its key aspects within our conception of gender hegemony (Connell & Messerschmidt, 2005; Paechter, 2002). This to deepen the understanding of relations among power, policies, options, and choice.

By the assemblage framework, the social world is viewed as constituted by various elements drawn together into specific clusters. As a consequence, educational policies are in the analysis approached as constituted by hegemonic assumptions, context specific ideas, as well as material conditions. In the analysis we focus how these elements are drawn together with the specific intent to produce “new” conditions under which prevailing power relations can be challenged. Yet, while these “new” conditions are entangled with for example institutional histories and economical forces, the individual’s freedom to move within them is constrained (Connell & Messerschmidt, 2005, pp. 843–844). For this study we approach these constraints as produced in a contingently shifting entanglement of various semiotic and material elements, and thus without predetermined distinctions between agents and structures (DeLanda, 2006; Deleuze & Guattari, 1987). That is, agency is here understood as produced in relations among elements, and not as emanating from specific actors (e.g., from individuals, organisations, or political parties).

Drawing from the dynamic model of the “masculine domination” as “a historical process, and not a self-reproducing system” (Connell & Messerschmidt, 2005, p. 844) we propose that student recruitment patterns can be used to illustrate how gender relations are continuously stabilised or reconstituted in upper secondary choice practices. That is, we are interested in how the organisation of education produces different agencies; how it, on a group level, takes part in limiting and enabling what is possible to choose for boys and girls respectively. One important aspect of this process is outlined in previous research, namely how subject matters are positioned in a hierarchical order produced by hegemonic power relations of masculinity/femininity, rationality/sensibility, mind/body, and etcetera (Paechter, 2002). In this hierarchical ordering, some areas of education have become perceived as more important and more valued than others. For example, previous studies highlight how girls in Physics or Mathematics belittle traits that are viewed as feminine and accentuate their conformity to the masculine norms embedded in the subject matter (e.g., Francis, 2000). Hence, upper secondary programme choice is for this article viewed as constrained or enabled by how the elements that constitute programme structures relate in a specific assemblage.

The Formations of Valued Spaces in Swedish Upper Secondary Education

The organisation of Swedish upper secondary school today, comprising both academic preparatory and vocational education stem from the process of forming a national, comprehensive school

system in the aftermath of World War II. One of the driving forces behind was the large-scale investigations of how social class affected educational trajectories, and that a stratified school system enforced social differences. Also, in the 1940s and 50s the gap between cognitive abilities and higher education transitions among working class children was highlighted as a democratic as well as an economic issue. To enable new groups to enter higher education, the various post-sixteen education was proposed to be integrated in one school form (SMER, 1963). Through the 1970 upper secondary reform, three different school types were brought together under one umbrella. These were (1) the academic preparatory school (Gymnasium) with a Science, Humanities or Social profiles, (2) the continuation schools corresponding to the economic and mercantile sectors of the labour market, schools educating for social work, and schools of technology, and (3) the various pre-existing vocational schools.

In the first section of the analyses we will outline some of the assumptions and models used in forming Swedish upper secondary school in relation to the reforms of 1970, 1994, 2000, and 2011, and how the recruitment patterns produced by these foundational policy elements take part in organising education in specific ways. In the second section we focus the elements forming the “social sciences” into programmes and options, and how different agencies are produced through their relations.

The Emergence of a Recruitment Matrix

Previous to the upper secondary reform in 1970, there was a strong focus on how reforms of the school system could counter social biases in society at large. This focus stemmed from the “ability reserve” investigations of Swedish (male) army recruits, where young people from working class homes were found to be less likely to enrol in higher education also when ability test scores were controlled for (see Husén, 1989). Other investigations concluded that a less stratified school system led to more equal educational opportunities (Boalt, 1947). The main goals of the upper secondary reform in 1970 were therefore to integrate the dispersed school forms and to recruit working class children to academic preparatory programmes. Particularly, the enrolment of new groups in science and technology was emphasised as important in relation to the articulated labour market need for engineers, and an increased recruitment of girls was expressed as especially crucial (SMER, 1963, p. 263).

