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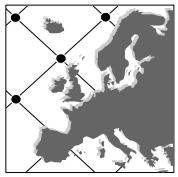

Early Career Patterns – a Comparison of Great Britain and West Germany

Stefani Scherer

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Editorial Note:

Stefani Scherer is a research fellow at the Mannheim Centre for European Social Research (MZES), University of Mannheim. She is currently involved in a research project on 'Educational Expansion and Social Reproduction in Europe' under the direction of Prof. Dr. Walter Müller. *The project is financed by the Deutsche Forschungsgemeinschaft.*

Abstract

The transition from initial education to work has received a great amount of attention, but hardly any research treats this process holistically. This paper focuses on the serial succession of statuses instead of on single events in the early years after leaving full-time education. As methodological tool Sequence Analysis will be applied. Optimal matching procedures allow for the direct comparison of entire career sequences taking into account the ordering of the events. The objective of applying this rather new tool is to empirically identify distinct patterns of transition into the labour market. The analysis covers the whole range of employment statuses including periods of unemployment and inactivity that individuals experience within the first five years following completion of education. A cross-national comparison between Great Britain and Germany aims at investigating to what extent the observed patterns of transition processes are shaped by their institutional embeddedness.

Contents

1 Introduction [1]

The transition from education to work has been the topic of much research. Most of this work, however, focuses on specific events, single time points and individual transitions, not on the resulting trajectories and life courses. Little research has dealt with the transition and allocation process as sequences of several events. It can be assumed however that the allocation process in the labour market is not finished after reaching one's first occupational position but is instead a *process* of reaching a more or less stable position in the labour market. The aim of this paper therefore is to *model the entry into work as a stepwise succession of different statuses* by using *sequence analysis*. Sequence analysis allows us to handle the whole career history by taking into account the information about length and ordering of different statuses instead of single events or time points. That this is not just a methodological issue but also of substantial importance becomes clear if we think of the entry into work as a process evolving over time which can only be captured by concentrating on information about whole trajectories. Thus, as an innovative methodological tool, we suppose that this method will provide new insights into the dynamics and distribution of early career trajectories. Furthermore, it also enables us to tackle the problem of developing typologies of trajectories in a promising way. Previous research dealing with typologies of transition patterns basically followed a more qualitative approach restricted to small sample sizes. With the statistical analysis of the whole career history information for representative data sets, we can now put the results on a much broader basis. This is especially necessary for an international comparison of the different transition patterns.

It is a well known fact that allocation and matching processes differ widely between different structural and institutional contexts. An international comparison therefore is helpful for better understanding how the institutional context people live in shapes their entry into work. Investigation of Great Britain and Germany offers a variation in relevant dimensions of the educational system and labour market structures. Previous research has shown the importance of several dimensions influencing transition and entry patterns and the allocation to occupational positions. Among these are characteristics of the *education and training system*, the *labour market structure* and the structuring and *regulation of the transition process* itself. Nations vary across relevant dimensions of these systems and with regard to the linking of these systems (Kerckhoff, forthcoming; Shavit/Müller, 1998; Hannan/Raffe/Smyth, 1997; Marsden, 1990; Allmendinger, 1989; Maurice/Sellier/Silvestre, 1986; Doeringer/Piore, 1971), so that we expect young people typically to follow different entry patterns into work. These entry patterns vary with regard to several dimensions, e. g. their achievement of specific statuses and positions, the mobility between these -what we could call 'early career turbulences' (Kerkhoff, forthcoming)-, the time it takes to

[1] Financial support from the Deutsche Forschungsgemeinschaft (DFG) is gratefully acknowledged. I thank Goetz Rohwer and Ulrich Poetter for their intense discussion, although not all of their extremely valuable comments found their way into this paper. I also thank Josef Bruederl, Walter Mueller and Hildegard Brauns for helpful comments and Gretchen Wiesehan for extensive help with English language editing. Remaining shortcomings and mistakes, of course, are my responsibility. Previous versions of the paper have been presented at the meeting of the former ESF network on 'Transitions in Youth' in Edinburgh in September 1998, the MZES-Workshop 'Bildung und Arbeitsmarkt' in January in Mannheim 1999, the 'Journees Longitudional' in Clermont-Ferrand in May 1999 and at the annual RC28 meeting in Madison, Wisconsin in August 1999.

achieve a stable position as well as the age at entry and the amount of individual choices to be made. This list is of course far from being complete.

The main focus of this paper is on the question *whether distinct patterns of entering the labour market can be empirically identified and how they differ between different institutional contexts.* More precisely, it will be investigated to what extent equivalent or different entry patterns into work are identified in different countries, namely Great Britain and West Germany,[2] and how these patterns differ with regard to their frequency and composition between the two nations. Differences between gender and the time period are taken into account. As emphasis is on the process of entry into work, this paper concentrates on the first five years after leaving full-time education drawing on monthly employment status information.

The remainder of the paper will proceed as follows: the next section provides a brief overview of the different institutional contexts within Germany and Great Britain and their expected impacts on the resulting trajectories. Section 3 gives an introduction to the applied method, sequence analysis, and some details about the data and the sample selection this paper draws on. Empirical results are the subject of section 4. After a brief description of the early career sequences in general, the analysis focuses on the investigation of typical career patterns. The paper concludes with a summary and discusses the empirical findings in the light of the outlined hypotheses, followed by some more general remarks about the new insights this approach is able to provide.

2 Theoretical Considerations

In almost all western countries we observe prolonged transitions to work (in terms of the time when young people first leave the education and training system) over the last decades. Despite this finding Germany is among those with the lengthiest process. Among other reasons this is due to the strong emphasis on educational credentials, leading to a high participation rate in education after compulsory schooling. This is true especially for participation in vocational training, mostly within the dual system of apprenticeship. Through this specific training the transition period in Germany is highly structured and *regulated* (Allmendinger/Hinz, 1997). In contrast, in the United Kingdom educational credentials carry not the same weight, neither for the youth nor for employers in their recruitment decisions. Young people push into the labour market much earlier and through more ‘informal’ channels. Transition to work takes place earlier in Britain and without the structural regulation observed in Germany.

Dimensions of the education and training system are of central meaning for the link between educational achievements and the labour market outcomes as well as for the way this transition between the two systems performs. As relevant dimensions of the education and training system the extent of *standardisation and stratification* and their horizontal *differentiation* are usually pointed out (Allmendinger,

[2] The analysis of Germany is confined to West Germany, given the specific situation in the former GDR which would require separate analysis. As BHPS contains no data about Northern Ireland empirical analyses do not cover the entire UK but are restricted to Great Britain.

1989; Kerkhoff, 1996; Shavit/Müller, 1998; Kerkhoff, forthcoming; Shavit/Müller, forthcoming). Among other things these dimensions shape the connection with the labour market, as they influence the way labour markets perform and employers select potential employees. The German educational system is typically classified as highly standardised and stratified, whereas the education and training system in Great Britain shows a moderate degree of differentiation and high standardisation within general education only (Hannan/Raffe/Smyth, 1997; Kerckhoff, forthcoming). This results in a strong linkage between educational achievement and labour market outcomes in Germany, whereas labour market position is not determined to the same extent by education in Great Britain.

During the last decades the British education and training system has undergone a lot of change (Brauns/Steinmann, 1999; CEDEFOP, 1994; Oulton/Steedman, 1995; Roberts, 1995; Lindley, 1996); vocational training has been subject to substantial reform and new tracks into employment have been established (Bynner/Roberts, 1991; Evans/Heinz, 1994).[3] In contrast, the German system is characterised by relative stability.

Closely connected to the characteristics of the education and training system is the segmentation of the labour market. The German system has promoted the emergence of an *occupationally segmented labour market* (Marsden, 1990; Marsden/Ryan, 1995; Müller/Shavit, 1998). Standardised vocational training is an important factor for the development of such a market. The literature is not clear in the categorisation of Great Britain, but recent studies indicate that Britain is closer to the ideal type of an *internal labour market.*[4] This implies that young people enter mainly as unskilled and training is to a larger degree provided on the job including a period of screening the workers due to the lack of reliable signals. Employees are provided with specific skills depending on their employers' needs, not automatically transferable to other organisations. These labour market structures have strong implications for the mobility patterns people follow in their early career. Internal markets lead to a much higher mobility in the early years of labour force participation, while within occupational markets relatively stable positions are gained more easily, but without considerable prospects for upward mobility later.

Due to different institutional frameworks in Germany and Great Britain the typical patterns young people follow in entering the labour market are supposed to vary considerably. Although both countries have some developments in common, these differ as to their extent. Among them are the educational expansion, growing flexibility of the labour market, growing unemployment rates and therefore an overall prolonged transition into work[5], both concerning the age of first entering the labour market and the time needed to establish oneself within it (Roberts/Clark/Wallace, 1994; Roberts, 1995). The high standardisation of the education and training system in Germany and its vocational specificity, combined with a high degree of regulation of the transition process, especially within vocational training at the secondary level, leads to smoother and more standardised transitions into work. These factors all facilitate the process of matching jobs and workers, which leads to lower turbulence at labour market

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3 These reforms are primarily aimed at countering the critique of an under-skilled work force in the United Kingdom and reducing the rising youth unemployment rates.

4 This assessment probably will change (again) through recent developments of ‚new vocationalism'.

5 Different definitions of the transition period have to be distinguished. Often education after compulsory schooling is conceived as part of the transition period. In this case transition is defined as starting at a specific age. Others include only the period after leaving education, which may be somewhat problematic for the specific case of the German apprenticeship system. As this paper focuses on entry processes into work and not so much on the various forms of transitions leading to the entry, the latter definition is used.

entry. Through standardised education, employers obtain reliable signals (Spence, 1981). Information about job relevance of the skills is available also as many young people enter the work force as skilled workers, already provided with training in a specific occupation. Moreover, through work-based training a first screening of potential employees is possible. Therefore *mobility* at labour market entry is supposed to be low. In contrast, for Great Britain we expect less standardised and smooth transitions into work, characterised by higher mobility at labour market entry. Mobility occurs as entry into and exit from employment accompanied by higher *unemployment* risks, in terms of higher *job changes* as well as a higher *upward mobility,* for those with successful entry. Unemployment is common among entrants. The matching of jobs and workers has to be elaborated individually as many young people are entering with no training in a specific occupation. Due to the lack of reliable and job-relevant screening information, the screening process is in some sense extended to the first period on the job. As a consequence greater differences between the youth and adult labour markets are observed in GB.

