

Selections and social selectivity on the academic track: A life-course analysis of educational attainment in Germany

Steffen Hillmert

Department of Sociology
University of Tübingen
72074 Tübingen
Germany
steffen.hillmert@uni-tuebingen.de

Marita Jacob

MZES
University of Mannheim
68131 Mannheim
Germany
mjacob@sowi.uni-mannheim.de

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Abstract

Academic training can be regarded as the key qualification in contemporary knowledge societies. Against this background, public debate has repeatedly highlighted two problems of the German system: first, a comparatively small proportion of the population attaining higher education and second, a relatively high degree of social selectivity in education, not least among university graduates where children from lower classes are highly underrepresented. Graduating from university is, however, just the final step of an extended educational career. Sociological transition research has revealed that final educational attainment must be understood as the result of a sequence of successive decisions. For example, with regard to graduation from university, one has to take into account that upper secondary school qualifications are required for enrolling in the first place, and in Germany, the decision for this kind of schooling is at a much earlier age. So where on the long way to the university degree does Germany 'lose' its potential academics and in particular its lower-class children?

This paper presents a detailed picture of the life-course development of educational careers by reconstructing the various steps of the collective educational history of a particular birth cohort. The paper takes account of both the country-specific institutional structures of the educational system and inter-individual variation in educational trajectories (age variation, detours etc.) and combines both aspects in an analysis of the most relevant types of educational transitions associated with the 'academic track'. Altogether, the transitions aggregate to the final number of graduates as well as to the observed amount of inequality in educational attainment. In our empirical analyses, we are interested in both the overall selection at particular transitions and social differences in these transition patterns. We use survey data from various sources on participation and social selectivity in education.

The paper confirms the usefulness of transition research for understanding the process of educational attainment; an analysis based on transitions is clearly superior to an analysis which focuses purely on stock figures of educational attainment. However, the paper also shows that conventional forms of transition research are often too simple as they assume an ideal-typical sequence of transitions during education, whereas educational careers in reality often deviate from this model. The number of young people (and in particular lower-class children) who try to join the 'academic track' at least once during their educational career is much higher than the number of those who in the end graduate successfully. Accounting for the most relevant events helps to understand the quantitative and qualitative selectivity of the German educational system and may serve as a model for research on the selectivity of other educational systems.

Key words: Transitions research, educational inequality, educational system, life course

1. German higher education in a life-course perspective

Academic training can be regarded as the key qualification in contemporary ‘knowledge societies’. For economies, academic jobs have become an important force of the creation of value. For individuals, an academic degree has become the necessary condition for entering higher-level employment careers and for success in other domains of social life. Against this background, public debate in Germany has highlighted a number of problems concerning the German system of higher education.

- Compared to other industrial countries, a rather small proportion of the population attains higher education (OECD 2007: 67). While this phenomenon is partly due to the availability of strong alternatives to tertiary education (in particular, vocational training in the dual system), it has raised major concerns in Germany with regard to international competitiveness (OECD 2006: 79ff).
- The duration of tertiary education is comparatively long. Together with a complex education and training system offering several tracks and many possibilities to attain a particular educational level, this results in relatively high ages of university graduates and late entries into the labor market (e.g., Schomburg and Teichler 2006: 39).
- Educational attainment is associated with a high degree of social selectivity, and this is particularly true for university students who make long-term investments in their education (e.g., Mayer et al. 2007).

Graduating from university marks the end of an extended educational career, which in most cases has lasted for around 20 years. Sociological transition research has strongly pointed out that final educational attainment must be understood as the result of the sequence of steps and successive educational decisions along an educational career. Hence, it may not be the final step that has the greatest impact on the final results, but rather one of the preceding steps, each of them characterized by its own institutional specificities. This may especially apply to the German case, as a specific school qualification (the *Abitur*) is required for an admission to university, and attaining the *Abitur* normally requires the decision for upper secondary schooling at a much earlier age. As both overall selection on various steps of the system and social selectivity at particular transitions are specific for particular educational systems we ask the following question: *Where on the long way to university graduation does the German educational system ‘lose’ its potential academics? And in particular, when do most of the lower-class children leave the system, so that only a small minority finally graduates?*

Using Germany as an example, we understand our paper as a contribution to the general discussion about theoretical and conceptual foundations of educational transitions research: First, we clarify central theoretical concepts and point out the challenges for ‘conventional’ transition analyses resulting from the inter-individual variation in educational careers, i.e. in the patterns and timing of transitions. Second, we illustrate our considerations with a detailed empirical account of the *life-course development of educational transitions and attainment* by reconstructing the various steps of the collective educational history of one birth cohort. We look at the educational careers of that cohort beginning with entering (secondary) school education until final graduation from university and examine several transitions in-between.

Although there have been several studies analyzing the impact of social origin at various transitions during education, none of them has actually provided a comprehensive account of the intra-generational development of social inequality in education, referring to the social selectivity of both the transitions and the resulting distribution of educational attainment. By analyzing this in detail, the paper demonstrates the analytical value of transition research and its superiority over an analysis which focuses purely on stock figures of final attainment. However, it also shows that conventional ways of doing transition research do not sufficiently take into account the complexity of real educational careers.

In the following we first consider conceptual aspects of analyzing educational transitions. After these more general considerations we outline the basic structure of the German educational system, highlighting the ‘academic’ track, i.e. the pathway from entering secondary education to university graduation. In our empirical analyses, we are interested in both the overall selection at particular transitions and social differences in these transition patterns. Therefore we combine survey data on social selectivity with official register data on participation in education. Finally, we discuss our results and draw conclusions for further transition research. These concern necessary conceptual clarifications as well as demands on future empirical analyses, particularly in comparative studies.

2. Concepts of analyzing educational transitions

2.1 Institutionalized sequences of transitions

Following Boudon (1974) and Mare (1980), educational careers can be conceptualized as sequences of (conditional) transitions and episodes. According to this model, educational careers can be split into several successive transitions that can be analyzed step-by-step by looking at the probabilities of entering the next higher level (or the ‘drop-out rate’), depending on individual and social factors. At different points in the educational system, decisions have to be made between either going on in the educational career or dropping out. The highest educational qualification that is achieved in the end is the result of selectivity at all preceding transitions, with possibly specific influences of social origin at different transitions¹.

Theoretically and empirically, this idea – which could be called the perspective on the *institutionalized sequence* of consecutive educational transitions – has been very fruitful. Theoretically, it points to educational decisions as ‘nodal points’ of the reproduction of social inequality (cf. Breen and Goldthorpe 1997; Erikson and Jonsson 1996b). For empirical analyses of educational inequality, sequential logit models have become common practice during the 1990s (Shavit and Blossfeld 1993; Müller and Haun 1994). They allow conducting comparative analyses in a relatively simple way. Particularly with regard to differentiated educational systems, however, the idea of a simple chain of decisions about remaining in the system has been criticized as inadequate. Hence, as a methodological extension (multinomial) logit models were introduced, where more than two alternatives of decision can be analyzed simultaneously (Breen and Jonsson 2000; Schimml-Neimanns 2000).

