

Social Class Background and Gender-(A)Typical Choices of Higher Education

Abstract

By employing a Bourdieu-inspired class scheme that differentiates between classes' volume and composition of capital, and by analysing Norwegian administrative register data for birth cohorts between 1987 and 1992, this paper examines the relationship between social class background and gender-(a)typical choices of higher education. Higher education in much of the Western world remains horizontally segregated by gender despite the gender gap in educational attainment having been reversed. However, some changes have taken place due to the influx of women into male-dominated, high-status fields. Few recent studies have examined the relationship between social class background and gendered educational choices in light of these changes; furthermore, the focus of previous research has been limited to the vertical dimension of class. The results presented in the present article suggest that men and women are more likely to make gender-atypical choices when this leads to social mobility and that focusing solely on the vertical dimension of class may mask horizontal differences.

Keywords: Gender, social class, horizontal segregation, higher education, educational choice, social background

Introduction

Although much literature on horizontal gender segregation in higher education focuses on the stability of segregation levels (Barone 2011; Charles & Bradley 2002, 2009), some changes in segregation patterns have occurred over the past decades due to the influx of women into higher education (Author one; Barone 2011; Støren & Arnesen 2007). As the proportion of women in higher education has increased, an increasing number of fields have become gender-balanced and even female-dominated. This applies mainly to previously male-dominated, high-status fields of study, such as medicine, law and psychology. There have been fewer changes in the traditionally female-dominated fields, such as nursing, pre-school teaching and social work; as a result, the overall segregation level has remained moderately high. This development is similar in many Western countries and desegregation has

therefore been described as ‘a one-way street’ (England 2010). In her influential work on gender differences in education and the labour market, Paula England (2010) links the changes in segregation patterns to social class and strategies of social mobility. She argues that historically women from higher social backgrounds have had to choose gender-atypically to gain upward mobility; accordingly, the integration of male-dominated educational fields has mainly been driven by this group of women. By contrast, women from working-class backgrounds and men from all classes have had fewer incentives to choose gender-atypically; this partly explains the moderately high horizontal segregation levels in many Western post-industrial countries (Charles & Bradley 2002, 2009; Charles & Grusky 2004).

Desegregation occurs as a result of women and men’s gender-atypical choices, whereas segregation is perpetuated by gender-typical choices. Even though theory and previous research suggest that the gender typicality of men and women’s educational choices is related to social background (Berggren 2008; Dryler 1998; England 2010; Hansen 1993; Støren & Arnesen 2007), and despite the recent changes in the gender composition of many fields, there are few recent studies of the relationship between social background and gender-(a)typical choices (for an exception, see van de Werfhorst 2017). Furthermore, previous studies have mostly used other indicators of social background than social class; where social class has been used, the focus has been restricted to the vertical class dimension. However, there is evidence to suggest that class inequalities originate in both cultural and economic resources (Andersen & Hansen 2012; Hansen & Mastekaasa 2006; Jæger 2009). In the tradition of Pierre Bourdieu (1984), social class is understood as a multidimensional concept, defined by the amount and composition of different types of capital (Flemmen 2013). Previous research has documented the impact of horizontal class differences, defined by capital composition, on several educational outcomes, such as grades, educational choice and persistence (Andersen & Hansen 2012; Helland 2006; Jæger 2009; Reisel 2013). Furthermore, it has been argued that cultural capital is associated with gender-egalitarian views and forms of behaviour (Bourdieu 1984). Arguably, both horizontal and vertical class differences in gendered educational choices need examination.

By analysing Norwegian administrative register data containing comprehensive information about the entire population, the aim of this article is to examine the relationship between social class

background and gender-(a)typical choices in light of the changes that have occurred since women entered higher education. Since an increasing number of fields within higher education have become gender-balanced or female-dominated, the remaining male-dominated ones do not now have the highest status. This could lead to different social mobility strategies than those described by England (2010). Furthermore, by conceptualizing social class in terms of both vertical and horizontal class divisions, this article contributes to the literature on gender-typed educational choices by introducing a more nuanced understanding of social class.

The Norwegian Context

It has been dubbed a paradox that the labour markets in Norway and the other Scandinavian countries are among the most highly segregated, despite the Scandinavian countries' commitment to gender equality and advances in other areas (Ellingsæter 2013). Although there has been some recent decline in occupational segregation, horizontal segregation by gender remains considerable in the Norwegian labour market (Ellingsæter 2013; Østbakken, Reisel, Schøne, & Barth 2017). Horizontal segregation in the labour market is closely related to educational segregation: two-thirds of occupational segregation can be ascribed to the gender-typical choices of women and men (Østbakken et al. 2017). Gender segregation in education in Norway is most pronounced on the vocational programmes at upper-secondary level. However, the overall level of segregation in higher education is moderately high and has been stable since the early 1990s (Author one).

Higher education in Norway is comparatively standardized, highly regulated by the central government and almost entirely publicly funded. It is dominated by two types of relatively uniform public institutions: universities and more vocationally oriented university colleges. Access to higher education programmes is mostly determined by the students' grades from upper-secondary school. Upper-secondary schooling is centralized and all students usually have to take the same exams in order to qualify for admission to higher education. The proportion of the population with higher education has increased steadily over the past decades. In 2016, 33 percent of the population had graduated from higher education, and 36 percent of 19- to 24-year-olds were enrolled in higher education (Statistics Norway 2018). Women and men from higher social backgrounds are overrepresented in higher education and

more women pursue it than men. The proportion of women in higher education has remained at 60 per cent since the early 2000s. This is partly because many of the vocationally oriented, female-dominated fields have been included in higher education. Whereas a well-paid, secure job is attainable through the male-dominated vocational programmes at upper-secondary school, comparable female-dominated occupations often require vocational higher education.

