DEPARTMENT OF SOCIAL POLICY AND
INTERVENTION

UNIVERSITY OF
OXFORD

BARNETT PAPERS IN SOCIAL RESEARCH

Cumulative inequalities over the life-course: Life-long learning and social mobility in Britain

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WORKING PAPER 16-02

February 2016

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Abstract

This paper examines the possibility that life-long learning promotes intergenerational class mobility. The following two research questions are asked. Is it the case that further education provides individuals coming from less advantaged origins with a second chance to improve on their educational attainment? Is it the case that the returns to further qualifications, in terms of chances of upward class career mobility, are greater for children from less advantaged backgrounds than for children from more advantaged backgrounds? The analyses – that are based on the complete educational and class histories of men and women in a British birth cohort – mainly produce negative findings. Children coming from managerial and professional backgrounds seem to benefit most from further education. More specifically, further education appears to be an effective means of career advancement for individuals of managerial and professional origins who start out in their working lives in relatively low level class positions. Via further education they can increase or update their qualifications, and in turn enhance their chances of being counter-mobile back to their class of origin. Overall, based on the findings of this paper, we can conclude that qualifications attained through life-long learning primarily serve to maintain, rather than to narrow, inequalities attached to social origins in Britain.

Acknowledgements

Introduction

In the UK policy agenda much importance is attached to pre-school programmes for children from disadvantaged backgrounds. But there is far less consensus on the effectiveness of later-life interventions, in particular through various programmes of post-school education and training. Especially important here are questions of how far educational attainment through such programmes compensates for or builds on earlier levels of attainment, and how far it serves to narrow or to maintain or even to widen educational inequalities associated with social origin. In this paper, I aim to shed some light on these issues by studying the role of further education – or 'life-long learning' – in intergenerational social mobility. More specifically, I address two interrelated research questions. First, I investigate to what extent individuals acquire qualifications in their later lives and how this form of educational attainment is related to their social origins. Second, I examine to what extent the returns to further qualifications, in terms of class position, differ for individuals coming from different class backgrounds. I focus on social class returns to further education because class more fully captures then, say, simply earnings or income, the intergenerational transmission of economic advantage and disadvantage (Bukodi *et al.*, 2015).

International comparative research shows that Britain is at the top of the league of participation rates in further education. In 2007 around 15 per cent of 25-to-64-year-olds took part in formal education or training of some kind – while participation

rates were, for instance, 12-13 per cent in Sweden and Denmark, and only 5 per cent in Germany and 2 per cent in France (Dämmrich *et al.*, 2014).

Past research also shows that the propensity for pursuing further education varies for individuals with different demographic and socio-economic characteristics. Younger people are much more likely than older people to participate in further training, especially in Britain (e.g. Dämmrich *et al.*, 2014). Further, there is ample evidence of the positive effect of initial education on the chance of obtaining new qualifications as adults, both in Britain and elsewhere (e.g. Jenkins *et al.*, 2003; Blanden *et al.*, 2010). Employment characteristics also affect participation rates – although the results in this regard are somewhat conflicting, at least for Britain. Wolf *et al.* (2006), Duckworth and Cara (2012) and McMullin and Kilpi-Jakonen (2014) report particularly high participation rates among the unemployed, but Blanden *et al.* (2012) find that life-long learning is largely undertaken by the working population. Once employed, individuals on permanent contracts appear to be more likely than their counterparts on limited contracts to accumulate further qualifications (Dämmrich *et al.*, 2014).

However, we know surprisingly little, especially in the British context, about the role of social origins in obtaining further qualifications. Raffe (1979) found that in the early seventies further training was an 'alternative route' to attaining a higher level of qualification for the children of the middle class rather than for those of the working class. Using data from the eighties and early nineties, Egerton (2001) still

reported some advantage of the children of the middle class in terms of mature graduation from universities. But, and perhaps more importantly, she also found that individuals coming from disadvantaged backgrounds to some extent increased their participation rates in higher education as mature students over time. Egerton's findings would then suggest that children of the working class in recent cohorts might be more able than their counterparts in earlier cohorts to use further education and training as an alternative route to attaining higher levels of qualification. Results from a recent study, however, throw some doubt on this possibility in that the children of the low educated still seem to be significantly less likely than the children of the tertiary-educated to participate in further education (Gloster *et al.*, 2015).

As regards the returns to further education, past research mainly focuses on estimating earnings returns, with somewhat conflicting results, at least for Britain. A large body of research reports no or rather weak returns (Jenkins *et al.*, 2003; Wolf *et al.* 2006; De-Coulon and Vignoles, 2008; Blanden *et al.*, 2012), although there is also research pointing to some economic benefits from life-long learning (Feinstein *et al.*, 2004; Dorsett *et al.*, 2011, 2013). But none of these studies attempt to link social origins to the earnings returns of further education, nor to consider occupational or social class returns. To my best knowledge, there is only one recent British study that explicitly investigates these questions and is thus able to address the issue of the role of further education in social mobility. This study finds that children of highly educated parents are somewhat more likely than children of lower educated parents

to benefit from further training in terms of attaining top managerial and professional occupations, even when children's own education is accounted for (Gloster *et al.*, 2015).

Against this background, I aim in this paper to contribute to the literature on the link between further education and social mobility in a number of ways. First and foremost, I give a comprehensive account of the associations between social origins, the probability of pursuing further education and training and the benefits gained in terms of class position – an account that has scarcely been given before. Second, I enhance the analyses of past research to cover a later birth cohort; i.e. a cohort of individuals who developed their educational and work careers between the late eighties and the late 2000s. Third, in contrast with most previous studies, I focus not on particular forms of further education – such as late entry into tertiary education or part-time vocational training – but consider the full range of academic and vocational courses that are available for individuals to advance their qualifications. Fourth, I also examine whether or not the effects of social origins on participating in further education and on the returns to further education change over the course of individuals' working lives.

I treat further education in terms of the attainment of certified, *formal* – both academic and vocational – qualifications that individuals obtain in the course of their working lives. I use this definition because formal qualifications are thought to be

more consequential than non-formal training for both intra- and intergenerational social mobility (Kilpi-Jakonen *et al.*, 2015).

Further education and intergenerational social mobility: two possible scenarios

There is no doubt that education is a key determinant of individuals' opportunities in later life, and is a key channel for attaining high-level occupational and class positions. Politicians and policy-makers also tend to believe that further education can have compensatory effects. In other words, further education can provide opportunities for disadvantaged individuals, in terms of social origin, initial education or employment, to upgrade their qualifications and can in turn contribute to increasing social mobility across the life-course and across generations. But in contrast with this 'second-chance' or 'compensatory' view, the alternative possibility is that further education in fact helps preserve the prevailing structure of inequalities via the logic of cumulative (dis)advantages. The idea behind the cumulative (dis)advantages – or 'Matthew-effect' – thesis is simple: small initial differences among individuals are magnified over time, and this makes it difficult for an individual who is behind at an early stage in educational attainment, occupational status or income to catch up. In other words, a favourable relative position becomes a resource that produces further relative gains; or put it yet another way: 'skills beget skills' and 'advantages beget advantages' (Merton, 1968; O'Rand, 1996; Elman and O'Rand, 2004; DiPrete and Eirich, 2006; Rigney, 2010; Hillmert, 2012).

So far as education and social mobility are concerned, 'Matthew effects' can manifest themselves in different ways. As an obvious example, an individual with origins in the managerial and professional salariat may leave full-time education with a high level of qualification that allows a smooth labour market entry into a relatively advantaged occupational position that itself provides good opportunities for subsequent career advancement, leading thus to intergenerational stability of class position. Or, conversely, an individual of working class origin who leaves school with no, or very low level, qualifications and enters the labour market in some form of 'dead-end' job may then find it difficult to enter into further education and training, at least of a kind that could result in upward social mobility out of the working class. However, another possibility has to be recognised that is of particular relevance in the present context. This would arise with an individual from an advantaged social background who does not do especially well in full-time education and thus enters the labour market at a relatively low level. In this case, a strong motivation could be supposed to pursue further education and training as a means of achieving worklife advancement sufficient to avoid intergenerational *downward* mobility (Goldthorpe, 2007) – with family resources and other forms of support then being drawn on to increase the chances of success. In this case, the 'Matthew effect' would be expressed in the form of what has been called 'counter-mobility' (Girod, Fricker and Körffy, 1972) whereby advantages deriving from social origins operate over the life-course so as to enable initial downward movement to be reversed.

In the remainder of the paper I investigate which scenario – the compensatory or the cumulative (dis)advantages scenario – applies in the British case.

Data and key variables

I draw on the data-set of the British Cohort Study 1970 (BCS70), which has aimed to follow through their life-courses all children born in Britain in one week in 1970 (for details, see Elliott and Shepherd, 2006). Drawing on this study, it has been possible to establish in person-year form cohort members' *continuous educational qualifications histories together with* their *continuous employment and social class histories*, extending from their first 'significant' job – i.e. one lasting at least six months – up to age 38.