Empirically, most studies have analyzed *actual transitions* at certain ‘*branching points*’ in the educational system using life course data (e.g., Henz and Maas 1995; Lucas 2001; Breen and Yaish 2006; Jackson et al. 2007). These studies have mostly been restricted to selected

¹ Cameron and Heckman (1998) discuss whether the decreasing effects of social origin are a statistical artifact of this method (see also Lucas 2001 for a critique of their data preparation).

transitions, for example entering a specific track of secondary school directly after elementary school or entering higher education directly after completing secondary schooling. Hence, most studies have abstracted from the fact that, in reality, it is possible to enter higher education later on as well. In many studies, however, there was no empirical information about the sequence of actual transitions available. Because of the lack of longitudinal data, available cross-sectional information was transformed into ‘quasi-longitudinal’ data, i.e. for each individual the highest educational certificate that had been achieved was used to reconstruct a *synthetic* (ideal-typical) *sequence* of transitions leading to this particular qualification (e.g., Shavit and Blossfeld 1993; Mayer et al. 2007).

Summing up, previous transitions research has either focused on particular and selected transitions that are just partial elements in a series of educational choices, or the sequence of transitions was reconstructed from the highest observed level of education neglecting the fact that real patterns may severely deviate from this ideal-typical sequence.

2.2 Inter-individual variation at educational transitions

While conventional transition research has mainly followed the institutionalized sequence of educational transitions, research that is grounded in detailed empirical data has pointed towards the problems associated with simplified models of transitions. The institutionalized sequence of transitions is but one important aspect of a life course perspective on educational attainment. We now consider another important aspect: the considerable amount of *inter-individual variation* at each of these transitions. For research this aspect is particularly relevant if complete empirical life history data are available. In this case, empirical analyses will show that the transitions analyzed with the model of an institutionalized sequence are in fact not strictly standardized. In most cases there will be (age) variation at particular transitions depending on more or less rigid institutional regulations. Another source of variation in age can be due to different or alternative pathways that converge at a later stage.

Conceptually even more important is another aspect. One single transition of this model can consist of several transitions itself, and it can be attained along different pathways; in this respect, one may speak of ‘complex’ events. In particular, relatively differentiated educational systems like the German one offer a number of options for such complex transitions. One consequence is that the set of the individuals who are ‘at risk’ for making a particular educational transition can normally not be reasonably defined as constant between two institutional stages. Their number may change because of entries, dropouts and re-entries. Research on the influence of social origin will lead to different results, depending on whether one restricts the analyses to the ‘direct’ transitions or whether also other pathways are considered, which themselves may differ in the impact of social origin.

2.3. Transitions and participation

Another aspect has to be taken into account when analyzing social inequality in education: while inequality of educational attainment normally refers to the whole population, the analyses of transitions refer only to the population at risk for this particular transition. In the latter case, some individuals have already left the population at risk (i.e., the educational system or the particular track). Therefore the population at risk – those that have to decide about the next step – gets successively smaller along the educational career. In the sense of Mare (1980), *analyses of causal relationships* will concentrate on social selectivity at separate

transitions. In a policy-oriented perspective, however, studies on social inequality are also interested in the *consequences* of educational decisions for the *whole population*, i.e. for the overall participation in education. These consequences can be found in the actual participation in education or the resulting distribution of educational credentials.

For the relationship between transitions and stocks three aspects have to be considered: First, changes in stocks result from *inflows* and *outflows*. Second, the degree to which social selectivity at particular transitions influences the shape of the educational distribution depends on the *quantitative relevance* of the transition in question. If it happens only rarely, the effect on the whole distribution will be rather small. Finally, changes in the social distribution of participation in education depend on the *social composition of different transitions*, relative to the distribution before. Depending on the social composition of entrants (or dropouts), initial inequality in participation can be compensated, reproduced, or the social gap may even become wider. Transforming transition rates into time-dependent changes of educational distributions is not trivial. Information on transitions rates, quantitative relevance and social composition of entrants and dropouts is necessary in order to get a comprehensive picture of the development of inequality over time. Even the direction in which social inequality develops over the life course cannot be concluded just from (unweighted) transition probabilities². It is therefore useful to distinguish between transitions and the changes of social selectivity at various steps on the one hand and the development of ‘results’ – i.e., inequality with regard to attainment levels – on the other hand.

Sequences of transitions can be found in all advanced educational systems, but systems vary considerably in the complexity of their institutional structures. In the following, we apply our considerations to one specific institutional case: the German educational system.

3. Educational system and educational careers in Germany: The academic track

We choose the German educational system as it is an example of a relatively complex educational system containing sequential transitions, but also alternative pathways and high individual variation in educational careers (cf. Cortina et al. 2003). We carry out analyses on what we call the ‘academic track’ in the German educational system. The ‘academic track’ in German secondary and higher education is the way from entering upper secondary school (*Gymnasium*) to finally attaining a university degree. Although the German educational system is highly differentiated, the academic track is, as an ideal type, relatively easy to identify, as the *Gymnasium* has got an explicit academic orientation and its leaving certificate, the *Abitur*, is the formal requirement for enrolling in university. In its simplest ideal-typical form, the ‘academic track’ consists of two transitions only, entering the *Gymnasium* after elementary school and entering university after having successfully completed the *Gymnasium*. An assumption implied in this simplification is that all participants graduate successfully, but as the following paragraphs will show, reality can be much more complex.

A focus on the academic track is also reasonable for possible international comparisons. As mentioned in the introduction, the number of graduates of a country is often used as an important indicator of educational performance (e.g. OECD 2007). However, the number of graduates depends on several aspects of the educational system and has to be interpreted by

² For example, identical relative transition rates (odds ratios) at early and late transitions may lead to constant, increasing or decreasing inequality in stocks – depending on the initial distribution and the magnitude of the transitions rates (cf. Jacob and Hillmert 2003).

taking into account the educational steps and transitions preceding graduation. From the perspective of social stratification the issue of access to higher educational attainment becomes particularly relevant, because transitions along an educational career are selective to a varying degree (cf. Müller and Karle 1993). So the question arises which stages of the educational career are the most important ones in terms of quantity and which ones prove to be the most selective ones in social terms.