Entry patterns are expected to have undergone more change over time in GB. This is due to the reform of the education and training system but also to the greater flexibilisation of the labour market. Although we find trends towards more flexible markets even in Germany, flexibility in GB is considerably higher. Flexibilisation implies that ‚non-standard' working relations are becoming more important in terms of frequency; continuous full-time work is becoming less frequent and at the same time part-time work, limited contracts, unstable and precarious employment are gaining in importance (Standing, 1995; Rodgers, 1989). These trends are supposed to be most pronounced at career entry, leading to a declining proportion of direct and stable entries into work.

More specifically, we therefore expect for Germany a higher proportion of people entering the labour market directly after leaving the educational system through access to more or less stable full-time employment and remaining in this status. Although unemployment in general became more common in Germany too, patterns showing considerable spells of unemployment are supposed to be more frequent in GB and to have increased over the last decade. Unemployment in general is a signal for problematic and unstable entry, but with the chosen focus a more differentiated picture can be provided through further differentiation of these career patterns. Patterns showing different periods spent in unemployment and also of varying location and order can be distinguished. (These patterns are supposed to reveal those with only short 'search-unemployment' experience at career entry and patterns of long-term unemployment as well as patterns with multiple spells of unemployment, characterised by greater instability). Adopting a broader view, unstable and 'chaotic' patterns should be more frequent in GB and should have gained in importance across the entry cohorts. The share of early career patterns showing spells of self-employment are, for reasons of greater labour market flexibilisation, also supposed to be more frequent in Great Britain.

Gender segregation of the labour market is one of the most stable attributes of modern societies. Research shows that gender-specific labour market segments and occupational career trajectories exist, but to varying degrees in the national economies. It is well known that gender segregation is extremely high for Germany, both in terms of job positions and labour market participation. Whereas part-time work is a clearly female-dominated phenomenon in Germany, it is, owing to the higher flexibility of the labour market, also expected to be common among men in GB, again with growing proportions. Additionally, working careers of women are closely linked with their domestic work and are for that reason more likely

to be interrupted. We know that within Germany 'traditional' working patterns among women are very common: the majority of females leave the workforce after childbirth at least until children start school. Thus, we expect 'traditional patterns' to be more prevalent among German women but not so obvious in Great Britain.

3 Methodology and data

"We are accustomed to view the cross-sectional structure of employment in a society ... as the major determinant of life-chances and the class structure. ... But considered more carefully, it emerges that the number of people who happen to possess particular occupational characteristics at one historical point has in fact no necessary implications for the pattern of stratification in a society. What is important is not the number in each occupation at any one time, but rather the individuals' *trajectories through various occupations over time*." (Gershuny, 1993:136). Thus, on the basis of cross-sectional distribution, it is not possible to depict the mobility and thus the mechanism leading to distributions. The focus therefore has to be on pathways, on trajectories rather than on distribution, to overcome this static and sometimes misleading approach.

Most of the 'classical' methodological tools used for analysing longitudinal data focus on single events, instead of mobility patterns in terms of serial succession of sequential events. In contrast, sequence analysis considers whole career sequences (as careers can be represented as a serial succession of different statuses over time) and therefore makes it possible to treat this data *holistically*. The handling of whole sequences is exactly what existing analyses of career mobility leave out (see Chan 1995; Brückner/Rohwer, 1996; Erzberger/Prein, 1997; Halpin, 1996; Halpin/Chan, 1998; Rohwer/Trappe, 1997 for counter-examples). This approach is able to provide viable answers concerning typical patterns in unique sequences; it allows one to empirically identify typologies of sequences. The specific technique used is Optimal Matching Analysis (in the following: OMA) (Rohwer, 1996, Abbott, 1995, Dijkstra/Taris, 1995), a technique introduced by molecular biologists investigating e.g. DNA sequences (Sankoff/Kruskal, 1983). It was first applied to sociological analysis by Abbott (Abbott/Forrest, 1986; Abbott/Hrycak, 1990). However, OMA by itself does not give any classification, but directly creates interval-level measures of dissimilarity between sequences which can be used as input to further analysis such as cluster analysis or multi-dimensional scaling. To investigate into typical early career patterns and their comparison over different countries, after the first step of comparing the sequences by calculating their resemblance by OMA, a second step is needed to bundle up groups based on their similarity.

The basic idea underlying the OMA algorithm is a simple count-metric. What OMA does is count for 'costs' needed to turn sequence A into sequence B or vice versa by counting the minimum number of transformations needed to make sequence A equal B. The more steps that have to be taken to make sequences equal, the more costs occur and consequently, the greater is their dissimilarity. Two types of

transformations are possible: substitutions and insertions/deletions.[6] With this procedure *OMA takes not only the length and frequency of the events into consideration, but also their location and order.*

In principle there are two possibilities to calculate these differences. Dissimilarities can be calculated either pairwise by comparing each sequence with each other or -as the second alternative- in comparison to a specified reference sequence. I use both options for computing the distances. In Section 4.1 sequences are compared with the standard reference of continuous full-time work, and section 4.2 reports distances of pairwise comparison as the basis for the clustering procedure.

As an additional feature to bring theoretical considerations into the calculation of the distances, transformations can be weighted. It would go far beyond the purpose of this paper to cover all relevant aspects about weighting, but a few remarks should be made. First, different substitutions can be assigned different weights. One can think of some statuses being closer together than others and therefore assign different costs for their substitution. A special ranking of the statuses has to be decided theoretically. Results in section 4.1 are based on such weighting; some additional remarks are given in the Appendix, which also shows the matrix of the substitution costs that have been applied. Secondly, weighting can also be assigned to insertion and deletion costs. These two transformations are treated the same- i.e. are assigned the same costs- and are often briefly described as 'indel'- transformation. It seems rather obvious that the insertion or deletion of a specific status can cost more than others if it is quite unusual. But these costs are in some sense a function of what the sequence already looks like: for one sequence the occurrence of a specific status might be rather unrealistic, while for an other it might not. To decide this point one has to make so many assumptions that I have decided to treat any insertion and deletion as costly as any other, following other authors. It has to be proven whether these cost-assignments produce meaningful categorisations. To complicate things even more, it could also be important to take into account the point in time at which specific transformations are carried out and therefore assign different weights to the same transformation at different points of time within the career sequence. This is where we reach the limits of this approach for the moment. The temporal order in that sense simply cannot be taken into consideration when calculating the matching costs.

As mentioned above, optimal matching does not provide any classification of the sequences. Therefore a second step to investigate for typical groups of entry patterns is needed. Classification can be reached in many ways and weight can be put on either theoretical considerations or the empirical investigation. In this paper the latter approach was chosen and classification of the groups is obtained empirically drawing on cluster analysis. Precisely, the pairwise dissimilarity measures are subjected to cluster analysis. Clustering data by cluster analysis is always a problematic procedure, as it provides a cluster solution even if there is no meaningful structure within the data,[7] and different rules of cluster formation lead to different solutions for the same dataset. Therefore one of the critical decisions to make is the choice of the clustering algorithm. Every algorithm has its own advantages and problems. I decided to choose Ward, which is supposed to find the most homogeneous clusters[8] and seems to provide the most

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6 Through the introduction of insertion/deletion transformation it becomes possible to detect sequences that are rather equal even when they are a bit staggered and for instance, differ in status at every single time point.

7 The problem here however is even more complex as we also have to deal with two different datasets, one for Germany and one for GB.

8 Measurement of the homogeneity is the variance criteria. Ward has the tendency to produce equally sized groups and has difficulties in detecting very small groups.

reasonable result for this analysis. Cluster analyses are conducted separately for each of the two countries.

Empirical analyses draw on data from the British Household Panel Survey (BHPS)[9] and the German Socio-Economic Panel (GSOEP), covering an interval from 1985 to 1996. To investigate the entry process into the labour market, the first five years after leaving full-time education are covered, which implies that the latest entry took place in 1991. This selection results in 1111 observed persons for Germany and 1114 for Great Britain. A brief description of further modifications of the data sets is given in the Appendix.[10]

Apprenticeship training is considered part of the educational system. Individuals thus enter the sample after their periods within apprenticeship.[11] Due to the lack of standardised training contents the British government training schemes (GTS) are more or less understood as active labour market policies rather than real education and thus considered part of the labour market experience and consequently included in the early career sequence. In addition military service is excluded from analysis in Germany. As the main purpose is to investigate into labour market entry process this seems reasonably justified.[12]

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9 Concerning BHPS (Taylor, 1996), I draw on the combined data sets, which include long-term retrospective as well as direct information out of the panel waves (Halpin, 1997).

10 Reduced numbers in the analysed models are due either to missing data or, in case of the sequence analysis, to gaps in the sequences; distances are not computed in that case.

11 The exclusion of apprenticeship seems reasonable on several grounds: one has to consider apprentices special status which gives them a very stable position and makes their condition non-comparable to other 'normal working' conditions. Another point is that because of the relatively long duration and the large proportion in apprenticeship training in Germany, most of these five years under investigation would mainly exist of periods of apprenticeship. It could be useful to treat this institutionalised 'transition phase' separately.

12 It can be shown that young males in Germany attend their military service in almost all cases directly after periods in education, either between two education spells or before labour market entry, depending on their attended level of education.

The definition of the early career sequences is based on monthly information of employment status. Concentration on employment status has the advantage of covering the whole range of statuses, including spells of unemployment and non-work force participation.[13] The following status categories have been covered:

- Self-employment
- Full-time dependent employment
- Part-time dependent employment
- Government training schemes (UK only)[14]
- Unemployment
- Full-time education (return to)
- Family care/maternity leave
- and a heterogeneous 'other' category including a group with status not specified further, military service (in GB only) and retirement.