The Relationship between Social Class Background and Gendered Educational Choices

The impacts of social class and gender on educational choices are often studied separately and the body of research studying the link between social class background and gender-atypical and gender-typical educational aspirations and choices is relatively small. Buchmann and Kriesi (2009) have investigated the factors that support women's aspirations to gender-atypical occupations in Switzerland, finding that having parents with higher education is associated with aspiring to non-traditional occupations. Similarly, England (2011) has found that women whose mothers have taken higher education aspire to male-dominated occupations more often than women whose mothers do not. A recurrent finding regarding actual educational decisions is that women from higher social backgrounds, indicated by parental educational level, socioeconomic status or class, are more likely to choose gender-atypically (male-dominated) than women from lower social backgrounds (Berggren 2008; Dryler 1998; Hansen 1993; Reisel 2014; Støren & Arnesen 2007; Trusty, Robinson, Plata & Ng 2000; Author one). The findings about men's choices are less unambiguous. Some studies have found that men from higher social backgrounds are more likely to make gender-typical choices (male-dominated programmes) compared to men from lower social backgrounds (Hansen 1993; Reisel 2014). However, other studies have found that men from higher social backgrounds are more likely to choose gender-atypically (female-dominated) compared to their counterparts from lower social backgrounds (Dryler 1998; Støren & Arnesen 2007). Van de Werfhorst (2017) has investigated whether gender segregation across fields of study varies between different socioeconomic groups, measured by parental educational level, in the Netherlands. He has found a lower level of gender segregation among men and women of higher social origins because women with higher social backgrounds are more likely to choose the science, technology, engineering and maths fields and because men with higher social backgrounds are more

likely to choose health programmes (mostly medicine). Van de Werfhorst concludes, however, that women and men from higher social origins only choose gender-atypically if the fields they enrol in are known to lead to good labour market prospects. Finally, in a qualitative study of men working within female-dominated occupations requiring short-length higher education, Lupton (2006) has found that most of the men he interviewed had working-class backgrounds. Instead of interpreting their choices as expressions of gender-atypical preferences, Lupton argues that their untraditional occupational choices can be understood as responses to a gendered labour market where the number of traditionally male-dominated working-class jobs was decreasing and where higher education was gaining importance.

Educational choices result from a complex process involving a number of factors. Multiple explanations why women and men tend to choose different educational fields and careers have been proposed in the literature on horizontal gender segregation, often emphasizing either gender role socialization or different types of rational choice processes (Barone 2011; Becker 1991; Dryler 1998; Jonsson 1999). However, one prominent explanation is that gender segregation in education and the labour market partly reflects the persistence of gender essentialist notions, i.e. the cultural belief that men and women are fundamentally and innately different in their interests and abilities (Barone 2011; Charles & Bradley 2009; Levanon & Grusky 2016). Furthermore, it has been argued that the impact of gender essentialism has been strengthened in post-industrial societies, where post-materialist values such as individual self-expression and self-realization encourage educational and occupational choices that express one's true, gendered self (Charles & Bradley 2002, 2009). However, the fact that the gender-typicality of educational choices seem to vary systematically by social class background indicates that the influence of gender essentialism is not straightforward and that other class-related factors also play a role in the gender typicality of men's and women's choices.

Two main explanations why the gender-typicality of choices varies between different social classes are suggested by the literature on gender segregation in education. First, since the incentives to choose gender-atypically vary between men and women from different classes, the gender-typicality of educational choices can be associated with class because of status maintenance and social mobility. In other words, social class could trump gendered preferences and expectations when the latter are not

compatible with status maintenance or upward mobility. England's (2010) point of departure is what she describes as the 'uneven and stalled' gender revolution that occurred in large parts of the Western world during the 1970s and early 1980s, involving a decline in horizontal segregation in higher education that stabilized in the 1990s. England's argument is in line with Boudon's (1974) social position theory, postulating that avoiding downward mobility serves as everyone's primary concern, followed by a concern for gaining upward mobility where possible. Furthermore, she argues that most people, due to gender essentialism, follow gender-typical paths of upward mobility if they can. The previous generation of one's own gender serves as the implicit reference group for what is deemed downward and upward. For instance, men may see their fathers or uncles as a reference, whereas the reference for women may be their mothers or aunts. People are most likely to cross gender boundaries when the only way to reach upward mobility is through a gender-atypical path. In other words, people are most likely to diverge from gender essentialist stereotypes when this is a prerequisite for upward mobility. Historically, this has been the case for middle-class women who took managerial and professional education and jobs more often than working-class women who were able to move upwards by choosing a traditionally female occupation such as teaching or nursing. This was not the case for many middle-class women, whose mothers were already in these female occupations with the highest status. Moreover, England stresses that there have been few incentives in terms of status and income for men to choose gender-atypically which is most likely one of the reasons why gender segregation has proven to be so resilient. However, McCall (2011) points out that employment in male-dominated blue-collar and manufacturing sectors has been declining for years and that this could constitute an alternative explanation why these jobs have not been integrated to the same extent as middle-class jobs. Furthermore, if there are fewer opportunities for working-class men within traditional occupations, they could be expected to be more inclined to pursue higher education and choose gender-atypically if this will secure their job prospects (McCall 2011). Although this has not been the case in the United States, pursuing higher education may be more attractive in Norway, where tuition is more or less free. On the other hand, the decline in working-class jobs has not been as steep in Norway, and the male-dominated vocational tracks at upper-secondary school often lead to good job prospects. Finally, it should be noted that England's argument is in a sense retrospective because it explains the integration of previously

male-dominated fields that has taken place over the past decades. Her explanation rests on the assumption that the status of male-dominated fields is higher than other fields, which they no longer are due to changes in the gender composition of the most prestigious male-dominated fields. One question that arises, then, is whether women from privileged backgrounds continue to cross gender barriers when this no longer serves as a path to upward mobility or if there are other groups for whom it has become necessary to make atypical choices to avoid downward movement or achieve upward mobility.