3.1 The German secondary school system

Despite being different in detail, the structure of the educational system of Germany is standardized in general lines throughout all 16 federal states. Compulsory education starts at the age of six, when children enter elementary school which usually lasts four years. At a comparatively early age, the age of ten, most students have to choose between three different hierarchically ordered tracks: lower secondary school (*Hauptschule*), intermediate secondary school (*Realschule*) and upper secondary school (*Gymnasium*).³ Track mobility within secondary education i.e. up- and downgrading between the differently demanding school tracks is possible in principle, e.g. in case of over- or underperformance in the track that a student has been initially allocated to. Only a successful graduation from the *Gymnasium*, the *Abitur*, qualifies for all post-secondary and tertiary institutions. Different secondary schools may also be attended in a sequence, i.e. entering a higher track is possible after successfully completing a lower track. Thus, some students that were initially placed in an intermediate or lower secondary school may also attain the *Abitur* later on. Besides that, there are some other alternative ways of attaining the *Abitur*, e.g. taking extra courses during vocational training or attending evening classes for adults who are already in employment ('second-chance education').

Regarding the social consequences of hierarchically tracked schooling systems, several empirical studies on social inequality at the entry into (lower) secondary education have come to the conclusion that such systems tend to be highly selective at a very early age (e.g. Baumert et al. 2001 for Germany; see also Breen and Jonsson 2000 for Sweden, Lucas 1999 for the U.S.). Sorting students into different school tracks in the German secondary school system can be expected to be a mechanism of social stratification that is even more salient than tracking within secondary schools (see Gamoran and Mare 1989, Jacob and Tieben 2007).

3.2 The German higher education system

The German higher education system is characterized by the following features: It is (mostly) a two-tier system with the main institutions universities (*Universitäten*) and polytechnics (*Fachhochschulen*). There has been a clear status difference between these two types of institutions. The polytechnics, introduced in the 1970s, have focused on vocationally-oriented tertiary education, especially in technical subjects, while the universities – some of them with a century-old tradition – have kept their superior position: Only universities have had the right to award PhD degrees and only their graduates have had access to the highest career track in

³ Comprehensive schools account for only a small proportion of schools; less than 10 percent of a cohort attend these schools. In most states in the Eastern part of Germany the two lower secondary track, *Hauptschule* and *Realschule*, are combined, so there we find only a two tier system.

the civil service. It is also remarkable, however, that there has been no particular hierarchy *among* the universities.

German university courses have (traditionally) had a long duration until the first degree of approximately 5 years. As a result, a decision for university means a long-term educational investment. This has changed just recently with the gradual introduction of the new BA/MA system in the course of the so called European ‘Bologna Process’. Unlike in many other industrial countries, in Germany vocational training is a strong and attractive alternative even for school leavers with upper secondary school degrees (most prominently in the form of the *dual system*). This may ‘detract’ school leavers from further pursuing the academic track, especially if they are from lower class background (Hillmert and Jacob 2003a; Shavit and Müller 2000). Moreover, combinations of vocational and academic training lead to extended educational careers and late entry into universities (Hillmert and Jacob 2003b; Jacob 2004).

3.3 A life-course oriented typology

The ideal-typical, *institutionalized sequence* of the ‘academic track’ is relatively simple. Children begin with entering the *Gymnasium* after elementary school, stay there until attaining *Abitur*, enter university immediately after and finally graduate. However, this is *only one* possible pathway to the final degree among a variety of others. Figure 1 is a schematic illustration of the pathways that may finally lead to a university degree. The German case seems therefore to be an ideal object of transitions research, e.g. for a comparison between results using longitudinal data on actual transition patterns vs. results gained when reconstructing a synthetic ideal-typical sequence of (only two) transitions leading to graduation. Social selectivity at transitions during secondary and tertiary education may differ from social selectivity at the two ‘main’ transitions; yet it is an open question to what extent these additional transitions actually matter in terms of quantity and hence for social inequality in final educational attainment.

***Figure 1 about here ***

In the following analyses we take several additional steps and transitions into account. These are still a selection from the full range of possibilities and the real complexity of individual educational careers, but by enriching the ideal-typical sequence with some important transitions that may occur in between we go clearly beyond a conventional over-simplification of the structure of educational careers – in particular in terms of social selectivity.

The following *typological classification* of transitions reduces the complexity of individual educational careers along the academic track in a meaningful way:

(1) Transitions to *Gymnasium* after elementary school

The transition from elementary school into one of the three hierarchically ordered tracks is the major step in the German education system with regard to opportunities of educational

attainment later on. At the end of elementary school, teachers give a recommendation which school type a student is appropriate for, based on previous performance and grades. Only in some federal states the recommendation is binding, in most states it is up to the parents to finally decide about the secondary school track.

(2) Dropouts and later entries into *Gymnasium*

After this institutionally defined branching point of allocating students into the different schooling tracks it is possible to change between the tracks during secondary school. These changes result in particular from mismatches between individual performance and the demands of the currently attended track. Dropping out of the *Gymnasium* and downgrading to a lower track occurs if the current track is too demanding and the student is at risk of failing the term. Late entries into the *Gymnasium*, i.e. upgrading from a lower track is an option for students whose performance is above expectations.

(3) Second chance education

Even for students who were initially placed into intermediate or lower secondary school and who successfully attained a lower secondary school diploma already, there are several possibilities to continue in education and attain the *Abitur* later on (as a ‘supplement’ diploma). For example, taking extra courses in mathematics, a foreign language etc. during vocational training and passing an exam is another possibility to get the *Abitur*. For adults who are already in employment there are evening classes of three years duration to attain the *Abitur*.

(4) Successful attainment of *Abitur*

Successful attainment of the *Abitur* is the prerequisite for enrolment in university. As discussed above, those actually achieving the *Abitur* are not necessarily the same persons as the former entrants into the *Gymnasium* at age ten. As processes of social selectivity will be different for the different pathways, social composition in the aggregate distribution may differ considerably from its initial structure.

(5) Transitions after leaving upper secondary school

After having attained the *Abitur*, all post-secondary and tertiary institutions can be entered. As outlined above, entering vocational training or lower tertiary education are genuine alternatives to enrolling in university – the latter being the most demanding option with the longest duration.

(6) Dropouts and later entries into university

While being enrolled in university courses, students learn about their potentials and the demands of the chosen field of study. As many courses have no adequate preparation at school, some students may find that their subject does not meet their expectations. Furthermore, students get more information about the costs and benefits of (completing) tertiary education. Therefore the initial decision might be revised, i.e. students drop out in order to continue in lower tertiary education or vocational training, or they enter the labor market without any further education and graduation. On the other hand, persons who initially chose vocational training or attended lower tertiary education may become dissatisfied with their initial choice and enroll later on.