Government training schemes have no counterpart in Germany. We therefore end up with one additional status in Britain.[15]

With the definition of 'ETS leaving cohorts' different age groups are compared, depending on their age at leaving education mirroring to a large extent their educational level within different time periods, but at equivalent stages in their career history. For both, entry period and age can be controlled for, and for both, effects on the performance at labour market entry are expected. The entry date is taken into account in a dichotomous way: the 'old-entry cohorts' refer to entry cohorts of 1984 - 1988 and the 'young-entry cohorts' refer to those entering between 1989 – 1991.[16]

Education is measured by the CASMIN scale, which was developed especially for comparative research (see Braus/Steinmann, 1999 for detailed description; Koenig/Luettinger/Mueller, 1988 for the original version).[17] CASMIN differentiates between the level of education and general and vocational tracks. Therefore it allows for the representation of non-linear impacts of education. A short description is given in the Appendix, table A1.

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[13] It however has the disadvantage of being relatively crude, hiding considerable parts of mobility between different employment statuses. Therefore a further subdivision of employment positions could be a topic for future analysis.

[14] Government Training Schemes cover, Youth Training' or ‚Youth Training Schemes' for instance.

[15] Consideration of this extra status leads -qua definition- to more possible mobility in the British case. It however seems reasonably justified, taking into account the specific national situations.

[16] With this distinction we do not grasp business cycles. Unemployment rates peaked in the mid-80s and the beginning of the 90s, and fell in the late 80s. (These developments differ are slightly staggered for the two countries, but roughly the same). So what we get by this approach is something like 'entrants into a relaxing labour market' for the first entry cohort and for the second one 'entrants into an increasingly competitive one' (OECD, 1995).

[17] Education is measured as the highest education achieved in 1991. As there is no information about education available for the British data before then, it is the time point closest to leaving the educational system. Only where there is no information at this point in time is status of later years regarded.

4 Empirical Results[18]

4.1 Deviation of the early career patterns from a standard sequence of continuous full-time work

In order to give a first impression of early careers in the two nations, individual sequences are first compared with a standard sequence consisting of continuous full-time work. Table 1 contains the proportion of people working continuously full-time over the first five years. For a more differentiated picture figures 1a/b and 2a/b show the cumulated frequencies of distances to continuous full-time work subdivided by gender and entry cohorts. Results are based on weighted distance calculation (see Appendix) but no substantial differences occur using non-weighted results.

Table 1 : Proportions in continuous Full-Time Work over the first five years [Percent]

	Great Britain		Germany	
	Men	**Women**	**Men**	**Women**
Entry cohort 1985-88	34.4	36.2	41.5	26.1
Entry cohort 1989-91	30.6	24.4	40.7	24.1
Overall	33.0		34.0	

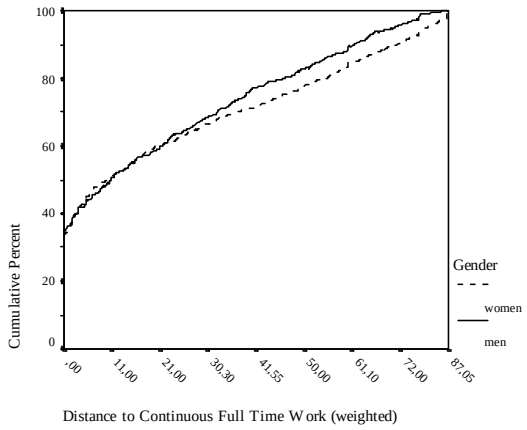
Source: BHPS and G-SOEP, Labour market entrants (first 5 years after leaving the ETS)

The largest proportion of people, 34.0% in Germany and 33.0% in Great Britain, is continuously within full-time dependent work during their first five years after leaving the education and training system. This proportion clearly differs between the two sexes and between the two entry cohorts under investigation, though to varying degrees in the two countries (see table 1). Gender differences are very pronounced in Germany, with males clearly dominating the pattern of continuous full-time work. But a closer inspection reveals gender differences concerning this portion in GB also: while women of the older entry cohorts even exceeded the portion of males remaining in full-time work in the first five years, they experienced a decline of more than 10 percentage points of this pattern over the two entry cohorts.[19] Although we observe declining full-time work participation between the second half of the 1980s and the beginning of the early 1990s in all groups, percentages in Germany stay more or less stable over the years.

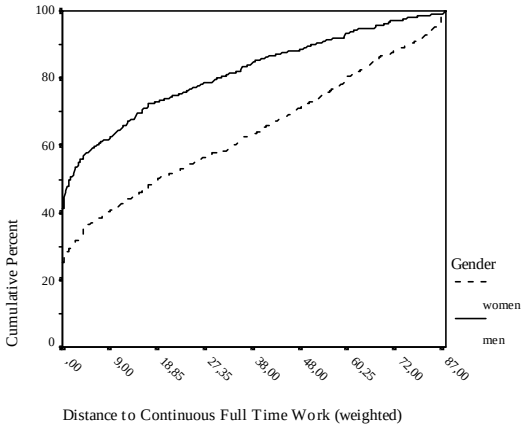
[18] The sequence alignments are calculated using TDA, a programme developed by Rohwer (1996).
[19] This, however, is not due to higher women's part-time work participation, as we shall see later.

Figure 1a/b and 2a/b: Distance to Continuous Full-Time Work, Cumulated Frequencies

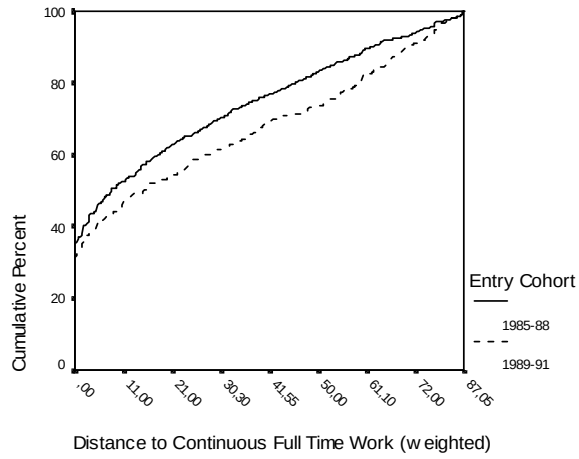
1a by Gender, Great Britain



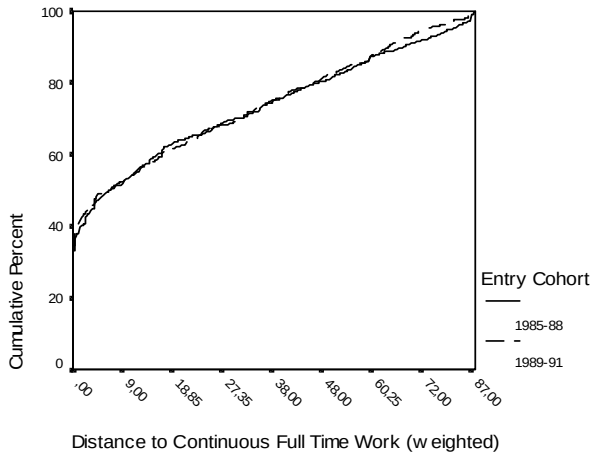
1b by Gender, Germany



2a by Entry Cohort, Great Britain



2b by Entry Cohort, Germany



Sources: BHPS and GSOEP. Cumulated distances to continuous full time work (employment status information). Distance calculation by optimal matching. Labour market entrants (first 5 years after leaving the ETS)
All figures base on a weighting of the substitution costs.

In addition to this portion of continuous full-time work participation, the more detailed inspection of distances to these career patterns provided in the figures (figure 1a/b and 2a/b) above shows substantial differences between the two countries too.[20] They clearly support the hypotheses about more pronounced gender differences in Germany and considerably more change over time in Great Britain.

For Germany the 'gender gap' is obvious: females do not follow the continuous full-time work pattern to the same extent as men and higher proportions have higher distances to this standard reference.

[20] Direct comparison of distances is not recommended given the one additional status in GB, which leads to an enlargement of distances. Of some importance to note is also the fact that we only have women in family care activities which means in fact a larger state-space leading to greater distances. This however is a substantial result also.

Although females in GB are also significantly further away from male patterns with regard to non-zero distances, gender differences there are rather weak. Beside the well-known fact of higher male full-time work participation especially in Germany, this confirms that women differ concerning their early career patterns also. To investigate whether not only the participation rates in several statuses, but also the entry patterns into work differ, I concentrate on those who actually have entered the active work force after a certain period of time, e.g. after five years: only those in full-time dependent work after this time are regarded, so as not to mix up different processes of entering patterns and participation decisions.[21] Results (not reported here) show that for Germany these entry patterns into full-time dependent work differ significantly between the two genders, with males starting much earlier with full-time work and a tendency to remain in it. In GB however gender differences again are not apparent at first sight: significant differences occur only if we disregard those who directly enter this status and remain within it (e.g. those within continuous full-time work). So in addition to different participation decisions, we also find different entry patterns into work, but to a considerably lower degree in GB.

Focusing on differences between the two entry cohorts, we can see a shift away from this standard over time for GB, indicating greater change in the British labour market. With regard to these distances Germany is characterised by high stability: no change between the two entry cohorts can be found. It however has to be added that with this distinction of entry cohorts it is not possible to grasp change over time to a satisfying extent; for this purpose a broader time period would have had to be covered.

Deeper insight into the role educational achievements play in influencing this deviation from the chosen standard sequence is obtained by a regression analysis of the distances. This is possible, as one of OMA's advantages is producing interval level distances.

[21] This however is a very crude approximation and to disentangle both processes more sophisticated modelling would be needed.