Second, the impact of gender essentialism and gender stereotypes could vary between different social classes due to class differences in the commitment to gender egalitarianism (Dryler 1998). The impact of gender essentialism could either be moderated by socialization or by parents' encouraging gender-atypical choices. Previous research has shown that gender-egalitarian attitudes and forms of behaviour are more widespread in the upper and middle class, as opposed to the working class, which has been described as having more rigid traditional gender roles, aligned with essentialist notions of female and male dispositions and abilities (Dryler 1998). Arguably, therefore, a boy or girl from an upper- or middle-class family will experience a more gender-egalitarian environment during childhood and adolescence than a counterpart from a working-class family and the differences in gender role socialization, or the more explicit encouragement of gender-atypical choices, will make him or her more inclined to choosing gender-atypically. However, few studies examine how gender socialization varies between different social classes and whether gender-egalitarian attitudes are reflected in the actual division of work within households. Arguably, the gendered division of housework and childcare could also be the result of pragmatic adaptations. For instance, in working-class families where the mother works shifts at a nursing home, fathers could be required to contribute more at home compared to fathers in middle-class families where both parents work regular hours, despite being more ideologically devoted to gender equality. In other words, more or less gender-egalitarian views among parents do not translate straightforwardly into more or less gender-typical preferences for their children through socialization. Nevertheless, the gender-egalitarian orientations of middle- and upper-class parents could possibly manifest themselves in encouraging and supporting untraditional choices.

Based on the theory suggesting the more gender-egalitarian orientations of the higher classes, one could therefore expect women from privileged backgrounds to be more likely to choose gender-atypically. However, regardless of how gender-egalitarian parents may be, it seems unlikely that they would encourage choices that would effectively lead to downward mobility for their daughters. For women from working-class backgrounds on the other hand, male-dominated fields could lead to upward mobility. However, working-class women have many options to attain upward mobility while choosing female-dominated fields. Since neither working-class women nor women from the upper or middle class have clear incentives to choose male-dominated fields, class differences in the tendency to choose gender-atypically are expected to be small among women. The empirical and theoretical literature is less unambiguous concerning men's gender-atypical educational choices. If the middle and upper class are in fact more gender-egalitarian in their views and behaviour, and this is reflected in more gender-atypical choices, men from middle- and upper-class backgrounds should be more likely than working-class men to choose gender-atypically. However, if their aim is to attain upward mobility, most of the fields that would ensure this are gender-balanced. For men from working-class backgrounds on the other hand, taking a shorter and vocationally oriented degree could serve as a mobility strategy. Since many of the fields within the female-dominated category are shorter and vocationally oriented, working-class men can be expected to be more inclined to choose gender-atypically compared to men from the middle and upper class.

As far as gender-typical choices are concerned, working-class women are able to attain upward mobility by choosing a female-dominated field they can thus be expected to be more likely to choose gender-typically than their counterparts in the middle and upper classes. Since the remaining male-dominated fields are shorter and vocational, they can be expected to attract men mostly from working-class backgrounds. In other words, men with working-class backgrounds can be expected to be more likely to choose gender-typically compared to their male middle- and upper-class counterparts.

Most of the prestigious fields of study that were previously male-dominated, such as medicine, law and economics and administration, are now gender-balanced, and women and men with upper-class

backgrounds can both thus be expected to demonstrate a high likelihood of choosing gender-balanced fields.

Social Class as a Multidimensional Concept

The theoretical perspectives outlined above describe different processes that may lead to class differences in the gender-typicality of educational choices. However, none of these perspectives entails a clear or developed definition of class. They are also limited to vertical class differences, differentiating primarily between the working class on the one hand and the middle and upper classes on the other. Class positions can also be differentiated horizontally. In research inspired by Bourdieu, class is understood not only as a vertical set of categories, but rather as a multidimensional space defined by the possession of economic capital (money, wealth), cultural capital (cultural competences, either in the embodied sense or institutionalized sense of educational credentials) and social capital (connections and network) (Bourdieu 1986, 2005). The primary and vertical dimension of the social space is the total volume of economic and cultural capital, distinguishing the upper class, the middle class and the working class. The horizontal dimension is defined by capital composition and differentiates between the upper class and the middle class based on whether one mostly has economic capital, cultural capital or a balanced capital composition (Atkinson 2017; Toft & Flemmen 2017).

There is evidence to suggest that both vertical and horizontal class differences are of relevance in several educational outcomes. For instance, Andersen and Hansen (2012) have found that the level of school performance varies horizontally between class fractions and between classes on different vertical levels in Norway. Jæger and Holm (2007) have examined the extent to which parents' economic, social and cultural forms of capital affect the choice of secondary education in Denmark; they have found that these forms of capital account for a substantial part of the association between class background and educational choice in Denmark. They have also found that cultural and social capital are more important than economic capital in the Danish context. Reisel (2013) has investigated the impact of economic and cultural resources on the persistence in higher education in the United States and Norway and has found that economic resources are more important for persistence in the United States. By contrast, the effect of cultural resources was strikingly similar in both countries. Previous

studies also suggest that both class dimensions are relevant to educational choices. Helland (2006) has analysed the relationship between social class origin and field of study and has found that social reproduction in Norway is not only hierarchical, but also horizontal, applicable to differences in the amount of cultural capital within the middle class. It should be noted that the studies mentioned here vary in their measuring of capital. However, all the results suggest that the impact of different types of resources on educational outcomes varies.

Higher education can be viewed as a field where families compete for attractive positions in the occupational structure; these can be obtained by accessing prestigious educational programmes. Bourdieu (1996) argues that families with high amounts of capital will seek to secure advantages for the following generation by monopolizing lucrative educational programmes according to the composition of capital the family possesses. The capital composition of the family is also relevant in educational choices. Because of the socialization and transmission of resources within the family, children are predisposed to choose a field of study that corresponds to their parent's class position. A child of middle-class parents in the cultural fraction will therefore be more likely to study certain programmes within the humanities or social sciences, whereas a child of upper-class parents in the economic fraction will be more likely to choose a field that leads to an economically rewarding job. In line with Bourdieu, Lucas (2001) argues that socioeconomically advantaged actors will secure advantages for themselves and their children wherever possible, using whatever resources they possess, and that horizontal inequalities, such as inequalities in the field of study, become more pronounced as enrolment in higher education becomes more widespread and inequality in educational attainment decreases.