Hence, before the reform in 1970, ideas of equal educational opportunities clustered together with findings of how social biases were enforced by stratified school systems, as well as with prognoses of labour market needs, into a proposition of an integrated upper secondary school (SMER, 1963). In this assemblage, the element of “integration” was primarily shaped in relation to the inclusion of underrepresented groups. That is, the assumption of an academic/vocational divide was not challenged in policy at the time. Contrary so, the existence and value of an “academic” area of education, appear to be re-established when the need to broaden its recruitment bases is articulated. In parallel, “science and technology” was maintained as a demarcated area by the enhancement of its value. Thus, when implementing the “integrated” upper secondary school in 1970 it was still organised around ideas of separate areas, even though the intent was to facilitate transition across the borders.

When organising upper secondary education as one school form in 1970, the aim to recruit children from working class homes to academic preparatory programmes remained unaccomplished. In 1976, therefore, a committee was appointed to investigate the effects of the 1970 reform for social biases. The main report regarding social selection to upper secondary education was published in 1980 (SMER, 1980). The 1980 committee report (SMER, 1980) was extensive, produced by well-established educational researchers, considering large-scale data on student recruitment in relation to socio-economic differences as well as gender. In this report some methodological problems were raised in relation to how the new organisation was unable to provide a coherent basis for analysing recruitment patterns. In the report, the programmes corresponding with the previous

“Gymnasium” were considered to be comparable and therefore as reliable outcome variables, while vocational programmes were not. Thus, in the state committee’s evaluation of recruitment patterns in 1980, a clear analytical cut was made between academic preparatory, upper secondary education and vocationally-orientated programmes. Although argued in the report as an empirical necessity, the cut between academic preparatory and vocational education is proposedly also shaped by both the previous, segregated, school forms. Also a discernible element in this assemblage is the predominant view of access to higher education as a mean for equal opportunities in life.

Furthermore, the report highlighted recruitment differences between “high achieving males and females”. By this inquiry, an analytical cut between programme areas was made also within the academic preparatory category of education. Focus in the analysis was recruitment to the academic preparatory Natural Sciences and Technology (NT) programmes. As a reference, a second category was produced, articulated as “other, academic preparatory programmes” (SMER, 1980, p. 70), including the various humanities, social sciences, and economics (HSE) programmes. As for the academic/vocational split, this is an action legitimised by political incentives to recruit new groups to the NT area, in order to meet with labour market needs. As the analysis highlighted how males (still) predominantly were found in the NT-area, and females in “other” programmes the analysis proposedly also took part in the continuous shaping of “gender” as a distinction between presence/non presence in a valued area. Additionally, the programmes of the vocational area were also categorised as either “NT” or “HSE”, thus following the model applied on the academic-preparatory area. So, in SMER (1980) four educational areas emerged as constituting upper secondary education. These four areas can be illustrated in a two-by-two matrix table with two areas of direction (Academic/Vocational) and two core subject areas (NT/HSE) (subsequently referred to as ac-NT, ac-HSE, voc-NT, and voc-HSE, Figure 2).

Distinctions Sustained

Thus, through relations among ideas of a meritocratic school system for equal opportunities, of valued areas, and prognoses of labour market needs, four areas of upper secondary education emerged as analytical categories. By the clear divisions between academic/vocational and science/social, the categories appears to also carry with them hegemonic ideas of mind over body, as well as rationality over caretaking and emotion (c.f. Paechter, 2002). The distinction of ac-NT as a valued space in SMER (1980) thus has two main consequences. First, it re-establishes

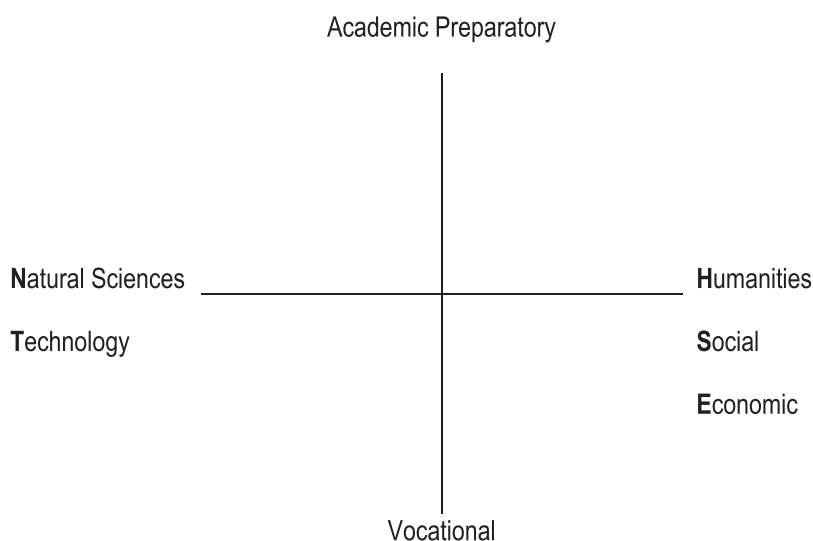


Figure 2. The recruitment matrix.