(7) Final attainment of university degree

The ‘academic track’ is successfully completed by attaining a university degree. While most of vocational training is highly standardized across Germany, this is not the case for tertiary education – with the exception of a few fields of study where final exams are regulated by the state (e.g., in law, medicine and teaching). Standards, numbers and types of final exams in all other fields are regulated by each university separately. However, universities are perceived to be more or less equal in quality.

Note that (only) the transitions (1) and (5) form the ideal-typical sequence of the academic track in the conventional model. Our question now is to what extent the various transitions are affected by social selectivity.

4. Selections and social inequality along the life course

4.1 General considerations

Family background clearly matters for educational attainment. A great number of theoretical papers and empirical studies have confirmed the influence of parental education (‘educational inheritance’), social status or social class on children’s education (e.g., Bourdieu and Passeron 1971; Mare 1980; Erikson and Jonsson 1996b; Goldthorpe 1996; Shavit et al. 2007; for a recent review see Breen and Jonsson 2005)⁴. However, the impact of social origin may differ at different transitions during the educational career. The evidence one can obtain from a short review of current research is rather mixed. Various sociological papers have focused on the impact of the family of origin at particular transitions in the educational system, for example the decision for a particular track of secondary school after elementary school or from secondary to tertiary education. Blossfeld and Shavit (1993) summarize the results of their comparative study as follows: in 12 out of 13 countries the effects tend to be strongest at earlier transitions and then decline for later transitions (see also Mare 1980; Müller and Karle 1993). On the other hand, some studies have focused on rather ‘uncommon’, delayed educational transitions, like returning to education and attaining (another) school degree or entering university after having completed vocational training. They find that the number of people undertaking these delayed transitions is far from being negligible and that the uncommon pathways to higher education can be observed more often for persons with more privileged social origins (e.g., Breen and Jonsson 2000).

But how can such changes along the life course be explained? In the following paragraph, the main arguments in the literature on educational inequality are summarized:

(1) Changes in composition and selectivity: The first group of explanations refers to a change in the social composition of the population ‘at risk’ between different transitions. These explanations are mainly used for studying effects of social origin under the assumption of sequential educational decisions. In the model of Mare (1980), at each transition some of the students decide not to continue education. It is expected that the selection barriers for

⁴ Most of the recent empirical studies looking at developments of inequality in education have taken a historical perspective, discussing the question whether in most (Western) countries the influence of social origin on education has been rather stable over time (Shavit and Blossfeld 1993) or whether there have been significant trends of decreasing social selectivity (Erikson and Jonsson 1996a, for a recent comparative study see Breen et al. 2005).

children from lower social classes are highest at early educational transitions. Working-class children are disadvantaged from the beginning, also in terms of average ability ('primary' effects as opposed to 'secondary' effects of transition behavior in the terminology of Boudon 1974). Thus, only the brightest working class children progress to higher educational levels. These cumulative selectivity processes with regard to the two determinants of success in education – social origin and ability – lead to an increasing 'homogeneity' of the population at risk. Therefore, the influence of social origin decreases at later transitions.

Transferring an argument by Raftery and Hout (1990) concerning the development of social inequality over historical time to developments in individual lifetime may lead to a similar conclusion. Because of the so-called „maximally maintained inequality“, the influence of the family of origin decreases. The participation of advantaged groups is already high (one may speak of saturation), so that children from disadvantaged groups will more often make use of later transitions and catch up with their socially advantaged peers (see, however Lucas 2001 for the opposite conclusion). In any case, this is again rather an explanation of *how* selectivity develops and not an explanation *why* the individuals of different social groups differ in their behavior. The implicit assumption in this model of competition is a universal preference for higher education, so the socially disadvantaged get the chance of participation once the more privileged have achieved already a great share.

(2) Changes in behavior: In contrast to considerations of selection processes that refer to aggregates and their compositions, there are several theories on social differences in individual behavior and individual educational decisions. These theories often use the argument of unequally distributed resources, and sometimes they also consider the timing of different transitions. Most prominently, these explanations are derived from rational choice models with specific cost/benefit-constellations⁵.

Alternative approaches emphasize the importance of individual development and social relations to the family of origin. Concerning developments along the life course, there are two competing hypotheses. The first one states that there is considerable change in the conditions of individual decision-making, resulting from cognitive development, changes in social expectations, and institutional policies. A substantially *decreasing* influence of the family context in an individual's lifetime can be expected following the life-cycle hypothesis proposed for example by Müller and Karle (1993). At the beginning of an educational career, the starting conditions, especially the economic conditions and the preferences of the parents, are very important. At later stages, students will be able to decide on their own and will rely less on their parents. In this scenario, it is assumed that at later transitions factors of individual living conditions, experience, actual material conditions, own aspirations and preferences gain in importance. Another argument in favor of decreasing selectivity has to do with cumulative information (Erikson and Jonsson 1996b). Good grades give young people a positive feedback and raise their expectations of success. This is especially important for children from lower-level social background who are initially less certain. As this sort of information is not available at the beginning of the educational career and its amount accumulates over time, the (bright) children of low origin tend to become more confident along their educational career, so that their relative disadvantage diminishes. On the other hand, theories of the social reproduction of status often assume that there is no (or a negligible) decrease, but rather

⁵ Yet, further developments are needed by conducting research on the parameters that are theoretically relevant for educational decisions (competencies, resources, preferences) directly instead of inferring them from age (see also Esser 1996). Moreover, the various situations of decision have to be specified precisely with respect to the relevant educational institutions and the actors that actually make the particular decisions, like students, parents or teachers (cf. Hillmert 2004).

stability of the influence of social origin over an individual's lifetime, because both parents and children try to maintain the family's status (Erikson and Goldthorpe 1993; Breen and Goldthorpe 1997). This aspiration of parents and children lasts along the whole educational and working career, and especially in those cases where the parents' status has not already been achieved there is particular pursuit to achieve it later on. Hence, delayed educational activities may be a particular expression of an influence of social origin. The considerations of Hillmert and Jacob (2003a) also suggest constant or even stronger effects of social origin at delayed educational transitions (in this case: delayed entries to university). Even when assuming that the school leavers with the highest school degree may decide quite autonomously, i.e. without a direct influence of their parents, there are still strong indirect influences, not least because of unequally distributed resources. As a consequence, delayed educational decisions and transition probabilities still differ with respect to social origin.

In the following paragraph, these general theoretical arguments are applied to the specificities of the particular types of transitions associated with the academic track in the German educational system. This includes another consideration of the institutional background which affects the salience of specific explanatory factors as well as an assessment of the quantities of any of these transitions.