Cohort members' educational qualifications histories include detailed information on all the academic and vocational qualifications that they had obtained in their working lives, up to age 38. For my purposes, I have created an ordered, nine-category classification of *academic* qualifications that ranges from 'no qualification' to 'postgraduate qualifications'. I use this classification for recording cohort members' academic qualifications throughout their life-course. The UK *vocational* qualifications system is complex, and to simplify the system, qualifications are recorded into the six-level National Vocational Qualifications (NVQ) classification, which allows an approximate cross-walk between academic and vocational qualifications. I use this classification for recording cohort members' vocational qualifications throughout

their working lives. **Table 1** describes the classifications of the academic and

vocational qualifications that I work with.

Table 1: The two qualification schemas

	Description
Academic qualifications	
1. No qualifications	
2. Sub-secondary	Below O-level or GCSE
3. Lower secondary – low performance	1-4 O-level or GCSE passes
4. Lower secondary – high performance	5+ O-level or GCSE passes
5. Higher secondary – low performance	1 A-level pass
6. Higher secondary – high performance	2+ A-level passes
7. Lower tertiary	Tertiary sub-degree
8. Higher tertiary	Degree
9. Postgraduate	Masters degree, PhD
Vocational qualifications	
1. No qualifications	
2. Sub-secondary	NVQ1
3. Lower secondary	NVQ2
4. Higher secondary	NVQ3
5. Lower tertiary	NVQ4
6. Higher tertiary	NVQ5-6

The definition of my main variable of interest, further qualifications, is based on the

two above classifications. I define further qualifications as the attainment of any

certified qualifications – academic or vocational – following on an individual's

completion of his or her first period of continuous full-time education and entry into

first significant job. I use this definition to make sure that further qualifications are

not ascribed to life-stages when cohort members are still in the transition from school to work (e.g. in a 'gap year').

Figure 1 shows the distribution of all qualifications that cohort members attained by age, distinguishing between qualifications obtained through life-long learning (further qualifications) and qualifications obtained through full-time education. As expected, the highest concentration of new qualification attainment occurs between ages 17 and 22, when cohort members are still taking part in full-time education. The incidence rates of further qualifications are rather different for academic and vocational qualifications. In case of further academic qualifications, the rate is steadily increasing up to age 26-27 when it starts declining. In contrast, the incidence rate of further vocational qualifications is highest at age 36-38 for women, and has a bi-modal distribution for men: i.e. the rate peaks at age 19-21, before declining in the twenties and then picking up again after age 34. This upward surge in participation in further vocational training around age 34 may be due – at least partly – to policy initiatives of the 2000s aiming to increase the number and level of qualifications to be attained by the British population (HM Treasury, 2007).

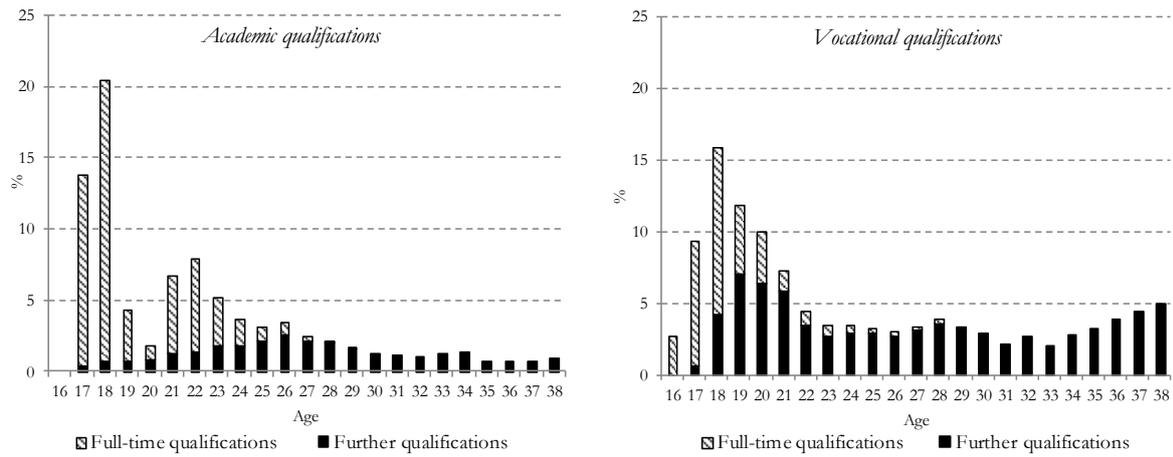**Figure 1.1**: Distribution of full-time and further qualifications by age, men

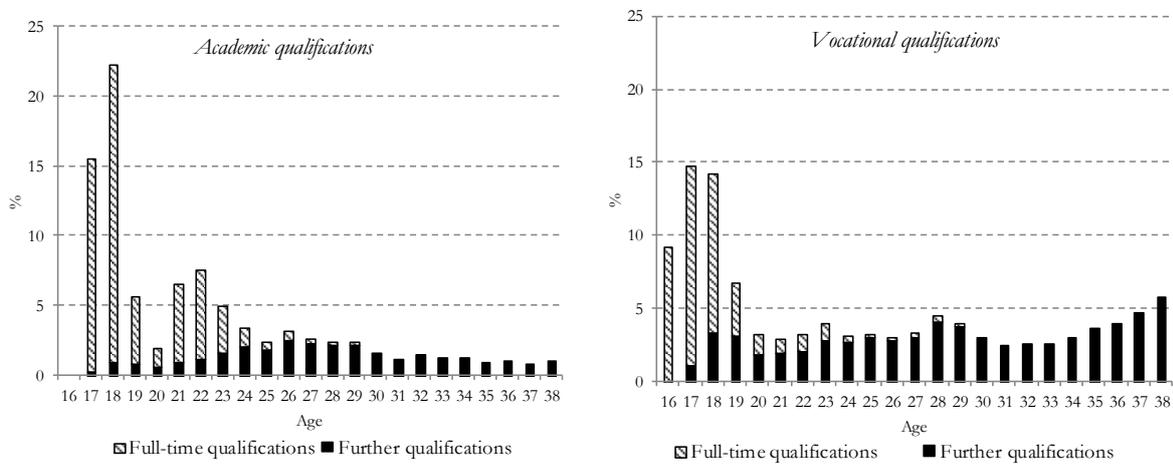**Figure 1.2**: Distribution of full-time and further qualifications by age, women

Table 2 presents some additional summary statistics. Four points of interest emerge. First, overall, more than half of the cohort members obtain some further qualifications between first significant job and age 38; most of them do so via vocational rather than academic education. Second, the large majority of new qualifications attained through further education raise cohort members' highest level of qualification – measured by the qualification scales introduced in Table 1. Third, further education is an important feature of cohort members' lives even after age 29 (as also indicated by Figure 1): almost a third of them obtain new qualifications in

their thirties. Fourth, there are no significant gender differences in participation rates

in further education.

Table 2: Proportion of individuals obtaining further qualifications

	Men	Women
New...	*57*	*54*
… academic qualification	19	22
… vocational qualification	47	44
New qualification that *raises* level of ...	*47*	*44*
… academic qualification	14	16
… vocational qualification	41	35
New qualification obtained *after age 29*...	*27*	*30*
… academic qualification	7	9
… vocational qualification	22	24
New qualification obtained *after age 29* that *raises* level of ...	*15*	*19*
… academic qualification	4	6
… vocational qualification	11	14

Note: The figures for academic and vocational qualifications do not add up to 100%, because cohort members can obtain both academic and vocational qualifications.

With regard to the level of further qualifications, new academic qualifications are

clearly concentrated at the tertiary level: around 70-75 per cent of these qualifications

are degrees or sub-degrees. In contrast, new vocational qualifications are distributed

more evenly across levels: only around 20 per cent are at the tertiary level (NVQ 4, 5

or 6), 25 per cent are at the upper secondary level (NVQ 3) and slightly more than

half are at the lower secondary or sub-secondary level, i.e. NVQ 1 or 2 qualifications.

As indicated above, BCS70 allows me to establish a continuous social class history for every cohort member, on a person-year basis. This is a crucial feature of the data for my purposes, as one of my core interests is to estimate the returns to further qualifications in terms of class position over cohort members' working lives. To construct the variable of social class, I use the 7-category version of the UK National Statistics Socio-Economic Classification (NS-SeC), as shown in **Table 3**, following procedures reported in Bukodi *et al.* (2015). I leave out of the analyses cohort members for whom there is no information at all on their class positions – mainly individuals who have never been in employment. In the case of person-years when cohort members are not in employment, I allocate them to their most recent class, unless there is no information on their class position for a spell of over ten years, in which case I drop them from the analyses. I operationalize cohort members' upward and downward movements in class position over the course of their working lives according to the five hierarchical levels of NS-SeC (as indicated by the dotted lines in Table 3) over the course of their working lives.

