

Life Course Pathways to Entrepreneurship

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ABSTRACT

We conceptualise life course pathways to entrepreneurship embedded in the resource-based view of the small enterprise. As a partial test, we propose a specific pathway structured by class in the personal life course and mediated by class and gender relations in the household life course. This is operationalized employing 18 waves of the British Household Panel Survey and event history random effect logistic regression modelling. Findings suggest a primary, class-structured pathway to entrepreneurship, emergent from the inter-generational transmission of resources from family of origin. This fosters continued resource accrual in higher class (although not highly credentialed), remunerative and satisfying careers that tip into business founding as a sustained route of class privilege or, for education failures and carers with reduced entrepreneur labour capacity, a defence against downward social mobility. Lower social classes avoid entrepreneurship except as a necessity when household income is low or when labour can compensate for other resources. We suggest new research directions.

Keywords: Entrepreneurship, Life Course, Start-up, Resources, Gender, Class

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INTRODUCTION

The resource-based view (RBV) is a primary theory of the small enterprise (Lockett, et al., 2009). It conceives businesses as bundles of resources (Barney, 1991), and entrepreneurship as a process of accumulating and applying those resources to market opportunities (Penrose, 1959; Shane and Venkatarman, 2000). Associations between resource ownership and business start-up are well established. Differences in ownership across demographic groups have also been detailed (e.g. Rouse and Jayawarna, 2011) and some explanations draw on social theory (e.g. Ram et al., 2008). There are dangers, however, in associating people with one aspect of their social positioning (e.g. their sex or ethnicity), homogenising heterogeneous demographic groups and reducing dynamic experiences of the social world to static observations.

At present, we focus on individual or firm level resources at particular points in time (Barney, 1991; Lockett et al, 2009) and rely on cross-sectional studies to measure the resources related to business start-up (for example, Davidsson and Honig, 2003). Longitudinal studies are rare (Haber and Reichel, 2007). Consequently, entrepreneurship is isolated from the evolving life context which positions people in terms of institutionalised advantages and disadvantages (Ram et al., 2008), shaping their opportunity to acquire resources (Welter, 2011; Mungai and Velamuri, 2011). We require more subtle understanding about how ability and motivation to accrue and apply resources to opportunity emerges from lifelong interactions with the complex of intersecting social relations that constitute contemporary society (Bradley, 1996). Such knowledge would enable us to say much more about how individual acts of entrepreneurship emerge from, and reproduce or change, complex patterns of social organising (Welter, 2011).

We propose that the framework and methods associated with life course analysis can support more complex conceptualisation of how entrepreneurship emerges from the environmental influences that produce life chances (Bradley, 1996). Life course analysis has been widely

employed in the social sciences (Mayer, 2009), particularly to model work biographies (Heckhausen and Schulz, 1999) and transitions (Halaby, 2004). It models individual actions in the context of other social factors over time (Heinz, 2002; Mayer 2009; Reynolds, 1991), enabling us to understand how individual lives are linked between domains of action, such as family and work (Moen and Sweet, 2002), that constitute action frames (Heinz, 2002). Established methods for modelling longitudinal data have the potential to detect how common pathways of resource accrual ‘tip over’ into entrepreneurial action (Chen and Korinek, 2010). By drawing on knowledge about process we can interpret how pathways emerge from agents’ interactions with external social relations and affect context (Welter, 2011). The complexity of pathways into, and through, entrepreneurship cannot be captured in one study and, so, different life course models should be tested. To date, however, there are few studies of how entrepreneurship emerges from different life courses (Jayawarna et al., 2011).ⁱ

In this paper, we present a specific life course model of pathways to start-upⁱⁱ. This represents a partial test of our conceptual proposition that small business entrance emerges from the application of resources accrued from an agent’s lifetime experience of interacting with an external world that influences (but does not determine) access to resources and adoption of social norms. We particularly draw on the concept of class to theorise pathways of resource accrual and application to business start-up. As the entrepreneurship literature has yet to deeply theorise entrepreneurship contexts (Welter, 2011), knowledge about the effect of class inheritance on entrepreneurship is scarce (Greenbank, 2006; Rouse and Jayawarna, 2011).

Class focuses our attention on how an individual’s resource accrual is shaped by the inter-generational transmission of resources from family of origin (Roberts, 2001) and, so, how social origins influence entrepreneurial destinations (Aldrich et al., 1998). A range of class theories (e.g. Weber, Bourdieu, Marx) share the contention that family transfers have a direct effect on life chances and shape an individual’s capacity to accrue resources from non-family sources in

adulthood by influencing the work they aspire to and can command, the networks to which they belong, and the households they form (Roberts, 2001); Giddens (1981) referred to this as a person's 'market capacities' (Atkinson, 2007).ⁱⁱⁱ In relation to small enterprise, we explore how family of origin shapes direct ownership, and capacity to accrue, two of the key market capacities that are the modern 'means of production': financial and human capital.^{iv}

An important element of our proposition that life course pathways to entrepreneurship are shaped by social context is acknowledgement that society is constituted by multiple intersecting social structures (see Bradley, 1996). We begin to test this intersectionality by modelling the effect on class-structured pathways of a particular gender process (sexual division of domestic labour). This is achieved by observing the mediating effect that childcare responsibilities have on class-based pathways to entrepreneurship.^v

In the following section we review literature concerning the resource-based view of business start-up and develop a framework proposing pathways to entrepreneurship across the life course influenced by class and gender processes. We test our model by loading longitudinal data from 18 waves (1991-2008) of the British Household Panel Survey (BHPS) into a series of random effect^{vi} logistic regression models. By interpreting the findings, we present an evidence-based model of how class and gender processes influence business founding in Britain. Finally, we discuss the implications of our findings for entrepreneurship and social theory. We point to future directions in researching entrepreneur life courses.

Accrual and Application of Resources to Start-Up: A Life Course Perspective

As with the wider entrepreneurship literature, research from the resource based view has tended to focus on individual actions and neglected to theorise how resources emerge from contexts which provide opportunities to acquire resources and both guide and set boundaries on agents' actions (Welter, 2011). Thus our understanding of how resources are deployed creatively in order to identify and (re)configure opportunities towards competitive advantage (Barney, 1991) is de-

contextualised. The life course perspective enables us to view the process of accumulating resources as a lifelong project, starting in childhood. The specific focus of our life course framework is to view how resource accrual is influenced by the inter-generational transmission of tangible and intangible resources from families of origin. As parents' capacity to transmit resources depends on their own life chances, both the process and effect of this inter-generational transmission can be conceptualised as a class pathway (Roberts, 2001). As our analysis is novel and exploratory, we suggest relationships worthy of investigation rather than proposing hypotheses.

We begin our analysis by modelling the effect of parental social class on entrepreneur transition; we interpret this as shaping a range of resources useful to the small business starter. Class schemas tend (possibly erroneously) to homogenise small business owners as a separate class. This has the advantage of enabling us to analyse the inter-generational transmission of entrepreneurship. It is widely reported that the children of entrepreneurs have a much greater likelihood of start-up than their contemporaries (see Kim et al., 2006). The nature of this relationship is little understood, however (Sorenson, 2004; Aldrich et al., 1998). We will explore pathways to start-up by people whose parents have different occupations, including entrepreneurship itself. We explore additional class processes in terms of the inter-generational transmission of two resources crucial to business start-up: human and financial capital.

Human capital is the knowledge and skills acquired through formal and informal learning (education and work/life experience) that resides within individuals and relates to inter-generational transmission of knowledge and learning behaviours (Roberts, 2001). Human capital provides functional management expertise (such as operations management), as well as problem solving and innovation skills necessary to adapt to market opportunities (Penrose, 1959). The effect of human capital on the propensity to start-up in business is complex. While those with better education and experience have greater entrepreneurial intention (Kim et al., 2006), and more chance of succeeding, their opportunity cost for foregoing employment is higher. Consequently, they may

only start businesses with high earning prospects (Cassar, 2006). Education also blocks risk-taking (Davidsson and Honig, 2003). Henley (2007) reports that start-up is more likely from a poor human capital base. Davidsson and Honig (2003) and Kim et al. (2006), however, found a positive relationship between education and work experience and start-up. Contradiction in the evidence base may result from weak conceptualization of how the *process* of accruing human capital, and experience of applying it in the labour market, influences start-up (Unger et al., 2011). For example, Kim et al.'s (2006) findings relate to early entrepreneurial activity and it is plausible that the well educated only persevere with start-up if high profitability is indicated. There is significant potential to research how human capital emerges from inter-generational transmission of resources and affects both labour market experience and resource application to entrepreneurial opportunity, as part of a class process.

Financial capital is also required by almost all new businesses to create the basic infrastructure of a business and provide working capital. While investment needs vary widely, low financial resources restrict the type and scale of enterprises started (Rouse and Jayawarna, 2006) and can result in survival self-employment (MacDonald, 1996). Under-capitalisation also seems to disrupt early entrepreneurial activity which, unlike start-up itself (Holtz-Eakin et al., 1994), is largely unaffected by wealth (Kim et al., 2006; Henley, 2007). This is probably due to unperceived resource constraints (Henley, 2007).

Private finance - including personal savings and gifts from family and friends - is the most commonly used and, often, the primary source of finance at start-up (Fraser, 2004) due to liquidity constraints (Kim et al., 2006). The wealthy have most ready access to personal finance and, consequently, their start-up rates are higher and, for men at least, receiving a windfall such as an inheritance can trigger start-up (Georgellis et al., 2005; Burke et al., 2002). The impact of wealth and windfalls decreases with greater wealth accrued (Georgellis et al, 2005; Burke et al, 2002) because the wealthy may favour investment to the effort of business ownership (Kim et al., 2006).

They may be particularly motivated to fund businesses started by children not achieving labour market success and so threatened with downward mobility (Western and Wright, 1994). Most business owners do not report direct mobilisation of an inheritance at start-up (Aldrich et al., 1998), but family transfers might take on the more subtle form of savings, property or investments made via earlier family transfers, gifts, soft loans or investments that have yet to be researched. As part of a wider class process, the privileged may also accrue wealth in adulthood through privileged labour market rent (Western and Wright, 1994). Henley (2007) found that business founders did not save immediately prior to start-up, but this might be explained by business expenditure. We will investigate further the pathways of financial resource accrual associated with start-up. The small amount of analysis so far has focused on household wealth (Kim et al., 2006). Class pathways are affected by ‘households of destination’ (see Bihagen, 2008), particularly in terms of the divisions created by dual career, occupationally privileged couples compared with work-poor households (Bonney, 2007). However, we know little about the capacity of the entrepreneur to draw on household finance. Our analysis will investigate the effect of personal *and* household wealth on start-up. It is our contention that financial resources may have varying effect on different entrepreneur pathways: it may reproduce privilege, defend against downward mobility or be employed as a route of mobility.

In summary, the literature informs us that human and financial capital are important resources in creating and developing a small enterprise. Resources tend to be treated as static (Hanlon and Saunders, 2007). We argue that resource acquisition is a longitudinal process that relates to the life course of the entrepreneur. Analysis is required of how start-up is resourced by direct transfers of resources from family of origins and how the inter-generational transmission of resources influences the capacity to acquire resources –in the labour market, and through household formation – as part of a wider class process. The model we present is groundbreaking in

operationalizing calls to theorise entrepreneur contexts (Welter, 2011). It measures capital resources owned in childhood and at a foundation stage in adulthood some years prior to start-up.

Mediating Effects: Recent Labour Market and Household Experience

The decision to commit resources to a new enterprise is a process that takes time to unfold (Mazzarol et al., 1999) and is influenced by emerging position in the labour market and family circumstances (Rauch et al., 2005; Rouse and Kitching, 2006). Life course modelling enables us to test the effect of intervening events on the direct relationships under study (Mayer, 2009; Vondracek and Profeli, 2002). We seek to analyse how a person's ability to continually develop and apply their capital resources to a small venture is mediated by the on-going effect of class relations in shaping career trajectories and household income and gender processes that affect entrepreneur labour capacity (Rouse, 2010).

Our understanding of how labour market experience affects propensity to start-up is currently confined to knowledge of macro factors. The labour market can effectively 'push' people into business ownership by providing too few employment opportunities in the whole economy or particular occupations or areas (Stanworth and Stanworth, 1997, MacDonald, 1996). However, we clearly need to explain entrepreneurial careers in terms beyond macro economics (Carter et al, 2003). Evidence to date tells us that entrepreneur transitions are most commonly made by people satisfied with their jobs (Henley, 2007; Schjoedt and Shaver, 2007), despite the opportunity costs created by positive labour market status (Cassar, 2006). Thus, Minniti and Bygrave (2004) report that, in a non-recessionary period, four times as many Americans started ventures for life enhancing opportunities rather than low employment prospects. Positive labour market experience may involve exposure to niche business ideas and the resources needed to exploit these and, so, have a mediating effect on the relationship between early resource ownerships and business practice (Rauch et al., 2005). Labour market success may also create wealth that supports business investment and fund household expenses while a business is established. In class-structured

societies, privileged labour market positions often emerge from inter-generationally transmission of both resources and normative practices (Naylor et al., 2002). We currently have little understanding, however, of how labour market experience acts as a mediating influence on the relationship between early resource ownership and start-up. We model the mediating effect of job satisfaction, labour income and incidents of economic inactivity on the application of resources to entrepreneur transition.

Another criticism of the entrepreneurship literature is the construction of the entrepreneur as an individualised ‘mythical hero’ (Ahl, 2006) when, in fact, entrepreneurship is a social phenomena (Fletcher, 2007; Dodd and Anderson, 2007) embedded in the family (Jennings and McDougald, 2007; Hamilton, 2006; Aldrich and Cliff, 2003). As a consequence of strong gendering processes that create sexual divisions in household roles (Bradley, 2003), this effect is gendered (Rouse and Kitching, 2006). Domestic roles reduce women’s entrepreneur labour capacity and enhance men’s breadwinning motive. This effect varies within individual lives and across the household life course (Ekinsmyth, 2011; Rouse, 2010). Thus far, there has been no systematic attempt to test how resource accrual and application to entrepreneurship is mediated by household roles. This is despite evidence that gendered family responsibilities play a significant mediating role in institutional careers (Castelman et al, 2005; Hostetler et al, 2007). We model the effect that relative freedom from childcare has on class-structured pathways to entrepreneurship and employ this analysis to comment on how class and gender processes are likely to interact to create specific entrepreneurship pathways. We also model how household income mediates class-structured pathways and, so, begin to explore how family wealth isolated to the entrepreneur’s household in the years immediately prior to start-up affects class-based pathways to entrepreneurship.

RESEARCH FRAMEWORK

In this paper we embed the resource acquisition process in the unfolding life course of the entrepreneur and propose that it is shaped by class and gender relations. As knowledge about the

nature of these life course effects is limited, we offer an exploratory model rather than specific hypotheses. First, we predict a positive relationship between resource ownership, emergent from the inter-generational transmission of resources in childhood (T0) and at an adulthood ‘foundation stage’ (T1)^{vii}, to business founding (T3)^{viii}, our dependent variable.

We also propose that, at a ‘pre-enterprise stage’ (T2)^{ix}, three displacement factors - pre-enterprise labour market returns, household income and childcare responsibilities – affect motivation and capacity to apply resources to start-up and, so, act as mediators to the individual pathways. This model represents a partial test of our conceptual propositions; other theoretical models could (and should) be developed.

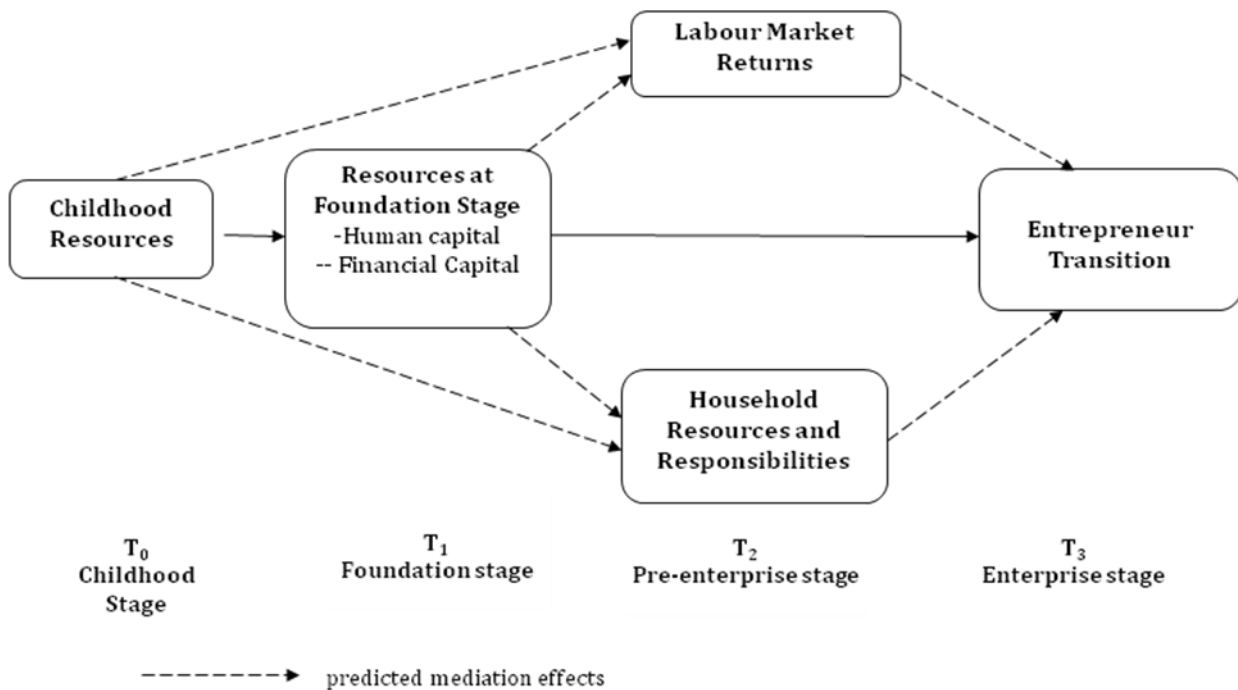


Figure 1. Resource-based Life Course Model of Entrepreneur Transition.