The multidimensional understanding of class discussed here relates to gender in multiple ways. Class positions are largely determined by occupation, and since men and women are very unequally distributed within the labour market, the class structure itself is gendered. On the one hand, there are far more men than women in the higher positions. On the other hand, women are overrepresented in the class fractions richest in cultural capital (Toft & Flemmen 2017). Furthermore, it has been argued that cultural capital is associated with more gender-egalitarian attitudes and behaviour (Atkinson 2017; Bourdieu 1984: 383), whereas gender seems to be a more salient principle of lifestyle differentiation

within the lower classes, as well as within the economic fractions of the upper and middle classes (Atkinson 2017). This last point resonates well with the findings from Aarseth's (2014) study of gendered family structures among financial intermediaries in Norway; she has found that women and men from families rich in economic capital play traditional and complementary roles within the family. Hence, the social reproduction, via the educational system, described above also has a gendered aspect.

Regarding horizontal differences originating in capital composition between class fractions, both men and women can be expected to choose programmes that correspond to their parents' composition of capital. In other words, students can be expected to choose a field of study that typically leads to jobs in their parents' fraction. For instance, having parents in the economic fractions of the middle or upper class can be expected to lead to the greater likelihood of choosing a field that typically leads to jobs with a high economic return, most of which are gender-balanced. Therefore, men and women from families rich in economic capital can be expected to be relatively more likely to choose gender-balanced fields. Furthermore, if high concentrations of cultural capital are associated with more gender-egalitarian attitudes and behaviour, and this results in the greater encouragement of untraditional choices, children of parents in the cultural fractions should be more likely to choose gender-atypically compared to those in the balanced and economic fractions.

Data, Variables and Method

Data

Norwegian administrative register data are used in this study for birth cohorts between 1987 and 1992. These data comprise official registers on education, employment and tax for the entire Norwegian population, thus ensuring reliable information about education, occupations and income. The data were gathered by the Norwegian authorities for official statistics, taxation and so forth; they are administered by Statistics Norway. Thanks to the data, individuals can be linked to their parents so class background can be determined. The sample is limited to those starting higher education before 2013.

Variables

The dependent variables indicate the gender profile of an educational programme. Education programmes with more than 70 percent women are defined as female-dominated.¹ Programmes with

more than 70 percent men are defined as male-dominated. Other programmes are defined as gender-balanced. The largest female-dominated groups of programmes are nursing and caregiving, elementary school teaching, psychology and pre-school teaching. The largest male-dominated groups of programmes are electronics, IT, transport and forestry. The largest gender-balanced groups of programmes are economics and administration, sports and physical education, history and philosophy and media and information. Seven groups of programmes changed their gender profile during the period covered by the data, the largest one being the humanities and aesthetics, which varies just above and under 70 percent throughout the period covered by the data, thereby changing status from gender-balanced to female-dominated. However, alternative analyses in which these groups of programmes were held constantly in their initial category did not yield substantially different results. Most programmes within the female-dominated category typically lead to jobs in the cultural and professional fractions of the middle class. Most programmes within the male-dominated category typically lead to jobs in the professional fraction of the middle class. Finally, the gender-balanced category consists of programmes that typically lead to jobs in the professional and economic fractions of the middle and upper class. The distribution of the dependent variable is shown in Table II, illustrating that the category 'female-dominated' is substantially larger than the category 'male-dominated'. Furthermore, the proportion of men on female-dominated programmes is larger than the proportion of women on male-dominated ones.

The main independent variable, other than gender, is parental class, measured using a simplified version of the Oslo Register Data Class (ORDC) scheme (Hansen, Flemmen & Andersen 2009). The ORDC has been developed to utilize the unique possibilities for class research provided by administrative register data. The idea for the scheme was inspired by Bourdieu in that classes can be distinguished both vertically and horizontally according to their amount and composition of cultural and economic capital. The hierarchical dimension differentiates between the highest and the lowest classes based on the total amount of cultural and economic capital. Three main classes can be identified: the upper, the middle and the working class. The last of these categories also includes people employed in the primary sector and people on benefits. The second dimension of capital composition crosscuts the

hierarchical dimension and the two highest classes are separated into cultural, economic fractions and balanced fractions (professional); the last of these groups is conceptualized as possessing similar amounts of economic and cultural capital. The scheme is operationalized by classifying occupational titles; this is supplemented with information about income from tax records. Parental class is measured at age 16. Occupational information is available from 2003 so the earliest cohort in the sample was born in 1987. Parental class is derived from the father's and mother's class positions using the dominance approach which allocates parents to the higher social class position of the two. If both parents are in the same hierarchical position, cultural capital is given precedence over economic capital. Results from alternative analyses that included both parents' class positions did not show any substantial differences in the impact of their class; this is in accordance with Toft and Flemmen's (2017) finding that the transmission of resources from parents to children does not follow any clear, gendered pattern.

The full scheme has 13 categories, but three-class and seven-class versions of the scheme will be used in this study. The former separates the classes vertically based on the amount of capital, whereas the latter divides the middle and upper class into fractions based on capital composition.

[Table I about here]

To adjust for possible changes over time, the year of enrolment is added as a control. A control for ethnic background has also been added since previous studies indicate that children of immigrants are less gender-typical in their educational choices than the majority population (Reisel 2014). Since the gender-typicality of choices is also related to geographical location, residential centrality at age 16 is included.

As noted above, previous studies have shown that grades are correlated with both cultural and economic capital. Since access to higher education in Norway is based on grades, this is one of the mechanisms through which class can limit educational choices. As the aim of this article is to study the relationship between social class and educational choice, the results reported are not controlled for grades since they are a part of the relationship between social class and gender-typical educational

choices. Nevertheless, alternative analyses were run and including a control for grades did not substantially alter the predicted choice patterns from the results here.²

[Table II about here]

Methods

The question of how social class background is related to gender-(a)typical choices of higher education is addressed using a multinomial logistic model with educational type as the dependent variable. First, a model is run with a simplified three-class version of parental class which separates classes only along the vertical dimension (amount of capital). Second, the same model is run with a seven-class version that also distinguishes the classes horizontally based on their capital composition. The results from both models are compared to investigate whether focusing solely on vertical differences could mask horizontal ones. The results will be presented as predicted probabilities.³

Results

Gender-atypical choices

Class differences in women's predicted probability of choosing male-dominated programmes are shown in Figure I.⁴ The probability is small for all groups, reflecting the fact that there are few male-dominated programmes and few women choose them. The first set of bars, based on the three-class version of the class scheme, shows the vertical class differences, whereas the last set of bars also shows the horizontal differences within classes. In line with expectations, class differences are small but women with upper-class backgrounds are slightly more inclined to choose male-dominated programmes compared to the other groups.