I also use NS-SeC to measure social origin. I index cohort members' class of origin by their father's social class position taken at age 10. Where this information is missing but is available at age 16, I use this alternative information.

Table 3: Class (origin and destination) description

NS-SeC	Description
Class 1	Higher managers and professionals - Higher salariat
Class 2	Lower managers and professionals - Lower salariat
Class 3	Intermediate occupations
Class 4	Small employers and own account workers
Class 5	Lower supervisory and technical occupations
Class 6	Semi-routine occupations
Class 7	Routine occupations

Results

Social origin and further qualifications

To address my first research question on the link between social origin and further qualifications, I construct two dependent variables: the conditional probability of obtaining (1) an academic and (2) a vocational qualification at any point of cohort members' working lives. I then apply binomial logistic regression models, in which time-dependency is taken into account via age-year dummies. To allow for the possibility of cohort members obtaining two or more qualifications during the observation period – i.e. between first significant job and age 38 – the models include random effects. More precisely, the model I work with can be written as:

$$logit\,[FQ_i(t)] = \alpha(t) + \beta_1 \mathbf{X}_i + \beta_2\,\mathbf{Z}_i(t-1) + u_i \tag{1}$$

$$u_i \sim (0, \sigma_u^2)$$

In this equation $FQ_i(t)$ is the probability that cohort member *i* obtains a qualification at time *t*, $\alpha(t)$ are coefficients for time (in this case age-year dummies); β_1 are

coefficients for time constant covariates **X** (i.e. these variables do not vary over the life-course); β_2 are coefficients for time-varying covariates **Z** (i.e. these variables can vary over the life-course); and u_i is a person-specific random error term. The random error term is assumed to follow a normal distribution with zero mean and variance of σ_u^2. The term u_i represents all of the unobserved characteristics of individual *i* that are common to each newly obtained qualification.

The focal explanatory variables of the analyses are class of origin and a dummy indicating whether or not in year *t-1* cohort members' class position is lower than that of their parents. The motivation for including this latter variable in the analysis is to test whether or not the fact that an individual is downwardly mobile intergenerationally generates a motivation to gain further qualifications that could then serve as a means for moving up to his or her parents' class position; i.e. these new qualifications could serve as a channel for intergenerational class maintenance.

The analyses also include as controls a range of individual characteristics that may be thought to affect the probability of obtaining new qualifications via life-long learning. I include two time-variant variables to capture cohort members' highest level of academic and vocational qualifications up to date, using the scales introduced above. Regarding cohort members' labour market attachment, the following two variables are included: a 4-category variable to measure employment status (full-time employee/self-employed, part-time employee/self-employed, unemployed, inactive of other kinds), and a variable to measure respondents' current

or, in case of the non-employed, most recent social class positions. Since it is conceivable that individuals' incentives to gain further qualifications to some extent depend on their career trajectories, I include a variable to characterise cohort members' class histories in the past five years, distinguishing between those who have not experienced any movement in terms of class, those who moved up and those who moved down the social class hierarchy as shown in Table 3 (indicated by dotted lines).

Before turning to the effects of the explanatory variables of main interest, I summarise the effects of controls (**Table A1** in the Appendix). As expected, the probability of obtaining further qualifications – either academic or vocational – is higher for individuals who already have some academic qualifications than for individuals with no academic qualification at all. But the association between the level of academic qualification and the probability of obtaining new qualifications is not entirely linear, although the non-linearity shows up differently for new academic and new vocational qualifications. The probability of obtaining a new academic qualification is highest for individuals with a middling level of qualification – i.e. with A-levels and sub-degrees (Columns 1 and 3 in Table A1). In contrast, the probability of obtaining a new vocational qualification is highest among individuals with lower secondary qualifications – i.e. with O-levels (Columns 2 and 4 in Table A1). The incentive for pursuing further education appears to be less dependent on the current level of vocational qualification. The only contrast that is significant in

this regard is between individuals with tertiary-level qualifications and individuals with lower level qualifications. Men and women who already have some tertiary-level vocational qualification – i.e. NVQ 4 or 5 or 6 – are more likely than others to obtain new academic qualification, but they are in fact less likely to obtain new vocational qualifications. In sum, these results imply that having some academic qualification in the first place is a pre-requisite for accruing further qualifications, whether academic or vocational, via life-long learning. But having some vocational qualification in the first place seems to matter much less in this respect.

Further, and in line with the results of most previous research, men who are unemployed, or otherwise out of the labour market, are more likely than their employed counterparts to advance their qualification levels via further education. But, interestingly enough, this pattern does not show up for women. Overall, the probability of obtaining new qualifications of any kinds is higher for employees than for the self-employed (cf. Ishida, Müller and Ridge, 1995). And, managers and professionals are clearly those employees who are the most likely to accrue further academic qualifications – suggesting that improving on or updating their academic qualifications might be an important way of avoiding downward mobility from the salariat. Overall, though, class career trajectories in the past five years do not seem to affect the probabilities of obtaining new qualifications: individuals who moved down the class hierarchy are just as likely as individuals who moved up to attain further qualifications.

Table 4 displays the effects of the two focal explanatory variables, class of origin and class maintenance. I work with three models. Model 1 is limited to the variable of class of origin (along with a series of age-dummies that are included in all three models). The main points of interest are the following. The association between parental background and participating in further education differs by the type of new qualification attained. Individuals of working class – i.e. Class 6 and 7 - origins are significantly less likely than those of intermediate class, and, especially, of salariat – i.e. Class 1 and 2 - origins to obtain further academic qualifications. But parental background does not seem to matter much in case of new vocational qualifications; if anything, individuals – women in particular – originating in Classes 5 and 6 are more likely than others to take part in vocational training. Model 2 adds the controls. As can be seen, although individuals' educational and employment characteristics to some extent explain class of origin effects – especially for men – the main pattern remains: the probability of pursuing further academic education is significantly higher for the children of the salariat than for individuals coming from less advantaged parental backgrounds, and from working class background in particular. Model 3, that adds a dummy for class maintenance, provides a possible explanation. Apparently, individuals with a current class position that is *lower than their class of origin* are more likely than others to pursue further academic education, presumably because they see this as a channel for attaining their parents' class position or even moving beyond it. This then indicates that further qualifications earned in the course of the working life could be of importance in promoting counter-mobility for

individuals of advantaged backgrounds whose initial educational attainment was

only modest.

Table 4: Effect of class of origin on the probability of obtaining further qualifications

	Men						Women					
	Academic			*Vocational*			*Academic*			*Vocational*		
	M1	M2	M3	M1	M2	M3	M1	M2	M3	M1	M2	M3
Class of origin												
Class 1	0.76 **	0.16 *		-0.26 **	-0.20 *		0.62 **	0.27 *		-0.01	0.02	
Class 2	0.52 **	0.08		-0.08	-0.07		0.30 **	0.07		0.02	0.03	
Class 3	0.21	-0.12		0.00	0.00		0.07	-0.03		0.02	-0.01	
Class 4 (ref.)	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Class 5	-0.11	-0.04		0.22	0.15		-0.15	-0.09		0.32 **	0.28 *	
Class 6	-0.09	-0.14		0.14	0.06		-0.34 *	-0.27 *		0.26 *	0.22 *	
Class 7	-0.37 **	-0.23 *		0.07	0.00		-0.42 **	-0.29 *		0.05	0.04	
Class of origin > own class in year t-1			0.24 **			-0.04			0.39 **			0.06
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
N. of events		1322			4274			1624			3545	
N. of persons			4951						5068			
N. of person-years			82016						85389			

Coefficients from random-effects logistic regression. To avoid over-identification, Model 3 does not include the variable of class of origin.

** $p<0.01$; * $p<0.05$

As an auxiliary analysis, I rerun the models with somewhat different dependent

variables. My main aim is to see whether the higher probability of obtaining

academic qualifications via life-long learning among individuals of salariat origins

exists only at particular qualification 'thresholds'. For this purpose, I focus on four

qualification thresholds: first, that which divides attaining 5+ O-levels (i.e. lower

secondary – high performance) or higher levels of academic qualifications from

lower attainment; second, that which divides obtaining A-levels (i.e. higher

secondary) or higher levels of academic qualifications via life-long learning from any

lower attainment; third, that which divides obtaining sub-degrees or degrees

through adult education from lower attainment; and, finally, that which divides obtaining university degrees or postgraduate degrees via further education from any lower attainment. I run the same set of regressions as in Table 4 but with the dependent variables described above. **Tables A2.1** and **A2.2** show the results for the focal explanatory variables. It is apparent that individuals of salariat origins have a significantly higher probability than their counterparts coming from less advantaged parental backgrounds to obtain new academic qualifications via life-long learning at *each* qualification threshold, except the third; i.e. that divides sub-degree or degree qualifications from lower level qualifications. It also appears that class maintenance is a major factor for pursuing further academic education, regardless of the level of academic qualification attained.