RESEARCH DESIGN

We test our research framework employing longitudinal analysis drawing on a secondary data source, the BHPS. Household panel data enables rigorous exploration of the contextually sensitive questions raised by life course studies (Halaby, 2004). The BHPS employed stratified random cluster sampling to develop its initial sample to be representative of British households. In

its first year (wave 1) a total of 10,264 were interviewed, covering 5,505 households. Each year, the original sample, and new members of the original sample households, are questioned via a telephone or postal questionnaire. Sample attrition rates in the BHPS are low (Uhrig, 2008); for more information see <http://www.iser.essex.ac.uk/bhps>.

Data is taken from waves 1 to 18 of the BHPS, covering 1991 to 2008. Our sample is selected on five criterion. First, booster samples employed periodically within the BHPS are excluded to promote complete data across waves. Second, proxy interviews are excluded to avoid a large amount of missing data. This leaves a starting sample of 9,613 cases. Third, only individuals of working age (aged 18-65 in wave 12), but not retired by 2008, are included. This reduces the sample by 28.5%, leaving 6,874 cases. Fourth, to ensure business founding is compared to employment careers, individuals with no economic activity during Time 3 are excluded, reducing the sample size to 5,157. Fifth, to ensure modelling of entrepreneur transition, the 365 respondents in business two years prior to first reporting entrepreneurship in the observed career period are excluded. The final sample is 4,801.

Model Estimation

We used event history analysis in its discrete time version (Allison, 1984) to estimate the direct and mediating effects of resources and displacement factors on the probability of entrepreneur transition. The logistic specification follows the principles of random intercept modelling that accounts for unobserved heterogeneity at the individual level. The model estimation used Full-Information Maximum Likelihood Method, as implemented in the package STATA 11, using Gaussian quadrature with the number of evaluation points in the Hermite integration formula set to 30^x (Butler and Moffitt, 1982). The data was reorganised to change the unit of analysis from person to person-years^{xi}. The dataset included both time constant and time-varying variables. Baron and Kenny's (1986) recommended conditions were used to establish mediation.

The underlying model in its general specification can be written as follows:

$$\log \left[\frac{Y_{it}}{1 - Y_{it}} \right] = \alpha + \sum_{g=1}^G \beta_g \cdot X_{it} + \sum_{k=1}^K \gamma_k \cdot Z_{it} + \sigma \cdot Q_i + \varphi \cdot R_i + \omega_i$$

where Y_{it} is the conditional probability of an individual entering into entrepreneurship at time (in years) $t = 1, \dots, T$ for the individual $i = 1, \dots, N$, α is a constant, X is a vector (size G) of time-varying and static resource variables measured at T_0 and/or T_1 for individual i at time t , Z is a vector (size K) of time-varying and static labour market return variables and/or household resource and responsibility variables measured at T_2 for individual i at time t . Variables age (Q) (time invariant measured at the beginning of T_2) and sex (R) (a dummy variable) were included as controls for every individual i . β , γ , σ and φ are the parameter estimates for the impact of the relevant explanatory variables on the probability of being a business founder. ω_i is the individual level random residual to measure the unobserved heterogeneity which is assumed to be iid^{xii} according to a multivariate normal distribution with $E(\alpha_i) = 0$; $\text{Var}(\alpha_i) = \tau^2$ and independent of all other explanatory variables in the model.

Model Design and Operationalization

We have focused on variables most frequently cited in the literature. As we relied on a secondary source, ideal measures and scales were not always available. We used some single item measures (relating to control variables and entrepreneur status) and a number of reflective multi-item measures (relating to human capital, financial capital, labour market returns, household income and childcare responsibilities). In general, the variables were structured such that higher scores indicate greater amounts of human and financial capital, labour market returns and household income, and care responsibilities thought to be more favourable to running a business (i.e. higher household income and few or no childcare responsibilities).

Measures

Dependent variable:

Our dependent variable is transition to business ownership. Career trajectories of every individual in the selected sample were studied for over five years (2004-2008) to detect entrepreneur career transition. For those who have made employment to business ownership career transition during the five year period were coded 1 and 0 otherwise.

Independent variables:

Childhood resources were measured using three indicators: parental social class, school level education and financial resources in childhood. *Parental social class* was measured using a reduced version of the Goldthorpe scale (Vandecasteele, 2010) with six categories: higher professional managerial, lower professional managerial, routine non-manual, skilled manual, unskilled manual and self-employed. The measure related to the father's social class, as is the convention, but the social class of the mother was used where the father was absent. *School level education* was measured using two indicators: "school leaving age" and "possession of a listed school qualification" (1- yes, 0- no). *Financial resources in childhood* were measured using a proxy of type of school attended. A nine category variable was recoded to create a dummy variable with 1 = fee paying school and 0= otherwise.

Most measures relating to the foundation and pre-enterprise phases were collected annually during the determined five year periods and, so, are time varying^{xiii}. Human capital at T₁ was measured using three indicators: highest academic qualification, on-going training and work experience. To measure *highest academic qualification*, the eight category BHPS question was recoded into three categories following Vandecasteele (2010): (1) no/low formal education (including lower secondary education) (2) medium education (including higher secondary education), 3) High level of education (university degree/higher degree). Receipt of *on-going training* was a binary measure (1=yes) in the BHPS which asked if respondents received any training (job related or other). *Employment experience* was measured by aggregating number of

years in employment (including self-employment) and calculating this as a percentage of total years in T_1 (5 years if no missing values).

Financial capital at T_1 was measured using three indicators: savings, income and home ownership. *Savings* was a dummy variable relating to whether the respondent made savings. *Total income* was measured by summing a number of income sources measured in the BHPS. The value was log transformed to induce normality. *Home ownership* was a categorical measure indicating type of accommodation: rented, mortgaged, and owned outright.

To measure pre-enterprise labour market returns, three indicators were used: job satisfaction, labour income and economic activity. *Job satisfaction* was measured using five-item, five-point Likert scale measures and a single factor was derived to estimate job satisfaction for each year. A *labour income* variable was generated through log transformation of total labour income. *Economic activity* was measured using the BHPS question “current economic activity”. Those who reported being in paid employment or in self-employment^{xiv} were treated as economically active for that year and others as inactive.

Household resources and responsibilities were measured using two indicators: household income and freedom from childcare. A *household wealth* measure was created by calculating household income per adult. This measure was log transformed to induce normality. *Freedom from childcare* was measured employing a BHPS question that asked “who is responsible for childcare?” with possible responses of 1- mainly responsible to 4- someone else is responsible. This was re-coded to allow three categories: (1) respondent takes the main childcare responsibility; (2) share responsibility; and (3) someone else take responsibility/no children. Sex (male =0; female =1) and age (in years) were used as controls.

RESULTS

We report results from the random effect logistic regression specifications (see table 1) used to measure direct and mediation effects proposed in Figure 1. Models 1 and 2 test the effect of

resources in childhood (T_0) and at the foundation stage (T_1), respectively, on business founding at T_3 ^{xv}. Models 3-8 incorporate the mediation effect of labour market returns, household income and childcare responsibilities at T_2 on the effect that childhood resources at T_0 (models 3 to 5) and adult resources at T_1 (models 6 to 8) have on business founding at T_3 ^{xvi}.

According to model 1, entrepreneur transition is significantly related (at least at $p < 0.01$) to childhood resources. Having parents with higher professional managerial occupations is positively associated with business. The lower a parents' occupational class, the lower the chance of making an entrepreneur transition. Respondents with self-employed parents, however, are more likely than children from any other occupational class to enter entrepreneurship. Childhood human capital (having a school qualification and higher school leaving age) and financial capital (having a family wealthy enough to fund attendance at a fee paying school) are also highly significant determinants of start-up ($p < 0.000$).

Adulthood social class at T_1 (model 2) is, like childhood social class, positively associated with business founding; each rung of the occupational level increases the chance of start-up. Prior entrepreneur experience is even more strongly related to new business founding.^{xvii} Only one human capital measure - work experience - is a significant determinant of start-up; having higher qualifications, and receiving on-going training is unrelated to business founding. Ownership of all forms of financial capital is positively associated with business entry: high income ($p < 0.01$), being a saver ($p < 0.01$) and outright home ownership ($p < 0.05$).

Table 1: Random effect logistic regression models for the effect of resource, labour market returns and household resources and responsibilities

MAIN EFFECT MODELS				MEDIATION EFFECT MODELS					
Variables	Measures	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
CONTROL VARIABLES									
Age		0.088***		.098***	.104***	.084**	0.091***	0.102***	0.091***
Sex	Female	-2.814***		-2.828***	-2.996***	-2.849	-1.669***	-2.193***	-2.150***
EXPLANATORY VARIABLES									
Resources at Childhood (T₀)									
Childhood Social Class – T ₀ (Ref: High professional Managerial)	Low professional managerial	-0.333		-0.119	-0.367	-0.285			
	Routine non-manual	-0.939*		-1.114*	-0.927*	-1.033*			
	Skilled manual	-1.045**		-1.137**	-0.984**	-1.087**			
	Unskilled manual	-1.685***		-1.761***	-1.544***	-1.762***			
	Self-employed	1.198*		1.054^	1.266*	1.017^			
School Leaving Age – T ₀		0.085**		0.068*	0.066*	0.057*			
Listed School Qualifications – T ₀		1.176***		1.146***	0.858**	1.192***			
Financial Resources – T ₀	Fee paying school	1.828***		1.866***	1.849***	1.751***			
Resources at Foundation Stage (T₁)									
Highest Academic Qualifications – T ₁ (Ref: High)	Medium		-0.278				-0.164	-0.276	-0.321
	Low		-0.604				-0.667	-0.701^	-0.668
On-going training – T ₁			-0.043				-0.191	-.058	-.125
Experience – T ₁			0.127*				0.102^	0.113^	0.122^
Adulthood Social Class – T ₁ (Ref: High professional managerial)	Low professional managerial		-0.146				-0.038	-.052	-0.163
	Routine non-manual		-0.979**				-1.218**	-0.953*	-1.060**
	Skilled manual		-1.112**				-1.409**	-0.989*	-1.052*
	Unskilled manual		-1.276***				-1.705***	-1.216**	-1.139**
	Self-employed		3.488***				3.512***	3.256***	3.900***
Savings – T ₁	Yes		0.312**				0.372**	0.315*	0.335**
Total income (log) – T ₁			0.362**				0.469**	0.358**	0.351**
Home Ownership – T ₁ (Ref: Rented)	Mortgaged		0.059				0.198	0.072	0.068
	Owned outright		0.729*				0.767*	0.816*	0.812*

Labour Market Returns (T₂)									
Job Satisfaction – T ₂				0.172*			0.128*		
Labour Income (log) – T ₂				0.271**			0.221**		
Economic Activity – T ₂				0.017**			0.034**		
Household Responsibility (T₂)									
Childcare Responsibilities – T ₂ (Ref: Take main responsibility)					0.542*			0.513*	
					0.968**			1.212**	
Household (HH) Resources (T₂)									
HH Income – T ₂						-0.385**			-0.373**
Wald Chi2		243.9***	346.0***	233.2***	235.3***	235.3***	388.7***	349.18***	291.37***
Log Likelihood		-3277.7	-2821.5	-2821.73	-2939.58	-3171.70	-2525.10	-2590.87	-2811.95
Variance Composition									
Sigma_u		7.93(.214)	5.90(.19)	7.91(.22)	7.98(.22)	7.82(.22)	5.76(.19)	5.98(.19)	5.80 (.268)
rho		.95(.003)	.91(.005)	.95(.01)	.95(.002)	.95(.002)	.91(.005)	0.92(.005)	912(.007)

*p<0.05; **p<0.01; ***p<0.001

Models 3 to 8 test the mediation effect of labour market returns, household income and childcare responsibilities on the relationships between resources at T_0 and T_1 on entrepreneur transition. For this we followed the conditions of mediation suggested by Barron and Kenny (1986). Condition 1 is largely supported for all childhood resources (model 1) and most resources held in the foundation stage, as outlined above. Condition 2 is also strongly supported by significant relationships between most resource variables and the mediators (results are not shown).

Condition 3 is supported by significant relationships between mediating variables (labour market returns, household income and childcare responsibilities) and entrepreneur transition. Higher level of job satisfaction ($p < 0.05$), economic activity ($p < 0.01$) and labour income ($p < 0.01$) are strongly related to business founding in models 3 and 6. Having higher household income ($p < 0.05$) is negatively related to start-up in models 5 and 8. Relative freedom from childcare responsibilities is significantly ($p < 0.01$) positively related to business entry in models 4 and 7.

Condition 4 depends on comparing model 1 with models 3 to 5 and model 2 with models 6 to 8. Irrespective of the influence of pre-enterprise labour market returns and household income and childcare responsibilities, having a parent with a higher occupational class and high childhood financial resources is strongly related to business founding in T_3 ($p < 0.01$). Positive labour market experiences, low household income and relative freedom from childcare reduce coefficients for school leaving age, suggesting they mediate the relationship between higher school leaving age and start-up. The effect of having a school qualification is also partially mediated by relative freedom from childcare. High labour market returns and low household income partially mediate the association between having self-employed parents and business entry.

The effect of higher adulthood occupational class is still positively associated with start-up but its effect is partially mediated for some groups by relative freedom from childcare responsibilities and low household income. The effect of work experience is also partially mediated by all labour market and household conditions tested. The influence of adulthood financial

resources on start-up remains largely the same but the positive effect of being a saver is partially mediated by childcare responsibilities.

DISCUSSION

We respond to Welter's (2011) calls for theorizing of how entrepreneurship emerges from, and recursively affects, context. Developing the RBV, we proposed that small business entrance emerges from the application of resources accrued from an agent's lifetime experience of interacting with an external world that governs (but does not determine) access to resources and subjection to social norms. We linked motivation and capacity to apply resources to entrepreneurship to labour market and household experiences in the years prior to start-up. We expected that people within a given society will have common behaviours and patterns of social feedback and this will create common pathways to entrepreneurship. We argued that life course modelling could enable us to identify statistical associations that represent these pathways and that, by drawing on knowledge created through qualitative research and social theory, we could interpret how pathways to entrepreneurship relate to experience of intersecting social relations.

We proposed a specific life course model that sought to identify, in particular, the influence of class relations on entrepreneur transitions. Specifically, we proposed pathways from inter-generational resource acquisition (in childhood continuing into a career period some years prior to business entrance), through displacement factors further shaped by class (labour market returns and household income) and also by gender relations (childcare responsibilities) at an intermediate period, to start-up. We then tested this model using random effect logistic specification on a reliable longitudinal dataset, the BHPS. Of course, even when strong statistical associations exist, pathways do not represent the experience of all subjects, reflecting the complexity of environmental factors and agent capacities (Archer, 2000). As all eight models tested are significant ($p < 0.000$), however, our proposition that life course modelling is powerful in explaining entrepreneurial behaviour is confirmed. One of our most significant contributions, then, is to point to the promise of a theoretical approach that embeds resource-based theory within a life course context.

Our findings support the proposition that entrepreneurship is most likely for the higher classes in Britain. Business entry is directly associated with parents' high social class and reduced by every step down the occupational ladder. Achieving educational qualifications in childhood and having a higher school leaving age are also related to start-up. As these human capital attributes are associated with parental resources, skills and attitudes, we assume they are at least partially transmitted from the family of origin in an inter-generational class process (Roberts, 2001).

Having greater financial capital in the family of origin and at the foundation stage is also directly associated with business entry. In particular, coming from a family wealthy enough to fund private education and, in adulthood, having a high income and being a saver are very strongly related to later business entry. Outright ownership of accommodation also has an effect. Henley's (2007) finding (also employing BHPS) that saving is unrelated to business founding suggest that, just prior to start-up, saving is halted as investment is made in a new venture. Our findings suggest entrepreneurship is related to a longer-term pattern of saving. Moreover, the effect of financial resource is largely unmediated by intervening labour market or household factors. This suggests that deep and enduring divisions of wealth, originating in the inter-generational transmission of wealth core to class processes and sustained through career success built on class resources, dispositions and behaviours inherited from childhood (Roberts, 2001; Hebson, 2009), fundamentally influence the chance of starting in business.

Our family wealth measure (attending a fee paying school) might be interpreted as a proxy of human and social capital accruing from an elite education, as well as family wealth.^{xviii} The lack of relationship between human capital measures in adulthood and business entry partially contradicts this interpretation, however. The better educated and trained feel too secure in prosperous employment careers to risk enterprise (Cassar, 2006). Being from a high class background and having a solid start in education, but not necessarily being the highest academic achiever, is a strong initial pathway to entrepreneurship. Adult occupational class and sustained

labour market engagement is also positively related to start-up; a pathway continues from early privilege to building a career, albeit not strongly credentialed. This may occur through privileged contacts and network abilities developed from childhood although data limitations mean we were unable to model social capital.

The effect that having entrepreneurial parents has on business foundation illustrates how norms (and probably more tangible resources) are transferred inter-generationally so start-up resembles a feasible life project (Kim et al., 2006; Western and Wright, 1994). This effect is partially mediated by positive labour market experience, which creates an opportunity cost to following a family tradition. Thus, parental self-employment has most influence on the young (Mungai and Velamuri, 2011). Partial mediation by low household income indicates some avoidance of necessity entrepreneurship; Mungai and Velamuri's (2011) report that the effect of parental self-employment is strongest when families have successful businesses suggests children raised in business families are more sensitive to the contingency of entrepreneurship on resources and opportunity. Of course, entrepreneur parents may have a range of occupational statuses – a point poorly addressed on standard class scales. We know that minority ethnic business owners who have reaped low rewards from hard work in low level service businesses channel their children to professionalized employment, although businesses pose viable alternative for under-performers (Ram et al., 2001). Mungai and Velamuri (2011) report that parents' experience of self-employment failure negatively affects the young. Further research is required to model the specific class pathways of children born to entrepreneur parents with different occupational standing and wealth.

The notion that start-up emerges from positive labour market experiences emergent from class privilege is also supported by the effect of positive labour market status as a tipping point into start-up. Job satisfaction, high labour income and more continuous economic activity are all associated with business entry two years later, but these relationships do not mediate the effect of earlier class privilege, suggesting they are part of a continuous pathway. The effect continuous

labour market experience is diminished. But as career breaks may reflect ability to rely on alternative sources of income (as well to unemployment) this mediation is not necessarily a lower class pathway to entrepreneurship. In terms of resources accrued in childhood, the only partial mediation effect is to later school leaving age. As all other class effects remain, this suggests that some people born to privilege achieve career success even when they failed to credentialise their learning and then apply their resources to entrepreneurship. In short, entrepreneurship pathways are deeply embedded in the resource base of higher-class families of origin; we are able to demonstrate this in relation to financial capital and suspect an effect is also present in relation to social capital.