the superordinate position of science in the knowledge hierarchy. Second, it constitutes a demarcation by which the question of presence/absence can be answered. The answer to this question, however, is pre-existent to the two-by-two matrix while the model itself builds on the highly stratified structure of the school forms previous to the 1970s reform (see SMER, 1980, p. 70). That is, the model is organised in relation to a structure where academic preparatory education, and especially science and technology, was a male dominated space. As a result, in SMER (1980) boys as “present” was both a key element in the formation of the recruitment matrix and a result of analyses through it. Girls, consequently, were in the recruitment analyses found to be overrepresented in areas “other than NT”, hence positioned as “the other” through large-scale measuring practices.

By the empirical results derived from applying the two-by-two recruitment matrix to the analyses of student recruitment in SMER (1980) and also in subsequent policies (e.g., SMER, 1981, 1986), the understanding of upper secondary education as divided both horizontally and vertically appears to become a hegemonic “truth”. Hence, while the researchers of the evaluation committee in 1976 were politically empowered to take part in forming the upper secondary education, their models for evaluation also attained agency in keeping the options separated in specific ways. These separations, we argue, also represent what Connell and Messerschmidt refer to as an “unreflective dimension of gender” (2005, p. 844). Proposedly hence, even though girls are discursively discerned as potential recruits for the ac-NT area, the institutional history of Swedish post-sixteen education constrains this potential.

In the analysis above, the recruitment matrix emerges both as an analytical model in student recruitment research, and as an active element in maintaining distinctions among educational areas in Swedish upper secondary school. If approached uncritically, the recruitment matrix as an analytical tool thus risk to re-establish girls as underrepresented and at the same time keep focus on the male dominated educational areas (see similar point made by Elgqvist-Saltzman, 1992). Therefore, in the following analysis of registry data, we will pay attention to the flow of students over the recruitment matrix as well as over time. This to make possible alternative understandings of the presumed potential of underrepresented groups to move across the borders.

Challenging the Recruitment Matrix

When analysing the four included cohorts in relation to the recruitment matrix, redistributions in where students enrol appear in relation to the 1994 and 2011 reforms. These changes are most salient for the vocational areas, such as the increased size of the vocational HSE area in relation to the other areas in 1999 (28%) and 2005 (29%) compared for 1991 (22%), probably explained by new programmes being implemented. Also, one possible explanation for the increase, supported by retraction in 2011, is that all programmes between 1994 and 2011 provided the basic entry requirements for higher education. Also salient looking through the matrix, is that boys consistently cluster at the NT side. Although most underrepresented in voc-NT, the proportion of girls within ac-NT fluctuates but never exceeds 40 per cent. Yet, to some extent, the incentive to recruit more girls seems to have gained response. For voc-NT, there is a slight increase from 1991 to 2005 (17/18/22%) as well as a leap to enrolling 30 per cent girls in 2012 (which proposedly is to be further investigated). When applying the recruitment matrix, however, the present analysis legitimises the conclusions drawn in previous work: there is a clear underrepresentation of girls both in ac-NT as well as in voc-NT.

If considering agency as produced in relations among elements (Deleuze & Guattari, 1987), yet another pattern appear in Table 1. As outlined above, the elements drawn together in for example SMER (1980) form an assemblage that pushes gender mainstreaming as a question of recruiting underrepresented groups to ac-NT. This also generates an idea of “girls” as potentially free agents, only restricted by organisational barriers. Still, although some changes do appear in three of the matrix areas, ac-HSE seems rather stable. It is consistently the largest within the matrix, except

Table 1. The recruitment matrix, by gender: frequencies and percentages.