All the analyses presented above have been conducted across all ages, between labour market entry and age 38. But a further question may arise. Do the individuals of the working class origins fare better later in their working lives in terms of their chances of improving their qualification level via further education? Or, put another way: are they able to 'catch up' with their more advantaged counterparts later in their life-course? To address this question, I take a hypothetical person and calculate the probabilities of his/her obtaining new academic or vocational qualifications at each age, supposing that he/she came from either a salariat (Class 1 and 2) or a working class (Class 6 and 7) background. I calculate the probabilities under Model 2

of Table 4, but with the inclusion of interactions between the age-year dummies and class of origin. Results are presented in **Figure 2** for men and in **Figure 3** for women.

In line with the results in Table 4, the graphs for obtaining further academic and vocational qualifications contrast in that the disparities between the probabilities of men and women with similar educational and employment characteristics but differing class origins are greater with academic than with vocational qualifications. But perhaps even more importantly, the disparities in the probabilities remain more or less constant across cohort members' working lives, especially for women. This means that individuals originating in the managerial and professional salariat are significantly more likely than those originating in the working class to attain further academic qualifications at *all* ages. But this also means that the latter are, at all ages, able to use further vocational training to update their qualification levels to the same – or for women even to a slightly greater – extent as are their counterparts from salariat origins.

To summarise the effects of class of origin on the chances of obtaining further qualifications, the following points should then be noted. The pattern and strength of social origin effects depend on the type of qualifications attained. In the case of academic qualifications, a managerial or professional class background is a clear advantage: individuals with this class background are more likely than those with intermediate, and especially with working class, backgrounds to gain further academic qualifications, even if they started out with a relatively low level of

education and from a disadvantaged class position in their own working lives. It is also suggested that one of the main motivations for individuals of salariat origins to accumulate academic qualifications is that of maintaining their parents' class position. In the case of vocational qualifications, however, the pattern is different. If anything, individuals of working class origins are more, not less, likely than individuals from more advantaged backgrounds to obtain new vocational qualifications.

Figure 2: Probability of obtaining further qualifications by class of origin and age, men
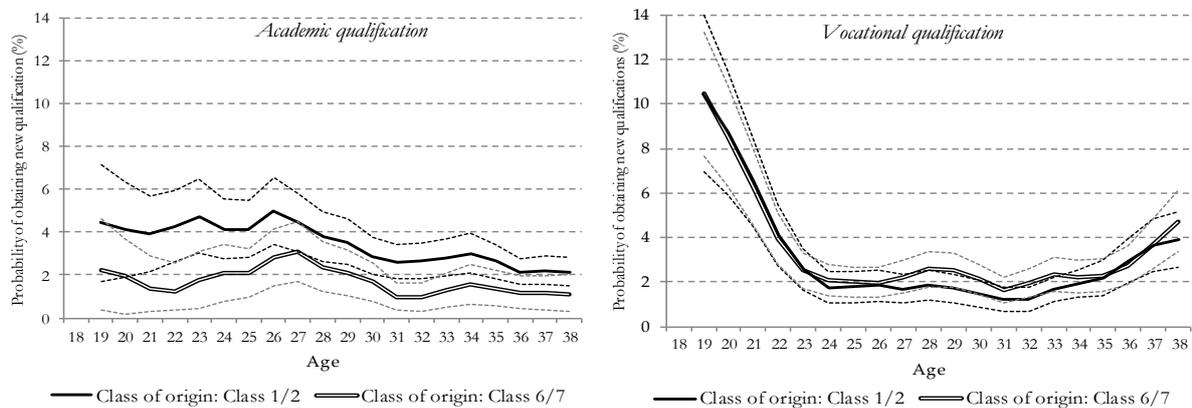
Note: Hypothetical person: full-time employee in Class 3; current level of - academic and vocational - qualification is higher secondary or more; no class career mobility in past five years.

Figure 3: Probability of obtaining further qualifications by class of origin and age, women
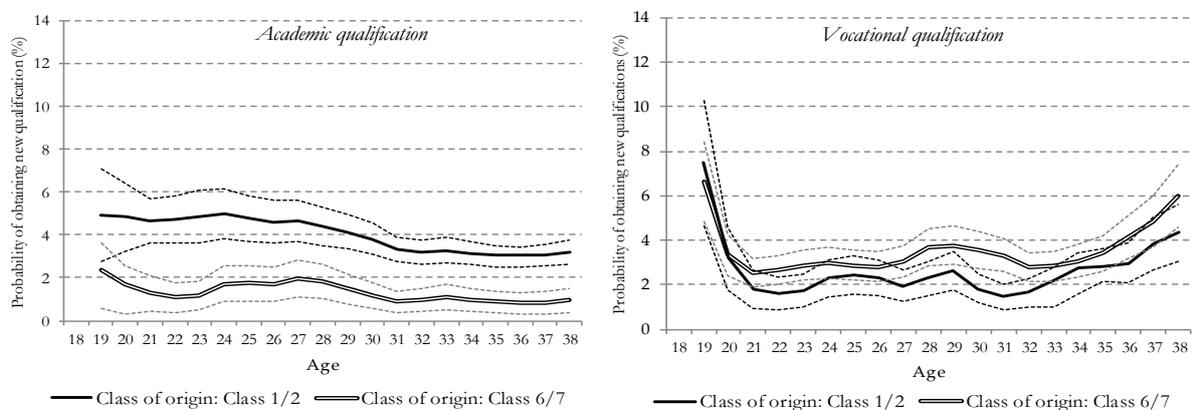
Note: Hypothetical person: full-time employee in Class 3; current level of - academic and vocational - qualification is higher secondary or more; no class career mobility in past five years.

The question that now arises is what the implications of all this might be for the role of further education in intergenerational class mobility. If new academic qualifications attained via life-long learning lead to an increased chance of upward career mobility, and more so for individuals of salariat origins, then further education helps maintain inter-generational class stability. The same applies if these individuals are able to use further academic education to guard against downward worklife mobility from managerial and professional jobs. But if new vocational qualifications increase the likelihood of moving up the class career hierarchy, and more so for individuals coming from working class backgrounds, then further education could promote intergenerational upward mobility. These are the issues I will address in the next section.

Further qualifications and worklife class mobility

Since I am interested in examining the chances of moving up and the risks of moving down the class hierarchy over working life, I take the following dependent variables. The first, upward class mobility, is defined as the conditional probability of a change in cohort members' class position that involves moving upwards (=1, otherwise 0) within the class hierarchy (cf. Table 3). The second dependent variable is designed to capture the chance of upward mobility to the salariat (=1 if a cohort member moves to Class 1 or Class 2, otherwise 0); the third dependent variable measures the probability of upward mobility to the higher salariat only (=1 if a cohort member

moves to Class 1, otherwise 0). Analogously, I construct another set of three dependent variables to measure the risks of downward class mobility in general, and from the salariat and the higher salariat, in particular.

I then set up a series of logistic regression models of the same kind as given in equation (1). The BCS70 enables me to avoid the problem of reverse causation by regressing the probability of experiencing an upward/downward career move in year *t* on obtaining new qualifications in previous years. By including lags in the attainment of new qualifications, I am able to estimate the timing of the effects of obtaining further qualifications on the chances and risks of worklife class mobility. I include five lags of new qualifications in the model; i.e. I measure whether or not a new qualification obtained in year *t-1*, year *t-2*, year *t-3*, year *t-4* and year *t-5* has any effect on the probability of a respondent moving up or down the class hierarchy. In principle, the maximum number of lags in the data-set is 22, but I only consider 5, mainly to avoid small cell sizes. The models also include a variable of class of origin and the same controls that were used in equation (1). The effects of the controls are presented in **Table A3**.

As expected, the higher educated are more likely than the lower educated to experience upward mobility and they are less likely to experience downward mobility over their working lives. Worklife class mobility of any kind is more frequent among men and women who are currently out of employment or work part-time (except upward mobility for female part-timers). This means that a large

bulk of mobility events are attached to re-entry into the labour market and transitions from part-time to full-time working or between part-time jobs. Overall, the more advantaged the class position that individuals hold, the less likely they are to be upwardly mobile – the well-known ceiling effect. But individuals in working class positions are almost as likely as individuals in managerial and professional jobs to move down the class hierarchy. Class career trajectories in the past five years also affect future career mobility. The probability of an upward move is particularly high if the individual experienced at least one downward move in the recent past. But the probability of a downward move is highest for those with stable class histories in the past five years. Finally, the children from more advantaged class backgrounds are clearly more likely than the children from less advantaged backgrounds to move up the class ladder, even when all individual characteristics reviewed above are controlled for. The risk of downward mobility, however, is scarcely affected by class of origin.