Interestingly, having low levels of income per adult household member does mediate some of the class associations with start-up. We found a general negative relationship between household income and start-up. Our finding that the positive effects of staying on at school and sustaining labour market engagement, and the negative effect of being a manual labourer, are diminished by low household income confirms existing evidence that household need pushes the poorly resourced into necessity entrepreneurship (Jayawarna et al., 2011). However, the fact that most class measures are not mediated by poor household income is significant. Members of the higher classes are still more likely to start-up when household income is low, probably because they can draw on financial and non-tangible resources transmitted from childhood to meet the resource challenges of start-up and, possibly, as a middle class strategy to guard against downward social mobility (see Roberts, 2001).

Overall, start-up is associated with a lifelong pattern of capital accumulation in Britain, particularly in terms of personal wealth and, we propose, the class networks and norms that foster career success regardless of mediocre educational achievement. The most privileged – with high-class backgrounds and the best qualifications – are as likely to focus on employment careers. Agents seem to have tacit knowledge that start-up demands a range of rich resources and this generally deters the resource poor from business founding. When household income is low, the

poorly educated and socially isolated with intermittent employment records may enter business as a survival strategy (Jayawarna et al., 2011). These kinds of businesses tend to be under-capitalised, despite the small resource enhancements often made by micro-enterprise programmes (Rouse and Jayawarna, 2006). They barely make a living wage (see Rouse and Jayawarna, 2006). This evidence supports our general conclusion that entrepreneurship is, as class and RBV theorists have long argued, crucially dependent on social capacity to access resources. In the parlance of Marxist class theory, entrepreneurs require the capacity to own the means of production. This finding is powerful; it defies the popular myth that entrepreneurship is an arena of meritocracy in which hard work (i.e. unfettered agency) is more powerful than privilege in supporting business venturing (Scase, 1992). It defies the discourse of enterprise as an open route of opportunity on which neo-liberal policy depends (Rouse and Jayawarna, 2011) and contradicts more simple analysis proposing that there is no wealth or class barrier to entrepreneurship (Kim et al., 2006).

By investigating class, we not only contribute to understanding of entrepreneurship but can comment on the role that entrepreneurship has on context (as called upon by Welter, 2011). Higher rates of start-up by people following a class-privileged pathway of resource accrual suggest that entrepreneurship is a route through which class is reproduced in Britain. Indeed, our finding that entrepreneurship is pursued by higher classes with low educational qualifications indicates that it is a means of defending against downward mobility (see Roberts, 2001; Western and Wright, 1994). Entrepreneurship may, thus, hinder change to a more meritocratic system. Ultimately, this claim depends on understanding the returns on entrepreneurship made by people from different class backgrounds. As business income tends to increase in time, and is situated in wider household work and economic strategies (Carter, 2011), modelling should integrate individual, business and household life courses.

As predicted by theorising about how entrepreneur labour capacity relates to household divisions in care labour (Ekinsmyth, 2011; Rouse, 2010), freedom from childcare responsibilities is

strongly positively associated with start-up. People sharing care responsibilities also have a higher chance of start-up than primary carers. Agents, then, have a tacit understanding of limitations in the strategy of reconciling work and family through business start-up and the contingency of business growth on entrepreneur labour capacity (Rouse and Kitching, 2006; Rouse, 2010). This confirms that entrepreneurship is embedded in the family (Jennings and McDougald, 2007; Hamilton, 2006; Aldrich and Cliff, 2003). Since typical sexual divisions in care labour in Britain cast women as primary carers (Bradley, 2003), reducing their entrepreneurial labour capacity (Ekinsmyth, 2011; Rouse, 2010), we can see that family embeddedness is a strong explanation of why women start-up much less frequently than men.

Interestingly, we found that class-based pathways to entrepreneurship are particularly strong for people with care responsibilities. People with lower occupations, less regular employment experience and who do not save are more likely to apply their resources to entrepreneurship if they have freedom, or relative freedom, from childcare. They probably believe they can compensate for financial constraints by working long hours and, so, substitute with labour resource. If they are cast in the masculine role of family breadwinner, their gendered household role may enable such time investment. However, we know that some entrepreneur fathers have primary or shared childcare responsibilities (Jayawarna et al., 2011). Future analyses should investigate sex differences in the incidence and effect of childcare responsibilities on class-based pathways to entrepreneurship; ideally, this effect should be modelled to investigate change across the household life course. These findings should be employed to develop a family-embedded notion of the entrepreneur (male and female).

Sex, as a control variable, is significant in all of our models, reflecting much lower rates of start-up by women in Britain. It is likely that these differences emerge from gendered social processes that create differences in women and men's access to resources and subjection to social norms (see Rouse, 2010). It is also likely that multiple gender divisions are at work in addition to

divisions in childcare responsibilities (2003). Meanwhile, we present evidence that women's economic liberation through entrepreneurship is hindered through care responsibilities. Women of low class, who are multiply resource constrained, are particularly discouraged from start-up.

Our life course model was tested on people in a wide age range to observe incidences of entrepreneur transition in a panel study during a specific chronological period. Observations about childhood relate to particular points in respondents' life courses but all other phases are age varying. The strength of age as a control variable suggests unexplained heterogeneity related to age. This effect could be investigated in future studies through two methodological strategies: repeating the model for people of particular age ranges and comparing results, or; employing cohort studies in which age is common among all respondents. The first strategy could be pursued using our BHPS dataset, although small sample sizes may prove problematic at the age extremes, where business founding is less common. British cohort studies are available, but present data limitations; we considered using the National Child Development Study but long periods between waves meant mediation effects could not be modelled, creating a more serious compromise in model operationalization than the age effect evident in the BHPS. Life course analyses commonly include compromises and demands researcher judgement (Audas and Williams, 2001). We have consistently stated that no single study can research the complexity of life course processes and urge experimentation with both alternative datasets and models.

Overall, our findings support the proposition underlying our contextualised life course framework. An individual's capacity to accrue resources and apply them to entrepreneurship depends on their lifelong experience of a social world that creates, and sets limits to, opportunities (Welter, 2011) depending on position within intersecting social relations (Reynolds, 1991; Bradley 1996). Clearly, this finding has significant implications for the RBV, understanding of business start-up and, indeed, our conception of the entrepreneurial agent.

CONCLUSION

We set out to conceptualise and model life course pathways that stimulate entrepreneurial action. Our conceptualisation of life course pathways drew on an understanding of potential entrepreneurs as socialised agents in continual interaction with an external social world structured through complex social relations that sets boundaries on opportunities (Welter, 2011; Archer, 2000). We presented a specific model that sought to identify the effect of class on resource accrual and application to entrepreneurship. To demonstrate how social relations intersect, we also modelled the effect of a specific gender division (in childcare responsibilities) on this class-structured pathway. All of our random effect logistic specifications are highly significant. As we drew on a reliable longitudinal dataset, the BHPS, this is powerful evidence that pathways to entrepreneurship in Britain are embedded in class and gender relations. It provides initial support to our wider conceptual framework. We have also contributed to sociological theory about the nature of contemporary society by interpreting the effect that the life course pathways to entrepreneurship have in reproducing class and gender relations in Britain.

Neo-liberal policy tends to assume that entrepreneurship is an open route of opportunity or, at least, a meritocracy; our findings contribute to a growing body of evidence that undermines this notion (Rouse and Jayawarna, 2011). We identified a strong enterprise life course pathway from direct inter-generational transmission of financial and basic human capital, that supports further resource accrual through successful employment careers and subsequent business entry. This is either as a continued route of social mobility or as a defence against downward mobility for people with high class inheritance who failed in education, or who are at a point in the gendered household life course when income is stretched and/or childcare responsibilities are heavy.

Our finding that lower class agents tend to avoid start-up, particularly if their entrepreneur labour capacity is low due to care responsibilities, suggests that most have a tacit understanding of the resource demands of entrepreneurship. We know that micro-enterprise programmes can inculcate the poor and economically inactive into the discourse of enterprise as an open route of

opportunity (MacDonald, 1996), but they make only small resource enhancements and found under-capitalised businesses (Rouse and Jayawarna, 2006) that barely make a living wage (Rouse and Jayawarna, 2011). Policy makers seeking to create enterprise inclusion should respond to evidence of socially constituted life course pathways by tackling the causes of class and gender inequality. This means disrupting divisions in the inter-generational transmission of financial and human capital, and the structuring of elite social networks on higher class norms and privileges. Providing support with childcare, to liberate entrepreneurial labour capacity, is also important (Rouse and Kitching, 2006). Equalising higher level educational opportunities may play a part in promoting social mobility through employment more than entrepreneurship.

Working with secondary sources inevitably involves compromises because there is no opportunity to collect ideal data (Audas and Williams, 2001). It is regrettable that our model could not include social capital due to data limitations. Nevertheless, the free availability of mass longitudinal data that is nationally representative and not subject to significant recall or attrition bias (Uhrig, 2008) make panel and cohort studies rich sources for life course modelling. The logistic specification employed in this study follows the principle of random intercept modelling that accounts for unobserved heterogeneity at the individual level. It also tolerates modelling of inter-correlated factors within clusters.

We encourage conceptualisation and testing of multiple alternative life course pathways to, and through, entrepreneurship. Particularly, to explore how start-up emerges from intersecting social relations (Bradley, 1996; Reynolds, 1991) as they are experienced across the life course of the individual, the household and the business (Chen and Korinek, 2010). As social relations vary spatially and temporally (Welter, 2011), we encourage comparative analyses utilising longitudinal data available for different periods, countries and regions. It would be interesting to compare our results with more unfettered capitalist systems such as the United State and more highly governed societies, such as the Nordic states (National Equality Panel, 2010), where boundaries to capital

ownership may be more or less permeable (Western and Wright, 1994). Meanwhile, our evidence should not be dismissed as specific only to class-structured Britain. The hope that any American can make it in business has already been exposed as an illusion (Bates, 1997) and poor outcomes from international micro-enterprise programmes (Jurik, 2005; Karides, 2005) point to the resource intensity, and socially constituted nature, of entrepreneurial opportunities internationally. Nevertheless, we would urge that other similar studies be conducted in other geographic and cultural contexts. In addition, comparison of life course pathways enacted at different times will inform us about changes to the nature of entrepreneurial opportunities across generations. Comparison between recessionary and non-recessionary periods will illuminate the effect of macro-economic forces; macro-economic climate might also act as proxy for market opportunity, which is otherwise difficult to model using mass datasets.

To explore, at a micro level, continual interactions between social agents and external social relations in business start-up, and so to extend our knowledge of resources, opportunities and entrepreneurship itself as socially constituted, we encourage qualitative investigation of life course pathways to entrepreneurship. Studies might compare typical, socially constrained experiences with exceptional ‘rags to riches’ entrepreneur stories. Our findings suggest that innovations or inconsistencies in structure and novel strategies devised by sensemaking agents can create ‘gaps’ in normal social processes and create socially mobile routes to, and through, entrepreneurship for the minority. Qualitative enquiry is required to test and extend our theorisation of opportunity identification, development and exploitation as governed, but not mechanically determined, by a lifetime’s experience of resource accrual and subjection to social norms.

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ⁱ Notable exceptions are explorations of why entrepreneur children are more likely to start-up (Sorenson, 2004; Aldrich and Renzulli, 1998).

ⁱⁱ We employ a range of terms to refer to small business owner-management, including self-employment. Our sample includes business owners with or without employees, some of whom referred to themselves in the BHPS as self-employed and others who did not but reported being business owners. Our modelling concerns making a transition into small business owner-management.

ⁱⁱⁱ We focus on class as a process that shapes market capacities as a stepping stone to theorising entrepreneurship as embedded in, and affecting, class divided societies. Future research could usefully engage with additional or allied notions of class division, particularly as these relate to dispositions/habitus, status/autonomy and collective identification/struggle (see Bourdieu, 1990; Atkinson, 2007; Roberts, 2001; Western and Wright, 1994).

^{iv} Due to data restrictions we are unable to model social capital.

^v It is acknowledged that gender relations are constituted by a number of divisions in addition to the sexual division of labour. In particular, occupational segregation, gender practises and divisions of power (Bradley, 2003). The influence of these should be tested in life course models.

^{vi} A limitation of random effect modelling is the assumption that unmeasured characteristics of respondents are not correlated with measured characteristics. Despite this, we adopted random effect modelling because fixed effect modelling cannot estimate the effect of time invariant measures on the dependent variable important to this study (e.g. sex and education). A Hausman specification test

(Allison, 1984) suggested that, while fixed effect modelling generated better model fit ($p < 0.05$), individual parameter estimates for key variables are similar in both models.

^{vii} The ‘foundation stage’ (T1) starts two years prior to the end of the ‘pre-enterprise stage’ (T2). This begins and ends variably between 1992 and 1996.

^{viii} The ‘enterprise stage’ is the five year period in which careers were observed to detect entrepreneur transition (or not) (i.e. 2004-8).

^{ix} The ‘pre-enterprise stage’ (T2) is the five year period that is 2-6 years prior to start-up for those who made a self-employment transition in the five year observed career period (2004-8) (T3); this begins and ends variably between 1998 and 2006. For the comparison group who remained in employment, the ‘pre-enterprise stage’ is the 2-6 years prior to 2004, the beginning of the observed career period (T3).

^x The results presented are not sensitive to using fewer evaluation points (tested for 20 and 10).

^{xi} Years = 5 for all measures.

^{xii} iid – independently and identically distributed.

^{xiii} Highest academic qualification is time invariant. Employment experience is aggregated and treated as time invariant.

^{xiv} To model entrepreneur transition, respondents in business within two years of T3 were excluded.

^{xv} Preliminary analysis suggest some strong significant relationship between resources at T_0 and T_1 (T1 measures are taken for individual years, results are not reported in order to conserve space). As a result, separate models (models 1 and 2) were created to avoid strong multicollinearity effects in the models.

^{xvi} Three further models were estimated to establish that mediation conditions are met (these results are not reported to conserve space). These established an association between labour market returns, household income and freedom from childcare at T2 and entrepreneur transition in T3.

^{xvii} Due to conditions imposed on sample selection, the number of respondents in entrepreneurship at the foundation stage is very low. This finding should, consequently, be treated with caution.

^{xviii} Just 6.5 per cent of children in the UK attend fee-paying schools (Independent Schools Council, 2011). They achieve significantly higher educational success at school and labour market privilege not fully explained by better educational credentials (Naylor et al., 2002).

Who Makes Money From Entrepreneurship? : Life Course Pathways to Entrepreneur Earnings

Dilani Jayawarna and Julia Rouse

Abstract

In response to a call from Carter (2011) to research the determinants of earnings from entrepreneurship across the business life cycle, we propose a life course framework and test this to explore two questions: (1) how capability to earn from entrepreneurship emerges from accrual of resources across the life course of the individual and their household, as this relates to the inter-generational transmission of resources and, so, to a class process; (2) how capacity to earn from entrepreneurship by applying resources to opportunity emerges from the entrepreneurs' position in household work and economic strategies. We use data from 18 waves of a nationally representative longitudinal database, British Household Panel Survey, covering measures at both an individual and household level, for the period 1991 – 2008. This large and highly reliable dataset is analysed via multilevel growth curve modelling to evaluate the influence of resource histories and household strategies on entrepreneur earnings across the business life course. The results provide evidence of a higher class pathway to entrepreneur earnings, but this is not consistent. In particular, educational achievement is not significantly related to entrepreneur earnings. We propose arguments that account for this complexity, relating to selection effects in terms of the types of people in each class starting businesses, and mediating effects from class cultures and household strategies. We detect the possibility of some specific routes of social mobility to entrepreneur earnings that warrant further research. Household strategies have a much more unequivocal effect on entrepreneur earnings, which are higher if entrepreneur labour is unfettered by housework and childcare and motivated by sole breadwinner responsibility. As household roles in Britain are highly gender divided, we propose that household strategies are a primary explanation of the large sex difference in entrepreneur earnings. The research points to a significant research agenda and develops understanding of how entrepreneurship emerges from socially structured positions of action in time. Novel implications for theory and policy are outlined.

Keywords: earnings, life course, class, gender, resource-based view, entrepreneurship

1.0 Introduction

The financial rewards from entrepreneurship are 'unknown' (Carter, 2011); knowledge is scarce, dated and poorly theorised (Parker, 2006). We cannot predict who has the chance of making a living wage, or wealth, from entrepreneurship or explain these life chances. Carter (2011) has recently proposed a new research agenda, emphasising the need to conceive of entrepreneurs' financial rewards as multi-dimensional and changing across the business life cycle. She also urged us to model business rewards in dynamic relationship with the financial investment and demands made by the entrepreneur's household.

In this paper, we extend and begin to operationalise Carter's research agenda. Like Carter, we conceptualise entrepreneur rewards as complex and dynamic; we model entrepreneur earnings in terms of business drawings and profit from start-up and for up to 16 years of the business life course. In addition, we draw on the resource-based view of the entrepreneurship process (Shane and Venkataraman, 2000) to conceptualise entrepreneur rewards as the outcome of the application of resources to opportunity. Entrepreneurs' actions are bounded by context (Welter, 2010; de Clercq et al, 2011) and we propose that the capacity to accrue resources and apply them to opportunity is emergent from a lifetime's experience of interacting with a multitude of social relations and, so, is shaped by social structures (Jayawarna and Rouse, 2010). We test the effect on entrepreneur earnings of two of the primary structures that characterise contemporary society (Bradley, 1996): class and gender.