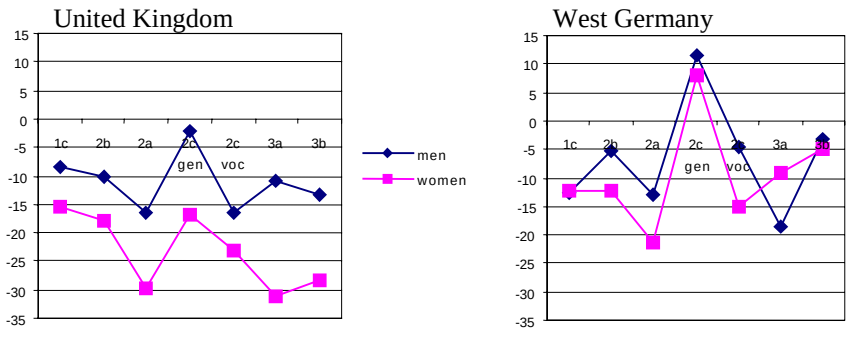
Table 2: OLS Regression Analysis of the Distance to Continuous Full-Time Work, b Coefficients

	Great Britain		**Germany**	
	Men	Women	Men	Women
Additional Descriptive Measurements				
Range of Distance	0 – 85.50	0 – 87.05	0 - 90.00	0 – 90.00
Mean Distance	21.78	24.21	14.63	29.12
Standard Deviation	24.55	28.19	21.83	29.25
Ref.: Entry cohort 1985-88				
Entry cohort 1989-91	4.93	6.19*	0.24	1.24
Ref.: CASMIN 1ab (social minimum educ.)				
CASMIN 1c (basic voc training)	-8.27	-15.50**	-12.64**	-12.17**
CASMIN 2b (intermediat secondary level, general educ.)	-10.21**	-17.88**	-5.16	-12.42*
CASMIN 2a (intermediate secondary level, voc. educ.)	-16.62**	-29.88**	-12.95**	-21.46**
CASMIN 2c general (higher secondary level, general educ.)	-2.25	-16.89**	11.33*	8.03
CASMIN 2c vocational (higher secondary level, vocational educ.)	-16.42**	-23.20**	-4.72	-15.13**
CASMIN 3a (lower level tertiary)	-10.89**	-30.98**	-18.43**	-8.99
CASMIN 3b (higher level tertiary)	-13.23**	-28.52**	-3.23	-4.90
Intercept	*29.74*	*42.84*	*21.95*	*39.73*
R^2	*7.5%*	*14.1%*	*10.1%*	*9.1%*

* *significant on 1% level * significant on 5% level

Source: BHPS and G-SOEP, Labour market entrants (first 5 years after leaving the ETS)

Figure 3: Educational Effects in Reducing the Distance to Continuous Full-Time Work



Source: BHPS and G-SOEP, Labour market entrants (first 5 years after leaving the ETS).
Results in the graphs refer to the estimated model reported in table 2

Table 2 makes obvious the gender differences in distance to continuous full-time work. Intercepts for females indicate that also controlling for educational achievement males are much closer to the labour

market in both countries. Direct comparison of the values between the two countries however is not recommended, given the one additional status in GB. With regard to entry cohort few or no differences are found with this approach.

With regard to the pattern of how educational achievements influence the distance to continuous full-time work, results show similarities as well as dissimilarities across the countries. Education in general reduces the deviation from continuous full-time employment. With the exception of full general secondary level (CASMIN 2cgen) for Germany, education increases the probability of being closer to continuous full-time work for both sexes; but having *Abitur* only in West Germany leads - at least for males - to a career with even more distance to work than possession of basic qualification only. It is striking that the crucial dimension which provides access to rather stable early careers is the possession of vocational training and not the level of educational achievements. In principal this applies for both countries. In Germany it is especially apparent for those who obtained apprenticeship training supporting the hypothesis about the importance of work-based training, whereas in GB the level of educational achievements seems slightly more important (indicated by the more linear pattern of influence and the higher advantage of tertiary-level education compared to Germany).

Measurement of education however is not optimal as it is based on information at one fixed time point (1991) only. This implies at least for Great Britain that older cohorts have a higher chance of reaching additional qualifications which we are not able to control for in this approach, given the relatively high portion attending (part-time) further education. To take into account this shortcoming of educational measurement at least to some extent, those individuals returning to education as their first status within these five years were excluded from analysis in an additional step. Overall effects of education become slightly more pronounced but no fundamental changes are apparent. Of special interest is the fact that the specific pattern of general secondary education (2c general) for Germany and the relatively low pay-off of tertiary education remains stable: those findings are independent of returning to education later in one's career.

The following section investigates these early career sequences in greater detail.

4.2 Early Career Patterns: the Description of the Clusters

For a closer look at what is behind this 'deviation' from continuous full-time work, I now turn to the investigation of the early career patterns. Can we identify distinct entry patterns empirically and how do they differ between the two countries?

The following results are based on pairwise distance calculation by OMA with no weighting. Although it is immediately reasonable to think of some statuses being closer together than others, in cluster analysis groups turn out to be more clearly structured when using no weighting. To discuss all implications about introduced weighting would go far beyond the purpose of this paper, but it is clear that with choice of non-weighted results emphasis is given to the ordering of the statuses, not only to their occurrence and duration. For Great Britain and Germany a twelve-cluster solution seems to provide the most reasonable grouping of the data.[22] Cluster analysis was conducted separately for the two countries. The primary aim was to investigate whether and to what extent we find the same or distinct patterns emerging in the two countries. With cluster procedures strongly depending on input of distances separate analysis is supposed to give more clearly structured results. It however leads to the problem of how to decide that two separately emerging groups are equivalent or not. But, as we shall see later, patterns are rather straightforward.[23]

[22] This, in some sense, is surprising, given the one additional status in GB. Closer inspection however revealed no meaningful further subdivision when enlarging the number of groups. Some clusters, however, are more heterogenious in GB owing to this additional status.
The 'big clusters' appear very early within the clustering procedure and remain relatively stable, indicating that they are rather homogeneous. So what happens at the end of the clustering procedure is the merging of relatively heterogeneous, small subgroups. Also of interest may be the fact that we do not obtain the same cluster solution by clustering the data based on the amount of time spend in the 7 (FRG) or 8 (UK) statuses. This shows the importance of the additional information concerning ordering of events taken into account by OMA.

[23] An alternative strategy would consist of running cluster analysis on the combined data sets and splitting up the groups according to the country information afterwards. This however in my view would lead to even more problems understanding what happens through this procedure.

Table 3: Description of the Typical Entry Patterns [Percent and Numbers of Persons]

	Great Britain			Germany		
Typical Entry Pattern: the Clusters	**%**	**Cum %**	**N**	**%**	**Cum %**	**N**
'Full-Time Work'	51.7		566	53.4		591
'Full-Time Work plus other Statuses'	11.3		124	12.3		136
		63.0			*65.7*	
'GTS (short)→ Full-Time Work'	4.7		51			
'GTS→ Full-Time Work'	5.2		57			
		9.9				
'Self-Employment '	3.1		34	2.3		25
'Full-Time Work → Self-Employment'				2.2		24
		3.1			*4.5*	
'Part-Time Work'	2.9		32	3.5		39
		2.9			*3.5*	
'Unemployment –short'	3.2		35	2.0		22
'Unemployment –long term'	5.8		64	2.1		23
		9.0			*4.1*	
'Return to Education'	3.4		37	2.4		27
'Return to Education (later)'				5.1		56
		3.4			*7.5*	
'Work→ Family Care'	2.8		31	7.0		78
'Family Care'	3.7		40	6.0		66
		6.5			*13.0*	
'Rest/No Clear Structure'	2.2		24			
'Rest'				1.8		20
		2.2			*1.8*	
Total	100		1095	100		1107

Source: BHPS and G-SOEP, Labour market entrants (first 5 years after leaving the ETS)
Results of the Clusteranalysis.

Table 3 provides an initial description of the emerging patterns in terms of frequency. The second column (Cum %) in both panels for the two countries provides cumulated percentages of persons belonging to groups dominated by a specific status or showing a characteristic pattern. For instance, 9 percent of the sample in GB and 4.1 percent in West Germany is significantly affected by unemployment. A more detailed picture provided by the emerging patterns shows that 5.8 percent in Britain (64 persons) and 2.1 percent in West Germany (23 persons) are affected by ongoing labour market exclusion, those in long-term unemployment. With this presentation it is easy to obtain a first impression about the relevance of

different early career patterns in the two economies. Table 4 shows the mean duration (in months)[24] within the seven (FRG) or eight (UK) statuses for the different typical career patterns. Shaded fields indicate the dominance of one (or two) statuses within the specific cluster. Out of the description of the clusters with regard to the duration spent in several statuses, insufficient or no conclusions can be drawn about the serial succession of the different statuses. Therefore the detailed picture of the early career sequences is given in figures 4a and 4b. The figures report the whole career sequences. For each individual in the sample one line is drawn representing the status each month within the first five years. Status information is indicated by the different colours. Individual sequences are sorted by their cluster membership; black lines mark the cluster borders. The special advantage of this graphs is that it allows for the detailed visual exploration of the typical trajectories. Besides the potential distinctions in the early career patterns that young people in the two countries typically follow, the emerging groups may also differ in their composition. Table 5 gives some details about the composition of the patterns with regard to gender, entry cohort and predominance of educational achievements. Due to the very few cases included in some of the emerging clusters, education is considered in a rather rough categorisation only: the level of education and the possession of vocational qualification are regarded, each in a dichotomous way. Both categorisations are based on CASMIN classification. Those with higher than intermediate-level education are considered as having higher education; vocational qualification is considered without regard to the level.[25] In principle composition of the clusters with regard to educational achievement is rather similar in both countries, though with some significant deviations.

[24] Remember that only the first 5 years are under investigation. Therefore a mean duration of about 60 months would mean that almost all persons spend their whole early career within this single status.

[25] More precisely, to distinguish the level of education, every qualification up to 2b and including, was grouped within the ‘low level qualification’ and those equal or above 2a in the ‘high level’ category. To construct the vocational training information 1c, 2a, 2cvoc and 3ab are grouped together for this purpose.