4.2 Social selectivity on the German academic track: Hypotheses

(1) Transitions after elementary school

At the transition from elementary school into one of the three hierarchically ordered tracks, children are rather young and their (future) schooling performance and the development of their cognitive abilities may not be easily evaluated. Thus, parents will rely on their own educational experiences to come to a decision. As children of less educated parents are disadvantaged in both respects, primary and secondary effects, we expect a relatively high impact of social origin on the first transition from elementary school to *Gymnasium*. Regarding overall participation in the 'academic track', we expect as the result a clear over-representation of children from higher social origin.

(2) Dropouts and later entries to *Gymnasium*

Compared to the evaluation of abilities and expected success after elementary school, later on there is less insecurity about actual demands and students' performance. However, we still expect secondary origin effects, as dropout might be avoided by retention and the chance for upgrades is not realized by all students equally. These transitions still require an explicit decision of the parents, which may be motivated by status maintenance and counter-mobility. For example, parents may strive to ensure at least the same educational level for their children as their own and therefore foster upgrades more strongly (see Jacob and Tieben 2007 for further theoretical considerations). As there is no necessity to upgrade even in case of clear over-performance we expect that children of higher educated parents use that chance much more frequently. On the other hand, up- and downgrading is performance-related, so that the composition of the population at 'risk' becomes important. The abovementioned differential selection processes at the first step (only the brightest children from lower classes enter the *Gymnasium*) may result in comparatively lower risks of these children to drop out. With regard to overall participation in the *Gymnasium* we expect only moderate changes, because these are relatively rare transitions and social selectivity of drop-outs and later entries may have ambiguous effects.

(3) Second chance education

Compared with entries into *Gymnasium* after elementary school, attaining an *Abitur* later on is a ‘safer’ option as the lower track has already been complemented. Furthermore, following the behavioral argument of the life-cycle hypothesis, emancipation from parents increases with age and students themselves play a greater role in educational decisions. Therefore one may expect that in particular less privileged children opt for this way of entering the academic track via ‘second chance education’. However, the arguments of status maintenance can also be applied to ‘second chance education’, so social origin effects may not completely diminish. Besides, entering second chance education involves costs, and parental resources might be necessary to bear them. With regard to overall participation, the impact of this time-consuming way to attain the *Abitur* may be limited in quantitative terms.

(4) Successful attainment of *Abitur*

Passing the final exams of the *Abitur* is predominantly performance-related. Thus primary effects of social background might be important. However, as previous selection processes may have resulted in a selective composition of the population ‘at risk’ (an overrepresentation of high-achieving children with lower educational background), social inequality in attaining the *Abitur* given long-term attendance in upper secondary school can be expected to be small. Due to the expected unequal participation in the *Gymnasium* and only minor changes of that composition in the course of up- and downgrades and supplements, the *unconditional* attainment of *Abitur* is to a high degree socially selective.

(5) Transitions to university after leaving upper secondary school

The second major branching point in the ‘academic track’ is enrollment in university. From the theoretical considerations we can derive two competing hypotheses about the development of social selectivity in decision behavior: First, a decrease of social selectivity compared to earlier transitions because at this later stage of the educational career more information on a student’s abilities has been gained and future success can be evaluated on the basis of previous performance. Also, according to the life-cycle hypothesis, students tend to decide themselves. In contrast, social selectivity may also be higher at this step as proceeding with higher tertiary education is the most costly alternative after having finished secondary education. It requires relative high investments due to the long duration and bears a high level of insecurity. Vocational training or lower tertiary education might be a more ‘secure’ and shorter alternative in particular for less privileged children to maintain or even improve social status compared to the parents.

(6) Dropouts and later entries to university

The same argument of emancipation from the parents due to older age also applies for university dropouts and late entries to universities. Also, own experiences in the educational system, in particular underperformance in university or over-performance in vocational training or lower tertiary education may lead to a revision of the initial decision for or against enrollment. However, in an analogy to the situation during secondary education, parental background might still matter, for example to avoid dropout (and resulting risks of status descent) as long as possible, e.g. by changing to a less demanding field of study. The more labor market experience an individual already has, the higher the opportunity costs in case of re-entering education will be, so parents’ resources might be necessary to compensate.

(7) Final attainment

Passing the final exams of university is again predominantly performance-related. Hence, social inequality in attaining the university degree *given* the necessary long-term attendance in the educational system can be expected to be small while the cumulative effects of social selectivity along educational careers will lead to an overall high level of social inequality in final attainment.

5. Data and analytical strategy

The analysis of educational careers over individuals' lifetime, beginning with the first days in school until finally leaving the educational system, requires information on all the transitions in-between, on changes of school tracks, on entering upper secondary and tertiary education and on pursued and actually achieved educational level. In order to be able to get an integrated picture of the relevant flows and developments on the academic track, we observe one particular birth cohort in detail, the (West) German 1964 birth cohort until age 40. As we are interested in both relative social differences in the process of educational attainment and reliable estimates of the absolute quantities involved in each transition, in our analyses we use register and census data from official statistics. These are complemented by survey data where necessary to estimate relative transition probabilities. The availability of adequate data within a broad observation window was one reason for choosing this cohort, another was substantial: The 1964 cohort was the largest birth cohort in the history of the Federal Republic of Germany (and the last in a sequence of growing cohorts), and competition among cohort members may make patterns of social selectivity particularly apparent.

Most data on education contain no information on the abovementioned transitions within secondary and tertiary education for individuals (dropout and late entry in the *Gymnasium*, second chance education, dropout of university and late enrollment). Furthermore, as register data contain no information on social background, we calculate relative risks of transitions and participation of particular social groups by using survey data. A recently collected dataset that contains information on both complete educational careers and family background characteristics are the retrospective data of the 1964 birth cohort in West Germany⁶. The data are part of the *German Life History Study* conducted at the Max Planck Institute for Human Development. The latest stage on the two youngest cohorts has focused on education, transitions from school to work and early working careers of West German women and men born 1964 and 1971 (see Hillmert and Mayer 2004). The analyses in this paper use data from 1319 respondents of the 1964 cohort that were born in Germany or immigrated before the age of 7. As a reference, we also use data from the German *Microcensus* of 1989 (before unification) and 2004, i.e. a one percent sample of the German household population provided by the Federal Statistical Office (Statistisches Bundesamt).

In the general school system we focus on the transitions to (and out of) the *Gymnasium* as the main form of upper secondary education. Regarding the transition to higher education, we only look at universities (not polytechnics) to define those at risk for this transition more precisely according to their schooling certificate. As for the independent variables, we look at

⁶ For information on data collection and sampling, see the data documentation (Hillmert et al. 2004).

the parents' educational level.⁷ This level is defined by the highest education of mother or father. We distinguish between two groups: children of parents who have themselves got an *Abitur* and all others. With this simple dichotomous distinction between the 'higher educated' and the 'lower educated parents', the whole sample remains for our analyses. Note that this is a comparatively 'conservative' estimate of educational inequality: if we contrasted children from 'very high educated parents' and 'very low educated parents', the numerical measures of inequality would be much higher.