Researching the complex web of dynamics that affects entrepreneur earnings poses significant methodological challenges (Carter, 2011). In related papers (Jayawarna et al., 2011a; Jayawarna et al., 2011b), we have argued

that the framework and methods associated with life course analysis can support investigation of entrepreneurship as emergent from the environmental influences that produce life chances (Bradley, 1996; Vondracek et al, 1986) and as interacting with multiple modes of action, including the family. Similarly, we propose that a life course framework has the potential to support the conceptual and methodological advances that we, and Carter, demand in researching entrepreneur earnings. We propose a particular life course framework. This proposes that class, defined as the inter-generational transmission of resources, will shape an individual's capacity to accrue resources through their individual and household life courses. We also propose that household economic and work strategies will shape motivation and capacity to apply resources to opportunity; as household strategies are sharply gender divided, we interpret this effect as explaining sex differences in entrepreneur earnings. Motivation to draw non-pecuniary benefits from entrepreneurship (Greenbank, 2001; Benz, 2006) also affects motivation to apply resources to opportunity; we test the extent of the trade-off between non-pecuniary benefits and earnings and incorporate any effect as a control in our life course modelling. We provide a test of the proposed life course framework by modelling drawings and profit growth over the business life course from start-up, employing 18 waves of the British Household Panel Survey (BHPS) (1991-2008) and growth curve modelling.

In the following section we outline our approach to defining and measuring entrepreneur earnings. We then critique current knowledge about financial returns to entrepreneurship and outline our life course framework. After detailing our research design, we present and discuss our findings. We conclude by summarising our contribution to the theorisation of entrepreneur earnings and pointing to research directions indicated by our life course framework.

2.0 Defining and Measuring Entrepreneur Earnings

Conceptual and methodological difficulties have discouraged research into the financial rewards from entrepreneurship (Carter, 2011). Problems arise in definition and measurement. Businesses may make *profits* and take *drawings* (in the UK, drawn as wages and/or capital gains) or retain profits in the business for security and investment. Businesses may also make losses. Wages and capital gains cannot be negative but, in practice, entrepreneurs invest household income or borrowing in living costs and loss-making enterprises (Rouse and Kitching, 2006). Business owners also commonly invest in business development. As few use sophisticated accountancy systems (Allinson et al., 2010), rewards from capital investment may be taken as drawings, obscuring returns on entrepreneur labour. To offset risks, entrepreneurs have strong incentive to save (Quadrini, 2000) so drawings and profit set aside for possible future business investment are unavailable for personal consumption. In short, drawings and profits are the outcomes of differential practices of business accounting and can only be treated as approximate indicators of earnings from entrepreneurship.

Entrepreneurship may create longer-term rewards in the form of pensions (state and private) and other investments, including the prospect of business sale, although this is rarely realised (Stone et al., 2007). In a study of older entrepreneurs, Parker (2003) found that earnings wealth is particularly important to entrepreneur lifetime wealth. Thus, while it would be valuable to model multi-dimensional returns as Carter (2011) urges, beginning with a robust understanding of entrepreneur drawings and profits, as they are embedded in household finances and change across the business life course, represents a significant advance.

Measuring drawings and profit from entrepreneurship also involves approximation. Allinson et al. (2010) report that two thirds of business owners rely on drawings cited on a tax return to conceptualise business returns. Carter (2011) cites consistent evidence that income declared for tax is under-reported; this causes her to doubt claims that entrepreneurs receive much lower incomes in self-employment than they would in employment (Allinson et al., 2010; Hamilton, 2000; Fairlie, 2005; Williams, 2004). When researching income variations *within* the entrepreneur population, under-reporting only matters if it is correlated with explanatory variables. We know it is not the preserve of the rich or poor, so is not directly related to one of our key independent variables – social class. It is more common during and following start-up (Williams, 2005), a bias neutralised in our study by modelling income across the business life course. Opportunities to conceal income differ by sector (Kesselman, 1989) although too little is known to create a sophisticated compensation variable. Our study does not specifically investigate sector, but sectoral differences in opportunity to avoid tax may be correlated with our explanatory variables. Equally, under-reporting may be lower in longitudinal surveys that win respondent's

trust and are distanced from government (Meager et al., 1996) especially when they allow reports of earnings over the different timescales conceptualised by business owners (Allinson et al., 2011); these conditions are satisfied in the BHPS. Overall, we estimate that an under-reporting effect will be present, but not significant, in our studyⁱ

Income studies commonly model income per hour. We model earnings by entrepreneurs for whom business is a primary job and seek to explain earning inequalities. In this context, total drawings or profits are the figures of most pertinence to business and household viability, not earnings per hour. We do conceptualise entrepreneur labour capacity as a primary explanation of earning variation but we embed this in wider theorisation of the relationship between entrepreneurship and gendered household work strategies. We also note that entrepreneur estimation of hours worked are relatively unreliable (Carter, 2011) and entrepreneur earnings are much less formally associated with labour investment than employment, which is commonly paid in relation to a measure of time. Modelling total drawings and profit is theoretically and methodologically justified, therefore.

3.0 Explaining Variation in Entrepreneur Earnings: A Life Course Framework

In the UK, self-employment incomes are more unequally distributed than employee incomes (Parker, 2005). One in ten of the self-employed earn nothing and average earnings may be lower than full-time employment on the National Minimum Wage (Allinson et al., 2010). Equally, self-employed earnings distribution includes a long tail of high earners (Meager et al., 1996; Parker, 1997). Households that run a business often have multiple sources of income (Carter, 2011) making it erroneous to equate low entrepreneur income with poverty. Nevertheless, concerns have been raised over a growing concentration of poorly paid self-employed (Meager et al 1994); it is asserted that, in Belgium, a quarter of the self-employed live under the poverty line (Lambrecht and Beens, 2005) and growth in low paid self-employment has increased income inequality in the UK (Parker, 1997). Explanation of why entrepreneur incomes vary, and their household effects, are fragmented and poorly theorised. They rarely model the relationship between business and household finances or change over the business lifecycle (Carter, 2011).

We propose a life course approach that enables us to model earnings over the business life course in the context of the life course of the entrepreneur and their household. Life course analysis was developed following the kind of methodological critiques made by Carter (2011): criticism of approaches that use static data to model dynamic processes and calls for modelling of individual actions in the context of other social factors over time. By widening our perspective, temporally and contextually, a life course framework encourages us to explore how individual lives (and businesses) emerge in time and are linked between the social processes and institutions that govern domains of action, such as family and work. The life course approach is supported by established modelling methods and is widely employed in the social sciences (Mayer, 2009). By drawing on knowledge about process, generated through qualitative enquiry and social theory, we can interpret how pathways identified in statistical analyses emerge from entrepreneurs' lifetime experiences of interacting with external social relations that effect capacity to accrue and apply resources (Jayawarna and Rouse, 2010). This innovation follows long-standing calls to study the 'lifecycle' of entrepreneurship (e.g. Allinson et al, 2010; Williams, 2004; Cressy, 1996) as it relates to context (Welter, 2010; de Clerq, et al. 2011).

Individuals and households that are differently situated in social structures may take multiple pathways to accrue and apply resources to opportunity. Given Britain's relatively stable social system, we propose that these will include common influences and effects that can be identified as pathways. Different life course models should be proposed and tested to investigate different pathways.

In this paper, we test how the influence of class and a particular gender division create pathways to entrepreneur earnings over the business life course. In the following sub-sections we conceptualise how this business pathway relates to individual and household life courses and outline how we operationalise these dynamics in our model.

Class Effects on Life Course Pathways to Entrepreneur Returns

There is overwhelming evidence of the existence, and even the intensification, of class divisions in Britain (Roberts, 2001; Bonney, 2007). This means that citizen's life chances are significantly constrained or enabled by the inter-generational transmission of resources and norms that support economic and, related, occupational advantages. Due to lack of research interest, there is little knowledge about how class influences returns from entrepreneurship (Greenbank, 2005; Hundley, 2008), although Hundley (2008) reports that financial success is related to having a higher socio-economic background. We model the effect that the class of the family origin, measured in terms of father's occupational class and whether the family had the means to invest in the privileges arising from private educationⁱⁱ, has on entrepreneur earnings. Within our framework, class is conceptualised as a process of inter-generational transmission of resources that are applied to identifying, developing and exploiting profitable opportunities. Resources are conventionally categorised as human, social and financial capital (de Clercq, et al., 2011). Due to data limitations, we focus on how inter-generational transmission of human and financial capital affect entrepreneur earnings.

Class Pathways to Accruing Human Capital

It is our general proposition that people with the human capital that promotes productivity in the entrepreneurship process have the capacity to earn higher rewards and that these resources are accrued, in part, through the inter-generational transmission of resources, skills and attitudes that support educational and occupational pathways (see Roberts, 2001). Entrepreneur human capital includes dispositions that inform how opportunities are identified and targeted - practices such as alertness, subjective judgement and uncertainty bearing (Ross and Wesgren, 2006). It also refers to the sector-specific expertise and management skills that create exposure to market information, credibility with customers and efficiency in arranging resources to exploit an opportunity (see Ross and Wesgren, 2006; Burke et al., 2002). Our model analyses the effect that education and work experience have in developing entrepreneur human capital and how these resources result from inter-generational transmission.

We know that a primary pathway to entrepreneurship is a college level education; an apprenticeship, for example, is a particular predictor of start-up (Burke et al, 2002). Becoming an employing business is also associated with vocational, but not higher, education (Cowling et al 2004). In a life course analysis of pathways to entrepreneurship in Britain, Jayawarna et al. (2011b) found that a primary pathway is a solid school education combined with other class resources; they argued that entrepreneurship was employed to defend against downward mobility by non-graduates from relatively high class backgrounds (including the children of business owners) who are excluded from the best employment trajectories due to a lack of credentials. The poorly educated and resourced only enter business under particular conditions: when household income is very low or labour availability is high and can compensate for other resources.

The effect of education privilege on *returns* from entrepreneurship is poorly understood. We know that the linear relationship between education and earnings found in employment is not apparent (Hammerstedt, 2009; Rees and Shah, 1986). This may be a selection effect as the most enterprising fail to shine in education, which demands too much focus relative to entrepreneurs' search for variety of experiences (Lazear, 2005), or because the most enterprising graduates apply their resources to lucrative employment opportunities (Parker, 2006; Williams, 2004). Education may actively discourage entrepreneurial behaviour by developing skills that are too specialist to support commercialisation of opportunities (Astebro and Thompson, 2007). A certain level of education may be necessary for entrepreneurship, however. Too little decreases exposure to lucrative opportunities and operational efficiency (Astebro and Thompson, 2007). Thus, people negatively selected into entrepreneurship due to a lack of employment opportunities (Parker, 2006) or low wage in employment (Hyitten and Rouvinen, 2008) generate low returns, even when given skills training by enterprise programmes (Rouse and Jayawarna, 2011). We expect that class inheritance of a solid school education will create higher entrepreneur earnings than no qualifications but that returns on higher qualifications will be muted. We model the effect that school leaving age and highest qualification have on entrepreneur drawings and profit across the business life course.

Work experience creates sector-specific, management and entrepreneurial skills. Securing privileged occupational positions is part of a class pathway because it relies on credentials, skills and attitudes transmitted inter-generationally (Roberts, 2001). We are able to model five measures of work experience

before and during the business life course. The first four are: occupational class, which is closely associated with earnings in employment and likely to affect reservation wages and ability to identify and efficiently exploit opportunities in more lucrative sectors; continuous economic activity which reflects contemporary skills and occupational networks; entrepreneur experience which is likely to include learning about the entrepreneurship process, and; training undertaken during the business life course which is likely to be business specific. The fifth measure is worker age, a significant predictor of earnings in employment, in part because age brings years of occupational experience (Hammerstedt 2009; Parker, 2006). We know that age is not simply correlated with earnings in entrepreneurship, however, This is probably because entrepreneur earnings are directly related to productivity, which may be eroded by decreased economic motive, willingness to work long hours or to take risks in later life (Cressey 1996). Overall, we expect that all five measures will be positively related to entrepreneur earnings although the association with age will be muted.

Class Pathways to Accruing Financial Capital

Financial capital is the money required to make capital investments and fund working capital in a business. We know that entrepreneurs are typically from wealthy households (Quadrini, 2000) but, in the absence of longitudinal research, it is unclear to what extent this wealth is a necessary condition for, or outcome of, entrepreneurship.

A part of entrepreneur's average household wealth is unrelated to the entrepreneurship process: households are relatively old (Quadrini, 1999) and include a high proportion of the richest families (Cagetti and de Nardi, 2006). There are also reasons to believe that wealth fosters entrepreneur earnings. In the terminology of class theory, the wealthy are able to own the means of production by financing large scale businesses privately (Cagetti and de Nardi, 2006) or with few borrowing constraints (Evans and Leighton, 1989). In contrast, the poorly resourced start small scale businesses that generate low rewards (Rouse and Jayawarna, 2011). The wealthy may be motivated to apply their resources to entrepreneurship to buy themselves out of oppressive aspects of the employment relationship; their expression of a high preference for entrepreneurship experience (Hurst and Lusardi, 2004) may reflect a class-related sense of entitlement to this liberty. Investing in larger scale businesses opens up the chance of high rewards (Cagetti and de Nardi, 2006) and may be pursued as a route to further social mobility. However, the rich also have the financial capacity to tolerate low rewards (Moskowitz and Vissing-Jorgensen, 2002) in exchange for entrepreneurship experience. High rates of business entry by the wealthy (Nanda, 2008; Cagetti and de Nardi, 2006) and following an inheritance (Burke et al, 2002) suggest that wealth does trigger the application of resources to opportunity. We propose that the application of household wealth creates a pathway to higher entrepreneur earnings because it enables large scale and economically efficient exploitation of opportunities. We analyse how the entrepreneur's individual life course affects their capacity to apply wealth to entrepreneurship by testing how income from a job and ability to save two years prior to start-up affects earnings across the business life course.

Our class thesis predicts that the wealthy will receive higher returns on entrepreneurship and this will sustain a privileged pathway to higher entrepreneur earnings. We know that successful business families have a high saving rate, motivated to offset risk and reduces borrowing constraints and costs (Quadrini, 2000). If money saved is never required for business, it converts into family wealth; if it is invested, it creates higher rewards. Successful business families may also receive large payments on an occasional basis (Carter, 2011). Quadrini (2000) identified an elite and inter-generationally transmitted pathway to business success: families with long experience of accruing business experience, networks and wealth apply these resources to new opportunities in successive waves of entrepreneurship and across generations. Cassar (2007) also report a cyclic process in which the accrual of wealth in entrepreneurship motivates growth intention and leads to growth; if initial growth is triggered by application of resources transmitted inter-generationally, then growth intention and the realisation of growth may be part of a class pathway. We model the effect of returns from entrepreneurship on the trajectory of entrepreneur earnings across the business life course.

We consider class primarily in terms of the individual life course and, in particular, the 'family of origin' that transmits resources to our research subjects. However, class pathways are also affected by the 'households of destination' that people form as adults (see Bihagen, 2008). An unanticipated consequence of women's higher labour market participation has been the intensification of privilege in middle class households formed by dual

career, occupationally privileged couples (Bonney, 1998). We model the effect of spouse income and household investment income two years prior to start-up on entrepreneur earnings over the business life course. The effect of household wealth accrued during the business life course is conceptualised in relation to household economic strategies, outlined in the following section, which help to explain both class and gender pathways to entrepreneurship.

The Effect of Gendered Household Strategies on Entrepreneur Earnings

Carter (2011) reminds us that small business households have multiple sources of income (Carter et al, 2004) and share resources with businesses in different patterns over time (Baines and Wheelock; Ram et al., 2001); business finance and labour are embedded in a relationship between businesses and households (Aldrich and Jennings). We propose to operationalise these ideas within our resource-based view of the entrepreneurship process by analysing how household strategies (Pahl, 1984; Wallace, 2002) govern the capacity to continually accrue resources for, and motivation and capacity to apply resources to, a small enterprise. First, we propose that household financial strategies - the practices through which households draw in and organise finance to meet immediate and longer-term consumption needs and aspirations - motivate and structure business investment, drawings and profit. Second, we assert that household work strategies - the practices through which households organise, perform and purchase the labour required to meet household consumption demands including paid work - shape capacity to apply resources (particularly labour) to entrepreneurship (Rouse, 2010).

Household strategies were first conceptualised to research how families 'get by' during recession (Pahl, 1984) and have been widely employed to explain household behaviour in contexts where weak labour markets and welfare systems mean families 'cobble together' income from a variety of sources (Wallace, 2002). Enterprise households share this economic uncertainty and complexity and, as Wallace (2002) notes, the act of accruing and organising household resources under uncertainty itself demands enterprise. Institutions such as welfare systems, labour markets and service/product markets define which consumption demands must be met by households and shape means of meeting household needs (Glucksmann, 1995). Our statistical analysis cannot capture all of this complexity, which warrants a research programme of its own (Rouse, 2010). We are able to model the effect on entrepreneur earnings over the business life course of household work strategies measured in terms of the reproductive demands made on the household (whether the entrepreneur is partnered and the number of children under 12), the entrepreneur's reproductive labour role (housework and childcare responsibilities), the time they are able to commit to business management and the time the spouse is pulled away from reproductive labour by paid work. Household economic strategy is measured in terms of: how financially dependent the household is on the business (measured in terms of the availability of alternative financial sources - spouse's income and household investment income); the entrepreneur's breadwinner role (lone, primary or shared), and; how far the household is from a subsistence level (measured in terms of savings made from the entrepreneur's income).

Carter (2011) asserts that small businesses have considerable opportunity to match business returns to household needs. We concur with Fosberg (2009) that household strategies may not be fully intentional, involve competing interests and are shaped by social structures that govern access to resources and normative behaviour in accruing and applying resources. It is plausible that in some instances entrepreneurship involves the intentional alignment of household strategies to meet the labour and economic demands of a small enterprise; indeed this may be an important terrain for the exercise of entrepreneurial capital. However, within our life course framework, we emphasise that this process will be constrained by the entrepreneurs' social capacity to accrue and apply resources to entrepreneurship. Enterprise may be part of a household work strategy that complies with the institutionalised 'common sense' of the male breadwinner and the female part-time earner accommodating a primary domestic role (Rouse, 2010; Hundley, 2000; Carr, 1996). This is difficult to resist due to higher male earnings promoted by occupational segregation, powerful mothering norms, gendered division of labour in the household and lack of welfare support for childcare (Rouse and Kitching, 2006; Rouse, 2010). Heavy caring responsibilities may be a 'given' role for women and businesses may be accommodated to this gendered household strategy, rather than vice versa. As accommodating a business to trade from home and during flexible or unconventional hours can mean applying resources to female-dominated sectors that are low paid (Hundley, 2000) and foregoing legitimacy (Marlow, 2006), gendered

household strategies can affect returns on labour invested as well as the capacity to invest labour in a business.