Turning now to the effects of further qualifications, as presented in **Tables 5** and **6**, the following four points of importance should be noted. First, obtaining new qualifications has a much greater effect on upward than on downward mobility. Men and women who gained some qualifications in the recent past are more likely than those who did not to move up the class hierarchy, even when their age, social origins, current level of education, employment characteristics and class career trajectories are taken into account. However, further qualifications do not have

systematic – negative – effects on the risk of falling down the career ladder. Second, if any effect of further education shows up, it tends to be rather immediate; i.e. it manifests itself within two or three years of obtaining the qualification in question. Third, for upward mobility, new academic qualifications seem to be more consequential than new vocational qualifications, at least for men. Fourth, overall, further education appears to play a greater role in women's than men's worklife mobility: the effects of new academic qualifications are stronger and greater in size for women. In addition – and, again, in contrast with men – new vocational qualifications obtained in the recent past increase the probability of women moving up but also down within the class hierarchy – a seemingly paradoxical finding that is explored further below.

Table 5: Effects of further qualifications on *upward* class career mobility

	Men			Women		
	to any class (M1)	to Class 1 or 2 (M2)	to Class 1 (M3)	to any class (M1)	to Class 1 or 2 (M2)	to Class 1 (M3)
New academic qualifications obtained in …						
… year t-1 (yes=1, otherwise=0)	0.24 *	0.25 *	0.25	0.48 **	0.42 **	0.58 *
… year t-2 (yes=1, otherwise=0)	0.19	0.24	0.35 *	0.50 **	0.59 **	0.34 *
… year t-3 (yes=1, otherwise=0)	0.13	0.16	0.25	0.13	0.26	0.03
… year t-4 (yes=1, otherwise=0)	0.00	0.06	0.08	0.09	0.11	0.09
… year t-5 (yes=1, otherwise=0)	0.00	0.10	0.13	0.23	0.16	0.12
New vocational qualifications obtained in …						
… year t-1 (yes=1, otherwise=0)	-0.04	-0.03	0.00	0.32 **	0.34 **	0.21
… year t-2 (yes=1, otherwise=0)	0.11	-0.08	-0.02	0.22 *	0.16	0.09
… year t-3 (yes=1, otherwise=0)	0.12	0.12	-0.05	0.19 *	0.20	0.25
… year t-4 (yes=1, otherwise=0)	0.13	0.10	0.12	0.19	0.24	0.27
… year t-5 (yes=1, otherwise=0)	-0.02	0.17	0.19	-0.01	0.08	0.35
N. of events	3400	1777	971	3368	1835	611
N. of persons	4578	4074	4578	4927	4443	4927
N. of person-years	69983	54460	69983	79440	61913	79440

Coefficients from random-effects logistic regression.

Models simultaneously include new academic and vocational qualifications. Models include all controls.

** $p < 0.01$; * $p < 0.05$

Table 6*: Effects of further qualifications on *downward* class career mobility*

	Men			Women		
	from any class (M1)	from Class 1 or 2 (M2)	from Class 1 (M3)	from any class (M1)	from Class 1 or 2 (M2)	from Class 1 (M3)
New academic qualifications obtained in ...						
… year t-1 (yes=1, otherwise=0)	0.09	0.03	0.04	-0.15	-0.18	-0.46
… year t-2 (yes=1, otherwise=0)	0.07	0.01	-0.12	-0.18	-0.02	-0.46
… year t-3 (yes=1, otherwise=0)	-0.07	0.04	0.04	-0.02	-0.24	-0.07
… year t-4 (yes=1, otherwise=0)	-0.12	0.05	0.01	-0.19	-0.10	-0.57
… year t-5 (yes=1, otherwise=0)	-0.08	0.05	-0.03	-0.12	-0.36	0.03
New vocational qualifications obtained in ...						
… year t-1 (yes=1, otherwise=0)	-0.04	-0.32	0.05	0.21 *	0.20	0.31
… year t-2 (yes=1, otherwise=0)	-0.10	-0.10	-0.12	0.23 *	0.32 *	0.43 *
… year t-3 (yes=1, otherwise=0)	-0.14	-0.09	-0.46	0.06	0.23	0.18
… year t-4 (yes=1, otherwise=0)	-0.05	-0.12	-0.05	0.00	-0.18	-0.16
… year t-5 (yes=1, otherwise=0)	-0.10	-0.39	-0.12	-0.08	-0.12	-0.02
N. of events	2019	877	446	2093	921	321
N. of persons	4219	2545	1325	4157	2366	739
N. of person-years	55709	27556	12033	55605	23476	5949

Coefficients from random-effects logistic regression.

Models simultaneously include new academic and vocational qualifications. Models include all controls.

** $p<0.01$; * $p<0.05$

I have then established that further education is beneficial in terms of promoting men's and women's upward class mobility over their life-course. But it is conceivable that the 'mobility returns' to further education are limited to new qualifications that raise the level of individuals' educational attainment. In order to investigate this issue, I replace the five lags of further qualifications with four dummy variables: whether or not – with reference to the classification of Table 1 – a respondent obtained a new academic qualification that (1) raised or (2) did not raise the level of his academic qualifications; and whether or not a respondent obtained a new vocational qualification that (3) raised or (4) did not raise the level of his vocational

qualifications. I only consider new qualifications attained in the past three years, as the analyses above indicate that the effect of further education dissipates after three years of obtaining the qualification in question. **Table 7** reports the results.

Table 7: Effects of further qualifications that raise and do not raise highest level of qualification on *upward* class career mobility

	Men			Women		
	to any class (M1)	to Class 1 or 2 (M2)	to Class 1 (M3)	to any class (M1)	to Class 1 or 2 (M2)	to Class 1 (M3)
New academic qualifications obtained in past 3 years...						
… that *raise* level of academic qualification (=1, 0=no new qual.)	0.31 **	0.28 *	0.39 **	0.47 **	0.57 **	0.26 *
… that do *not* raise level of academic qualification (=1, 0=no new qual.)	0.14	0.25	0.47 *	0.38	0.47 **	0.71 **
New vocational qualifications obtained in past 3 years...						
… that *raise* level of vocational qualification (=1, 0=no new qual.)	0.04	-0.03	-0.10	0.32 **	0.28 **	0.20
… that do *not* raise highest level of vocational qualification (=1, 0=no new qual.)	0.11	0.07	0.00	0.31 **	0.46 **	0.15
N. of events	3400	1777	971	3368	1835	611
N. of persons	4578	4074	4578	4927	4443	4927
N. of person-years	69983	54460	69983	79440	61913	79440

Coefficients from random-effects logistic regression.

Models simultaneously include new academic and vocational qualifications. Models include all controls.

** $p<0.01$; * $p<0.05$

Further academic qualifications have mobility returns in terms of helping men and women move up to Class 1, the higher salariat, regardless of whether or not these new qualifications raise individuals' level of education. But to increase the chances of promotion to Class 2, lower managerial or professional positions – in the case of men – or to intermediate class positions, individuals need to gain new academic qualifications that improve on their previous qualifications. As shown in Table 5, new vocational qualifications help women but not men to move upwards on the class career ladder. The relevant statistics in Table 7 further show that vocational qualifications of any kind – i.e. not only those that raise their level of vocational

qualification – can serve as means to promote female respondents' upward career mobility, although not to the most advantaged class positions.

Table 8 summarises the results of an analogous set of analyses, but now with the risk of downward mobility as the dependent variable. One would expect that further qualifications that advance individuals' educational attainment should be more likely than further qualifications of other kinds to guard against downward mobility. However, this is not the case. New academic qualifications that raise individuals' level of education are not more likely than new academic qualifications that do not lead to a higher level of education to prevent men and women from moving downwards. Moreover, new vocational qualifications actually lead to increased risks of downward mobility for women, even when these certificates improve on their level of vocational qualification. At a first sight, this latter result may seem surprising. To examine the issue further, I re-run Model 1 of Table 8, but now with an explanatory variable that differentiates between the levels of new vocational qualifications.

Table 8: Effects of further qualifications that raise and do not raise highest level of qualification on *downward* class career mobility

	Men			Women		
	from any class	from Class 1 or 2	from Class 1 (M3)	from any class	from Class 1 or 2	from Class 1 (M3)
New academic qualifications obtained in past 3 years...						
… that *raise* level of academic qualification (=1, 0=no new qual.)	0.00	0.11	0.01	-0.04	-0.08	-0.20
… that do *not* raise level of academic qualification (=1, 0=no new qual.)	-0.03	-0.04	-0.01	-0.23	-0.09	-0.43
New vocational qualifications obtained in past 3 years...						
… that *raise* level of vocational qualification (=1, 0=no new qual.)	-0.25	-0.22	-0.19	0.23 *	0.38 **	0.62 **
… that do *not* raise highest level of vocational qualification (=1, 0=no new qual.)	0.10	-0.05	-0.31	0.29 *	0.33 *	0.08
N. of events	2019	877	446	2093	921	321
N. of persons	4219	2545	1325	4157	2366	739
N. of person-years	55709	27556	12033	55605	23476	5949

Coefficients from random-effects logistic regression.