Table 4: Time Spent in the Different Statuses by Cluster Membership [Months]

	Great Britain									**Germany**							
Cluster	Self-employed	Full-time work	Part-time work	GTS	Unemployed	Education	Family care	Other	N	Self-employed	Full-time work	Part-time work	Unemployed	Education	Family care	Other	N
'Full-Time Work'	0.05	58.20	0.20	0.16	0.97	0.07	0.00	0.28	*566*	0.02	58.72	0.08	0.54	0.35	0.14	0.15	*591*
'Full-Time Work plus other Statuses'	1.44	39.98	3.35	0.81	7.31	4.53	1.62	0.86	*124*	0.93	45.87	1.82	6.66	2.63	0.81	1.27	*136*
'GTS (short)→ Full-Time Work'	0.22	46.31	0.09	11.51	1.20	0.07	0.33	0.25	*51*								
'GTS→ Full-Time Work'	0.07	24.95	1.95	25.37	4.68	1.00	1.65	0.32	*57*								
'Self-Employment '	39.59	14.00	0.38	2.12	1.91	0.18	1.56	0.26	*34*	49.44	5.68	2.92	0.24	0.00	1.24	0.48	*25*
'Full-Time Work → Self-Employment'										19.79	35.08	0.71	1.21	1.62	10.8	0.50	*24*
'Part-Time Work'	1.31	9.91	41.75	0.13	4.81	0.44	0.88	0.78	*32*	0.92	7.05	38.37	4.08	0.92	7.87	0.28	*39*
'Unemployment –short'	0.08	26.40	1.14	0.26	30.89	0.46	0.66	0.11	*35*	0.00	29.91	1.14	25.73	1.77	0.55	0.91	*22*
'Unemployment –long term'	1.63	6.09	1.52	3.03	46.08	1.16	0.00	0.48	*64*	0.00	6.70	1.91	38.57	2.00	8.13	2.70	*23*
'Return to Education'	0.43	12.78	1.95	0.22	2.97	39.59	0.95	1.11	*37*	0.22	10.85	3.41	6.37	37.89	1.07	0.19	*27*
'Return to Education (later)'										0.00	30.23	0.11	2.38	25.39	1.34	0.55	*56*
'Work→ Family Care'	0.00	24.61	2.97	0.35	1.55	0.29	30.23	0.00	*31*	0.42	34.81	4.95	2.55	4.32	11.73	1.22	*78*
'Family Care'	0.00	1.78	3.42	3.28	7.20	0.15	43.85	0.32	*40*	0.09	7.76	2.32	4.53	0.53	44.52	0.26	*66*
'Rest/No Clear Structure'	1.33	19.42	2.33	2.33	9.25	10.21	0.00	15.13	*24*								
'Rest'										0.00	4.45	1.2	5.20	10.65	1.60	36.90	*20*
Total	1.62	41.61	2.27	2.48	6.12	2.26	2.91	0.72	*1095*	1.74	43.64	2.38	3.42	3.39	4.29	1.14	*1107*

Total time under investigation: 60 months
Source: BHPS and G-SOEP, Labour market entrants (first 5 years after leaving the ETS), Description of the Clusters.

To see figure 4a and figure 4b please visit the following site :

http://www.mzes.uni-mannheim.de/publications/wp/wp-7-plot.pdf

[566KB]

Probably the most striking result of these first descriptions is that these methods do produce meaningful and well defined results, as for instance can be seen in table 4, where clusters clearly differ in distribution over the several statuses. But as becomes clear from the detailed representation in figures 4a/b and table 5, patterns also differ clearly in their location and order of statuses as well as in their composition.

Table 5: Composition of the 'Typical Patterns': Proportion of Males, Entrants between 1989-91, Higher Educated and Vocationally Trained in Deviation from Overall Proportion [Percent]

	Great Britain				Germany			
	Men	Entrants 1989-91	Higher Education	Vocational training	Men	Entrants 1989-91	Higher Education	Vocational training
Overall Proportion	**48%**	**31%**	**57%**	**58%**	**54%**	**41%**	**48%**	**67%**
Entry Pattern								
'Full-Time Work'	+1	-3	+11	+8	+11	+0	+4	+7
'Full-Time Work plus other Statuses'	+0	-5	-2	-3	+5	+0	-7	-1
'GTS (short)→ Full-Time Work'	+7	-9	-12	+1				
'GTS→ Full-Time Work'	+8	+2	-15	+9				
'Self-Employment '	+14	-13	-1	-5	+18	+3	+31	+1
'Full-Time Work → Self-Employment'					+21	+22	+9	+16
'Part-Time Work'	+5	+32	+2	-20	-21	-3	-5	+0
'Unemployment –short'	*+23*	*+15*	*-31*	*-32*	*+23*	*-27*	*-31*	*-22*
'Unemployment –long term'	*+13*	*+19*	*-28*	*-23*	*-24*	*+7*	*-40*	*-41*
'Return to Education'	+1	+14	+24	-7	+9	+7	+3	-15
'Return to Education (later)'					+9	+11	+22	-3
'Work→ Family Care'	-48	-12	-22	-10	-41	-5	-3	-11
'Family Care'	-48	+2	-42	-35	-54	-3	-17	-22
'Rest/No Clear Structure'	+10	-6	+10	-4				
'Rest'					+1	+21	-29	-47

Source: BHPS and G-SOEP, Labour market entrants (first 5 years after leaving the ETS), Description of the Clusters.

For both countries the predominant pattern containing about 65 percent of the sample is one mainly composed of people continuously working *full-time*. This group however is further subdivided into two groups, one consisting of more or less pure full-time working careers, the other showing additional spells in other statuses, mainly in unemployment. The first, homogeneous group, containing about 50 percent of the sample, enters the labour market directly after leaving the education and training system through periods of full-time dependent work and remains within this status over their first years. On average they spend about 97% of their first five years within full-time work (see table 4), but as can be seen from the detailed report of sequences in figure 4a/b, the vast majority has no additional spells in other statuses. The dominance of this pattern as well as the strong gender differences occurring for Germany with regard to this group were already outlined in the section above. Continuous full-time work participation is much more common among men than women in West Germany, while there are no gender differences at first sight in GB. Behind this rather stable pattern, however, a lot of mobility can be hidden: this view takes into account neither employer nor job changes.

The second mainly full-time work-dominated group is characterised by much higher heterogeneity than the first one. In principal we detect this pattern in both countries but with considerably higher heterogeneity in GB. Besides the predomination of periods in full-time work (mostly) there is one additional spell of limited

duration in another status, mainly unemployment. These additional spells have no clear structure in location. In a sense these patterns can be interpreted as showing problems of entering labour as they are characterised by remarkable mobility in and out of employment. But for both countries rather different types are bundled together in this cluster. They reach from (multiple) spells of education over periods in part-time work participation to those with initial unemployment experience at labour market entry of rather short duration and multiple spells of unemployment after first work experience.

Two additional clusters consisting of those starting with a period in Government Training Schemes (*GTS)*, such as the Youth Training or Youth Training Scheme, and successful transition into full-time work afterwards emerge for GB. Obviously they can have no counterpart in Germany. Together they cover about 10 percent of the sample. Both groups differ concerning their time spent within GTS: the first remaining for about one year, the second about two years on average (see table 4). These two groups clearly reflect the extension of the training time assigned to GTS over time: mainly the older ones remain only briefly in this status. Government Training Schemes in GB are an instrument aiming to help especially less-educated young people to establish themselves in labour. Consequently we find higher portions of less-educated youth in this group. Also the high portion of vocationally trained youth of about 60-67% corresponds to expectations, given that GTS is rewarded as basic vocational qualification (CASMIN 1c). But this also indicates the relatively high proportion of GTS leavers without certificates, which however is, in combination with prolonged training periods, decreasing over the two entry cohorts. The results seem to indicate that the instrument of GTS has succeeded in integrating young people into work: in the sample most of the persons taking part in this scheme, independent of duration, show a smooth transition into work afterwards, with only a few exceptions located in other clusters ending up in unemployment or family care. This, in a sense, supports the argument about the importance of work-based training, independent of standardised training contents. Assessing the efficiency of this measure however is not possible with this approach as we do not consider information about the quality of the subsequent job and do not have any direct control-group; it is not clear how much this result is due to unobserved heterogeneity rather than the effects of GTS.

Corresponding other research (Luber/Leicht 1998), *self-employment* is not very common in early careers. While for GB one cluster dominated by self-employment occurs, we obtain two groups for Germany that differ with regard to the time spent within this status. Besides the very few individuals entering self-employment directly after school and remaining within it, in principle all groups share the same patterns, with self-employment located at the end of these five years after a period in full-time dependent work. The higher proportion of people with spells of self-employment in Germany is somewhat surprising, as it clearly contradicts other results. It, however, seems plausible that this result is due to the fact that information about self-employment is only available in a yearly grid for Germany and therefore, although corrections are made (see Appendix), the proportion of self-employment is overestimated. For this reason not too much emphasis should be put on these results. Due to sample construction overestimation of this status at the same time means underestimation of full-time dependent work in Germany.[26] In both countries self-employed groups are mainly composed of males but this gender difference is much more pronounced in Germany, indicating that self-employment in general is very unusual for females in this country. For GB this

[26] Periods of self-employment were only filled in if the main status was full-time work.

pattern of self-employment is losing in importance over the two entry cohorts, which seems surprising given the growing overall proportion of self-employment in Britain, while in Germany it became more common among the 'younger' entry cohort, who left full-time education after 1989. Self-employment in Germany is strongly dependent on educational qualifications based on formal regulations of access. Vocationally trained persons are over-represented among those starting self-employment after initial full-time dependent work, while it is the more educated persons in the ongoing self-employed pattern. Given the different educational distributions of the two self-employed groups it seems plausible to think of them as two different types of self-employment. This contrasts with the British pattern, where education of this group is equivalent to mean, indicating different structures of self-employment in the two countries. The same probably applies for the part-time working groups. In GB part-time work is more common among persons without any vocational training, supporting the idea of part-time work being largely combined with precarious employment (Schör, 1987; Meyer, 1997), whereas no overrepresentation of educational groups can be found in West Germany.