As a conventional measure of social selectivity we calculate relative transition rates as *odds ratios*, i.e. as the quotient between the odds of children from higher educated families and from lower educated families to make a particular transition (vs. to not make this transition).

6. Empirical results: Transitions and developments on the 'academic track'

Our analyses begin with all members of the 1964 birth cohort in West Germany. Extrapolating microcensus data to the whole population, this cohort amounts to around 1 065 000 people; 69 000 of them attain a university degree (until age 40). In sections 6.1 we describe the educational careers of this cohort, including social selectivity at several transitions during upper secondary and tertiary education. In section 6.2, we extrapolate these results to the absolute numbers of the whole cohort.

6.1 Social selectivity

6.1.1 Empirical transitions

(1) Transitions after elementary school

The first transition into the 'academic' track, i.e. moving directly from elementary school to upper secondary school can be observed for 26 percent of the 1964 cohort. With regard to social selectivity at this early transition, 63 percent of the students whose parents are higher educated enter the *Gymnasium*, whereas only 21 percent of students with lower educated parents do so. As a result, the chances of students with higher educated parents are 6.3 times the chances of students from lower educated families.

(2) Later entries and dropouts from *Gymnasium*

Upward mobility into the *Gymnasium* from one of the two lower school tracks occurs in 6 percent of all cases that were initially placed in another school track. On the other hand, 22 percent of all students attending the *Gymnasium* drop out before attaining the *Abitur*. Both late entries and dropouts are socially selective: Among all students who are not yet in the *Gymnasium*, 22 percent from higher educated families enter later on, whereas only 5 percent from of less educated families parents use this opportunity. The relative transition rate of later entries into *Gymnasium* amounts to 5.6, i.e. it is slightly lower than immediately after elementary school. Dropping out occurs less often for children of higher educated parents, as

⁷ Because we are mainly interested in the *development* of inequality over the life course, we focus only on one measure of parental background assuming that parents' education is closely related with other factors like social status and income.

12 percent of those and 32 percent of children of less educated parents leave the *Gymnasium*. Relative transition rates are now ‘in favor’ of the latter group who is 3.6 times as likely to drop out as children of higher educated parents.

(3) Second chance education

Attaining the *Abitur* later in life is a very rare event; we observe it for only 3 percent of all cases that have not attained the *Abitur* at the end of ‘standard’ secondary education. The proportion is equal in both social groups, but as the total numbers in the survey data are very small, this result has to be interpreted with caution.

(4) Successful attainment of *Abitur*

The share of cases that finally attain the *Abitur* amounts to 25 percent of the whole cohort. This does not differ much from the first entry into *Gymnasium*, but due to the various sources of mobility during secondary school and after, these are often different persons. 64 percent of students of high educated parents finally achieve the *Abitur*, as do 19 percent of the children of lower educated parents. The unconditional relative attainment rate is 7.4. The proportion of students, who successfully attain this qualification *conditional* on previous attendance, i.e. only looking at those students who actually attended the *Gymnasium* during secondary education, amounts to 76 percent. Distinguishing the success rate by family background, the proportion of successful students from higher educated families amounts to 89 percent resp. 70 percent of children of less educated parents. The relative transition rate given attendance in the *Gymnasium* is 3.2.

(5) Transitions after leaving upper secondary school

After having successfully attained the *Abitur*, only 39 percent of the students enroll in higher tertiary education immediately – all others enter either lower tertiary education or vocational training. Whereas half of the children of higher educated parents enroll after school, 34 percent of children of low educated parents do so. In accordance with previous research, social selectivity at this transition is considerably lower than for the transition into *Gymnasium*; the relative transition rate amounts to 2.0.

(6) Later entries and dropouts from university

Entering university is possible also later in life, e.g. after having completed vocational training or lower tertiary education. Of those cases that attained *Abitur* but decided not to enroll immediately, 26 percent enter university later.⁸ Late entries are socially unequal distributed as 37 of children of higher educated parents enroll later compared to 22 percent of the others. However, the relative transition rate remains almost stable (2.2). Regarding university drop out, we get the reverse picture: Of all university students with high educated parents, 30 percent drop out and 40 percent of those with low educated parents. The relative transition rate amounts to 0.6 (or 1.7 ‘in favor’ of low educated off-spring).

(7) Final graduation from university

⁸ The overall number of (late) entries and dropouts is in fact much higher than reported here using an individual-based approach, as almost half of the students change their major subject or dropout and re-enter higher tertiary education later on.

For calculating the chance of finally graduating from university we consider all cases that attend university. 70 percent of the students of higher educated parents pass the final exams successfully and 58 percent of those with lower educated parents. The odds ratio for graduating given attendance is 1.7. The unconditional attainment rate (based on all cases regardless of their previous educational career) is much higher: 7.8.

Summing up the results on all seven transitions on the academic track, we find that virtually all of them are selective in favor of children from higher educational background. In accordance with previous research, social selectivity is highest at the first transition after elementary school at age ten. Our results on dropouts and late entries support the hypotheses of status maintenance and counter-mobility: Upward mobility occurs more often for children of high educated parents that are in a track which does not lead to the *Abitur*, i.e. which is below their parents' educational level. Dropping out is also more often avoided by children from these families. However, the relative chances of late entries and dropouts are considerably lower than selectivity at the first transition, supporting the hypotheses of compositional effects and decreasing parental influence on track mobility during secondary school. With regard to successful attainment of *Abitur* we expected no or only small social inequality due to the previous selection processes. In fact, we still observe clearly higher relative risks of children from higher educated parents to succeed. This indicates that possible composition effects resulting from earlier transitions do not (fully) compensate for selective behavior at later transitions. Transitions into higher tertiary education after leaving upper secondary school are still socially selective, but well below the first major transition after elementary school. Inequality of university dropouts and late entries is of the same size, thus we find neither a reduction nor an increase of selectivity. Neither deciding themselves on the basis of own experiences nor maintaining the parents' status or being more capable to bear the costs seem to be dominant factors. Final graduation given attendance is least influenced by social background, as children from less privileged backgrounds who actually 'survived' until graduation are almost as likely to attain a degree than their fellow students from higher educated parents. Consistent with our hypotheses, there is obviously a reduction along the life course, but social differences are significant also at later stages. We summarize the results in Table 1.