Models simultaneously include new academic and vocational qualifications. Models include all controls.

** $p<0.01$; * $p<0.05$

As can be seen in **Table A4**, new tertiary or upper secondary vocational qualifications (i.e. NVQ 3-6) do not lead to a heightened risk of downward mobility for either women or men. However, new vocational qualifications at lower levels (i.e. NVQ 1 or 2) do increase the risk for women – but not for men – moving down the class career ladder. To shed more light on the matter, I made a closer inspection of the working lives of women who were downwardly mobile upon obtaining some lower level vocational qualification. This investigation reveals that around 90 per cent of these women moved down from either Class 1 or 2 or intermediate class occupations. (The corresponding figure for men is less than 50 per cent.) Furthermore, roughly 45 per cent of these downward moves were preceded by employment breaks, most frequently periods of inactivity related to child-rearing. (The corresponding figure for men is 15 per cent.) This suggests that new – lower level – vocational qualifications may in fact help women who previously occupied

relatively advantaged class positions re-enter the labour market after a period of inactivity, even if in lower level class positions.

We have seen that qualifications – academic qualifications in particular – attained via life-long learning promote upward career mobility, but do not guard against downward mobility. It is conceivable, though, that the 'career promotion effect' of further qualifications differs for individuals with different social origins; e.g. that it is stronger for individuals of salariat origins than for those of working class origins. It is also conceivable that further qualifications in fact prevent downward moves for individuals coming from more advantaged parental backgrounds. To allow for these possibilities, I include interactions between further qualifications and class of origin in the analysis. For the sake of simplicity, I measure further qualifications through two dummy variables: whether or not the respondent obtained (1) any academic, (2) any vocational qualifications in the past three years. I measure class of origin through a 3-category collapse of the 7-category variable of class of origin (cf. Table 3). The results are reported in **Table A5**. As is apparent, we cannot detect a significant and systematic pattern of interactions between class of origin and further qualifications, either for men or for women. In other words, the positive effects of new (academic) qualifications on the chances of upward career mobility are neither stronger, nor weaker for individuals or more or less advantaged origins. Likewise, further qualifications do not seem to diminish the risk of falling down the career ladder for anyone, even for individuals of salariat origins.

How can one bring together the findings reported in this section and the findings reported in the previous section on the relationship between class of origin and further education? To answer this question, I calculate predicted probabilities of upward career mobility to the managerial and professional salariat at each age, for individuals coming from different parental backgrounds. The probabilities are calculated separately for individuals who obtained new *academic* qualifications in the past three years and for those who did not obtain any new qualification in the reference period. I focus on academic qualifications only, because, as showed above, new academic qualifications are more likely than new vocational qualifications to promote upward mobility for both men and women. **Figure 5** plots the predicted probabilities of men moving up to the higher salariat. **Figure 6** plots the predicted probabilities of women moving up to the higher or the lower salariat. The probabilities are calculated under a model that includes all controls, plus interactions between obtaining new qualifications and age.

As can be seen, overall, individuals from salariat origins are more likely than individuals from working class origins to move up to managerial and professional positions during their working lives (cf. Table A4). But, more importantly, the disparities between individuals of salariat and of working class origins *are much greater for those who recently obtained some new academic qualifications than for those who did not take part in further education in the past three years*. And we observe this pattern not because the 'career mobility returns' to further academic qualifications are

greater for individuals from salariat origin than for individuals from working class

origin, *but because the former are more likely than the latter to advance their educational*

attainment via life-long learning, and in this way to increase their chances of upward career

mobility.

Figure 5*: Probability of moving up to the higher salariat (Class 1) by further academic qualification, class of origin and age, men*
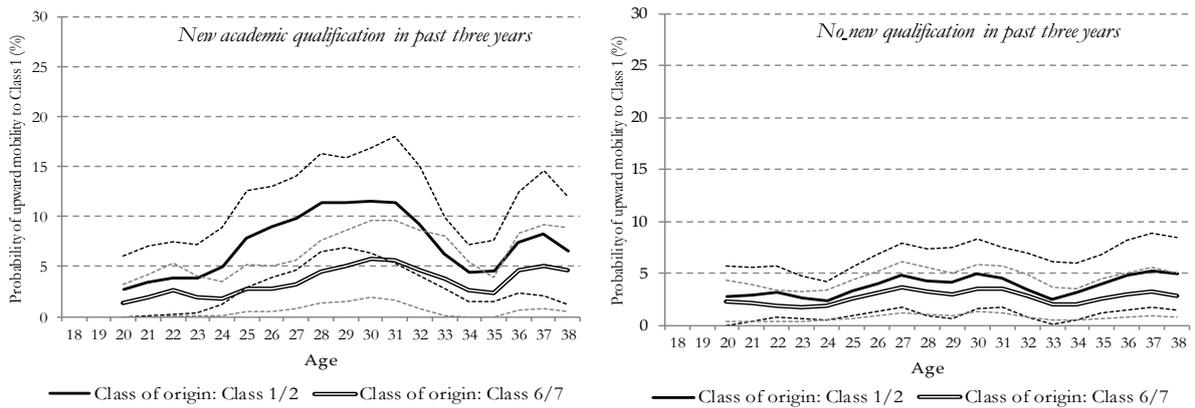
Note: Hypothetical person: full-time employee in Class 3; current level of - academic and vocational - qualification is higher secondary or more; no class career mobility in past five years.

Figure 6*: Probability of moving up to the higher or the lower salariat (Class 1 or 2) by further academic qualification, class of origin and age, women*
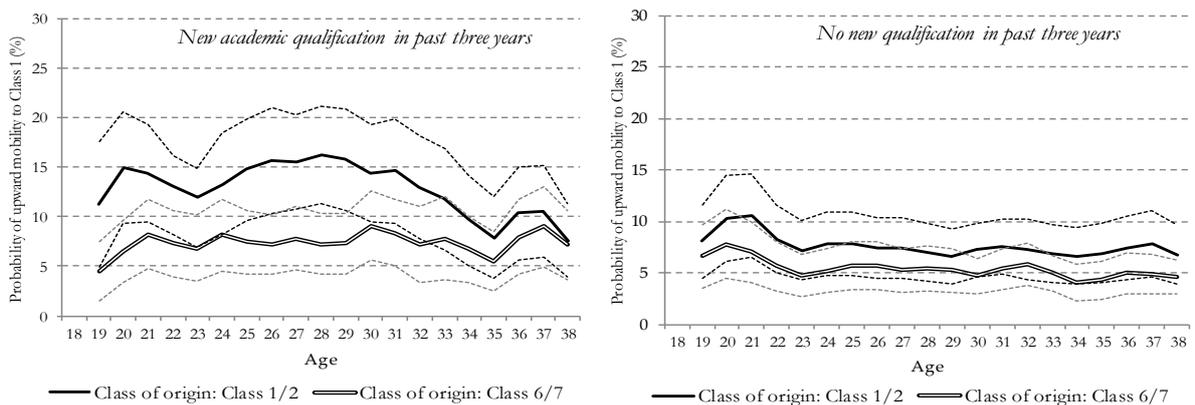
Note: Hypothetical person: full-time employee in Class 3; current level of - academic and vocational - qualification is higher secondary or more; no class career mobility in past five years.

Conclusions

In this paper, I have examined the possibility that further education – or life-long learning – promotes intergenerational class mobility. On the basis of complete educational and class histories of men and women in a British birth cohort, I have addressed two related questions. Is it the case that further education provides individuals coming from less advantaged origins with a second chance to improve on their educational attainment? And, second, is it the case that the returns to further qualifications, in terms of chances of upward class career mobility, are greater for children from less advantaged backgrounds than for children from more advantaged backgrounds?

The findings are mainly negative. The analyses have demonstrated that individuals originating in the managerial and professional salariat benefit most from further education. They are more likely than their less advantaged counterparts to obtain new academic qualifications during their working lives, and especially if their own class position is lower than their parents'. And these new academic qualifications then increase their chances to move upwards within the class hierarchy, in most cases to the higher or lower levels of the salariat. But new academic qualifications do not guard against downward mobility, even for the children of the salariat.

The analyses have also demonstrated that further vocational qualifications might, potentially, act as 'equalisers': individuals, women in particular, of working class

origins are somewhat more likely than individuals from more advantaged origins, and especially from the salariat, to take part in vocational training. However, new vocational qualifications are not very valuable currencies in the labour market, at least for men. New vocational qualifications do not increase men's chances of moving up the class ladder, even when these qualifications improve on their level of previous qualification. For women, the role of further vocational qualifications in worklife mobility is more complex. Obtaining new vocational qualifications increases women's chances of moving up within the class hierarchy – although not to the higher salariat – but it is also associated with increased risks of downward mobility. The explanation for this lies in the specificity of women's employment careers. Obtaining new vocational qualifications helps women who previously had managerial or professional positions to re-enter the labour market after a career break, although in less advantaged class positions.