Career courses predominantly consisting of *Part-time work* participation emerge as a separate cluster in both countries, roughly equal in size with about 3-4 % of the sample. These groups consist of status homogeneous careers as well as careers ending up in part-time work after a period of either unemployment, family care or full-time work participation (see figure 4a/b). The proportion of sequences starting with part-time work and subsequent transition into full-time paid work is quite low and located within other clusters. The most important difference between the two countries with regard to this part-time working pattern is the composition by gender: while for Germany part-time work is clearly a female-dominated phenomenon, a considerable proportion of males is included in this group in GB, with growing importance over time. This results in a sharp overall increase of this group. Findings are in line with the expected higher change in GB going along with the greater labour market flexibilisation; male part-time work can be understood as an indicator of labour market flexibility.

Aside from these groups with more or less successful transitions into work, a considerable proportion of people follows patterns showing remarkable problems in entering work, namely those with spells of *unemployment* in their early careers. Looking at involuntary labour market absence in the early career, differences among the two countries are most apparent. First, the higher portion of careers showing spells of unemployment in GB is striking, but we also find differences with regard to the ordering and the duration of this status. Considering in each country only the two emerging clusters dominated by unemployment, in GB they are more than twice as large as in Germany, covering about 9 percent of the ETS-leaving cohort in contrast to only about 4 percent. In addition to these two clusters, patterns containing spells of unemployment of shorter duration occur also, though located in other clusters. Concerning the incidence of unemployment it is plausible to depict different patterns with regard to ordering and location within the sequence of this status theoretically. First, it is possible to distinguish those with only short periods of unemployment located at the very beginning of their early career but with successful transition into work afterwards, which can be interpreted as short periods of search-unemployment. This pattern exists in both countries, some of them, depending on the length of the period, grouped within the full-time working cluster and some within the more heterogeneous cluster of full-time working persons with additional spells in other statuses. Second, and at the other extreme, the pattern of long-term unemployment is apparent: in both countries again a pattern of ongoing unemployment over the whole five years under investigation can be seen, though differing sharply in size. With regard to its frequency this group is of almost no importance in

Germany, but considerably more common in GB. In Germany these persons are grouped together with those who enter unemployment after a period within full-time work. This third configuration emerges as a separate cluster in GB, whereas in Germany the second unemployment-dominated group consists of those who succeeded in finding work after a considerable period of unemployment, as a fourth configuration. Labour market exclusion is strongly structured by gender, with gender differences depending in different ways on the patterns of unemployment in the two countries. The phenomenon of either having problems in entering work or even failing to enter is one definitely more common among men and clearly increasing over time in GB: males and the younger entry cohort are over-represented within these groups. The picture for Germany is not as clear-cut. We find shrinking proportions of the male-dominated pattern of initial unemployment at labour market entry over the two cohorts, while it is mainly women who are continuously excluded from the labour market. Although these findings should not be overestimated because of the small numbers they are based on, it seems as if in Germany females are at higher risk of being excluded from labour whereas British females seem to find ways to escape long-term unemployment. This second group of long-term unemployed persons is also increasing slightly over time. Looking at the more unstable pattern which shows additional spells of full-time work, neither gender differences nor considerable change over time can be found.

Concentrating on the educational achievements of those individuals who follow the unemployment dominated trajectories, findings obviously are in line with already well established results (Brauns/Gangl/Scherer, 1999 among others): it is mainly the less-educated individuals as well as those without any vocational qualification who are affected by unemployment, disregarding duration or ordering of this status. This picture remains stable if we disregard those with tertiary-level education in the group of those with vocational training, indicating that this is not a level effect. The level of education however seems to be more important for Germans with regard to the long-term unemployed persons: their proportion within this group is considerably lower in Germany. The same applies for persons with vocational education, whereas possession of vocational training seems to be less important for those with shorter unemployment spells. Correspondingly vocational training as well as possession of higher education facilitates access to more or less stable and ongoing full-time work, with the level of education being of greater importance in GB.

We now turn to those groups of individuals who leave the work force for a considerable period in their early career.[27] In both countries a substantial share of individuals (of about 3 to 8 percent) *returns to education* after entering the workforce, most of them after having entered full-time work.[28] This phenomenon is clearly much more common among the more recent entrants, showing the increasing importance of further education over time. At first sight the larger proportion of returners to education in Germany seems astonishing, considering the overall higher proportion of further education given in GB. As this training in GB is mostly part-time courses, it becomes clear that it is not taken into account in this approach, drawing on persons' main status only, which means disregarding additional statuses. Returners to education are, at least to the largest extent, bundled together in one group for GB, all following the pattern of a rather short

[27] In principle the ILO definition of workforce is adopted in this paper, with slight modifications, however: persons in full-time education are not regarded as belonging to the workforce.

[28] By definition there are no persons starting with spells of education. Return to education in the British data is defined as respondents' own assessment of their main status, whereas multiple states in Germany are allowed for so that a hierarchy of states has been introduced (see Appendix).

period within full-time dependent work of about one year and subsequently remaining within education for the considered period. The same pattern is found in Germany but the higher proportion of people makes up a group with longer periods of previous full-time work. With regard to the patterns described first, this is probably a typical waiting loop situation: young people enter work as a transition stage to the next period of education (and due to sample construction this formation is notoriously small in Germany[29]). Few individuals choose education as a way to escape unemployment. Return to education goes along with higher educational achievements, but not with vocational training. Although focus on the composition of this group with regard to educational achievements is problematic given the static measure applied here, findings provide a first rough picture. It suggests that primarily tertiary-level training participants are included in this pattern.

While participation in further education does not differ by gender, it is only women who leave or never take up paid work for reasons of private family care activities (with the exception of one man in Germany). In principle the same patterns occur in both countries, but proportions vary clearly. The two family care groups emerging in each country taken together are about double the size in Germany. More precisely, in Germany one group contains those directly entering this status and those with short periods in work before leaving the workforce. This direct entry and early exit is more common in Germany, which fits into the picture of more traditional roles of women in this respect.[30] A second rather heterogeneous group consists of those with shorter spells in family care not clearly structured in location[31]. This group also contains males as not really all persons in this group actually show spells of domestic work. Grouping of the patterns in GB differs. One cluster contains those in ongoing family care and comprises individuals starting with spells of either unemployment, GTS or part-time work. In contrast to Germany the second one is rather clearly structured, containing females leaving full-time work after about two and a half years. We could speculate that those with preceding unemployment and probably those with GTS spells choose family care or maternity as possible alternatives because of inability to get established within the labour market. But as we know nothing about their personal reasons, this cannot be investigated in detail. The often reported high proportion of female labour market withdrawal in order to avoid unemployment in GB cannot be found through this approach, which is probably due to the early careers focused on. Family care decreases in importance for GB, indicating that females either leave work less often or later in their career for that reason,[32] but has remained more or less stable in Germany. A much higher and surprisingly stable proportion of females in Germany leaves the workforce early in the career to become a housewife or mother. Additionally females seem to leave work for family or maternity reasons regardless of their educational achievement. In contrast the choice of family care in GB is strongly structured by educational achievements: Women with higher education or vocational training leave the workforce less often for that

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29 The chosen sample selection in Germany is supposed to avoid including young people with their waiting loops between two spells of education (see Appendix for details in sample construction).

30 Including the former East Germany would change this picture considerably.

31 t should be mentioned that these patterns differ if substitution costs in calculating distances are weighted. As the introduced weighting gives higher emphasis to the occurrence of specific states, the pattern is more clearly structured, especially for Germany. In case of weighted distance measures, two groups emerge, the first containing those with long periods of family care, the second with short periods. Looking at the patterns this way the higher portion of females in this status becomes more apparent.

32 It is however possible that these differences are at least to some extent due to the lower age of females in GB in this school-leaver sample. The education and training system in general is left earlier in GB so that the investigated sample in GB is assumed to be younger. In fact people are on average about four years younger in the British sample.

reason and instead remain in work. Especially among those with early beginning and subsequent long periods in family care activities, lower education and lack of vocational qualification is common.

In addition to the clusters described above, for both countries one cluster composed mainly of those with spells in the 'rest' category emerges. On average they spend most of their time in either military service (for GB only, see above), retirement or a not further specified 'other' category. In GB this group also has some periods in full-time work after preceding spells in other statuses such as unemployment, education, GTS or rest category and is primarily composed of males. In Germany this group, growing in proportion over time, is mainly composed of those in the 'other' category including some with additional spells of education.

5 Summary and Discussion

This paper's major aim was to apply a rather new method, sequence analysis, to the topic of interest: the investigation of entry patterns into work and their variation between different institutional settings. More precisely, the question of whether entry patterns can be identified empirically and how they differ between different institutional contexts, namely between West Germany and Great Britain, were posed. Differences between the country-specific patterns of entering labour are expected to occur mainly in three ways, first as different types of emerging patterns, second with regard to their importance in terms of frequency, and third in their composition, including gender differences, changes over time, and the predominance of specific educational credits. In a nutshell, with the applied method we are able to identify typical early career trajectories, revealing shared as well as country-specific patterns in the two economies.

The investigation of the early career patterns focuses on the first five years after leaving the education and training system, drawing on monthly employment status information. Through employment status, periods in employment, unemployment, and periods of non-participation in the workforce have been covered. For both countries patterns of continuous full-time work participation, which make up the highest proportion in both countries, are found, patterns indicating problems entering the labour market, groups clearly not successful at making the transition into work who spend most of their time within unemployment, as well as patterns of self-employment, part-time work and clusters leaving the labour force, if they ever entered it, for further education or family reasons. For GB separate clusters containing government training scheme participants emerge, which of course have no counterpart in Germany. In sum, using the chosen approach we find country-specific as well as similar typical career pathways in the two countries. Most of the emerging clusters have a counterpart within the other country. Differences occur mainly with regard to the overall frequency - the importance of the specific trajectories in the countries- and their composition with regard to gender, loss or gains in importance over time and to some extent the educational achievements.