Consistent evidence that the gender earnings gap in self-employment is larger than in employment (Leung, 2006; Hundley, 2001; Carr, 1996) indicates the effect of gender divisions. Single women earn more than their male counterparts (Hundley, 2000), discounting the idea that 'under-performance' is intrinsic to sex. Yet, women have much lower value businesses than men with similar resource stocks (Burke et al 2002). Having a low value business, relative to expectations based on qualifications, is related to working part-time, being a mother, longer hours of domestic work and family size (Burke et al, 2002; Hundley, 2000; Leung, 2006). Men's higher earnings relate to freedom from domestic responsibilities (Hundley, 2000). There is some evidence that entrepreneur households have sharply gender divided household work strategies (Devine, 1994), either working very long hours as primary breadwinners and relying on a partner to cover domestic labour, or working very short hours as a female carer and accommodating the business to limited entrepreneur labour capacity. Higher earnings are created by working very long hours (Allinson et al, 2010), to offset the risk of income insecurity (Parker, 2006) as well as to increase production. Some business owners create high incomes on a part-time basis (Meager et al., 1996; Hundley, 2000), suggesting the effect of intersecting social relations including class and, perhaps, personal agency. This association is, however, rare. We expect that when entrepreneurs occupy positions within household strategies where their reproductive labour demands are low and their breadwinning role is high they will have greater capacity to apply their labour to entrepreneurship and, so, create higher earnings. The effect of household financial dependence on the business may be more equivocal due to the intersection of class and gender relations: poorer, dependent households will be less able to invest in business development, as part of a class pathway, but heavy dependence on the business will prompt breadwinner commitment of whatever resources are available. As it is beyond the remit of our analysis to test this intersection, we expect a neutral effect from household dependence.

The Mediating Effect of Non-Pecuniary Benefits on Resource Application

It is widely argued that small business owners are not motivated to pursue high incomes (Greenbank, 2001; Benz, 2006) but, instead, seek a satisfactory living combined with the non-pecuniary benefit of job satisfaction which is associated with work characteristics such as work initiation and independence (Blanchflower, 2004; Blanchflower & Oswald, 2004; Hamilton, 2000; Greenbank, 2001). Desire for non-pecuniary benefits motivates business start-up (Burke et al. 2002) and the self-employed report greater satisfaction than employees (Blanchflower, 2004; Hundley, 2001). Trade-off of non-pecuniary benefits with entrepreneur earnings can be conceptualised in terms of the resource-based view of the entrepreneurship process. Desire for independence and autonomy may reduce motivation to apply resources to employment growth (Cassar, 2007), restricting business scale and earnings. Behaviours such as search for variety may reduce productivity in resource application (Astebro and Thompson, 2007) and so decrease profitability. Need for subsistence means that entrepreneurs usually have some economic motive and some seek higher returns. Like all motivations, economic desire may be variable across life courses (Jayawarna et al., 2011a). We are able to test the importance of work initiation, independence and financial gain in work prior to business start-up on initial drawings and profit and the effect of job satisfaction on earnings across the business life course. We also analyse the relationship between general job satisfaction and earnings. We test the idea that non-pecuniary benefits are traded-off for earnings and ensure that any effect is accounted for in our model.

The Effect of Business Life Course on Entrepreneur Earnings

Little is known about how earnings from entrepreneurship change across the business life course (Carter, 2011). While we know that most small businesses do not grow to be significant employers, longer established businesses have a higher chance of survival (Parker, 2006) and greater value (Burke et al, 2002). The association between age and performance is influenced by two early selection effects. First, poorly resourced new business owners are often the 'disguised unemployed' (Hyitten and Rouvinen, 2008) who readily select themselves out of entrepreneurship when employment is available. Second, poorly resourced new businesses may be selected out by the market because they are only able to identify marginal opportunities or they exhaust resources before profitability can be established. Businesses that are not selected out early are likely to improve performance and earnings following start-up as they build the resources required to efficiently

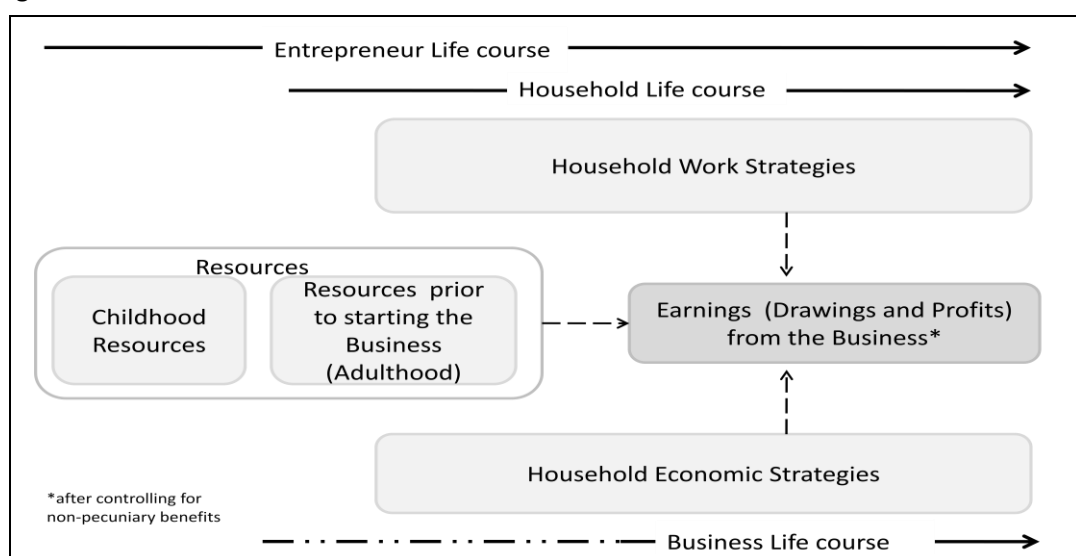
identify, develop and exploit opportunities. To remove this selection effect, we model earnings from businesses that traded for at least three years; this creates a research gap in terms of understanding how class and gender relations effect earnings from short business tenures. As most businesses do not grow significantly, we do not expect initial increases in earnings to be sustained. There is some evidence that more experienced business owners focus on growth in profitability, rather than employment (Allinson et al., 2010), so we expect that profits will grow more continuously than drawings. However, given heterogeneity in how rewards are reported, this effect may be occluded. We model earnings growth across the business life course up to 18 years. As business life courses vary in length, we control for business tenure.

Life Course Framework Summary

We have built on Carter's (2011) call for a more embedded and dynamic understanding of entrepreneur financial well-being by proposing that returns across the business life course should be associated to individual and household life courses and their governance by the structures of class and gender. We have proposed a pathway of inter-generational resource transmission from childhood resulting in human and financial capital resources that, in general, foster the profitable identification, development and exploitation of opportunity and, thus, higher entrepreneur earnings. We have also associated resource to the formation of privileged, dual earner couples and, so, developed the class pathway to include the accrual of financial resources within the household, prior to and during entrepreneurship. Equally, we have proposed that capacity and motivation to apply resources depends on the reproductive labour and finance demanded at different times in the household life course and the entrepreneur's role in fulfilling this need. We have employed the concept of household strategy to associate resource application with taking a higher breadwinning role within household economic strategies and a low domestic and care responsibilities within the household work strategy. In acknowledgement of entrepreneurs' common pursuit of non-pecuniary benefits from business trading, and the negative effect this may have on resource application, we have included the effect of pursuing economic and non-economic motives in our modelling. To avoid early selection effects and to model earnings from start-up, we model associations between resource accrual and application on entrepreneur earnings in businesses started during the study period and that traded for at least three years.

Family class, human capital and financial capital resources accrued within the entrepreneur's individual life course are measured in childhood and two years prior to start-up. Resources accrued in the household life course are measured two years prior to start-up and, for time varying measures, across the business life course. Household strategies are modelled across the business life course. Drawings and profit are measured annually across the business life course for up to an 18 year study period.

Figure 1: Life Course Framework



4.0 Method and Sample

We draw on data from British Household Panel Survey (BHPS), a secondary data source that employed stratified random cluster sampling to develop its initial sample (taken in 1991) to be representative of British households. In its first year (wave 1) BHPS interviewed (via a telephone or postal questionnaire) a total of 10,264 individuals, covering 5,505 households on a number of individual related (e.g. employment, education) and household related issues. For the purpose of this paper, data is taken from waves 1 to 18 covering 1991 to 2008. Our initial sample includes any individual who reported self-employment or business ownership as their employment status at any wave during the 18 years of the survey and the study period for each respondent was their longest period of business trading. To constitute a working age sample, respondents aged over 65 at wave 1 were excluded. To remove early selection effects, and to satisfy the requirement that quadratic growth modelling should include at least three data points (Willett, 1988), respondents without a trading period of at least three years were excluded. Individuals who at wave 1 or 2 reported that they own a business and were only included if they had a break from business ownership and start-up during the study period. This was to enable modelling of resource variables two years prior to start-up. Nine cases were subsequently excluded from the final sample due to they being highlighted as severe outliers. Our sample was 645 respondents with between three and up to 16 years of continuous business ownership. We used the longest spell of business ownership for those respondents who reported multiple spells. The sample used in the drawings and profit model varied based on the number reported missing data for both dependent and independent variablesⁱⁱⁱ.

Measures

The dependent variables are drawings and profit^{iv}. These are modelled separately for two reasons: first, we wish to explore whether there are different growth trajectories in the two reports of earnings, and; second, estimating total earnings requires a method of handling missing data (most usually regarding profits) which could introduce bias^v. Inflation adjusted drawings and profits from each wave were used as our dependent variables (2011 equivalent figures). Log transformation was applied to both these variables to induce normality. Age of the business in years (T) is our growth measure. This enables modelling of earnings across the business life course. We applied a centring procedure recommended by (Hoffmann et al., 1998) to our growth variable to adjust the intercept to be the first year drawings/profit.

Class pathways are modelled using a number of resources, accumulated in childhood and adulthood. Childhood resources were measured using three indicators: parental social class, school level education and financial resources in childhood. Parental social class was measured using a reduced version of the Goldthorpe scale (Vandecasteele, 2010) with five categories: higher professional managerial, routine non-manual, skilled manual, unskilled manual and self-employed. School level education was measured using the indicator “school leaving age”. Financial resources in childhood were measured using a proxy of type of school attended. Nine category variable was recoded to create a dummy variable with 1 = fee paying school and 0= otherwise.

Adulthood resources were measured using a number of items. To measure highest academic qualification, the eight category BHPS question was re-coded into four categories (1) no/low formal education (including lower secondary education) (2) GCSE qualifications, (3) post school including A’Level qualifications, (4) university degree and postgraduate level qualifications. Receipt of training is a time varying binary measure (1=yes). Age (log transformed) was measured in the first year in business. A binary measure of previous business experience was constructed by scrutinising questions about employment history at Wave 1 and reports of employment status in each wave; “1” has previous business experience and “0” otherwise. Economically inactivity was measured two years prior to start-up and is a binary measure with 1= economically inactive and 0 otherwise. Respondent’s occupational class was measured using the aforementioned five categories of the Goldthorpe scale but this time in relation to the respondents’ own occupational status, two years prior to start-up. All five financial capital measures (household investment income, combined income from first and second job, spouse earning, benefits, savings) were taken two years prior to starting the business. The first three were measured on a continuous scale and log transformed to induce normality. Receipt of benefits and savings are binary measures (1= received benefits/had savings; 0 = otherwise).

Household work strategies were measured throughout the business life course using number of indicators. Number of children in the household was measured at each wave and therefore is time variant. Number of

hours the respondent spent doing housework and working in the business, and the spouse spent on paid work, are time varying (log transformed) measures. Marital status was re-coded to produce a binary measure where 1= married or cohabiting and 0 = otherwise. Childcare responsibility was re-coded in accordance to two category variables (1= respondent takes the main childcare responsibility, 0= share responsibility or take no responsibility/has no children under 12). Household economic strategy was also measured across the business life course using multiple indicators. Time varying (log transformed) measures were taken for household investment income, savings from business earnings, and spouse monthly earnings. The breadwinner role measure was constructed with three categories (1= sole breadwinner, 2= primary breadwinner and 3= secondary breadwinner. These categories were derived using the income/drawings measures for both the respondent and the spouse.

Non-pecuniary benefit (independence, work initiation and financial motivation) measures were derived by assigning “1” if the motive was ranked in the top two most important aspect of their job and “0” otherwise. Job satisfaction was reported by respondents on a scale where 1 represents not satisfied at all and 7 represents completely satisfied. Business tenure was a control variable used in all models^{vi}.

For each time varying explanatory variable, we derived three variables and predicted three related coefficients: the first takes values in the first year of trading; the second reports proportional change in values over the business life course, and; the third reports time interactions with the values reported in the first year. While the first indicator measures the initial effect, the second and third indicators measures respectively the change in effect over time in relation to the effect in the first year and whether the first year effect persist over the life course of the business.

Analysis strategy

Using the BHPS longitudinal data we estimated relationships between within-individual changes in the two earnings variables (drawings and profit from business) to within-individual and between-individual changes in class resource, household work strategies, household economic strategies and non-pecuniary benefits. We employed growth curve modelling to study the initial effects and subsequent growth patterns. Growth curve models belong to a general class of mixed models that can estimate variations within nested data structures. Multi level modelling is important because hierarchically structured data violate standard linear regression assumptions. When compared to other mixed method approaches, growth curve modelling has the advantage of separating out between- and within-subject influences on dependent variables. These models also work with time varying covariates and unbalanced data. Crucially, it minimises the bias related to unmeasured individual differences between those making different levels of drawing and profit.

In the two level hierarchical model we treat multiple observations over time as nested within respondents. The first level of the hierarchical model includes variables referencing time (business age) and time varying covariates. Level one parameters become outcome variables in the second level; we use Level 2 parameters to address between-person variation in earnings and warning growth.

The Level 1 model can be written as:

$$Y_{it} = \beta_{0i} + \beta_{1i}T_{it} + \beta_{2i}T^2_{it} + \sum_p \beta_{Xi} X_{pit} + e_{it}$$

where Y_{it} is the measure of wealth (drawings or profits) for individual i at time t , and parameters β are specific to each individual i . β_{0i} refers to the individual's intercept, β_{1i} is the rate of change in drawings or profits, β_{2i} is the acceleration of the rate of change, T and T^2 are the linear and quadratic terms of the business age and β_{Xi} represents the parameter estimates for X number of time varying explanatory variables that may affect wealth creation through entrepreneurship for individual i at time t .

The effects of the time varying covariates may be biased and inconsistent if the Level 1 predictors, X_{it} , are associated with person-level factors that influence the outcome variables (Halaby, 2003). To eliminate this potential bias in the estimation of Level 1 explanatory variables, we included the initial values^{vii} for each time-

varying variable X_i as predictors in the Level 2 intercept and slope equations. By including the initial status of the time varying variable in the Level 2 equations helps to control for sources of unobserved heterogeneity bias (Halaby, 2003).

The Level 2 equations can be written as

$$\begin{aligned}\beta_{0i} &= \gamma_{00} + \gamma_{01}P_i + \gamma_{0X}X_i + \gamma_{0Z}Z_i + U_{0i} \\ \beta_{1i} &= \gamma_{10} + \gamma_{1X}X_i + U_{1i} \\ \beta_{Xi} &= \gamma_X\end{aligned}$$

where β_{0i} indicates the wealth for individual i for business age=1; β_{1i} is the expected change in wealth during the business tenure; β_{Xi} represents the effects of time varying variables that may affect changes in Y ; and U_{0i} and U_{1i} indicates the variation around the intercept and linear components. The coefficients for the effects of the time varying measures in equation 1 are fixed rather than random at level 2. γ_{0X} and γ_{1X} reflects the effects of between-person differences in time-varying covariates. Z_i and corresponding coefficient γ_{0Z} represent the effects of all the time invariant resource variables (including childhood resources, adulthood resources, household work strategy, household economic strategy and non-pecuniary benefits). P_i and the associated γ_{01} coefficient represent the effects of the control variables. The individual growth parameters depend on person-level characteristics and vary by the age of the business. The Level-2 model specifies a distinct average trajectory for each business stage and incorporates other time-invariant covariates associated with each individual. Restricted maximum likelihood-empirical Bayes parameter estimates were obtained using STATA “XTMIXED”. AIC and BIC statistics were used to assess goodness of fit (the smaller the value, the better the model fit).

5.0 Data analysis

Table 1 describes the mean, median and standard deviation of annual drawings and monthly profits make from businesses taken at different stages of the business. Mean drawings at age 1 is £14,628 and median drawings is £11,513. Profits, reported monthly, are lower: mean £877 and median £600. Business drawings and profits increase annually, on average, up to year 9 or 10 and then decline.

Table 1: Average drawings and profit over the business life course of the business: descriptive analysis

Drawings /per year	Year 1	Year 3	Year 5	Year 8	Year 9	Year 10	Year 12
Mean	£14,628	£16,037	£18,538	£22,119	£22,211	£20,813	£20,006
Median	£11,513	£12,213	£12,440	£13,045	£15,787	£14,899	£14,125
S.D	£15,029	£15,690	£26,109	£30,376	£22,697	£19,127	£18,017
Profits /month							
Mean	£877	£1127	£1388	£1436	£1450	£1406	£1374
Median	£600	£683	£833	£842	£862	£833	£833
S.D	£1018	£1580	£3174	£2588	£2303	£2395	£1850

Growth modelling

We estimated two sets of models: unconditional models (one each for drawings and profit) to examine the mean and variance of the within-subject parameters, and; conditional models estimating the effect of class and household strategy variables on the variance of within subject parameters.

Unconditional Models

The unconditional models include an intercept representing the individual’s expected drawings or profit at first year in business, a slope parameter to capture the linear rate of change in wealth, and a quadratic term^{viii}. The squared term allows the average change in income for the whole cohort to have a non linear shape and this quadratic parameter explains the extent to which the slope of the growth curve is increasing or decreasing. We included a random slope for the time measure to allow the relationship between our outcome measures (drawings/profit) and explanatory variables to change across level 2 individual measures. However we did not add the random slope parameter for the squared term and therefore did not remove the constraint that all individuals experience the same change in monitoring scores over time. Therefore in our baseline model, the random part of the model only allows linear departures from the average growth curve and prevents us

modelling whether some individuals have steeper or shallower curves. Fitting a squared term in the random part of the model will in general require more repeated measurements per individual than our data permits and adds complexity to the model.