** Table 1 about here **

6.1.2 Empirical and synthetic rates of transition

The life history data we use provide us with detailed empirical information on actual transitions, but they also allow us to conduct a methodological comparison: What would have been the results had we *reconstructed* these transitions on the basis of information about final attainment? As noted above, this technique is, due to data restrictions, common in transitions research.

Table 2 summarizes the results. Depending on the specific operationalization, transition rates would have been both (moderately) over- or underestimated. This is especially the case for the early transitions to *Gymnasium*. However, it should be noted that this comparison is conditional on our particular sample. Future (comparative) research may investigate whether

there are typical patterns of over- or underestimation when educational transitions are reconstructed on the basis of final attainment.

** Table 2 about here **

6.1.3 Flows and stocks

Another conceptual aspect regards the difference between transitions and stocks. Actual educational careers are still much more complex than our typology of transitions suggests, and any of these types cannot be exactly related to a specific age. To illustrate this, we present an analysis where we include all events of entry and dropout during secondary school and university, i.e. we include re-entries after dropouts and recurrent dropout. In our survey data, we observe 451 entries into upper secondary education and 123 dropouts, and 209 entries into university and 85 dropouts. Figure 2 demonstrates age-related developments in the social selectivity of these inflows and outflows and also inequality in the stock development (i.e., attendance) resulting from both processes.

**Figure 2 about here **

One can see considerable variation with age in any of these indicators. In contrast to life-cycle theories of individual development, there is no monotonic trend. It is also important to recognize that the trajectories of inequalities in participation cannot be directly inferred from the trajectories of inequalities in inflows and outflows; this would require additional information on the size of the different populations. The heterogeneity among these trends indicates that for a description of *life-course related developments in inequality*, the two concepts of transitions and attendance have to be clearly distinguished.

6.2 Population estimates

6.2.1 Selections and selectivity on the academic track

(Relative) transition rates are appropriate to identify specific inequalities at specific stages of educational careers. They are based on the respective populations ‘at risk’. However, especially at later stages, it becomes increasingly difficult to infer from these figures how important particular educational stages or transitions are in quantitative terms. To sum up our analyses we therefore calculate the approximate size of the relevant stocks and flows. The results are presented in Figure 3. The two columns on the left present the percentages based on equal ‘starting populations’. It can be seen that finally 31 out of 100 children from higher educated families attain a university degree while only 5 out of 100 children from lower educated families do so.

** Figure 3 about here **

Moreover, it has to be taken into account that the populations of our two origin groups are very different in size: there are many more children from low educated families than from higher educated families, and previous transitions repeatedly change the population at risks. In order to be able to assess the quantitative relevance in the real population (something any policy-oriented research will be interested in), we therefore extrapolate our results to the original size of the cohort (cf. the two columns on the right in Figure 3).

One of the striking findings here is that the absolute number of children who finally attain university degree is almost the same in both groups (46 000 vs. 49 000). Yet, given the very different size of the two origin groups (150 000 vs. 916 000), this is just another expression of the cumulative social selectivity we observe: a rate of 30.8 percent vs. 5.4 percent (or an odds ratio of 7.8) of finally attaining a degree.

6.2.2 Counterfactual scenarios

We have found both overall cohort selection and social selectivity all along the academic track. Both phenomena can be related to the comparatively small proportion of university graduates in Germany. We illustrate this by making some counterfactual considerations which take into account both the observed patterns of selection and social selectivity and the size of the different populations. What would be the consequences for the number of graduates, if one raised the lower chances of children with lower educational background and/or the likelihood of school leavers with *Abitur* to go on to university? Selected results are presented in Table 3.

** Table 3 about here **

Everything else being equal, any of these changes would increase the proportion of university graduates to a moderate or large extent. Note that none of these scenarios assumes a rising probability of attaining *Abitur* for the children from higher educated families. In a policy-oriented perspective, one may therefore interpret these findings that in Germany there is a considerable potential for raising the number of university graduates – even within the present institutional structures of selective secondary school tracks. This would happen if parents opted for *Gymnasium* more equally or if higher tertiary education became more attractive for all school leavers with *Abitur* compared to the other options. The current reforms of higher education in Germany (introducing a BA/MA-structure in universities) might serve this purpose of enhancing participation of school leavers with *Abitur* from less educated families.⁹

7. Conclusions

The empirical analyses presented in this paper focus on the German educational system and its ‘academic track’, which is particularly relevant for inequality research. We find that from one step to the next, a considerable amount of overall selection goes along with social selectivity: The number of young people – and in particular, of children from lower educated

⁹ In a recent comparative study Arum et al. (2007) show that systems of tertiary education that are sequentially stratified (i.e. following a BA/MA structure) tend to be less selective than systems that are stratified in parallel tracks, and that also participation rates in the former are higher than in the latter.

families – who join the ‘academic track’ at least once during their educational career is much higher than the number of those who in the end graduate.

Going beyond the German case, analyses like the ones proposed in this paper will be useful for comparative research since there are equivalent pathways in other educational systems. Our results already lead to a number of major conceptual conclusions.

- *Institutionalized sequences vs. inter-individual variation:* Corresponding to results from conventional analyses, we find that inequality decreases with the institutional order in educational careers; social differences of educational behavior are particularly distinct in the general school system and less pronounced in tertiary education. A combination of these transitions results in the particularly high amount of social selectivity that we observe for attaining a university degree. The idea of a steady decline of selectivity, however, holds true only when comparing all transitions to *Gymnasium* and university as a whole. There are remarkable variations of inequality within both stages because of socially selective entries and dropouts. General statements about a clear-cut upward or downward trend related to life-course development often prove to be too simple. These findings may be a step towards a separation of institutional (stage-related) and other developmental effects like increasing independence from the parents. The analysis of causal processes has to take into account these two sources of change in the level of social selectivity.

- *Educational transitions and stocks of participation:* The analyses of transition rates as well as the analyses on relative and absolute participation often lead to rather different results. This is another indicator for the fact that these two concepts have to be clearly distinguished when describing life-course related developments, and also when comparing educational systems.

- *Data and measurement issues:* Our results show that both the number of young people on the ‘academic track’ and the extent of social inequality may vary over the life course to a considerable degree. Similar developments of inequality, either between different institutional stages in the educational careers or within stages, may also be the case for other group definitions (e.g., gender). In any of these cases, however, measurement errors may arise if analyses are based on the *synthetic sequences* of transitions reconstructed from final attainment instead of the empirical transition patterns. This underlines the need for longitudinal data. In addition to this, ‘sensitivity analyses’ will be helpful that discuss the problem comparatively.