The differences in men's probability of choosing gender-atypically are more pronounced than for women. As expected, the first set of predicted probabilities in Figure II shows that men with working-class backgrounds are most likely to choose female-dominated programmes, whereas men with upper-class backgrounds are least inclined to make gender-atypical choices. However, taking the horizontal dimension of class into account clarifies that this is mostly the case for men from the economic fraction

of the upper class. Furthermore, the middle-class economic fraction also stands out as less likely to choose gender-atypically compared to the other fractions. In contrast, the cultural fractions are more likely to choose female-dominated programmes. On the one hand, this could reflect more gender egalitarian orientations among the cultural fractions. On the other hand, this could result from social reproduction, since the female-dominated category comprises many programmes that typically lead to jobs in the cultural and professional fractions of the class structure, including teaching, languages and some social-science programmes; for men from the cultural fractions, choosing female-dominated fields could therefore be a strategy to reproduce the horizontal aspect of their parents' class position.

[Figure I about here]

[Figure II about here]

Gender-typical choices

Figure III shows class differences in women's gender-typical choices. As expected, women with working-class parents are most likely to choose gender-typically compared to women from middle-and upper-class families. The results from the model depicting the seven-class version of parental class shows that women from the professional fractions of the middle and upper class are somewhat more inclined to choose female-dominated programmes which, as mentioned, will most often lead to jobs in the cultural or professional fractions.

Figure IV shows the same pattern for men as for women, although the class differences are less pronounced for men. As expected, men with working-class parents are most likely to choose gender-typically compared to men from middle-and upper-class families. Men with upper-class parents, on the other hand, are least likely to choose male-dominated fields. Moreover, the predicted probabilities based on the model with the seven-class version reveal that men from the professional fraction of the middle

class are as likely to choose gender-typically as men with working-class backgrounds. Male-dominated programmes, such as electronics and IT, will typically lead to jobs within the professional fraction of the middle class. Given that parents' capital composition is an important aspect of social reproduction, it is unsurprising that men from the professional fraction of the middle class are more likely than the other fractions to choose this field.

[Figure III about here]

[Figure IV about here]

Gender-neutral choices

The gender-balanced category is the largest one, comprising programmes within law, economics and administration, history and philosophy, the natural sciences and medicine, many of which were previously male-dominated. Gender-balanced fields are the most popular among both women and men. The vertical class differences in women's tendency to choose gender-balanced programmes illustrated in Figure V shows that, in line with expectations, women with upper-class parents are most likely to choose gender-balanced programmes compared to women from the working and middle class.

Figure VI shows the same pattern of vertical class differences for men as for women. The horizontal pattern is more pronounced, however, and in line with expectations, men with parents in the economic fraction of the upper class stand out as most likely to choose gender-balanced programmes.

[Figure V about here]

[Figure VI about here]

Discussion

The present study has examined the relationship between social class background and gender-(a)typical choices of higher education, at a time when many previously male-dominated fields have become

gender-balanced due to the rising proportion of women in higher education. Many of the expectations derived from theory and previous research were met. As expected, class differences in women's tendency to choose gender-atypically are small, reflecting the altered status of the male-dominated fields; this implies that choosing a male-dominated field no longer serves as a means to attain upward mobility for women from higher social backgrounds. Despite this, women from the upper class are slightly more likely to choose male-dominated fields compared to women from the other classes; this may indicate that coming from a home rich in capital provides some form of support that prompts gender-atypical choices for women, even though this is unnecessary for social reproduction or mobility. The analyses in this study do not show whether this takes the form of ideological support, reflecting more gender-egalitarian orientations within the upper class, or material support, reducing the potential economic risk of an untraditional choice. This should be examined further with other types of data. Overall, however, very few women choose male-dominated fields and the small class differences found contradict previous studies (Dryler 1998; Hansen 1993; Støren & Arnesen 2007; Author one). Another main finding is that working-class men are more likely to choose both gender-typically and -atypically compared to men in the middle- and upper-class. This was expected, since both the female- and male-dominated categories comprise the vocational programmes within higher education, which previous research has shown to be particularly attractive to children of working-class parents. Furthermore, the male-dominated category is quite small, and working-class men have on average lower school performance than is required to enrol on the more prestigious gender-balanced programmes. Choosing a female-dominated field might therefore be a compromise that allows working-class men to finish higher education. As with the men in Lupton's (2006) study, the chances of gaining a secure job after completing higher education may be more salient to men from working-class families than the gender profile of the education in question. Furthermore, as expected, men and women from upper-class families are most likely to choose gender-balanced fields, reflecting the fact that this category comprises the most prestigious programmes.

Although theories and previous research concerning the link between social class and gender-(a)typical educational choices have treated social class as a vertical concept, in the present analyses

social class was differentiated both vertically and horizontally, following Bourdieu's (1984) ideas about the social space, where positions are determined by one's amount and composition of capital. The results suggest that both dimensions are relevant for understanding women and men's gendered educational choices. Comparing the results from the three-class model with the seven-class model shows that some of the vertical differences are driven by horizontal differentiation within classes. For instance, when only considering vertical differences, it seems all upper-class men are particularly reluctant to choose female-dominated fields. However, employing a more nuanced version of the class scheme revealed that this was mostly the case for the economic fraction of the upper class, highlighting the importance of differentiating class both horizontally and vertically when assessing the influence of social class on gendered educational choices.

