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The openness of Britain during industrialisation. Determinants of career success of British men born between 1780 and 1880

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ABSTRACT

In this article, we study the occupational careers of British men during industrialisation. We ask whether careers became more successful during industrialisation and whether British society became more open. Using the Longitudinal Study of Residential Histories dataset we analysed the career of 6229 men born between 1780 and 1880 with a multilevel growth model. Over time men's careers became somewhat more successful: men started their careers at a higher occupational status, but status did not grow at a faster rate. Father's occupational status and son's education were main determinants of career success. The importance of education did not increase, but the relevance of father's status declined, suggesting that with industrialisation Britain became a more open society.

> *'What does the phrase 'the Industrial Revolution broke out' mean? It means that some time in the 1780s and for the first time in human history, the shackles were taken off the productive power of human societies, which henceforth became capable of the constant, rapid and up to the present limitless multiplication of men, goods and services. . .By any reckoning this was probably the most important event in world history, at any rate since the invention of agriculture and cities. And it was initiated by Britain.'*
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> Eric Hobsbawm, 'The Age of Revolution' (1962).

1. Introduction

Few processes in social history are said to have had such a profound effect on society as the industrial revolution. Before this rapid process of industrialisation, a large proportion of manufacturing of products was done at home on a small scale and parallel with agricultural tasks. A great deal of this production was for the consumption of the household itself. Industrialisation meant the increasing replacement of human labour through the use of mechanical devices (e.g. the spinning jenny) and the use of new forms of energy, such as the steam engine (Davis, 1955). This had a profound effect on the British textile industry—the most important industry at the time—which dramatically increased its output: from 40 million yards of cloth in 1785 to 2025 million in 1850 (Hobsbawm, 1962). By increasing productivity, these technological innovations led to a steep decline in prices of textiles and other non-agricultural products, which encouraged individuals to replace their domestic production with the purchase of industrial products. The productivity of the agricultural sector also rose. This allowed the release of labour, which boosted the proportion of workers available for commercial manufacturing (Weisdorf, 2006). Indeed, data on long-term changes in the occupational structure of Britain show a definitive shift to manufacturing during the nineteenth century as the agriculture sector shrank from 35.9% of the total occupied population in 1801 to 8.7% by 1901 (Joyce, 1990).

Theorists of industrialism have stated that the changes in the occupational structure triggered by industrialisation had an important effect on the patterns of social mobility experienced by individuals (Kerr, Dunlop, Harbison, & Myers, 1960; Treiman, 1970). It has been argued that industrialisation increased the amount of social mobility, as well as the average occupational status of the population. People were expected to enjoy more successful careers, a higher level of status and income, and increased upward mobility. Furthermore, it is said that industrialisation made society more open in the sense that the importance of ascriptive factors (i.e. social background) on career success receded and left space for achieved characteristics of individuals, such as their educational attainment and effort (Blau & Duncan, 1967).

Despite the far-reaching impact of industrialisation there is not a great deal of empirical knowledge about how it affected occupational careers. For the 'pre-sample survey' period, career research has predominantly depended on the personnel records of companies, firms and government departments (Van Leeuwen & Maas, 2010). As a consequence much of the research has focused on

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the study of specific occupations within a certain economic sector or organisation. For example, Shpayer-Makov (2004) focused on the work-life history of policemen in Victorian and Edwardian England, Mitch (2004) investigated the careers of agricultural workers in a small region of Britain, while Miles and Savage (2004) looked at career patterns within three large British organisations. This restriction to specific occupational groups or few organisations does not permit generalisation of the findings to the working population (Schulz & Maas, 2012).

In recent times the digitalisation of censuses and population registers has increased the amount of historiographical data available for analysis. Accordingly, some research has been done on larger samples. For example, Maas and van Leeuwen (2004) combined historical sources to describe changes in the occupational careers of a large sample of Swedish men. For the case of Britain, Long (2005) linked 28,474 men from the 1851 Census of the Population of England and Wales to the 1881 census to study the effects of rural to urban migration on social mobility. Long (2006) linked the data of 5337 school-aged men from the aforementioned censuses to study the importance of their primary schooling for their subsequent labour market outcomes. Mitch (2005) also used the census records of 1851 and 1881, which he matched to a sample drawn from marriage registers to study occupational mobility. He was particularly interested in comparing the role of literacy for upward mobility between the rural region of Norfolk and the urban region of Birmingham. Finally, Prandy and Bottero (2000) used longitudinal genealogical data of men born between 1790 and 1909. However, they did not investigate complete occupational careers, but summarised the occupational information into occupational status at a few points in time in order to estimate a path model. Unlike Long (2005, 2006), Mitch (2005) and Prandy and Bottero (2000), who only examined the difference in status within individuals' careers at a few points in time, Schulz and Maas (2012) used longitudinal data on occupational careers from the Netherlands to study the determinants of career success for men and women between 1865 and 1940. We will follow their approach and use longitudinal data to study the careers of the male labour force in Britain during industrialisation for those born between 1780 and 1880. We pose the following research questions:

- Did men have more successful careers in Britain as the country became industrialised?
- Did British society became more open during industrialisation?

We will use data from the Longitudinal Study of Residential Histories (Pooley & Turnbull, 1996). This dataset consists of a large sample of high-quality longitudinal data on individual residential histories from the eighteenth century to the twentieth century in Britain. Although the main purpose behind the data collection was to gather information on the history of individuals' residential moves, the occupational status of individuals was recorded before and after each residential move, resulting in between 1 and 67 occupations per person, and 41,205 occupational measurements for 6229 men born in Britain between 1780 and 1880 who were in the labour market between 1790 and 1950.[1] This dataset provides the opportunity to study the development of the careers of the British male labour force over a century of profound changes.

The data will be analysed with a multilevel growth modelling method. We excluded women from the analysis as this technique assumes that women for whom there is no occupational measurement behave in the same way as those women with similar characteristics who remain in the labour market. This is a problem since women who did not leave the labour market during this historical period are expected to have been a very selective group.[2] We define a successful career as having on average, over the life-course, a high occupational status. In our first set of models this average status will be the outcome. A high average status can, however, come about in two ways. Men either start their career in a high status occupation and remain there, or they start at a lower level, but experience upward mobility. Following Schulz and Maas (2010), in our second set of models we therefore differentiate two aspects of a career. The first relates to the level of occupational status at which the career starts, while the second refers to how fast occupational status grows over the course of a man's work-life history. Both aspects do not necessarily go hand in hand, since the higher the status of the first occupation, the more difficult it is to gain additional status, as studies on career mobility have shown (e.g. Blossfeld, 1986). We will derive hypotheses on both the starting level of the career and on growth in occupational status.

With this research we would like to contribute to previous research in three ways. First, we will study consequences of industrialisation on men's occupational careers in Britain, the country that first experienced industrialisation. To our knowledge—this would be the first attempt to study the career trajectories of the male labour force during industrialisation in Britain over such a long historical period and across different occupations, social backgrounds and geographical regions.

Second, we aim to contribute to the scarce literature on occupational careers of men in the past by evaluating whether the conclusions of Schulz and Maas (2012) and Schulz (2013), regarding the changes in occupational careers during industrialisation in the Netherlands, can be extended to another country during industrialisation, namely Britain. Their main findings were: (1) occupational careers peaked early in men's life (before age 40), (2) both father's occupational status and son's literacy were strong predictors of son's average occupational over his career, but only son's literacy caused a faster growth of status during his career, and (3) the effect of father's occupational status decreased during industrialisation, but the effect of literacy did not (yet) change.

And third, our dataset is one of the very few pre-survey datasets that contain information on educational attainment. Previous studies (e.g. Mitch, 2005; Schulz & Maas, 2012; Schulz, 2013, but see Long, 2006 for an exception) usually used literacy (whether someone signed his or her marriage act), which is a rather restricted indicator of educational attainment. Since literacy measured in this way was almost universal at the end of the 19th century it was bound to lose predictive power, whereas more extended education may have become more important. By using a more elaborate measure of educational attainment we can perform a better test of the claim that industrialisation made societies more open.

2. Theory

2.1. An individual model of career success

Over the course of their occupational career, workers increase their productivity by learning new skills and perfecting old ones (Becker, 1962). Therefore, the longer a worker has been in the labour force, the more skills he has developed, making him more

[1] These numbers of individuals and occupational measurements correspond to the final dataset after making the selections discussed in the data section.

[2] Schulz and Maas (2012) showed for the Netherlands that women who continued working after marriage were predominantly of higher status. This selection led to the estimation of a significant positive effect of marriage on the occupational status of women, contradicting theory. This finding led them to conclude that growth models are more suitable for the study of the careers of men than of women.