How then can we interpret these findings in the light of the two possible scenarios that were set out regarding the link between further education and intergenerational social mobility? According to the 'compensatory' scenario, further education provides opportunities for individuals from less advantaged origins to upgrade their educational qualifications and then to move up the occupational and class ladder. In contrast, according to the cumulative (dis)advantages scenario, further education is likely to do more to further the career advancement of individuals from advantaged

origins rather than to help individuals from less advantaged origins who make poor starts to 'catch up'.

The findings of this paper mainly support the cumulative (dis)advantages scenario. In particular, further education appears to be an effective means of career advancement for individuals of salariat origin who, because of a relatively poor initial academic performance, start out in their working lives in relatively low level class positions. Via further education they can increase or update their academic qualifications and in turn enhance their chances of accessing positions in the salariat or, that is, their chances of being counter-mobile back to their class of origin. Individuals of working class origin who enter the labour market in working class position may later raise the level of their qualifications, especially their vocational qualifications; but this improvement does not tend to lead to increased chances of upward worklife, and thus intergenerational mobility, at least so far as men are concerned. In the case of women, there is some evidence that obtaining further vocational qualifications does promote intergenerational upward mobility, although more to intermediate than to higher level class positions.

Overall, based on the findings of this paper, we can conclude that qualifications attained through life-long learning primarily serve, in Britain at least, to maintain, rather than to narrow, inequalities attached to social origins. Post-school education and training is not the most effective way to promote intergenerational social mobility. Policy-makers would appear to have good grounds for attaching more

importance to educational programmes and interventions that target children from

disadvantaged backgrounds in pre-school and early school years.

References

Blanden, J., Buscha, F., Sturgis, P. and Urwin, P. (2010). Measuring the returns to life-long learning. *LSE Centre for Economics of Education, Discussion Paper 110*.

Blanden, J., Buscha, F., Sturgis, P. and Urwin, P. (2012). Measuring the earnings returns to lifelong learning in the UK. *Economics of Education Review*, doi:10.1016/j.econedurev.2011.12.009.

Bukodi, E., Goldthorpe, J. H., Waller, L. and Kuha, J. (2015) The mobility problem in Britain: new findings from the analysis of birth cohort data. *British Journal of Sociology*, DOI 10.1111/1468-4446.12096.

Dämmrich, J., Vono de Vilhena, D. and Reichart, E. (2014). Participation in adult learning in Europe: the impact of country-level and individual characteristics. In: Blossfeld, H.-P. *et al.* (eds.): *Adult Learning in Modern Societies: An International Comparison from a Life-Course Perspective.* Cheltenham/Northampton, pp. 29-55.

De-Coulon, A. and Vignoles, A. (2008). An analysis of the benefit of NVQ2 qualifications acquired at age 26–34. *Centre for the Economics of Education, Discussion Paper 106*.

DiPrete, T. A., and Eirich, G. M. (2006). Cumulative Advantage as a Mechanism for Inequality: A Review of Theoretical and Empirical Developments. *Annual Review of Sociology*, 32: 271–297.

Dorsett, R., Lui, S. and Weale, M. (2011). *Estimating the effect of lifelong learning on women's earnings using a switching model.* The Centre for Learning and Life Chances in Knowledge Economies and Societies at: http://www.llakes.org.

Dorsett, R., Lui, S. and Weale, M. (2013). *The effect of life-long learning on men's wages*. Manuscript.

Duckworth, K. Cara, O. (2012). The relationship between adult learning and wellbeing: Evidence from the 1958 National Child Development Study. *BIS Research Paper Number 94*. Department for Business, Innovation & Skills.

Elman, C. and O'Rand, A. M. (2004). The race is to the swift: Socio-economic origin, adult education and wage attainment. *American Journal of Sociology*, 110: 123-160.

Egerton, M. (2001). Mature Graduates I: Occupational attainment and the effects of labour market duration. *Oxford Review of Education*, 27: 135-150.

Elliott, J. and Shepherd, P. (2006). Cohort Profile: 1970 British Birth Cohort (BCS70). *International Journal of Epidemiology*, 35: 836-843.

Feinstein, L. F., Galindo-Rueda, F. and Vignoles, A. (2004). The labour market impact of adult education and training: a cohort analysis. *Scottish Journal of Political Economy*, 51: 266-280.

Girod, R., Fricker, Y. and Körffy, A. (1972). Counter-mobility. *Social Science Information*, 11: 257-267.

Gloster, R. et al. (2015). The contribution of further education and skills to social mobility. *BIS Research Paper No. 254*. Department for Business, Innovation & Skills.

Goldthorpe, J. H. (2007). Class analysis and the reorientation of class theory: The case of persisting differentials in educational attainment. In: Goldthorpe, J. H., *On Sociology, Volume II.*, Stanford University Press.

Hillmert, S. (2012). Cumulative inequalities along the life course: Long-term trends in the German labour market. In: Blackburn, R., Conelly R., Vernon, G. and Lambert, P. (Eds.), *Social Stratification: Trends and Processes*, Ashgate, pp. 69-83.

HM Treasury (2007). *PSA delivery agreement 2: Improve the skills of the population on the way to ensuring a world-class skills base by 2020.*

Ishida, H., Müller, W. and Ridge, J. (1995). Class origin, class destination, and education: A cross national study of industrial nations. *American Journal of Sociology*, 101: 145-93.

Jenkins, A., Vignoles, A., Wolf, A., & Galindo-Rueda, F. (2003). The determinants and labour market effects of lifelong learning. *Applied Economics*, 35: 1711–1721.

Kilpi-Jakonen, E., Vono de Vilhena, D. and Blossfeld, H-P. (2015). Adult learning and social inequalities: Process of equalisation or cumulative disadvantage? *International Review of Education*, 61: 529-546.

Merton, R. K. (1968). The Matthew effect in science. *Science,* 159: 56–63.

O'Rand, A. M. (1996). The Precious and the precocious: Understanding cumulative disadvantage and cumulative advantage over the life course. *Gerontologist* 36: 230-238.

Raffe, D. (1979). The 'alternative route' reconsidered: part-time further education and and social mobility in England and Wales. *Sociology*, 13: 47-73.

Rigney, D. (2010). *The Matthew Effect: How Advantage Begets Further Advantage*. Columbia University Press.

Wolf, A., Jenkins, A. and Vignoles, A. (2006). Certifying the workforce: Economic imperative or failed social policy? *Journal of Education Policy*, 21: 535–565.

Appendix

Table A1: Effects of controls on probability of obtaining further qualifications

	Men		Women	
	Academic (1)	Vocational (2)	Academic (3)	Vocational (4)
Highest level of academic qualification				
No qualifications	-0.97 **	0.12	-1.64 **	-0.13
Sub-secondary	-1.37 **	0.18	-1.84 **	-0.09
Lower secondary – low performance	-0.69 **	0.33 *	-1.01 **	0.27 *
Lower secondary – high performance	-0.63 **	0.36 **	-0.77 **	0.28 *
Higher secondary – low performance	-0.14	0.07	-0.30	0.28
Higher secondary – high performance (ref.)	0.00	0.00	0.00	0.00
Lower tertiary	-0.45	0.00	-0.59	0.00
Higher tertiary	-0.18	-0.40 **	-0.65 **	-0.10
Postgraduate	-0.71 **	-0.60 **	-1.26 **	-0.46 *
Highest level of vocational qualification				
No qualifications	0.16	-0.08	0.07	-0.02
Sub-secondary	0.08	-0.10	0.02	0.00
Lower secondary (ref.)	0.00	0.00	0.00	0.00
Higher secondary	0.07	0.14	0.00	0.03
Tertiary	0.56 **	-0.26 **	0.27 *	-0.48 **
Employment status				
Working FT (ref.)	0.00	0.00	0.00	0.00
Working PT	0.79 **	0.02	-0.07	0.05
Unemployed	0.69 **	0.27 *	-0.09	-0.09
Other inactive	1.89 **	0.42 **	0.73 *	-0.06
Social class position				
Class 1	1.86 **	0.42 **	0.84 **	0.13
Class 2	1.54 **	0.49 **	0.56 **	0.10
Class 3	1.55 **	0.38 **	0.26	0.15
Class 4 (ref.)	0.00	0.00	0.00	0.00
Class 5	0.79 **	1.91 **	0.12	0.29
Class 6	0.62 *	0.52 **	0.03	0.14
Class 7	0.48 *	0.22 **	0.01	0.06
Class career mobility in past 5 years				
upward direction	-0.05	-0.01	-0.06	0.15
no mobility (ref.)	0.00	0.00	0.00	0.00
downward direction	0.02	0.14	0.17	0.09

Coefficients from random-effects logistic regression.

Age dummies and class of origin are also included in the models.