Table 2 presents our baseline models of drawings (Model X) and profit (Model Y). While our fixed effects results provide information about average change across all individuals, the random effects provide variance components that give information about variation between individuals. . All mean and variance growth parameters differed statistically from zero. Mean linear growth rate in drawings is estimated to be .0643 ($p < 0.000$), indicating a highly significant positive rate of increase over the observed business life course (this is equivalent to an average of £914 increase in drawings per year). The expected acceleration of drawings is also significant but negative ($\beta = -0.005$; $p < 0.000$) indicating that the rate of growth in business drawings is not constant, but rather progressively declining (at a rate of £56 per every year). This linear and quadratic change in drawings over time is depicted in figure 2a.

The significant random effects in table 2 suggest that expected drawing level at year 1 ($\beta = 1.202$; $p < 0.000$) and linear growth in drawings ($\beta = 0.024$; $p < 0.000$) differed among business owners. The very high intra class correlations coefficients for the intercept variation indicate that around 60 percent of variation in initial drawings is the result of differences between individuals. The contribution of the random effects to model explanation is confirmed by an omnibus hypothesis test ($\chi^2 = 15.73$, $df = 7$, $p < 0.05$).

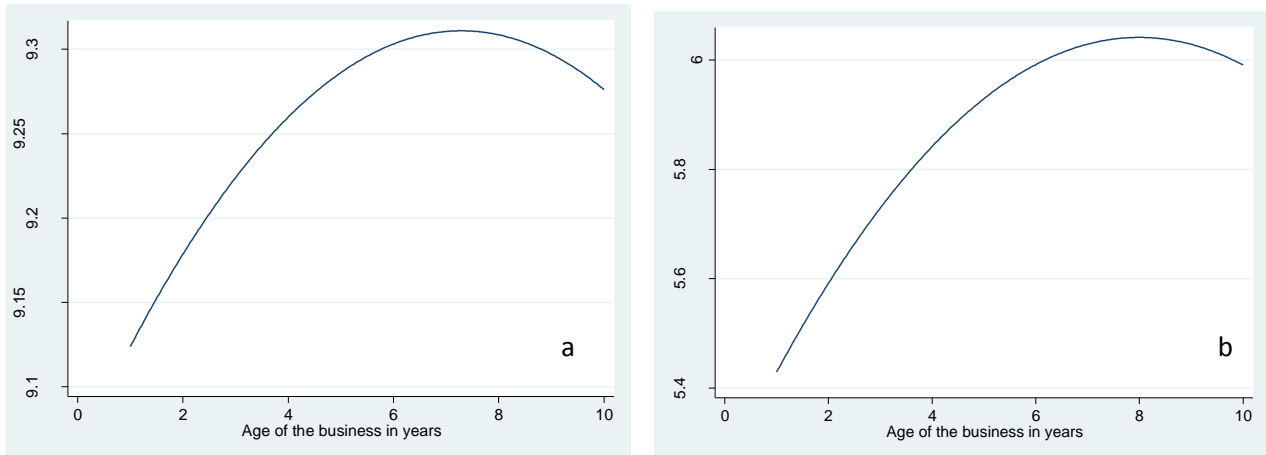
Table 2: Unconditional model

	Drawings from the business (model X)		Business profit (model Y)	
	Beta	Std Error	Beta	Std Error
Unconditional Model				
Fixed Effects				
Mean initial wealth	9.1238***	0.0521	5.4292***	0.1273
Mean growth rate	0.0595***	0.0140	0.1751***	0.0372
Mean quadratic growth rate	-0.0047***	0.0010	-0.0125***	0.0029
Random Effects				
Individual initial wealth	1.2025***	0.0941	5.2359***	0.4961
Individual mean growth rate	0.0236***	0.0033	0.1467***	0.0218
Intra class correlation coefficient (ICC) – intercept	0.6013		0.5482	
Log Likelihood	-6459.76		-8360.00	
AIC	12933(7)		16734(7)	
BIC	12978(7)		16777(7)	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Profit had a higher rate of linear growth (£118/month) and deceleration in growth in profit (£11 per month), compared to drawings, over the observation period. As with drawings, there is significant variability in profit between individuals in both initial status ($\beta = 5.24$; $p < 0.000$) and linear rate of change ($\beta = 0.147$; $p < 0.000$) over the business life course. The overall variation in profit at the individual level is amounting to 54.8 percent. Profit per individual also varies significantly between time points (residual variance is highly significant – results not shown) suggesting variability in profit can be partially attributed to within individual between time points variation. Overall, although the two growth curves for drawings and profit (figure 1) follow a similar shape, there are some marked differences in the initial status of drawings and profit and the variability over time between and within individuals.

Figure 2: Growth curves: a) Drawings, b) Profits



Conditional Models

We first tested the hypothesis that non-pecuniary benefits could explain average and growth patterns in drawings and profits. As can be seen in table 3, after controlling for business tenure non-pecuniary explanations failed to predict average drawings. Job satisfaction along was a significant non-pecuniary benefit predictor of profit and this relationship was positive. Overall, the non-pecuniary benefit variables added to this model only explained less than 1 percent of the individual level variation in both drawings and profits. The expectation that earnings are traded for non-pecuniary benefits is discounted, therefore.

Table 3: Growth models for non-pecuniary benefits

	Drawings from the business		Business profit	
	Beta	Std Error	Beta	Std Error
Non pecuniary benefits model				
Fixed Effects				
Intercept	8.778***	0.136	4.7396***	0.308
Time (T)	0.0605**	0.016	0.1608***	0.038
Time ² (T ²)	-0.0047***	0.001	-0.0121***	0.003
Controls				
Business tenure	0.0278**	0.009	0.4059	0.022
Non-pecuniary benefits				
Motivation – work initiation	0.0102	0.086	0.0127	0.176
Motivation – independence	-0.0189	0.060	-0.0721	0.118
Motivation – money	0.1016	0.085	0.1108	0.174
Satisfaction in business ^a	0.0184	0.016	0.0786*	0.040
Random Effects				
Individual initial wealth	1.4798***	0.121	5.213***	0.489
Individual mean growth rate	0.0247***	0.003	0.1392**	0.021
Log likelihood				
AIC	-6505.42		-8470.92	
BIC	13034.84(12)		16965.8(12)	
	13111.35(12)		17040.26(12)	

*p<0.05; **p<0.01; ***p<0.001

Table 4 presents findings from the measuring of class-transmitted resources. Addition of these variables to the baseline model with controls does not change the general drawings and profit growth pattern. None of the childhood resources is significant predictor of drawings. Of the childhood resources studied, parents social class variables have significant positive effect on profits: respondents from high professional managerial (p<0.05)

and routine non manual ($p<0.01$) childhood family backgrounds (in relation to unskilled manual backgrounds) have higher propensity to make higher levels of profits from business.

Of the adulthood resource measures studied, age of the respondent exhibits a negative and highly significant association with drawings and profit. Education has no significant effect on drawings or profit; indeed, having qualification beyond school level (GCSE) has a negative effect, compared with having no qualification, although this is not significant. Having entrepreneurship experience and Training while in business has a significant positive effect on drawings, although not profit. Occupational class two years prior to start-up does not predict earnings, except for professional and managerial occupations and those hopping from a previous spell of business ownership.

Of the financial capital measures studied, income from a job two years prior to start-up is highly significant ($p<0.000$) in predicting drawings and profit. Having savings is equally strongly related to drawings ($p<0.000$), but less strongly to profit ($p<0.05$). Household investment income is negatively related to profits and Receipt of benefits is negatively related to drawings. Overall resource measures together explained 7 percent and 6 percent of the individual level variation in drawings and profits, respectively, after controlling for business tenure and non-pecuniary benefits.

Table 4: Growth models for the class-based resource measures

	Drawings from the business		Business profit	
	Model X		Model Y	
Fixed Effects	β	Std. error	β	Std. error
Intercept	5.569***	0.511	2.829***	1.716
Time	0.0663***	0.015	0.277***	0.064
Time ²	-0.0049***	0.001	-0.018***	0.005
<u>Childhood resources</u>				
School leaving age	0.0216	0.025	0.089	0.073
Type of school attended	-0.0349	0.121	-0.375	0.303
Parents Social class (ref: unskilled manual)				
High professional managerial	0.0416	0.106	0.671*	0.336
Routine non manual	0.0237	0.166	0.972**	0.355
Self-employed	-0.0625	0.103	0.278	0.394
Skilled manual	0.0437	0.097	0.534	0.339
<u>Adulthood Resources</u>				
AGE as a human capital	-0.0228***	0.003	-0.033***	0.009
Academic qualifications (ref: no qualifications)				
Degree and above	-0.0605	0.132	-0.104	0.259
Post School qualifications	-0.0741	0.095	-0.249	0.362
GCSE qualifications	0.0278	0.193	0.102	0.202
Training in business	0.1528**	0.052	0.244	0.203
Previous SE experience	0.2100*	0.086	-0.052	0.240
Economically inactive prior to business start-up	-0.0363	0.094	-0.261	0.276
Occupational class at start-up (ref: unskilled manual)				
High professional managerial	0.1865*	0.080	0.0237	0.629
Routine non manual	-0.215	0.149	0.0905	0.915
Self-employed	0.2456*	0.096	0.5648	0.697
Skilled manual	0.0359	0.134	0.044	0.675
HH investment income prior to start-up (log)	0.0272	0.029	-0.293*	0.144
Income from job prior to start-up (log)	0.4242***	0.034	0.625***	0.113
Receipt of benefits prior to start-up	-0.2736*	0.115	-0.276	0.361
Had any saving prior to start-up	0.1656***	0.046	0.176*	0.076
Spouse earnings prior to start-up (log)	-0.0242	0.038	0.073	0.073
Random Effects				

Individual initial wealth	1.0636***	0.096	3.678***	0.635
Individual mean growth rate	0.0253***	0.003	0.106***	0.031
Log Likelihood	-6306.86		-6214.5	
AIC(df)	6999.34(35)		6051.3(35)	
BIC (df)	7149.78(35)		6181.5(35)	

*p<0.05; **p<0.01; ***p<0.001. Business tenure and non-pecuniary benefit variables were included as controls in the model – none of the variables are significant predictors of drawings or profits, results are not shown to preserve space.

Household work strategies (table 5) also did not alter the general growth pattern in drawings and profits. Having a family with more dependent children at start-up is associated with higher levels of initial drawings (p<0.01) but not profit. The effect of increase in the number of dependent children or the number of children at start-up on later earnings is not statistically significant. Higher levels of housework at start-up are significantly associated with lower levels of initial drawings, with each 1 percent increase in initial housework hours reducing the initial drawings by almost 2 percent. A decline in housework relative to initial level of housework is significantly associated with growth in drawings. Turning to the initial level of housework on the slope for drawings, we found a significant and steeper rate of decline in drawings with age of the business for people spending longer hours in housework at the start of the business. Spouse hours in paid work significantly negatively affected profit at start-up, although this initial effect declined over time. It did not significantly affect drawings and change in spouse hours had not discernible effect on earnings. The entrepreneur's hours worked in the business significantly affected drawings and profit at start-up but change in work hours had no significant effect and initial hours had a negative effect in the longer-term. This indicates that initial differences in amount of drawings between those who work longer hours and shorter hours alleviate as business grows older. Being partnered at start-up is only significantly associated with making profits. Taking a main role in childcare is a significant negative predictor of drawings and profit. Overall, 12 percent of variation in drawings and 7.5 percent of variation in profit overtime at the individual level is explained by the household work strategies.

Table 5: Growth models for household work strategies

	Drawings from the business		Business Profit	
	Model X		Model Y	
Fixed Effects	β	Std. error	β	Std. error
Intercept	7.4199***	0.374	5.4479***	1.117
Time (T)	0.1983***	0.067	0.3864*	0.211
Time ² (T ²)	-0.0029***	0.001	0.0062	0.006
<i>HH work strategy</i>				
Number of kids (initial)	0.1005**	0.038	0.2837	0.297
Proportional change in number of kids	0.061	0.041	0.2036	0.205
Kids (initial) * T	-0.038	0.019	-0.0636	0.045
Amount of housework (initial)	-0.0177**	0.006	-0.3642	0.240
Proportional change in the amount of housework	-0.091**	0.044	-0.1001	0.142
Amount of housework (initial) * T	-0.014	0.017	0.0137	0.041
Spouse work hours (initial)	-0.0271*	0.012	-0.7723**	0.284
Proportional change in spouse work hours	0.011	0.099	0.0468	0.888
Spouse work hours (initial) * T	0.033	0.015	0.1242	0.097
Work hours (initial)	0.5181***	0.097	0.9245**	0.282
Proportional change in work hours	0.0694*	0.031	0.0291	0.093
Work hours (initial) * T	-0.0402*	0.017	-0.1267*	0.053
Married	0.0346	0.025	0.3389**	0.126
Childcare (1=main responsibility)	-0.1311**	0.046	-0.3486**	0.147
Random Effects				
Individual initial wealth	1.0117***	0.105	3.8291***	1.118
Individual mean growth rate	0.0163***	0.003	0.0368***	0.024
Log likelihood	-5080.94		-1410.98	
AIC(df)	10201.88(26)		2863.96(26)	
BIC (df)	10324.71(26)		2956.25(26)	

*p<0.05; **p<0.01; ***p<0.001. Business tenure and non-pecuniary benefits were used as controls, none of these controls has a significant effect in models. Results are not shown to preserve space.

Like in all other models, addition of household economic strategy variables did not alter the general shape of the drawing/profit growth models. Household investment income is positively related to initial drawings ($\beta = 0.176$; $p < 0.01$) and profit ($\beta = 0.281$; $p < 0.01$). With drawings, there is also a statistically significant effect for the proportional change in household investment income ($\beta = 0.049$; $p < 0.01$). This effect is not significant over time, and may even decline with an increase in household investment income, although this effect is not significant. Initial spouse income has some positive effect on higher levels of initial drawings but increase in spouse income has a negative effect, although none of these associations are significant. With profits, initial spouse income is not a significant predictor (effect is negative), the proportional change in spouse income has a significant negative effect on increase in profits over time ($\beta = 0.176$; $p < 0.01$). Savings from business at start-up has a strong positive effect on making higher drawings and profits. Improvement in savings over its initial level is also significantly associated with higher levels of drawings, although this effect is not present (and the direction is negative) for profits. None of the savings interaction terms are significant. The breadwinner role is a particularly strong predictor of both drawings and profits. In relation to a sole breadwinner, secondary breadwinners make significantly lower levels of drawings and profits from business. With drawings the difference in effects between sole and primary breadwinner is also statistically significant. Overall, 10 percent of drawings and 8 percent of profit growth trajectories are explained by the individual level variations in household economic strategies.

Table 6: Growth models for household economic strategies

	Drawings from the business		Business Profit	
	Model X		Model Y	
Fixed Effects	β	Std. error	β	Std. error
Intercept	9.0281***	0.116	3.1679**	1.274
Time (T)	0.0784***	0.023	0.5223**	0.183
Time ² (T ²)	-0.0047***	0.001	-0.0289**	0.009
<i>HH economic strategy</i>				
HH investment income ^a (initial)	0.1755**	0.071	0.2814**	0.127
Proportional change in HH investment income	0.0492**	0.019	-0.0151	0.059
HH investment income (initial) * T	-0.0102	0.012	-0.0161	0.025
Spouse income ^a (initial)	0.0159	0.017	-0.0315	0.107
Proportional change in spouse income	-0.062	0.542	-0.1073**	0.038
Spouse income (initial) * T	0.0345	0.280	-0.0192	0.019
Savings from the business (initial)	0.3896***	0.114	0.4856*	0.241
Proportional change in savings	0.0123*	0.021	-0.0638	0.132
Savings from the business (initial) * T	-0.029	0.033	0.0098	0.001
Breadwinner role (Ref: Sole Breadwinner)				
Secondary breadwinner	-0.7051***	0.093	-1.1521**	0.449
Primary breadwinner	-0.2682**	0.095	-0.2179	0.455
Random Effects				
Individual initial wealth	0.2162***	0.107	3.8356***	1.454
Individual mean growth rate	0.0244***	0.003	0.1327**	0.073
Log likelihood	-6498.19		-680.68	
AIC(df)	13032.37(24)		1397.36(24)	
BIC (df)	13147.26(24)		1464.56(24)	

*p<0.05; **p<0.01; ***p<0.001. Business tenure and non-pecuniary benefits were used as controls, none of these controls has a significant effect in models. Results are not shown to preserve space.

6.0 Discussion

Earnings from entrepreneurship in Britain are primarily taken as drawings, although profits are also important. On average, both follow a curve, increasing annually on a slope whose growth rate decreases steadily until drawings and profit begin to decline in real terms around year nine or ten of trading. The rate of initial linear growth is higher for profits; this may reflect, either, a practice of taking subsistence drawings while opportunities are initially seized or growing sophistication in accountancy practices (Allinson et al, 2011). Start-up earnings and rates of growth differed significantly and 60 percent of drawings variation and 54 percent of profits variation were the result of differences between individuals (rather than change in individual lives over time). Our investigation into the causes of these differences is, therefore, justified.

Rather surprisingly, we found little evidence that entrepreneurs traded-off earnings for non-pecuniary benefits. Indeed, the only significant association (between job satisfaction and profit) was positive; this indicates that job satisfaction during business promotes higher profits, rather than being traded off for profits. Valuing independence, work initiation and financial gain prior to start-up or early in the business life course does not affect entrepreneur earnings. It is feasible that entrepreneurs who survive in business make cognitive adjustment when initial desires are not fulfilled. Freedom to work independently and even initiate work organisation in entrepreneurship can be exaggerated (Allinson et al, 2010). Those most able to adjust these expectations may be more satisfied and earn more. The marginal effect of non-pecuniary benefits is accounted for in our life course model, where these measures are employed as control variables.