In line with expectations, men and women from families rich in economic capital are more likely to choose the gender-balanced fields. The expectation regarding cultural capital was also supported for men, as men from families rich in cultural capital are more likely to choose female-dominated fields, and thus choose gender-atypically, relative to those from families richer in economic capital or with a balanced capital composition. Overall, the horizontal class differences seem to be somewhat more pronounced among men, suggesting that capital-specific processes of social reproduction might be more important for understanding men's gendered choices. To summarize, the results indicate that both men and women are more likely to choose gender-atypically when this enables social mobility or allows them to maintain their vertical and horizontal position in the class structure. This is in line with England's (2010) reasoning. However, because of the influx of women from privileged backgrounds in prestigious fields, the patterns observed here diverge from the patterns she describes.

One limitation of this study is that due to the changes in the gender composition of some fields, their current gender composition is not necessarily reflected in peoples' perceptions of a field. For instance, choosing a previously male-dominated field that is now gender-balanced might still be considered a gender-atypical choice for women if the occupation it leads to is still male-dominated. Furthermore, it should be noted that though I refer to students' choices throughout this article, I acknowledge that these choices are constrained by external factors and that they could also be family

decisions rather than individual ones. Finally, there are of course many factors at play other than class and gender when a field of study is chosen. However, this study has documented the current association between social class background, defined by the amount and composition of resources, and gendered educational choices. More research is required to understand more of the processes through which social class and gender interact and influence women's and men's educational choices.

As mentioned, one prominent explanation for horizontal gender segregation is that gender essentialist beliefs persist and continue to influence women's and men's preferences and choices, despite major gains in gender equality in other areas of society (Charles & Bradley 2002, 2009). Although this might shed light on why horizontal gender segregation is resilient, it fails to explain why some changes do actually occur. The results of this article suggest that although gender stereotypes may influence men's and women's preferences and choices of higher education, this does not occur independently of social class. Not everyone 'indulges their gendered selves' (Charles & Bradley 2009) in choosing higher education, and whether or not one does is related to the vertical and horizontal dimensions of social class background.

Appendix

Table AI. Multinomial logistic regression with 3-class version parental class.

	Female-dominated b/se	Male-dominated b/se
Female	1.198*** (0.011)	-1.622*** (0.020)
Parental class		
<i>Upper class</i>	-0.358*** (0.022)	-0.184*** (0.020)
<i>Middle class</i>	<i>ref.</i>	<i>ref.</i>
<i>Working class</i>	0.239*** (0.019)	0.159*** (0.019)
Female*Parental class		
<i>Female # Upper class</i>	-0.084** (0.026)	0.160*** (0.042)
<i>Female # Middle class</i>	<i>ref.</i>	<i>ref.</i>
<i>Female# Working class</i>	0.138*** (0.022)	-0.031 (0.038)
Municipal centrality		
<i>Least central municipality</i>	0.302*** (0.014)	0.073** (0.024)
<i>Less central municipality</i>	0.298*** (0.017)	0.165*** (0.027)
<i>Somewhat central municipality</i>	0.157*** (0.011)	0.170*** (0.017)
<i>Most central municipality</i>	<i>ref.</i>	<i>ref.</i>
<i>Unknown</i>	0.260*** (0.032)	0.210*** (0.051)
Year	-0.034*** (0.002)	0.003 (0.003)
Ethnic background		
<i>Norwegian and Western</i>	<i>ref.</i>	<i>ref.</i>
<i>Non-Western</i>	-0.327*** (0.019)	-0.030 (0.028)
Constant	66.456*** (3.911)	-7.539 (6.233)
ll	-2.73e+05	
chi2	48978.486	
N	334,737	

* p<0.05, ** p<0.01, *** p<0.001

Reference category = gender-balanced

Table AII. Multinomial logistic regression with 7-class version of parental class.

	Female-dominated b/se	Male-dominated b/se
Female	1.200*** (0.016)	-1.616*** (0.027)
Parental class		
<i>Cultural upper-class</i>	-0.171*** (0.042)	-0.281*** (0.039)
<i>Professional upper-class</i>	-0.269*** (0.032)	-0.199*** (0.028)
<i>Economic upper-class</i>	-0.767*** (0.043)	-0.408*** (0.034)
<i>Cultural middle</i>	0.016 (0.024)	-0.308*** (0.024)
<i>Professional middle</i>	<i>ref.</i>	<i>ref.</i>
<i>Economic middle</i>	-0.134*** (0.024)	-0.119*** (0.022)
<i>Working-class</i>	0.209*** (0.022)	0.058** (0.021)
Female*Parental class		
<i>Female # Cultural upper-class</i>	-0.323*** (0.051)	0.059 (0.086)
<i>Female # Professional upper-class</i>	-0.137*** (0.038)	0.159** (0.060)
<i>Female # Economic upper-class</i>	0.213*** (0.049)	0.212** (0.070)
<i>Female # Cultural middle</i>	-0.123*** (0.028)	-0.000 (0.052)
<i>Female # Professional middle</i>	<i>ref.</i>	<i>ref.</i>
<i>Female # Economic middle</i>	0.101*** (0.028)	-0.043 (0.046)
<i>Female # Working-class</i>	0.136*** (0.025)	-0.038 (0.042)
Municipal centrality		
<i>Least central municipality</i>	0.303*** (0.014)	0.088*** (0.024)
<i>Less central municipality</i>	0.297*** (0.017)	0.176*** (0.027)
<i>Somewhat central municipality</i>	0.156*** (0.011)	0.172*** (0.017)
<i>Most central municipality</i>	<i>ref.</i>	<i>ref.</i>
<i>Unknown</i>	0.256*** (0.032)	0.217*** (0.051)
aar	-0.034*** (0.002)	0.003 (0.003)
Ethnic background		
<i>Norwegian and Western</i>	<i>ref.</i>	<i>ref.</i>
<i>Non-Western</i>	-0.329*** (0.019)	-0.033 (0.028)
Constant	66.305***	-7.253

	(3.911)	(6.238)
ll	-2.73e+05	
chi2	49475.829	
N	334,737	

* p<0.05, ** p<0.01, *** p<0.001

Reference category = gender-balanced

Notes

¹ The analyses were also run with alternative cut off points (60 percent, 65 percent and 80 percent); the results point in the same direction. The results are available upon request.