The introduction has outlined some assumptions about the ways specific institutions shape the process of entering labour, resulting in different entry patterns in Great Britain and West Germany. Owing to the distinct labour market structures outlined above, different entry processes and consequently different early career patterns are expected to become apparent. In Germany transition into work is expected to be

smooth and well regulated whereas the process is supposed to be characterised by much higher instability in GB. Although in both countries the large majority of persons follows patterns of predominantly full-time work participation, support for the outlined hypotheses emerges with respect to labour market exclusion as well as to unstable career patterns. Differences between the two countries become most apparent with regard to the incidence of unemployment: the proportion of unemployment-dominated careers is more than twice as high in GB as in West Germany. A considerable proportion of persons in GB, nearly 10 percent, fails to enter the labour market within this first five years. In contrast this group is of marginal importance in Germany where even the unemployment-dominated pattern shows more or less successful transition into work after a period of unemployment. In addition to these unemployment clusters, patterns of much higher heterogeneity indicating problems entering labour emerge for both countries. They are quite equal in size but differ in their heterogeneity, with patterns being more unstructured in GB. Taken together, this supports the idea of more stepwise and problematic entry processes in GB characterised by greater turbulence, whereas transition is more clearly structured in West Germany, which also leads to the predominance of stable patterns.

As alleged above, change over time in the way labour market entry takes place is supposed to be more prevalent in GB and hardly existent in West Germany. Beside the fact that GB labour market is usually referred to as being much more flexible than especially the German one, this flexibility has even been increased over the last decades. For this reason a higher and growing portion of non-standard working conditions is expected for GB. Evidence for this view can be found in the growing proportion of male part-time work participation, indicating erosion of normal working conditions for males accompanying higher flexibility. As patterns of labour market exclusion gain in importance over time too, it seems obvious to interpret these changes as a sign of changing mechanisms of accessing the labour market and the matching process to stable jobs as well. These findings confirm the idea that entry takes longer and is becoming increasingly problematic in GB: it takes more time to enter work and become established after the first try, and patterns become increasingly unstable. However, to fully address the issue of change over time, a broader time span and more distinct entry cohorts are needed.

Labour market structures have no necessary implications for the amount of gender segregation of labour but often go along with it. Work participation in West Germany is highly structured along gender lines. This is true for labour force participation as well as for specific occupational choices. Although gender segregation cannot be explored in detail here, evidence can be found with regard to part-time work participation and family care activities. If women in West Germany participate in paid work at all, they follow part-time working careers to a much higher degree than their male counterparts. So, while part-time work in West Germany is therefore a clearly female-dominated phenomenon, it is of much higher importance among British males, sharply growing in importance over time. A considerable proportion of females in West Germany, however, follow the ‘traditional pattern’ of leaving the work force for family care activities. These patterns remain remarkably stable over the two entry cohorts under investigation, whereas they lose importance for British females.

Through the application of this rather new methodological approach to handling career course information we can extensively enlarge the perspective on labour market entry processes and the early career patterns typically followed. Sequence analysis allows for the handling of whole career trajectory information, considering the serial succession of different statuses, their duration and ordering instead of only single events or single time points. That this is not just a methodological issue but also of substantial importance

becomes clear if we think of the labour market entry as a process evolving over time. This process can only be fully captured by this kind of holistic approach. Thus, this approach opens an important perspective on the investigation of career patterns and consequently on the comparison of different institutional arrangements.

So, the question about the underlying mechanism producing different kind of work career patterns can now be addressed in a new and very promising way. In addition, sequence analysis also enables the investigation of *typical* career patterns and their diversity over different institutional settings, based on much broader set of information, both with regard to sample size and career information taken into account. This has important implications for the development of a typology of trajectories. Such typologies are especially important for the comparison of entire nations, and the more differentiated the typologies are the more information we can hope to extract about the impact of the institutional settings.

In this paper I followed a more or less 'empirical approach' to investigate typical early career patterns and their differences between the two countries. Although a 'theoretical' classification of the different patterns would have easily been possible with the amount of limited statuses taken into account here, we soon reach the limits of that by expanding the status information considered. Focusing on employment status information makes classifying and interpreting the emerging typical career patterns as equivalent in the two nations a straightforward undertaking. However, it still is an open question to what extent the phenomena behind these statuses can be considered comparable or significantly different between the two economies. This is obvious with regard to full-time employment, which indeed covers a lot of heterogeneity, but also if we look at self-employment or part-time work. In fact, there may be different situations people typically face. Focusing on the composition of the 'typical patterns' allows us to assess these potential differences to some extent. Thus, the chosen perspective on additional covariates was basically one of further qualifying the emerging patterns instead of explaining them. Therefore we focused more on the composition of the groups. With this view we give credit to the fact that the emerging patterns are not totally comparable but even further emphasise their differences. These differences for instance became obvious with regard to the part-time working group. The predominance of males versus females can be taken as an indicator of different types of employment. Absence of vocational training in this group in GB may also support that picture.

A different perspective would be to concentrate on the factors affecting the pathways to be followed. For instance the country-differences in educational systems outlined in the introduction and their specific link to occupational achievements suggest the existence of considerable differences in the way education affects the access to specific job positions and the subsequent occupational careers. By now it has become clear that education is a central dimension influencing career patterns followed. However, the question about the impact of educational achievements on the early career-patterns followed within the different national contexts and how the process of converting educational achievements into occupational positions takes place in these structures must be answered in future research. With this perspective we then can leave the more or less descriptive approach we took with this method up to now and come back to a more explanatory one.

Although even this rather rough categorisation of the employment status variable reveals interesting pictures about the typical patterns of labour market entry among young people in different countries, it is however not possible to fully investigate the entry process and the impact institutions have on these processes. Therefore a further subdivision of the regarded statuses is needed. A more detailed inspection

will be the topic of future research. With a more differentiated view of occupational positions and further job characteristics it will then be possible to assess the underlying matching processes in more detail.

Appendix

The sample

The chosen approach covers the first five years after leaving full-time education. Although this definition is rather precise, it leads to some practical problems concerning the sample selection. To make sure that school leavers are included, only persons with first spells in education are selected, as we otherwise do not know in which state of their career people participate in the survey. This strict definition is enlarged by including young people (under 26) with spells of education other than their first. This way (labour market) activities before finishing education are allowed. A considerable portion of young people do not have their education spells in succession but with some other activities between. In principle they are included in the sample after their last education spell, with some exceptions. In case there is a considerable time period between two education spells, persons join the sample after their first period. Coming from apprenticeship, a half year of other activities is allowed for, whereas from school or university the threshold is one and a half years. With this procedure 'waiting loops' are taken into consideration. Young people often do not enter higher education directly but increasingly experience some kind of 'waiting loops': e.g. young people waiting for a place at university, apprentices deciding to attend further education, or simply young people not knowing what to choose. Within this period we cannot think of them as really entering the labour market. In addition, for Germany sequences are only selected after military service.

The considered status information is directly provided within the BHPS, while the status variable within the GSOEP has to be enlarged by information about self-employment. Self-employment unfortunately is only available within a yearly grid. It was taken into account as follows: if a person indicates a time period of full- or part-time work and she also reports being self-employed within the yearly grid, this spell up to the end of the year is replaced by self-employment. But with this procedure we have to assume an overestimation of the time spent in self-employment.

With the GSOEP data we have to deal with more than one status information per time point. Therefore it was necessary to introduce a hierarchy of statuses which was done as follows: full-time education, full-time work, part-time work, unemployed, maternity leave and housewife/men followed by a 'rest' category. Thus, for a person reporting both full-time education and part-time work for the same period, priority is given to full-time education and any other information about further statuses is ignored. Additionally there are a large number of gaps between the serial episodes. In this case the missing information was filled in by either previous or subsequent reported spells taking into account the provided information about the censoring of the statuses.

Educational achievements are measured as the highest educational qualification people have in 1991. This was the best possible approximation to the educational achievements at labour market entry as no information about previous time points is available for Britain.

Table A1: The CASMIN scale of educational qualifications

Qualification	Description
1ab	This is the social minimum of education. Namely, the minimal level that individuals are expected to have obtained in a society. It generally corresponds to the level of compulsory education
1c voc	Basic vocational training above and beyond compulsory schooling
2b	Academic or general tracks at the secondary intermediate level
2a voc	Advanced vocational training or secondary programmes in which general intermediate schooling is combined by vocational training
2c	Full maturity certificates (e.g. the Abitur, Matriculation, Baccalauréat, A-levels)
2c voc	Full maturity certificates including vocationally-specific schooling or training (e.g. Baccalauréat de technicien)
3a	Lower-level tertiary degrees, generally of shorter duration and with a vocational orientation (e.g. technical college diplomas, social worker or non-university teaching certificates)
3b	The completion of a traditional, academically-oriented university education

Source: adapted from Brauns/Steinmann 1999 and Müller/Shavit 1998

Calculation of the matching costs

Calculation of the dissimilarities in the compared sequences is based on two distinct transformations for which different costs can be assigned: Substitution and Insertion/Deletion (abbreviated as 'indel' transformation). Introducing indel costs instead of reducing the admitted transformations on substitution is important to be able to take into account the ordering of specific statuses in the sequence. This becomes obvious if we think of two sequences with the same statuses but in a different order. Two years of full-time work and two in family care is obviously more similar to the first two years within family care and the last two in full-time work than for example continuous part-time work. In fact, these sequences are different in any time interval we regard. So -besides the fact that we can introduce different weighting- only allowing for substitution would mean calculating the same distance for both possible pairs. Admitting indel costs however makes it possible to cut the first two years of full-time work, move the last two years to the beginning and add to years of full-time work at the end of the sequence to make it similar to the reference, instead of changing the statuses of every single time interval. In this example it becomes clear how the assigned weights of substitutions and insertion/deletion depend on each other.