Cohort	1991				1999				2005				2012			
	N	% of matrix	% female		N	% of matrix	% female		N	% of matrix	% female		N	% of matrix	% female	
Academic preparatory fields																
Natural Sciences, Technology	18,087	22	33		19,827	23	40		19,675	19	31		21,513	22	39	
Humanities, Social, Economics	26,815	33	65		26,545	31	62		29,084	28	61		30,828	32	60	
Vocational fields																
Natural Sciences, Technology	18,537	23	17		15,942	19	18		24,738	24	22		25,106	26	30	
Humanities, Social, Economics	17,741	22	75		23,782	28	63		30,358	29	68		19,718	20	68	
Total	81,180	100			86,096	100			103,855	100			111,372	100		

from cohort 2005 when voc-HSE enrolled 29 per cent and ac-HSE 28 per cent. Also, and in adverse to ac-NT, the proportion of girls never goes below 60 per cent (Table 2). That is, while Table 1 illustrates continuous changes in the flow of students over three of the matrix areas, the idea of the ac-HSE area as a potential recruitment base for ac-NT is not realised in practise. So, a considerable proportion of all girls entering upper secondary school consistently clusters in ac-HSE over the spanned cohorts, thus not achieving the presumed potential of being mobile; of having agency.

The Social Sciences Programme

In 1994, a vast reform of both Swedish comprehensive and upper secondary school was implemented. As proposed by previous research, the reform of 1994 was at the same time a result of a democratic project for equal educational opportunities through a comprehensive school system, and of market liberal forces promoting individual freedom of choice (see also Lundahl et al., 2010). In the 1994 curriculum for upper secondary education, it was significant that the 16 national programmes were to provide the basic access requirements for entrance to higher education. By this reform, drew together the academic preparatory Natural Sciences and Technology programmes, two streams which in previous educational planning was considered as substitutable in relation to the labour market need of engineers (SMER, 1963). Accordingly, the Natural Sciences programme of 1994 provided a base year in science with either science or technology as specialisations the second and third years. The reorganisation of ac-NT relied on pilot studies in which programmes combining the two streams proved to increase the attendance of girls in technology education (as described in SMER, 1997; Mellén & Angervall, 2020).

Thus, the ac-NT reform was both empirically founded in large-scale data and driven by a particular intention of increased recruitment to education positioned as in demand. In contrast, the introduction of the Social Sciences programme in 1994 drew together various “other programmes”, with the articulated intent to enable higher education transitions for groups (primarily girls) who traditionally had chosen a two-year HSE-programme with a less distinct connection to the labour market (SMER, 1989). In policy, hence, it seems like there are two different types of potential agencies produced. On the one hand, girls are supposedly enabled to choose technology while it being integrated with the natural sciences. On the other hand, the Social Sciences now became the (only) option for those who still do not choose ac-NT or vocational education. Proposedly, a specific function as a “generic node” is here assigned to the Social Sciences programme.

By the ac-NT model, the Social Sciences programme of 1994 offered a first comprehensive year, with the option to either stay in the Social Sciences track during the second year or to choose Economics or Humanities as specialisations. However, in relation to the concomitant idea of individualised education, the three tracks also came to comprise various different options. The heterogeneous, and to some extent contradictory, elements of comprehensiveness and freedom of choice, constituting the policy assemblage foregoing the 1994 reform were also visible in the produced realities of programmes and options in 1994.

As outlined above, if relying on the general changes within the recruitment matrix (Table 1), the reform of 1994 seems to have had some consequences for the gender balance within ac-HSE, with a decrease in the proportion of girls from 65 to 62 per cent from cohort 1991 to 1999. However, in order to challenge the supposed turn towards a more equal gender distribution within ac-HSE, we shift the lens and investigate the multiple options which emerged between the 1994 and the 2011 reform. As a point of reference, we separated the 1991 cohort into aggregations of programmes in relation to the pre-existing categorisation of “Humanities”, “Social”, and “Economics” (HSE) orientations. Below, we refer to the less aggregated alternatives as “specialisations”.

In Table 2, one of the main changes is the decreased proportion of girls within the Social Sciences specialisation from 1991 to 1999, and from 1999 to 2005 (68/66/63%). This decrease follows the overall change in gender distribution across the ac-HSE area. However, within some specialisations in 1999 and 2005 there are indications of an increased gender bias. For example, girls are overrepresented in the International specialisations (a broad category of specialisations in e.g., “Global

work” or “the functions of the European Parliament”) both in 1999 and 2005 (76/68%). Also, it becomes obvious that girls in the 1999 cohort are significantly over-represented in the Humanities (88%), even more so than in 1991 (85%). Furthermore, within Economics, the overall proportion of girls in 1999 decreased to 50 per cent, thus considerably contributing to the overall change in the gender distribution within the HSE area. More so, the Enterprise specialisations in 1999 showed a clear under-representation of females (40%). Thus, when forming a Social Sciences programme consistent of “other academic preparatory education” (SMER, 1980) their different recruitment bases become less visible. That is, the overarching structure of the Social Sciences programme in the 1994 curriculum risks hiding a seemingly even more gender-stratified pattern within the ac-HSE area than was the case before the reform.