** $p<0.01$; * $p<0.05$

Table A2.1: Effect of class of origin on the probability of obtaining further academic qualifications, men

	5+ O-levels or higher			A-levels or higher			Sub-degree or higher			Degree		
	M1	M2	M3	M1	M2	M3	M1	M2	M3	M1	M2	M3
Class of origin												
Class 1	0.79 **	0.20 *		0.79 **	0.17 *		0.83 **	0.10		0.97 **	0.27 *	
Class 2	0.50 **	0.01		0.50 **	0.01		0.51 **	0.03		0.64 **	0.04	
Class 3	0.23	-0.12		0.21	-0.13		0.21	-0.08		0.15	-0.16	
Class 4 (ref.)	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Class 5	-0.13	-0.01		-0.14	-0.02		-0.16	0.05		-0.37	0.06	
Class 6	-0.08	-0.16		-0.12	-0.16		-0.08	-0.14		-0.21	-0.26	
Class 7	-0.43 **	-0.25 *		-0.47 **	-0.27 *		-0.45 *	-0.19		-0.70 **	-0.32 *	
Class of origin > own class in year t-1			0.24 **			0.23 *			0.20 *			0.25 *
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
N. of events		1245			1170			1069			691	
N. of persons						4951						
N. of person-years						82016						

Coefficients from random-effects logistic regression.

** $p<0.01$; * $p<0.05$

Table A2.2: Effect of class of origin on the probability of obtaining further academic qualifications, women

	5+ O-levels or higher			A-levels or higher			Sub-degree or higher			Degree		
	M1	M2	M3	M1	M2	M3	M1	M2	M3	M1	M2	M3
Class of origin												
Class 1	0.69 **	0.24 *		0.72 **	0.22 *		0.72 **	0.18		1.09 **	0.33 *	
Class 2	0.28 *	-0.01		0.28 *	0.04		0.27 *	0.07		0.52 **	0.27	
Class 3	0.05	-0.05		0.05	-0.03		0.04	-0.04		0.26	0.19	
Class 4 (ref.)	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Class 5	-0.18	-0.10		-0.25	-0.14		-0.31 *	-0.16		-0.31	-0.04	
Class 6	-0.30 *	-0.17		-0.33 *	-0.18		-0.44 **	-0.24		-0.53 *	-0.10	
Class 7	-0.51 **	-0.30 *		-0.53 **	-0.28 *		-0.53 **	-0.24		-0.60 **	-0.21 *	
Class of origin > own class in year t-1			0.33 **			0.30 **			0.26 **			0.34 **
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
N. of events		1463			1330			1160			704	
N. of persons						5068						
N. of person-years						85389						

Coefficients from random-effects logistic regression.

** $p<0.01$; * $p<0.05$

Table A3: Effects of controls on probability of upward and downward career

	Men		Women	
	Any upward	Any downward	Any upward	Any downward
Class of origin				
Class 1	0.40 **	-0.06	0.39 **	-0.26 **
Class 2	0.18 *	-0.09	0.31 **	-0.06
Class 3	0.23 *	0.03	0.14	-0.19
Class 4 (ref.)	0.00	0.00	0.00	0.00
Class 5	0.06	-0.10	-0.02	-0.08
Class 6	-0.25 **	0.04	-0.24 **	-0.10
Class 7	-0.22 **	0.21 *	-0.17 *	-0.08
Highest level of academic qualification				
No qualifications	-0.89 **	0.77 **	-0.98 **	0.37 **
Sub-secondary	-0.95 **	0.95 **	-1.01 **	0.79 **
Lower secondary – low performance	-0.73 **	0.73 **	-0.73 **	0.44 **
Lower secondary – high performance	-0.45 **	0.52 **	-0.47 **	0.31 *
Higher secondary – low performance	-0.23	0.40	-0.05	0.15
Higher secondary – high performance (ref.)	0.00	0.00	0.00	0.00
Lower tertiary	0.14	0.36 *	0.07	0.08
Higher tertiary	0.85 **	0.17	1.17 **	0.08
Postgraduate	1.36 **	-0.16	1.80 **	-0.11
Highest level of vocational qualification				
No qualifications	-0.04	-0.19 *	-0.11	-0.23 **
Sub-secondary	-0.23 *	0.09	0.12	-0.17
Lower secondary (ref.)	0.00	0.00	0.00	0.00
Higher secondary	0.14	-0.19 *	0.27 **	-0.20 *
Tertiary	0.30 **	-0.39 **	0.46 **	-0.13
Employment status				
Working FT (ref.)	0.00	0.00	0.00	0.00
Working PT	0.76 **	0.88 **	-0.16 **	0.33 *
Unemployed	0.80 **	2.32 **	0.67 **	1.64 **
Other inactive	0.65 **	1.40 **	0.02	1.11 **
Social class position				
Class 1	..	0.67 **	..	0.82 **
Class 2	-0.46 **	0.55 **	-1.20 **	0.43 **
Class 3	0.92 **	-0.20	0.55 **	-0.27 *
Class 4 (ref.)	0.00	0.00	0.00	0.00
Class 5	0.07	0.32 *	0.21	0.52 **
Class 6	0.98 **	0.45 *	1.05 **	0.63 *
Class 7	1.59 **	..	1.72 **	..

Table A3: Cont.

	Men		Women	
	Any upward	Any downward	Any upward	Any downward
Class career mobility in past 5 years				
upward direction	0.00	-0.54 **	0.05	-0.48 **
no mobility (ref.)	0.00	0.00	0.00	0.00
downward direction	0.43 **	-1.09 **	0.33 **	-0.70 **

Coefficients from random-effects logistic regression.

Age dummies and further qualifications are also included in the models.

** p<0.01; * p<0.05

Table A4: Effects of further vocational qualifications that raise the highest level of vocational educational attainment on *downward* class career mobility by level of new qualification

	Men	Women
Level of new vocational qualifications obtained in past 3 years …		
… tertiary	-0.13	-0.05
… upper secondary or higher	-0.33	0.08
… lower secondary or higher	0.03	0.21 *
… sub-secondary or higher	0.10	0.29 *

Coefficients from random-effects logistic regression.
Models simultaneously include new academic and vocational qualifications. Models include all controls.

** p<0.01; * p<0.05

Table A5.1: Interaction effects between class of origin and further qualifications on *upward* class career mobility

	Upward mobility to…		
	Class 1	Class 1/2	any class
Men			
… Class 1/2 X any new *academic* qualification	0.10	0.10	-0.01
… Class 3/4/5 X any new *academic* qualification	0.01	0.03	-0.19
… Class 6/7 X any new *academic* qualification (ref.)	0.00	0.00	0.00
… Class 1/2 X any new *vocational* qualification	-0.41	-0.17	-0.23
… Class 3/4/5 X any new *vocational* qualification	-0.56	-0.41	-0.11
… Class 6/7 X any new *vocational* qualification (ref.)	0.00	0.00	0.00
Women			
… Class 1/2 X any new *academic* qualification	0.09	0.11	-0.14
… Class 3/4/5 X any new *academic* qualification	0.13	0.15	-0.25
… Class 6/7 X any new *academic* qualification (ref.)	0.00	0.00	0.00
… Class 1/2 X any new *vocational* qualification	-0.39	-0.24	0.16
… Class 3/4/5 X any new *vocational* qualification	-0.38	0.00	0.15
… Class 6/7 X any new *vocational* qualification (ref.)	0.00	0.00	0.00

Coefficients from random-effects logistic regression.

Models simultaneously include new academic and vocational qualifications. Models include all contro

** $p<0.01$; * $p<0.05$

Table A5.2: Interaction effects between class of origin and further qualifications on *downward* class career mobility

	Downward mobility from…		
	Class 1	Class 1/2	any class
Men			
… Class 1/2 X any new *academic* qualification	-0.55	-1.16 *	-0.11
… Class 3/4/5 X any new *academic* qualification	0.02	-0.56	-0.17
… Class 6/7 X any new *academic* qualification (ref.)	0.00	0.00	0.00
… Class 1/2 X any new *vocational* qualification	-0.05	0.01	0.16
… Class 3/4/5 X any new *vocational* qualification	-0.33	-0.07	0.03
… Class 6/7 X any new *vocational* qualification (ref.)	0.00	0.00	0.00
Women			
… Class 1/2 X any new *academic* qualification	-0.17	-0.08	0.01
… Class 3/4/5 X any new *academic* qualification	0.21	-0.68	-0.45
… Class 6/7 X any new *academic* qualification (ref.)	0.00	0.00	0.00
… Class 1/2 X any new *vocational* qualification	0.27	0.43	0.25
… Class 3/4/5 X any new *vocational* qualification	-0.11	0.27	0.17
… Class 6/7 X any new *vocational* qualification (ref.)	0.00	0.00	0.00

Coefficients from random-effects logistic regression.

Models simultaneously include new academic and vocational qualifications. Models include all contro

$** p<0.01; * p<0.05$