We explored the effect of class on entrepreneur earnings by modelling the effect of inter-generational transmission of capital resources on the capacity to accrue resources across the individual and household life courses. In the first instance, we measured how the class of the family of origin affected earnings. In comparison to the children of unskilled manual workers, the children of high professional managerial and routine non-manual workers derived significantly greater profits from entrepreneurship. All other relationships

between childhood class and drawings and profit were positive but not significant, with the exception of a negative (although not significant) association between self-employed parentage and drawings. It is possible that class associations are revealed in relation to profit rather than drawings because knowledge of the tax breaks that motivate structuring of earnings as profit is more available through higher class networks. As a further proxy of family class, particularly as it relates to family wealth, we tested the effect of attending a fee paying school on earnings. A negative (although not significant) association for drawings and profit is, at first, surprising. It has been argued, however, that the wealthy may be able to tolerate low drawings in return for entrepreneurship experience and, in class theory terms, for buying themselves out of oppressive aspects of employment relationships; it may even be a form of leisure for those who lack economic motive and who make low effort. Low borrowing constraints may also cause an over supply of poor quality businesses among the wealthy (see de Meza, 2002) whose business ideas are not regulated by lenders. Jayawarna et al. (2011b) found a primary pathway to start-up is high class background but low credentials; they argued that entrepreneurship was pursued as a means of defending against downward mobility. It may be that these individuals lack the skills and commitment to build highly remunerated businesses. Female entrepreneurship may also be lower among working class populations as agents avoid the demands of business ownership when time and other resources are low (Jayawarna et al., 2011b). This may mean that higher class entrepreneurship includes a higher proportion of female entrepreneurs, whose earnings are suppressed by reduced labour capacity caused by gender household strategies. Overall, our evidence suggests that the class pathways to entrepreneur earnings are intersected by other social divisions and suppressed by the low commitment and motivation that may be part of higher class entrepreneurship. We propose there a selection effect, where the most capable members of the higher class avoid entrepreneurship, and mediation effects, whereby class itself erodes the efficient application of resources and gender also affects resource application.

We initially proposed that individuals whose class pathways mean they have privileged access to the human and capital resources that make the identification, development and exploitation of opportunity productive will earn more from entrepreneurship. In terms of human capital, we acknowledged that this may not include a higher education. We did, however, expect that a solid school and vocational education and business-specific training would create higher earnings. We found that education variables were not significantly related to profit or drawings. A higher school leaving age and having GCSEs (i.e. a solid school education) was positively associated with drawings and profit, but not significantly. Having a post-school or degree level qualification was negatively associated with earnings, but again not significantly. This seems to confirm the notion that entrepreneurs rely only on a minimal level of education. Analysis with a more detailed dataset may reveal that it is the style of education that is important; business-specific vocational training, enterprise or creativity education may well enhance entrepreneur productivity. We did find that having previous business experience and receiving training while in business were positively associated with drawings (although not profit) and that economic inactivity prior to start-up is negatively associated, although not significantly. This confirms the importance of business-specific human capital. In class terms it suggests that the transmission of openness to learning is important to entrepreneurship and that exclusion from work-based learning through economic inactivity is detrimental.

We were surprised that adulthood occupational class is not more strongly associated with entrepreneur earnings, with the exception that business starters transitioning from high professional managerial occupations or who had a spell of self-employment just prior to start-up create significantly more drawings. We expected that class divisions that justify occupational pay differences, under a class-structured occupational system (Roberts, 2001), would spill over more strongly into entrepreneurship. A possible interpretation is that entrepreneurship does not form part of the educational and occupational pathways of privilege that characterise a class-divided society, but is a meritocracy. This may be because entrepreneurship demands skills, such as ability to identify opportunities and to bootstrap, that are not class divided and because educational credentials (which are strongly inter-generationally transmitted) are used much less as signals of capability. However, there are alternative explanations. Some entrepreneurs will lose their class advantages by starting businesses outside their privileged occupations. There may also be a negative selection, whereby people who have followed privileged occupational pathways create sufficient wealth to start-up but this low borrowing constraints leads to an over-supply of poor quality businesses (de Meza, 2002). It may also be that members of lower occupational groups apply more effort to their businesses. Jayawarna et al. (2011b) report that the lower

classes only enter self-employment if household income is very low or labour availability is high and can compensate for other resources. By applying strong motivation and long hours to entrepreneurship, lower occupational groups may create a pathway to earnings in line with other classes; this is not the same, however, as having equal opportunities to create rewards. It would be interesting in future research to test specific pathways and the mediating effect of wealth, hours worked and economic motive on relationship between occupational class and entrepreneur earnings.

We employed age as a proxy for the human capital variable work experience, assuming that older people had more experience but acknowledging they may bring reduced motivation to apply resources to opportunity and earnings creation (Allinson et al., 2010). Although we expected the relationship between earnings and age to be muted, we were surprised to find it was significantly negative for drawings and profit. In fact, age is a rather blunt instrument for measuring both work experience and motivation; it may itself be a distinctive social division that intersects with class (Bradley, 1996). More complex analysis is required to explore how people at different stages in individual and household life courses that have followed varying class pathways accrue and apply resources to opportunity and how this affects entrepreneur earnings. It may be, for example, that a middle aged man acting as sole breadwinner to a second family, following divorce, will display much greater economic motivation and work effort than a middle aged man in his first marriage whose children are almost independent, mortgage is paid, pension is healthy and wife earns a second salary. The effect of age as a social structure is also worthy of further investigation.

We did identify one type of class-based resource that directly affects entrepreneur earnings: financial resources. The income a person made from a job two years prior to start-up is highly significantly related to both drawings and profit. Having savings is also highly related to drawings and significantly associated with profits. Being in receipt of benefits (which can be taken as a proxy of constrained household finances) is negatively associated with earnings, significantly so in relation to drawings. As childhood and occupational class measures are inconsistently associated with entrepreneur earnings, we cannot simply argue that higher class life course pathways lead to the accrual of financial wealth and, through its application, to higher earnings in entrepreneurship. We have argued that childhood class and occupational privileges may not be applied efficiently to entrepreneurship. Financial capital seems to have a more direct and consistent effect. Higher earnings prior to start-up may influence reservation wage and, so, economic motivation. Higher earnings and savings, and independence from benefits, suggest ability to invest financially in the business. Financial resources may be more readily convertible to entrepreneur resources, regardless of sector, than childhood class, education or occupational privilege. There may also be socially mobile pathways from lower class and occupational positions to better remunerated work that enables business investment for people used to working hard and for economic gain.

Household wealth held prior to start-up has a muted effect on entrepreneur earnings. This is probably because household wealth effects motivation to apply resources to entrepreneurship or to prioritise economic gain. For example, older people may have investment income but be reluctant to invest when they have limited time to recoup any losses. They may also avoid strong work effort. Equally, entrepreneurs with high earnings spouses may not be motivated to earn higher entrepreneur rewards and may play domestic roles that reduce entrepreneur labour availability (Rouse, 2010); we test these ideas under our household strategy modelling. In short, the application of household wealth prior to start-up may be mediated by intersections with other social structures (age and gender) that moderate the scope of business started and, so, class pathways to entrepreneur earnings.

In our household economic strategy model, household investment income and savings from entrepreneur income *are* significant predictors of drawings and profit at start-up and they are also associated with drawings growth across the business life course. The effect of investment income and drawings at start-up on the growth curve is negative, although not significantly so. This seems to suggest that, once in business, household income enables continued business investment which supports higher earnings but an early injection may not be sufficient; continued cross-subsidy or investment from the household may be necessary.

Having access to the means to invest in business is clearly important to creating higher earnings. We have cited some evidence that creating higher returns on entrepreneurship is related to class privilege, in terms of having higher class parents, a reasonable school education and openness or respect for learning that supports business training, a high professional managerial occupation and a higher paying job and ability to save prior to start-up. Generating sufficient earnings in business to save is also important; as higher earnings are related to class pathways, this might be seen as a class effect. We have also argued that class privilege can reduce motivation to apply resources to entrepreneurship or suppress an economic motive, particularly when a household receives investment income or a high spouse income prior to start-up. Reduced borrowing constraints may also enable some low quality start-ups among the wealthy, suppressing class effects. Overall, our evidence of a class pathway to entrepreneur earnings is mixed and complex. Given that entrepreneur incomes are lower than for employees, it may be rational for people on this strong class pathway to apply their resources to employment. That is, unless they lack economic motive, in which case they might pursue entrepreneurship as a form of leisure or to buy themselves out of an employment relationship, creating a selection effect when we analyse class pathways to entrepreneurship. There is no common pathway from high class birth, through educational privilege to higher occupation and accrual of wealth to higher entrepreneur earnings. Future research should explore specific class pathways by researching how entrepreneur earnings emerge from particular combinations of resources across the life course. For example, our findings suggest a socially mobile path, from a moderate childhood class and education pathway through economic success in work or previous business, to business investment combined, probably with work effort and productivity.

Following, Carter's advice to embed entrepreneur rewards in the business household, we have begun to model how household work and economic strategies affect capacity and motivation to apply resources to entrepreneur earnings creation. We expected that, when an entrepreneur adopts a role within the household work strategy that involves high levels of domestic and care work, their capacity to apply resources to opportunity will be constrained (Rouse, 2010, Hundley, 2000), limiting returns from entrepreneurship. Conversely, we expected that household economic strategies will influence motivation to apply household resources to opportunity; those acting as sole or primary breadwinners will set a higher reservation wage and be under pressure to create higher returns from entrepreneurship (Jayawarna et al, 2011b). As household roles are deeply gender divided (Bradley, 2003), we expected that gendered household strategies will be a primary explanation of significant sex differences in entrepreneur earnings^{ix}.

Entrepreneurs in households with more dependents generally earn more; the married make higher profits and parents with larger families at start-up make higher drawings. Family growth is not significantly related earnings growth and the effect of family size at start-up has a declining effect on earnings. It is likely that these associations will be different for mothers and fathers, dependent on their household work strategy. Further exploration of how household life course stage, household strategy and earnings inter-relate is worthy of further research.

As expected, we found that spending a longer amount of time on housework is significantly negatively associated with drawings and profit. An increase in housework over the business life course also significantly lowers drawings and the association with profits is negative (although non-significant). Longer hours spent on housework at start-up is also significantly associated with lower earnings across the business life course. Taking the main responsibility for childcare at start-up is also significantly negatively related to drawings and profit. Thus, entrepreneur earnings are clearly affected by constrained labour availability and the restriction this has on applying resource (including labour resource) to opportunity (Rouse, 2010). The lasting effect of initial housework commitments suggests that domestic accommodations affect the type of businesses started, constraining future prospects, even if a domestic role change or household demands less domestic work later in their life courses. This may be evidence that a domestic role creates a 'scarring' effect on businesses.

Unsurprisingly, when a spouse works longer hours at start-up, entrepreneur earnings are lowered (profits are significantly negatively affected and the relationship with drawings is negative (although non-significant). This may be due to the entrepreneur taking a higher domestic role (Rouse, 2010). The longer term effect of initial spouse hours, and growth in spouse hours spent in paid work, is positively associated with drawings and profit, although not significantly. This suggests that time deprivation created by spouse working can be offset by the

potential to invest in the business (perhaps buying in labour or services that increase entrepreneur productivity or replacing entrepreneur labour with staff) or to buy in household services from the market (e.g. domestic or childcare services and convenience or restaurant food). Thus, the scarring effect of household commitments may be offset for some through the application of household wealth to business and household work strategies that liberate pressure on entrepreneur labour. An intersecting effect between gender and class is suggested here: businesses started by lower class women may be more domestically constrained due to low financial capability to supplement their labour; this is an important direction for future research.

As expected, when entrepreneur labour capacity is unfettered, earnings are strongly supported. Working longer hours at start-up is highly significantly associated with making higher drawings and profit. Increase in work hours over the business life course is positively associated with earnings, significantly so in relation to drawings. The effect that long work hours at start-up has on earnings significantly declines over the business life course, however. It seems that working long hours is most important at start-up but relatively long hours must also be maintained and a business cannot rely on the effort invested early on. As we suspected, entrepreneurship is a time hungry occupation and earnings are significantly related to the entrepreneur's labour capacity, as determined by their position in household work strategies, which are likely to be gendered (Rouse, 2010).

Mirroring findings in relation to household work strategy, we found that the role played by the entrepreneur in the household economic strategy strongly affects earnings. Sole breadwinners earn very significantly more drawings and profit than secondary breadwinners and more drawings and profit than primary breadwinners, significantly so in relation to drawings. We expect that this is the outcome of economic motive and work effort and is part of gendered household strategies. As discussed in relation to the class analysis, we found that availability of other financial sources prior to start-up tends to constrain economic motivation to earn more from entrepreneurship but having mixed household economic strategies during the business life course is positively associated with entrepreneur earnings. We have proposed an intersecting class and gender effect, where middle class women may be more able to buy themselves out of domestic responsibilities. This is an important research direction. Equally, it seems that businesses that create higher drawings may make more savings and, so, create family wealth that can support business investment and mixed household work strategies. Cassar (2007) found that growth creates growth intention; it may well be that earnings create earnings growth intention and capability and, thus, that class and gender effects that suppress earnings early into a business life course will reproduce social positions by undermining earnings motivation and vision

Overall, our propositions about the effect that household strategies have on the application of resources to opportunity are strongly supported. A significant research agenda remains to unpack this important finding. Most importantly, to model how these relations intersect with gender and explain the very high sex different in entrepreneur earnings. Second, to investigate through more fine grained exploration some of the subtle effects of household strategies that can mediate tension over entrepreneur labour capacity. Keeping in mind the strong age effect in our resources model, all of these relations should be researched with the stage of the individual entrepreneur and household life course in mind.

7.0 Conclusions and Implications

We have developed the conceptual propositions offered by Carter (2011) to propose that life course analysis is a strong framework to support the complex problem of researching how entrepreneur earnings emerge over time. To test this proposition, and create new empirical knowledge, we have proposed a particular life course framework for theorising how entrepreneur earnings emerge from the entrepreneur's lifetime experience of being positioned within class and gender relations. Integrating the RBV and theory of entrepreneur process (Shane and Venkataraman, 2000), we have proposed that entrepreneur earnings emerge from class processes that shape the accrual of resources across the individual and household life courses and gender processes that shape resource application to entrepreneurship through household work strategies, as these relate to household life courses.

We report that drawings are the larger element of entrepreneur earnings in the UK but profits are also important and increase following start-up on a steeper curve than drawings. Both begin to decrease, on

average, in the ninth or tenth year of trading. As far as we know, the literature does not suggest an explanation for this. As we found that businesses remain time greedy across the business life course, it may be that entrepreneurs cannot sustain the level of effort required to maintain earnings growth. It is also feasible that entrepreneurship erodes other capital resources such as savings, networks and human capital due to demands of the business and poor exposure to means of refreshing wealth, knowledge and contacts. Decline in earnings is a cause for concern and warrants research attention.

Our findings suggest that the effect of class on resource accrual is complex: we present some evidence that childhood class, occupational status, employment earnings, savings made prior to start-up and investment income and savings made during the business life course create privileged pathways related to the inter-generational transmission of resources that support entrepreneur earnings. Education, even at a basic level, is unrelated or negatively related (although not significantly) to entrepreneur earnings, however, and occupational privilege does not consistently create higher earnings.

We propose three explanations for why the class pathway to entrepreneur earnings is not as strong as we expected. First, that being wealthy can reduce productivity in the application of resources. We propose that entrepreneurship may be a form of leisure for the wealthy, satisfying the desire to gain satisfaction and status from working while avoiding the oppressive aspects of the employment relationships; under these conditions, motivation to apply resources, including effort, and to create earnings may be weak. Low borrowing constraints experienced by the wealthy may also suppress productivity because it enables start-up even when business ideas are weak, leading to the over-supply of poor quality businesses in the higher classes (see de Meza, 2002). Second, as female entrepreneurship is more common among higher class women (Jayawarna et al., 2011b), gender disadvantages may be felt disproportionately in the higher classes, thereby suppressing the aggregate class effect. Third, entrepreneurship may form part of a socially mobile route for people born of lower class backgrounds who do not necessarily succeed educationally or enter high class professions, but reach a managerial or other well-paid role (possibly including business ownership or involvement in a family business) and have the financial investment to make in business. Bates (1997) found little evidence of social mobility through entrepreneurship for Black American male business owners, with the exception of construction businesses. There may be similar, sector-specific routes of mobility in UK entrepreneurship. Jayawarna et al (2011b) found that start-up was more likely from lower class origins if the entrepreneur's labour capacity was unfettered, so labour could substitute for other scarce resources. It may be that, in some sectors, mobility is possible through long work hours, particularly if the entrepreneur is able to combine labour and financial investment. Specific analysis of this life course pathway is required to test this hypothesis. The other lower class route to start-up identified by Jayawarna et al (2011b) is from highly constrained household finances; we find no evidence that low personal or household wealth is a base from which to build social mobility through entrepreneurship.

Elsewhere, we have criticised neo-liberal entrepreneurship policy based on a discourse of enterprise as an open route of opportunity, arguing that entrepreneurship is a resource-based activity and socially structured (Rouse and Jayawarna, 2011, 2006). Findings from this study reinforce argument that start-up from a very low resource basis will often lead to poverty. We join a growing body of researchers raising concern that enterprise inclusion may deepen social inequalities or waste public finance (see Rouse and Jayawarna, 2011); policy makers must decide whether to seriously enhance the resources of businesses started by the poor to tackle social inequality or to stop actively encouraging enterprise among those likely to make very low returns. As our findings also show that the resources of the wealthy may not be applied efficiently, governments may wish to enhance the productive application of resources. We raise the possibility of specific routes of social mobility through entrepreneurship; governments should support research that helps to identify these and then promote them.

Our proposition that household strategies affect entrepreneur earnings is supported unequivocally; domestic and childcare responsibilities inhibit earnings and being free and motivated to work long hours and act as a sole breadwinner increases earnings. These effects are largely sustained across the business life course; businesses are not only time greedy at start-up. Another interpretation is that household role shapes the scope of the business at start-up. The potential scarring effect of domestic work responsibilities at start-up support the notion that earnings are not just inhibited at a point in the household life course when domestic demands are

high but affect the business trajectory. Due to strong gender divisions in domestic labour and roles, the effect of household strategies in shaping the application of resources to entrepreneurship is likely to be a primary explanation of the powerful sex difference in entrepreneur earnings. This finding not only supports the largely theoretical arguments made about the family embeddedness of small enterprise but underpins argument that family embeddedness is likely to be highly gendered (Rouse, 2010). It raises the serious problem that the huge, and politically influential, growth literature has missed an important dynamic affecting small enterprise performance: gendered household strategies.