When the new curriculum of 1994 was implemented, a committee was appointed to evaluate the consequences for student recruitment. Throughout the committee’s report, increased possibilities to “customise” both the Natural Sciences and the Social Sciences by individualised options were articulated as necessary (SMER, 1997). Furthermore, the committee had as a specific directive to consider how boys’ and girls’ rights and opportunities were promoted through the new organisation. In the report, there was accordingly a specific section focusing on gender mainstreaming, again particularly in relation to the Natural Sciences programme (SMER, 1997, p. 98; c.f. Mellén & Angervall, 2020). In the 1997 policy, the idea of gender mainstreaming thus again is formed in relation to girls being underrepresented in ac-NT. That is, while still implied as a recruitment base for ac-NT in 1997, there are consequently no questions about “under-representations” in the Social Sciences programme. Also, gender mainstreaming is now shaped by the idea of “individualised freedom of choice” as a liberator from traditional gender patterns. The focus on ac-NT, drawn together in the assemblage with the neo-liberal shaping of choice as “free”, are proposedly one explanation to why gender biases within the Social Sciences programme seem to be a “non-issue” when evaluating the 1994 reform. Yet, although the reform specifically targeted the ac-NT, a multiple options structure was in 2000 implemented also in the Social Sciences programme. By this reform, the Social Sciences programme provided a wider range of courses, and a more distinct organisation of the Humanities stream into a Culture and a Languages specialisation.

Disassembling the “Unbiased”

When analysing registry data from Statistic Sweden in relation to the multiple options structure of the Social Sciences programme, it is clear that the more specialised options in 2005 (Media, Behavioural Sciences, Law, Enterprise, International specialisations, and Physical Education) only enrol a small portion of the students within the area (adding up to 8%, Table 2). The opportunity to alter the curriculum in a “Specially Designed” option close to the Social Sciences track is taken by 16 per cent of students within the area in cohort 2005 (Table 2). Although not as popular, the options Physical Education, Media, and International specialisations (3%, 2%, and 2% respectively, Table 2), are interesting from a gender perspective. Firstly, this is because the female over-representation in these three options combined is modest (54%, derived from Table 2). In relation to the overall distribution ratio of 61 per cent females in 2005, males are thus overrepresented in the specialisation options. Secondly, there is a clear difference in the options preferred by students categorised as males and females respectively, while the under-representation of females in Physical Education is apparent (33%), which contrasts with the female share within Media and the International specialisations which is closer to 70 per cent. Hence, the clustering of students in cohort 2005 illustrated in Table 2, suggests that boys to a greater extent respond to the multiple option structure which materialises the idea of “freedom of choice”.

The analysis of the differentiated ac-HSE variable highlights how “representation” as an element in the recruitment policy assemblage, is shaped by the outcome variable. However, another interpretation of the clustering in ac-HSE is possible. For example, in 2005 about 30 per cent of the boys enrolled in ac-HCE attend the Economics option, which comprises 26 per cent of the cohort (Table 2). That is, although enrolling more girls than boys, boys are still overrepresented

Table 2. Inside the academic preparatory Humanities, Social and Economic education-field, by gender: frequencies and percentages.

Cohort	1991 ^a			1999			2005			2012		
	N	% of total	% female	N	% of total	% female	N	% of total	% female	N	% of total	% female
Academic HSE												
Social Sciences	11,366	43	69	12,070	46	66	12,674	44	63	20,395	66	63
Social studies				11,535	44	66	11,995	41	62	9,136	30	58
Media ^b				535	2	64	544	2	69	2,789	9	70
Behavioural Sciences							135	0.5	81	8,470	28	66
Economics	11,850	44	56	9,601	36	50	7,652	26	55	9,365	30	50
Economics spec.				9,221	35	51	7,373	25	55	7,208	23	47
Law							157	0.5	59	2,157	7	63
Enterprise				380	1	40	122	0.4	50			
Humanities	3599	13	85	2,485	9	88	2,802	10	80	1,053***	3	82
Language							1,360	5	87	(630)		(84)
Culture							1,442	5	75	(343)		(78)
Specially Designed "New options"				1,224	5	56	4,585	16	57			
International spec.				981	4	76	516	2	68			
Physical Education				83	0.3	35	753	3	33			
Uncategorised				101	0.4	66	102	0.4	61	15	0.0	-
Total	26,815	100	65	26,545	100	62	29,084	100	61	30,828	100	59.5