² Grade point average from lower secondary school.

³ Full tables in appendix.

⁴ 95% confidence intervals.

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Tables and figures

Table I. The Oslo Register Data Class Scheme - simplified version.

Upper classes		
Cultural upper class Professors, artists, executives in publishing etc.	Professional upper class Doctors, assistant doctors, judges, pilots	Economic upper class High capital income Executives and managers with high salaries
Middle classes		
Cultural middle Teachers, librarians, lecturers, journalists, social workers, children's nurses etc.	Professional middle Consultants, engineers, junior executives, nurses, first secretaries, chefs, machinists	Economic middle Medium or small capital income, various executives and managers in the private sector, financial brokers, accountants etc.
Working class		
Skilled, unskilled and semi-skilled workers, farmers, foresters and fishermen, social security recipients		

Hansen, Flemmen & Andersen (2009)

Table II. Descriptives.

Dependent variable	Total	Men	Women
<i>Gender profile</i>			
Female-dominated	30.96	14.88	42.27
Gender-balanced	59.86	67.1	54.76
Male-dominated	9.19	18.01	2.98
Total	100	100	100
<i>Independent variables</i>			
<i>Parental class</i>			
Cultural upper class	3.61	4.06	3.29
Professional upper class	7.38	8.37	6.69
Economic upper class	5.48	5.98	5.13
Cultural middle	14	14.88	13.38
Professional middle	30.52	30.44	30.57
Economic middle	16.94	16.56	17.22
Working class	22.07	19.72	23.72
Total	100	100	100
<i>Ethnic background</i>			
Norwegian and Western	91.8	91.31	92.15
Non-Western	8.2	8.69	7.85
Total	100	100	100
<i>Gender</i>			
Male	41.31		
Female	58.69		
Total	100		
<i>Municipal centrality</i>			
Least central municipalities	8.59		
Less central municipalities	5.99		
Somewhat central municipalities	17.54		
Most central municipalities	66.36		
Unknown	1.51		
Total	100		
<i>Enrolment year (2007-2014)</i>			
Mean	2010.85		
Std. Dev.	2.05		
N	334,737	138,268	196,469

Figure I. Women's gender-atypical choices by different class versions. Predicted probabilities.

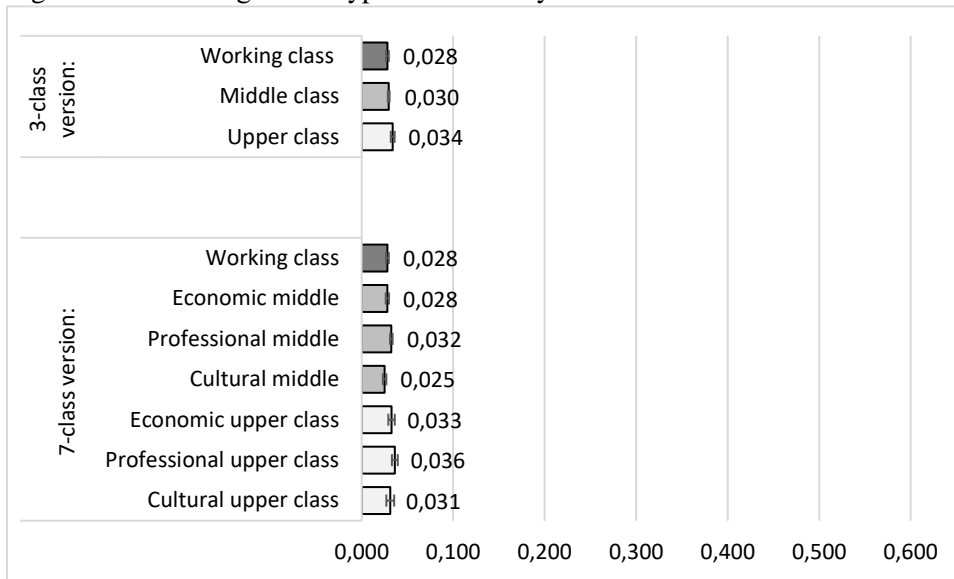


Figure II. Men's gender-atypical choices by different class versions. Predicted probabilities.

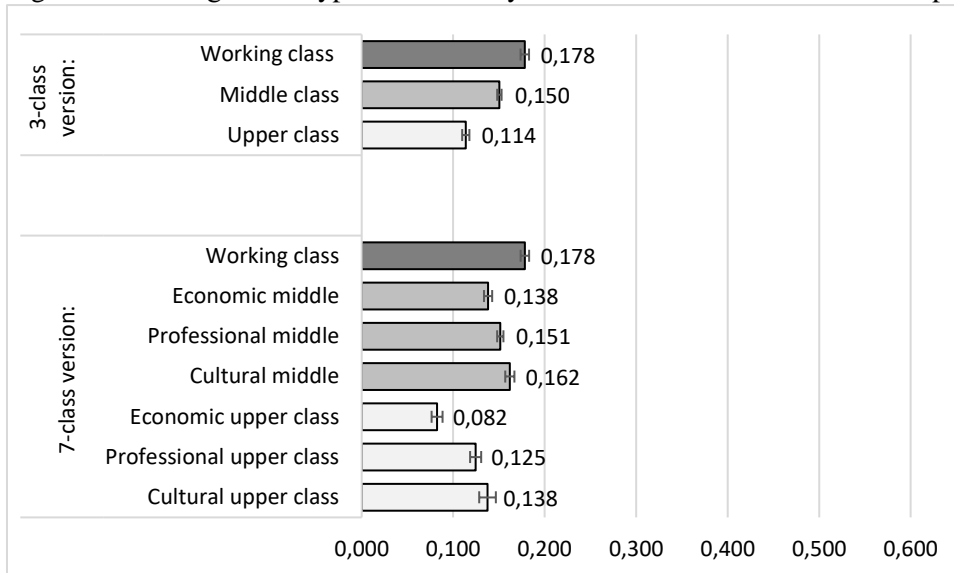


Figure III. Women’s gender-typical choices by different class versions. Predicted probabilities.