The invisibility of family responsibilities in small business growth theory has arisen because this theory is gender-blind. It is probably accepted by enterprise policy makers because the separation of work and home is a tenet that underpins contemporary capitalism (Rouse, 2010); enterprise policy makers may be removed from their social policy colleagues. On the ground, business support may also cast domestic relations as irrelevant to business operation and, for this reason, entrepreneurs may themselves hide the barrier to family responsibilities pose to business development (Rouse and Kitching, 2006).

Our findings raise a provocative question: could support to overcome the gendered burden of childcare and domestic work have more effect on business growth than business advice services (Rouse and Kitching, 2006)? Policies may include those that encourage fathers to share maternity and childcare responsibilities, direct funding or provision of childcare by the state, and tax relief policies, such as the childcare voucher scheme open to UK employees but from which most entrepreneurs are excluded. Childcare is now accepted, at some level, as a labour market issue in UK politics. Should this be extended to housework, which is so significantly constraining business development? Such a policy might be necessary to attract working class women into entrepreneurship and to support middle class female entrepreneurs, who are well resourced except for their constrained labour capacity, to earn more through entrepreneurship?

We acknowledge that household roles, and their demands, will change across the business life course. Thus, the family embedding of businesses will change across household and business life course (Ram et al., 2001). We have captured some of this effect by modelling the influence of working time, domestic work and spouse's paid labour on entrepreneur earnings across the business life course. More detailed analysis could fruitfully also model marital status, childcare and breadwinner roles dynamically. The effect of particular household compositions (e.g. single adults and single parents) could also be modelled and methods such as event history analysis could support modelling of household changes (e.g. marriage, childbirth and divorce) on entrepreneur earnings.

The gendered effect of household strategies must be researched to help explain how sex differences in business entry and performance are caused by gendered household strategies. This can begin, in the first instance, with analysis of how associations between household strategies and entrepreneur earnings among male and female entrepreneurs compare with the total population, presented here. There is also great potential to research the intersecting effect of class and gender on entrepreneur earnings. We have only begun this task and advocate it as an important direction in understanding both sets of social relations and specialist populations that have been widely ignored, particularly working class men and women. The very strong and negative effect of age on entrepreneur earnings is also worthy of investigation and this might also adopt the approach of identifying intersections with class and gender. Through such sophisticated analysis, we can begin to understand how entrepreneurship emerges from the mass of intersecting social relations that govern contemporary society (Bradley, 1996). By understanding specific pathways, we could inform sociologists about whether entrepreneurship is a means of upward or downward social mobility for different groups, at particular life course phases, and so comment on whether entrepreneurship is intensifying, reproducing or reducing social inequalities.

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ⁱ Nevertheless, we urge research to test and build a variable that compensates for under-reporting of entrepreneur earnings, particularly as this relates to sector.

ⁱⁱ Just 6.5 per cent of children in the UK attend fee-paying schools (Independent Schools Council, 2011). They achieve significantly higher educational success at school and labour market privilege not fully explained by better educational credentials (Naylor et al., 2002).

ⁱⁱⁱ Growth modelling allows using unbalanced data where data missing in certain waves does not result in eliminating the entire case from the analysis.

^{iv} Due to the way in which data was collected, drawings are annual and profits are a reported monthly average.

^v Missing data may indicate that the profit question was refused or that profits were zero. If we omitted cases with missing data on the assumption of random refusal but, in fact, profits in these case were zero, earnings would be under-estimated. If we assumed missing data meant zero profits, and included these cases on that basis but, in fact, the question was refused, earnings could be under-estimated.

^{vi} We model entrepreneur earnings for the longest stretch of self-employment of business ownership experienced in an 18 year period for businesses that survived for at least three years. Business tenure in the observed period ranged from 3 to 16 years. To control for any heterogeneity created, we control for business tenure.

^{vii} Although it is recommended to included the mean values of the time varying variables in level 2 equations, for interpretation purposes relevant to this study we used the initial values rather than the mean values .

^{viii} We also considered running a cubic model but the small number of growth points in some instances mean this was not viable.

^{ix} In a separate analysis, we found a highly significant sex different in entrepreneur earnings. Sex was not employed as a control in our models because we are modelling gender relations that cause sex divisions, so, did not want to suppress sex differences.

ESRC End of Award Report

For awards ending on or after 1 November 2009

This End of Award Report should be completed and submitted using the **grant reference** as the email subject, to **reportsofficer@esrc.ac.uk** on or before the due date.

The final instalment of the grant will not be paid until an End of Award Report is completed in full and accepted by ESRC.

Grant holders whose End of Award Report is overdue or incomplete will not be eligible for further ESRC funding until the Report is accepted. ESRC reserves the right to recover a sum of the expenditure incurred on the grant if the End of Award Report is overdue. (Please see Section 5 of the ESRC Research Funding Guide for details.)

Please refer to the Guidance notes when completing this End of Award Report.

Grant Reference	RES-000-22-3185		
Grant Title	Income from Self-employment: Development of an Innovative Life Course Model		
Grant Start Date	01 st Jan 2009	Total Amount Expended:	£
Grant End Date	31 st May 2011		
Grant holding Institution	Manchester Metropolitan University Business School		
Grant Holder	Dr. Dilani Jayawarna		
Grant Holder's Contact Details*	Address		Email
	The University of Liverpool Management School, The University of Liverpool, Chatham Street, Liverpool L69 7ZH, UK		dilanij@liverpool.ac.uk
			Telephone
			0151 795 3823
Co-Investigators (as per project application):		Institution	
Dr. Julia Rouse		Manchester Metropolitan University Business School	

*Dr Jayawarna has recently moved her employment to the University of Liverpool but the project has remained the responsibility of Manchester Metropolitan University.

1. Non-technical summary

Please provide below a project summary written in non-technical language. The summary may be used by ESRC to publicise your work and should explain the aims and findings of the project.

[Max 250 words]

Who has the chance of making it as an entrepreneur? That question is at the heart of this programme of research which models life course pathways into and through entrepreneurship drawing on 18 waves of the British Household Panel Survey (1991-2008).

In our first study, we identified a primary, class-based pathway to start-up. Following birth to higher class parents, the privileged accrue resources necessary to start a business through higher class (although not highly credentialised), remunerative and satisfying careers. Business founding is an outcome of class privilege. When privileged entrepreneurs failed in education or have domestic responsibilities, start-up may be a defence against downward social mobility. The lower social classes avoid entrepreneurship except as a necessity when household income is low or when childcare responsibilities are low so time can compensate for other resources.

In our second study, we found that high class pathways into entrepreneurship do not necessarily create higher financial returns. In particular, the better educated do not make higher earnings. This may be because the more privileged lack entrepreneurialism or the economic drive and time investment associated with higher earnings. Low capital constraints may also permit start-up of poor quality businesses. Access to finance *is* important, making the wealthy and socially mobile higher earners in entrepreneurship. As small firms are time greedy, entrepreneurs with heavy housework and childcare responsibilities earn less. Sole breadwinners earn more, probably due to economic motive and available time.

Chances of making it entrepreneurship are governed by class and gender relations.

2. Project overview

a) Objectives

Please state the aims and objectives of your project as outlined in your proposal to the ESRC.

[Max 200 words]

We originally proposed to draw on two longitudinal datasets - British Household Panel Survey (BHPS) and National Child Development Study (NCDS) - to test an innovative model of income from self-employment utilizing structural equation modeling and time series analysis. We aimed to employ the findings to develop theory about entrepreneurial opportunity structures and their relationship to broader social structures (particularly class and gender).

Another key aim was to inform national and international policy promoting business start-up to disadvantaged groups. Specifically, we aimed to inform: (i) evidence-based assessment of the potential of self-employment as a route out of social exclusion; (ii) identification of antecedent factors that cause inequalities in entrepreneurial opportunities that may be amenable to policy interventions, and; (iii) development of business support by contextualizing entrepreneurial opportunity within the life course.

A final aim of the research was to advance the ESRC's priority of exploiting national longitudinal datasets to their full potential (e.g. expressed in the UPTAP Initiative). The study aimed to raise awareness and skill in using these sources in the small business research community, which previously made little use of longitudinal datasets. We also planned to archive a dataset suitable for further analysis.

b) Project Changes

Please describe any changes made to the original aims and objectives, and confirm that these were agreed with the ESRC. Please also detail any changes to the grant holder's institutional affiliation, project staffing or funding. *[Max 200 words]*

The aims and objectives of the project remained consistent. One of the objectives was to raise our own understanding of the BHPS and NCDS and methods for analysing longitudinal data. We did this by: attending training courses, reading widely, investigating datasets and methodologies and seeking peer guidance/review. This learning process led us to amend the:

1. Project scope – following feedback from peers, via review in 4* journals, we expended considerable time re-modelling the pilot study on which this project was founded (revisions from papers 6 to 3). This broadened the scope of our work programme and created valuable learning for the main study. We also developed a conceptual paper to underpin the project (2 developed from 4 and 5).
2. Modelling method - we revised plans to use SEM in our main project and instead employed random effect modelling.
3. Datasets – we focused our modelling on the BHPS as it introduced fewer compromises in operationalising our research questions. We created a longitudinal NCDS dataset of business owners and plan to employ it in future research.

These changes did not change the project outcomes and were the subject of researcher judgement so did not require ESRC approval.

We received ESRC approval to conduct our study over 24 months, rather than a year, to accommodate changes to the work roles of both researchers.

c) Methodology

Please describe the methodology that you employed in the project. Please also note any ethical issues that arose during the course of the work, the effects of this and any action taken. *[Max 500 words]*

Revised Pilot Project: In the revised pilot study we employed the theoretical notion that business start-up is the outcome of the acquisition and application of resources. We proposed that the process of acquiring resources is life long and structured by class and gender processes. We then tested these ideas by modelling the relationship between resource acquisition in childhood and a career period prior to business entrance and business start-up. We also tested the mediating effect of labour market returns, household income and childcare responsibilities at an intermediate period prior to start-up on resource relationships to create a life course analysis.

Our model was operationalised employing BHPS data. A series of data files prepared at the individual and household level from waves 1 to 18 of the BHPS (1991 to 2008) were merged using SPSS syntax. These were later transformed into STATA for analysis. We used event history analysis in its discrete time version to estimate the direct and mediating effects of resources, entrepreneurial intention and mediating factors on the probability of entrepreneur transition. The logistic specification followed the principles of random intercept modelling that

accounts for unobserved heterogeneity at the individual level. The model estimation used Full-Information Maximum Likelihood Method, as implemented in the package STATA11.

Main Project: We modelled how life course pathways of resource acquisition, and factors that affect capacity to apply resources to entrepreneurship associated with household work and economic strategies, affect entrepreneur earnings. We then interpreted these findings to analyse how financial returns to entrepreneurship are affected by class and gender processes.

We drew on the prepared BHPS dataset. We estimated relationships between within-individual changes in two earnings variables (drawings and profit from business) and within-individual and between-individual changes in resource, household work and economic strategies. We employed growth curve modelling to study the initial effects and subsequent growth patterns. Growth curve models belong to a general class of mixed models that can estimate variations within nested data structures. Multi level modelling is important because hierarchically structured data violate standard linear regression assumptions. When compared to other mixed method approaches, growth curve modelling has the advantage of separating out between- and within-subject influences on dependent variables. During data analysis, restricted maximum likelihood-empirical Bayes parameter estimates were obtained using STATA “XTMIXED”.

Exploration of NCDS data: We explored the potential of the NCDS. Whilst it was rejected due to data limitations, learning about the NCDS is a significant project outcome and this included downloading a database including life histories at ages 23, 33 and 43. The PI has employed this to estimate the effect of education on start-up propensity; a paper has been submitted to the 2011 ISBE conference (10).

Allied Projects:

This project is part of a wider programme of research on the opportunity structures governing entrepreneurship and how these relate to the life course. Three papers will be published in 3* journals in 2011(7-9). These drew on alternative datasets and on cluster and regression analyses.

As we drew on anonymised datasets, the project did not raise ethical dilemmas.

d) Project Findings

Please summarise the findings of the project, referring where appropriate to outputs recorded on the ESRC website. Any future research plans should also be identified. *[Max 500 words]*

Revised Pilot Project

Findings from our revised pilot project are presented in a paper (3) that recently went under review at the 4* journal Entrepreneurship, Theory and Practice. The methodology received no significant criticism but the paper was rejected with encouragement to revise part of the literature review and to submit it to a sociological journal. The paper identifies a primary, class-structured pathway to entrepreneurship, emergent from the inter-generational transmission of resources from family of origin. This fosters continued resource accrual in higher class (although not highly credentialised), remunerative and satisfying careers that tip into business founding as a sustained route of class privilege or, for education failures and carers with reduced entrepreneur labour capacity, a defence against downward social mobility. Lower social classes avoid entrepreneurship except as a necessity when household income is low or when labour can compensate for other resources. We suggest new research directions.

Main Project

We underpinned our main project by developing a conceptual paper on the nature of the opportunity structures governing entrepreneurship. Versions were presented at ISBE conferences in 2009 (5) and 2010 (2); the latter received a 'best in track' prize.

Findings from the main project are presented in a paper submitted to the 2011 ISBE conference (1). These suggest that the relationship between class structured resource accrual across the life course and entrepreneur earnings is complex. Childhood class, occupational status, employment earnings, savings made prior to start-up and investment income and savings made during the business life course are related to higher entrepreneur earnings. We argue that these resources are accrued due to inter-generational transmission processes – either direct or indirect through affect on habits, networks etc) – and, so, are part of a class process. Education, even at a basic level, is unrelated to entrepreneur earnings, however, and occupational privilege does not consistently create higher earnings. We propose three explanations for our findings and outline research directions to identify specific class-based routes to entrepreneurship, including pathways that represent upward and downward social mobility and defence against downward mobility.

Our proposition that household strategies affect entrepreneur earnings is supported unequivocally; domestic and childcare responsibilities inhibit earnings and being free and motivated to work long hours and act as a sole breadwinner increases earnings. These effects are largely sustained across the business life course; businesses are not only time greedy at start-up. We identify a long-term (or 'scarring') effect of heavy domestic work responsibilities at start-up. As domestic work and childcare are gender divided, we propose that gendered household strategies are a primary explanation of the powerful sex difference in entrepreneur earnings. Using our existing dataset, we plan to investigate further and our paper points to future research directions.

Allied Projects – an alternative dataset has been used to demonstrate relationships between life course and entrepreneur motivations (8) and test the effect of education at a particular life course stage on entrepreneur propensity (10).

e) Contributions to wider ESRC initiatives (eg Research Programmes or Networks)

If your project was part of a wider ESRC initiative, please describe your contributions to the initiative's objectives and activities and note any effect on your project resulting from participation. *[Max. 200 words]*

Not applicable

3. Early and anticipated impacts

a) Summary of Impacts to date

Please summarise any impacts of the project to date, referring where appropriate to associated outputs recorded on the ESRC website. This should include both scientific impacts (relevant to the academic community) and economic and societal impacts (relevant to broader society). The impact can be relevant to any organisation, community or individual. *[Max. 400 words]*

Scientific Impacts

1. Raising Research Capacity in Longitudinal Modelling and BHPS/NCDS

A significant objective has been to develop our own and other's skills in longitudinal modelling and use of the BHPS and NCDS. We have now achieved a high level of knowledge and competence, have two significant datasets to work with and a programme of ideas for future research. We have shared this learning with our research community via: presenting at five conferences (1, 2, 4-6); developing outputs with colleagues (3, 10); doctoral supervision; presenting at ISBE's 2010 Doctoral Day, and; promoting the UK Data Archive and using our BHPS dataset to train doctoral students in quantitative methods at our respective universities.

2. Raising Awareness of the Potential Life Course Analyses

Our longitudinal modelling is set in the context of life course analysis. This was outlined in a conceptual paper presented at the 2010 ISBE conference (2, developed from 4 and 5), awarded a 'best in track' prize. Our pilot (3, 6) and main project (1) papers operationalise the life course concept, as does an allied publication (8). Life course is a key research theme promoted on the website of the Centre for Enterprise at Manchester Metropolitan University.

3. New Empirical Knowledge

We have developed three key papers that present significant new knowledge (1-3). Versions were delivered at ISBE conferences in 2007 (6), 2009 (5), 2010 (2) and 2011 (1) and received 'best in track' and 'best development paper' awards. A paper was also presented at the Work, Employment and Society (2010) conference (4). A revised paper from our pilot project (3) was accepted for review at Entrepreneurship, Theory and Practice but rejected in July 2011. The reviewers do not question the revised methodology. They focus on parts of the literature review and suggest submission to a sociology journal. We are committed to publishing all three papers (1-3) in top quality journals to maximise impact.

This project is part of a wider research programme on the opportunity structures governing entrepreneurship which created three 3* publications in 2011 (7-9) and a conference paper (10).

Dissemination Event

We planned to disseminate the project and seek peer review from an Expert Panel convened to meet in Manchester on August 25-26 2011. As the CI underwent emergency hospital treatment, the event was postponed to autumn 2011.

Economic and Social Impacts

The CI discussed the project at a workshop on the childcare barriers enterprise hosted by the Department for Business, Innovation and Skills in Whitehall in November 2010.

b) Anticipated/Potential Future Impacts

Please outline any anticipated or potential impacts (scientific or economic and societal) that you believe your project might have in future. [Max. 200 words]

Scientific Impacts

We will publish the three papers produced under this project in 4* or 3* journals. These will first be presented to an Expert Panel in Autumn 2011. The empirical paper from the main event (x) will also be presented at three international conferences: ISBE (UK, 2011) (1), British Academy of Management (2012) and we will seek to present to a North American conference.

Presentation will provide expert review and develop awareness and skills in using BHPS, longitudinal modelling and life course analysis in the small business research community.

Economic and Social Impacts

- **Impacting international policy makers** – We will prepare a research summary and policy impact statement and circulate this to national and international policy makers concerned with widening entrepreneurship opportunities and promoting the small business sector.
- **Impacting UK policy debate** – We will host an event on the nature of opportunity structures and invite senior policy makers and business support representatives.
- **Impacting the media and general public** – We will write a press release about project findings and use public relations experts to secure media interest and exposure.

Our findings and their implications, including full papers, will be hosted on a dedicated project website.

You will be asked to complete an ESRC Impact Report 12 months after the end date of your award. The Impact Report will ask for details of any impacts that have arisen since the completion of the End of Award Report.