^aYear one for birth cohort 1975.^bMedia is included in the vocational HSE category only in the 1991 cohort. In 1999 and 2005 it is both a programme of its own, included in the vocational HSE category, and as a specific option within the Social Sciences. In 2012 it is only an option within the Social Sciences.

in the Economics in relation to the gender proportions of ac-HSE in general. Furthermore, the inclusion of the Economics in the Social Sciences programme produces a cancellation effect which makes the overrepresentation of girls in the Social Sciences specialisation as well as the heavy gender biases in the Humanities, less visible.

Materialising Applicability

In 2000, the demand for individual “freedom of choice” was materialised through the implementation of a specialisation structure encompassing multiple options (SMER, 1997). Furthermore, after 2000 there was a noticeable shift in how education was addressed, with an increasing focus on applicability, which was also recognised as part of a policy transfer in previous research (e.g., Mellén & Angervall, 2020). Also two, proposedly intertwined shifts appear by the increased focus on individual freedom of choice: First, there are no large-scale evaluations of upper secondary programme recruitment appearing in policy after 2000. Second, in the policy texts before the 2011 reform, there was a decrease in how often gender was addressed in relation to equal educational opportunities. Moreover, in 2008 it was stated in policy that gender inequality predominantly is an issue to be solved by labour market parties (SMER, 2008, p. 284). The agency and power of large-scale data as well as the researchers using it in the project of forming a comprehensive school system up to 1994, thus appear as heavily reduced. Yet, as we outline in the following section, the recruitment matrix established in 1980 still seem to be an important element in the 2011 reform.

In the government commission report preceding the 2011 reform, the “flexible” structure implemented in 1994 and enforced in 2000 was deemed to be unclear in relation to the labour market. The importance of students’ being aware of the “applicability” of their education was now particularly highlighted (SMER, 2008). It was argued that, as a consequence of the access reform in 1994, both the traditional vocational and academic preparatory education were failing in preparing students for the future. The only programme articulated at this point as having a clear academic preparatory profile was the Natural Sciences programme. The Social Sciences programme, in contrast, was described as “[having] a considerably less distinct academic preparatory character than the Natural Sciences in practice” (SMER, 2008, p. 252). The unclear structure of the Social Sciences programme was also regarded as corresponding with youths lacking distinct ideas about their future employability. In contrast, the Natural Sciences programme was articulated as both providing a broad generic knowledge base *and* specialised knowledge with distinct applications (SMER, 2008, p. 252). In SMER (2008) it is argued that the integrated structure of the Social Sciences programme hinders the potential of the included tracks to be distinct and applicable. Foremost, the Economics option is outlined as already independent from the “other” (i.e., the Social Sciences, Humanities and Media specialisations), and therefore proposed to be implemented as a programme of its own (SMER, 2008, p. 486).

In 2011, a new upper secondary programme structure was implemented, in which the most salient change was the restriction of access to higher education through the vocational programmes. Here, six programmes were articulated as academic preparatory, the Natural Sciences, Technology, and Arts programmes and the three programmes stemming from the integrated “Social Sciences” programme: the Social Sciences, Humanities, and Economics. As in the previous system, the 2011 programmes are streamed through different specialisation options. Three streams (the Social Sciences, Media and the Behavioural Sciences) emanate from the Social Sciences, and two from Economics and Humanities (Economics and Law; Language and Culture).

Different Desires – Demanded Differences?

In SMER (2008), it becomes clear that the ideas behind the 2011 reform are deeply intertwined with the hegemonic ideas of an upper secondary education that is being separated into a NT and a HSE area. In 2008, however, the students found within ac-HSE are no longer primarily defined as potential recruits to ac-NT. Instead, the students within the ac-HSE area become problematic, especially

in relation to higher education transitions and employability. In 2008, this problem is proposed to be solved by an internal reform of the ac-HSE area; by making the options inside more distinct.