Setting the indel cost to equal half of the substitution cost is an inserting option as it makes the costs for two indel operations equal to one substitution (Rohwer, 1997). This approach introduces no weighting at all, neither with regard to indel or substitution nor to the different statuses. Non weighted results presented in the paper are based on this calculation. Indel operations are each assigned a weight of 0.5 and substitutions one of 1.0. However, as it seems plausible to think of some statuses being closer together than others, I decided to introduce some weighting of the substitution costs. Therefore a hierarchy of statuses has to be introduced. The underlying idea of the development of the applied cost structure is the usual division of a) 'in labour force' composed of: employed/self-employed and unemployed, and b) 'out of labour force'. These divisions constitute the main thresholds and weighting of the statuses is in some sense to be understood as nearness to the labour market.
Although this approach takes into account the ordering of statuses, it was not possible to assign different weights to the same transformations at different points in time: the location within the sequence is not relevant for calculating the costs. Rohwer/Trappe (1997) for instance propose to overcome this shortcoming by calculating 'sequences for costs' for the sequences. But this is where we reach the limits of the method for the moment.

Closely connected to this point is the problem of treating subepisodes as if they were independent. This is a problematic assumption with regard to career sequences, as the probability for a specific status is already a function of the preceding sequence. This becomes clear if we consider that most of the episodes in the sequences are of longer duration and therefore the probability of continuing with an already-started status is higher than a change in status. This could be taken into account by attributing higher costs for change in status than for their continuation, which would provide a more dynamic view (Erzberger/Prein 1997). At this point the potential of the method has to be elaborated further.

Table A2: Substitution costs underlying the distance calculation of the sequences

	Self-employed	Full-time Employed	Part-time Employed	GTS	Un-employed	Education (full-time)	Family care	Others
Self-employed								
Full-time Employed	1							
Part-time Employed	1	1						
GTS*	1,1	1,1	1,1					
Un-employed	1,3	1,3	1,3	1,2				
Education (full-time)	1,4	1,4	1,4	1,3	1,3			
Family care	1,45	1,45	1,45	1,3	1,4	1,3		
Others	1	1	1	1	1	1	1	

*Government Training Schemes (GTS) is not considered for Germany

Costs for Deletion and Insertion : InDel = 0,75

References

Abbot, A. and Hrycak, A. (1990) "Measuring Resemblance in Sequence Data: An Optimal Matching Analysis of Musicians' Careers", *American Journal of Sociology*, 96(1).

Abbott, A. and Forest, J. (1986) "Optimal Matching Methods for Historical Sequences", *Journal of Interdisciplinary History*, XVI(3).

Abott, A (1995) "A comment on 'Measuring the Agreement Between Sequences'", *Sociological Methods & Research*, 24 (2).

Allmendinger, J. (1989) "Educational Systems and Labor Market Outcomes", *European Sociological Review*, 5(3).

Allmendinger, J. and Hinz, T. (1997) "Mobilität und Lebensverlauf: Deutschland, Großbritannien und Schweden im Vergleich" in Hradil, S. and Immerfall, S. (eds.) *Die westeuropäischen Gesellschaften im Vergleich.* Opladen, Leske + Budrich.

Brauns, H., Gangl, M. and Scherer, S. (1999) "Education and Unemployment: Patterns of Labour Market Entry in France, the United Kingdom and West Germany". Paper presented at the annual ASA meeting 1999, Chicago, USA.

Brauns, H. and Steinmann, S. (1999) "Educational Reform in France, West-Germany and the United Kingdom: Updating the CASMIN Educational Classification". *ZUMA Nachrichten*. No. 44.

Brückner, H. and Rohwer, G. (1996) "Geschlechtsspezifische Unterschiede in den Erwerbsverläufen der Geburtskohorte 1960". Unveröffentliches Manuskript.

Bynner, J. and Roberts, K. (1991) *Youth and Work: Transition to Employment in England and Germany.* London, Anglo-German Foundation.

CEDEFOP (1994) "*Das Berufsbildungssystem im Vereinigten Königreich*" in CEDEFOP (ed.) Luxemburg, Official Publication Office of the European Community.

Chan, T. W. (1995) "Optimal Matching Analysis: A Methodological Note on Studying Career Mobility", *Work and Occupations*, 22(4).

Dijkstra, W. and Taris, T. (1995) "Measuring the Agreement Between Sequences", *Sociological Methods & Research*, 24 (2).

Doeringer, P. B. and Piore, M. J. (1971) *International Labour Markets and Manpower Analysis.* Lexington, DC Heath.

Erzberger, C. and Prein, G. (1997) "Optimal-Matching-Technik: Ein Analyseverfahren zur Vergleichbarkeit und Ordnung individuell differenter Lebensverläufe", *ZUMA-Nachrichten*, 21(40).

Evans, K. and Heinz, W. R. (1994) *Becoming adults in England and Germany.* London, Anglo-German Foundation.

Gershuny, J. (1993) "Post-Industrial Career Structures in Britain" in Esping-Andersen, G. (ed.) *Changing Classes. Stratification and Mobility in Post-Industrial Societies.* London, Sage.

Halpin, B. (1996) "Class Careers as Sequences: An Optimal Matching Analysis of Work-Life Histories". *ESRC Research Centre on Micro-social Change*, Colchester.

Halpin, B. (1997) "Unified BHPS Work Life Histories. Combining multiple Sources in a userfriendly Format". University of Essex: *ESRC Technical Paper* , Essex.

Halpin, B. and Chan, T. W. (1998) "Class Careers as Sequences: An Optimal Matching Analysis of Work-Life Histories". *European Sociological Review* 14. 111-130.

Hannan, D. F., Raffe, D., and Smyth, E. (1997) "Cross- National Research on School to Work Transitions: An Analytical Framework", paper proceedings of the third ESF Workshop of the network on Transitions in Youth, France 1996. *La Ciotat*, France.

Kerckhoff, A. C. (forthcoming) "Transition from School to Work in Comparative Perspective" in Hallinan, M. T. (ed.) *Handbook of Sociology of Education.*

Kerckhoff, A.C. (1996): "Building Conceptual and Empirical Bridges between Studies of Educational and Labour Force Careers". In: Kerckhoff, A.C. (ed) *Generating Social Stratification: Toward a New Research Agenda*. Westview Press.

Koenig, W., Luettinger, P., and Mueller, W. (1988) "A Comparative Analysis of the Development and Structure of Educational Systems. Methodological Foundations and the Construction of a Comparative Educational Scale". University of Mannheim, Mannheim.

Lindley, R. M. (1996) "The School-to-work Transition in the United Kingdom", *International Labour Review*, 135(2).

Luber, S. and Leicht, R. "The Development of Self-Employment in Western Europe: Patterns of Entrepreneurship and Labour Market Trends", Paper presented at the XIV. I.S.A. World Congress of Sociology, Montreal, Canada.

Marsden, D. (1990) "Institutions and Labour Mobility: Occupational and Internal Labour Markets in Britain, France, Italy, and West Germany" in Brunetta, R. and DellAringa, C. (eds.) *Labor Relations and Economic Performance.* London, MacMillan.

Marsden, D. and Ryan, P. (1995) "Work, Labour Markets and Vocational Preparation: Anglo-German Comparisons of Training in Intermediate Skills" in Bash, L. and Green, A. (eds.) *Youth, Education and Work. World Yearbook of Education 1995.* London, Kogan Page.

Maurice, M., Sellier, F. and Silvestre, J. (1986): *The Social Foundation of Industrial Power. Cambridge*. Mass: MIT Press.

Meyer, Traute (1997): „*Ungleich besser?: die oekonomische Unabhaengigkeit von Frauen im Zeichen der Expansion sozialer Dienstleistungen*". Berlin: Sigma.

Müller, W. and Shavit, Y. (1998) "The Institutional Embeddedness of the Stratification Process: A Comparative Study of Qualifications and Occupations in Thirteen Countries" in Shavit, Y. and Müller, W. (eds.) *From School to Work. A Comparative Study of Educational Qualifications and Occupational Destinations.* Oxford, Oxford University Press.

OECD (1995) *The OECD Job Study. Evidence and Explanations.* Paris, Publication Service of OECD.

Oulton, N. and Steedman, H. (1995): The British System of Youth Training: A Comparison with Germany. In: Lynch, Lisa M. (ed.), 1994: *Training and the Private Sector. International Comparison*. NBER. Chicago and London: The University of Chicago Press.

Roberts, K., Clark, S. C., and Wallace, C. (1994) "Flexibility and Individualisation: A Comparison of Transition into Employment in England and Germany", *Sociology*, 28(1).

Roberts, K. (1995) "*Youth and Employment in Modern Britain*" in Oxford University Press (ed.) Oxford.

Rodgers, G and Rodgers, J. (ed.) (1989) „*Precarious Jobs in Labour Market Regulation: The Growth of Atypical Employment in Western Europe".* International Institute for Labour Studies, Brussel.

Rohwer, G. (1997) *TDA User's Manual Version 2.0.* Berlin, Max-Planck-Institut für Bildungsforschung.

Rohwer, G. and Trappe, H. (1997) *Describing Life Courses. An Illustration Based on NLSY Data*. Paper presented at the European University Institute, Florence.

Sankoff, D. and Kruskal J.B. (ed.), (1983): *Time Warps, String Edits, And Macromolecules: The Theory and Practice of Sequence Comparison*. Addison-Wesley Publishing Company, Inc., USA.

Shavit, Y. and Müller, W. (1998) *From School to Work. A Comparative Study of Educational Qualifications and Occupational Destinations.* Oxford, Oxford University Press.

Shavit, Y. and Müller, W. (forthcoming): Vocational Secondary Education, Teaching and Social Stratification. In Hallinan, M.T. (ed) *Handbook of Sociology of Education.*

Schör, K. (1987): Part-Time Employment: Britain and West Germany. *Cambridge Journal of Economics* 11, 83-94.

Standing, G (1995): Labour Insecurity through Market Regulation: Legacy of the 1980s, Challenge for the 1990s. In: McFate, K., Lawson, R. and Wilson, W.J. (Ed.), 1995: *Poverty, Inequality and the Future of Social Policy. Western States in the New World Order*. New York, Russel Sage.

Spence, M. (1981): Signalling, Screening and Information. In: Rosen S. (ed) (1981): Studies in Labour Markets. Chicago: University of Chicago Press.

Taylor, M. F. (1996) *British Households Panel Survey User Manuel Volume SA. Introduction; Technical Report and Appendices. User Documentation.* Colchester: University of Essex, ESRC Research Centre on Micro-Social Change.