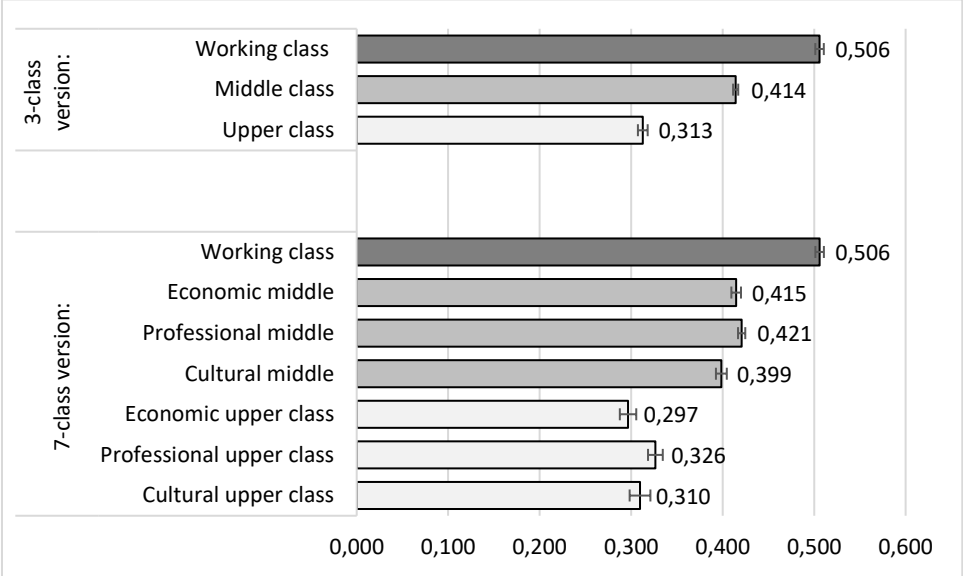


Figure IV. Men’s gender-typical choices by different class versions. Predicted probabilities.

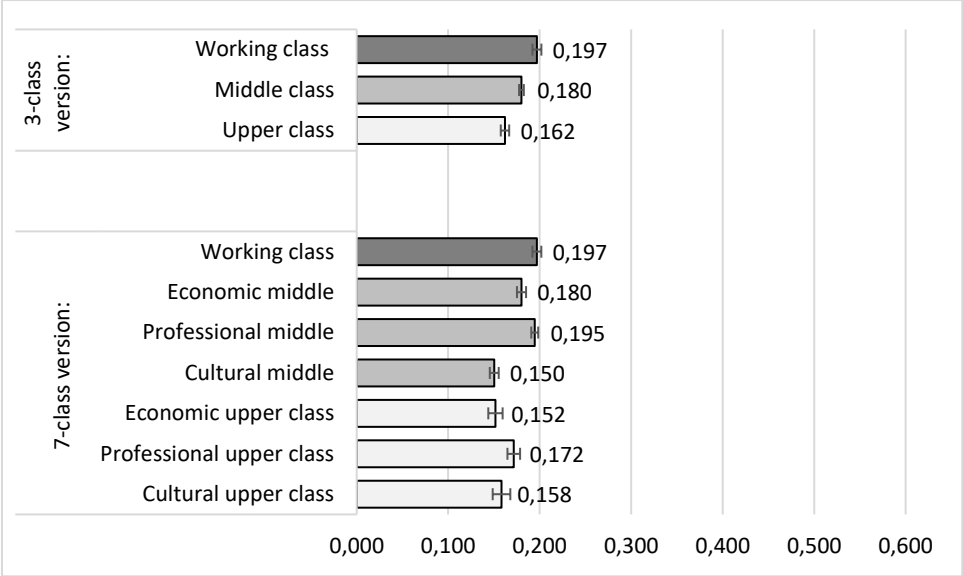


Figure V. Women's gender-balanced choices by different class versions. Predicted probabilities.

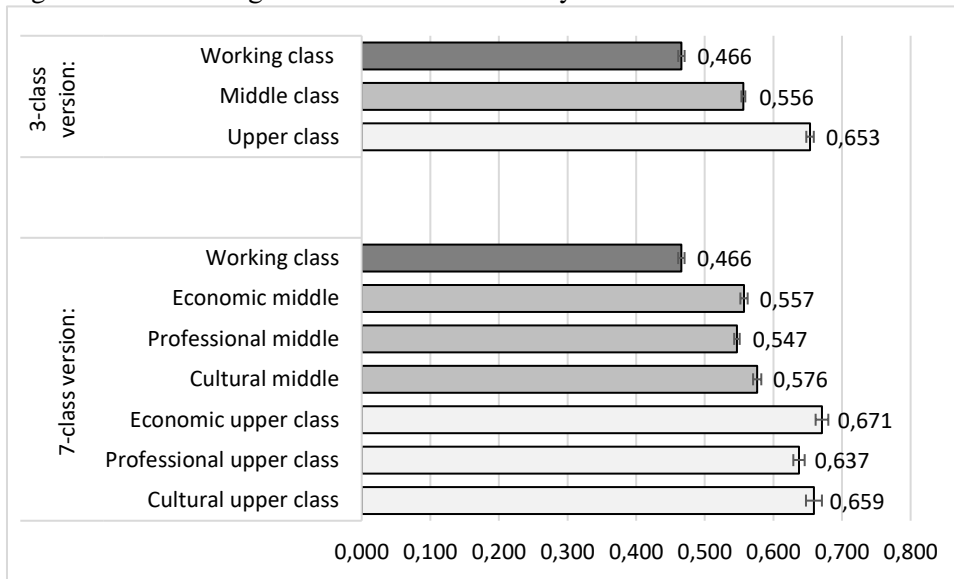


Figure VI. Men's gender-balanced choices by different class versions. Predicted probabilities.