Most prominent in [Table 2](#), is how the new Social Sciences programme in cohort 2012 comprises 66 per cent of the students within the HSE area, in comparison to 44 per cent in 2005. This increase, as suggested in relation to [Table 1](#), can partly be explained by the limited possibilities to access higher education via vocational programmes in 2011.

Also, the included options of Social Sciences, Media, and the new Behavioural Sciences provide a deepened understanding of the differentiating capacities of the programme. While the Social Sciences specialisation only enrol 58 per cent girls, the proportion of girls in Media is 70 per cent. Also, as indicated already when the Behavioural Sciences emerged as an option in 2005 (80% girls), there are more girls than boys who enrol in the option in 2012 (66%). The analysis of registry data hence again suggests that there is a large proportion of upper secondary students who use the Social Sciences programme to “keep the door open” to higher education. By the increased proportion of students in the Social Sciences, and by the gender biased patterns between the comprised options, the reform in 2011 may be argued to even enforce the function of the Social Sciences as a generic node, and as a space for “the other”.

Furthermore when the Economics programme is materialised as a programme of its own, the dissimilarities in relation to the Social Sciences and the Humanities become even more distinct. In cohort 2012, the overarching Economics shows a 50/50 proportion of girls and boys. As also seen in previous cohorts, boys choosing an academic preparatory, “none”-NT programme seem to cluster in the Economics. This conclusion is strengthened by the pattern produced when parting the Law specialisation from the Economics specialisation, where 63 per cent of students in Law are girls, while the economics actually enrolls less girls than boys (47 per cent) (note that Law is one of the areas expressed as being over dimensioned in SMER, 2020, p. 166). One reason for this could be that the Economics is formed to meet the demands of higher education business schools, and thus also presents a more distinct route than the more general approach of for example the Behavioural Sciences. That is, although Economics in relation to ac-NT is shaped as less specific and less in demand in policy, it is at the same time shaped as more applicable than “the other” ac-HSE programmes.

Conclusions

In this article we have outlined how Swedish upper secondary programme structures are constituted and re-constituted within a framework that can be illustrated by a two-by-two recruitment matrix. This matrix is formed by prevailing ideas of academic contra vocational, and science contra social. We also see how the recruitment matrix is shaped by, as well as shapes, elements of numeric comparability, delineated subject areas, underrepresentation, gender, and ideas of freedom, efficiency, and applicability over time. By this we argue that although numbers continuously attain power in educational governance, the models produced to interpret large-scale data are just as important agents to critically address. That is, in our analysis, we see how the idea of Swedish upper secondary school as comprising four separate areas of education remain, despite the vast reforms carried through in the last five decades. In this process of keeping areas apart, the “recruitment matrix” appears as active also after the era of policy informing, large-scale recruitment research.

Our results also demonstrate how upper secondary choice is a continuously gendered process. The persistent gender biases between the NT and the HSE areas of the recruitment matrix can be understood as representations of how the gender hegemony affects access to areas that are perceived as valuable. By keeping these areas apart through re-implementing programmes that are either “science or social”, the incentive to challenge the gender biases of upper secondary programme choice seems to remain only a discursive potential (c.f. Connell & Messerschmidt, 2005). That is, although girls during the last decades have been claimed to “do better” in schools

than boys (e.g., Lahelma et al., 2008), our analyses show how boys to a greater extent cluster in the NT-areas. These areas are also continuously articulated as valued spaces in Swedish upper secondary policy, as well as repeatedly assembled (c.f. Deleuze & Guattari, 1987) together with values that emerge as important in specific contexts. For example, ideas of “applicability” and “employability” in SMER (2008), predominantly appear in relation to the Natural Sciences and Technology programmes. Proposedly thus, boys’ access to ideas of freedom of choice, programme specialisations, and applicability, are enabled by these values being entangled in the relations among masculinity and science (c.f. Paechter, 2002). This gendered access to education that can be transformed into positions of power, we argue, will presumably also increase boys’ future mobility.

In contrast, girls are repeatedly positioned as “absent” in policy, and our analyses of large scale data highlight how they continuously cluster in the “other” spaces. These other spaces, and specifically the academic preparatory Social Sciences programme, have since the 1970s been articulated as less distinct, as less applicable, and consequently also as less valued. In relation to the present efficiency discourse, and the sharpened responsibility of the individual to make informed choices (SMER, 2020), we therefore see it as vital to further explore the gendered (as well as classed and racialized) limitations of “choice” in relation to what is positioned as in demand.

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