The paper confirms the usefulness of transition research for the understanding of educational attainment and the general superiority of a dynamic analysis over an analysis which focuses purely on stock figures of final attainment. However, it also shows that conventional ways of doing transition research are often too simple as they assume an ideal-typical sequence (and timing) of transitions and phases of education. Real educational careers often deviate considerably from this model, and the empirical analyses of this paper show the relevance of ‘atypical’ transitions, in particular: delayed transitions, drop-out, and re-entry. These additional events are necessary to understand the quantitative and qualitative selectivity of the German educational system. An analysis which accounts for the variety and the heterogeneity of transitions may serve as a model for research on selections and social selectivity in other educational systems.

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Tables

Table 1: Social selectivity along the ‘academic track’, percent and relative transition rates

	Percent	Percent	Relative transition rate ^a	S.E.	<i>N (at risk)</i>	<i>N (at risk)</i>
Parents' education	high	low			high	low
Upper secondary education						
(1) Transitions after elementary school	62.7	21.0	6.3	0.17	169	1150
(2) Later entries drop outs	22.2	4.8	5.6	0.34	63	908
	11.6	32.2	0.3 ^b	0.31	120	286
(3) Second chance education	3.2	2.9	1.1 ^c	0.74	63	956
(4) Successful attainment of <i>Abitur</i> ... given attendance ... of all cases	88.8	70.7	3.2	0.31	122	314
	63.9	19.3	7.4	0.18	169	1150
Higher tertiary education						
(5) Transitions after leaving upper secondary school	50.0	33.8	2.0	0.24	108	222
(6) Late entries dropouts	37.0	21.7	2.1	0.35	54	147
	29.7	42.0	0.6 ^d	0.32	74	107
(7) Final graduation ...given attendance ...of all cases with <i>Abitur</i> ...of all cases	70.3	57.9	1.7	0.32	74	107
	48.1	27.9	5.5	0.24	108	222
	30.8	5.4	7.8	0.21	169	1150

Notes:

^a Compared are the relative chances of children from high (parents hold *Abitur*) vs. low educational background.

^b Relative rates smaller than 1 mean a relatively lower risk of dropout for children of high educated parents. The inverse shows that children of low educated parents are $1/0.3 = 3.6$ times as likely to drop out.

^c Due to the small number of cases relative transition rates this is a rough estimate.

^d Relative rates smaller than 1 mean a relatively lower risk of dropout for children of high educated parents. The inverse shows that children of low educated parents are $1/0.6 = 1.7$ times as likely to drop out.

Source: (West-)German Life History Study (1964 birth cohort), own calculations.

Table 2: A comparison between empirical and synthetic rates of transition

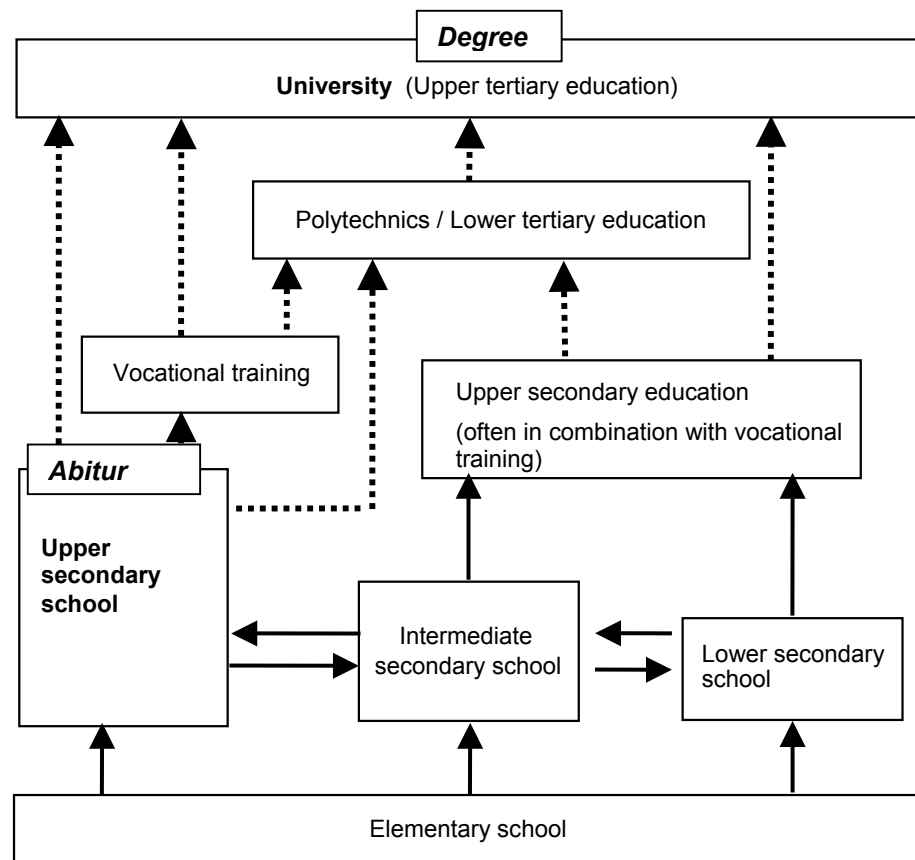
	Odds Ratio	N (at risk)
Transition to <i>Gymnasium</i>		
<i>Reference</i> : Empirical value ('regular transitions' after elementary school)	6.31	1319
Reconstructed (<i>Abitur</i> vs. no <i>Abitur</i>)	7.40	1319
Reconstructed (<i>Abitur</i> vs. intermediate school degree)	6.22	799
Reconstructed (<i>Abitur</i> vs. upper-medium/intermediate school degree)	5.43	889
Transition to university		
<i>Reference</i> : Empirical value ('regular transitions' after leaving secondary education)	1.96	330
Reconstructed (Univ. degree vs. no degree)	2.40	330
Reconstructed (Univ. degree vs. lower tertiary/vocational degree)	2.48	312
Reconstructed (Univ. degree vs. lower tertiary degree)	2.52	178

Table 3: Patterns of selection and social selectivity: counterfactual scenarios

	Proportion of the cohort attaining a university degree
<i>Empirical reference value</i>	9.0 %
Children from lower educated families have the same probability of graduating from university (conditional on <i>Abitur</i>) as children from higher educated families, but empirical (lower) probability of attaining <i>Abitur</i>	12.3%
Children from lower educated families have the same probability of attaining <i>Abitur</i> , but empirical (lower) probability of graduating from university (conditional on <i>Abitur</i>)	19.7%
All children who attain <i>Abitur</i> graduate from university, but children from lower educated families have empirical (low) probability of attaining <i>Abitur</i>	25.6%
Children from lower educated families have the same probability of attaining <i>Abitur</i> and of graduating from university as children from higher educated families	30.7%
All children who attain <i>Abitur</i> graduate from university, children from lower educated families have the same probability of attaining <i>Abitur</i>	63.9%

Figures

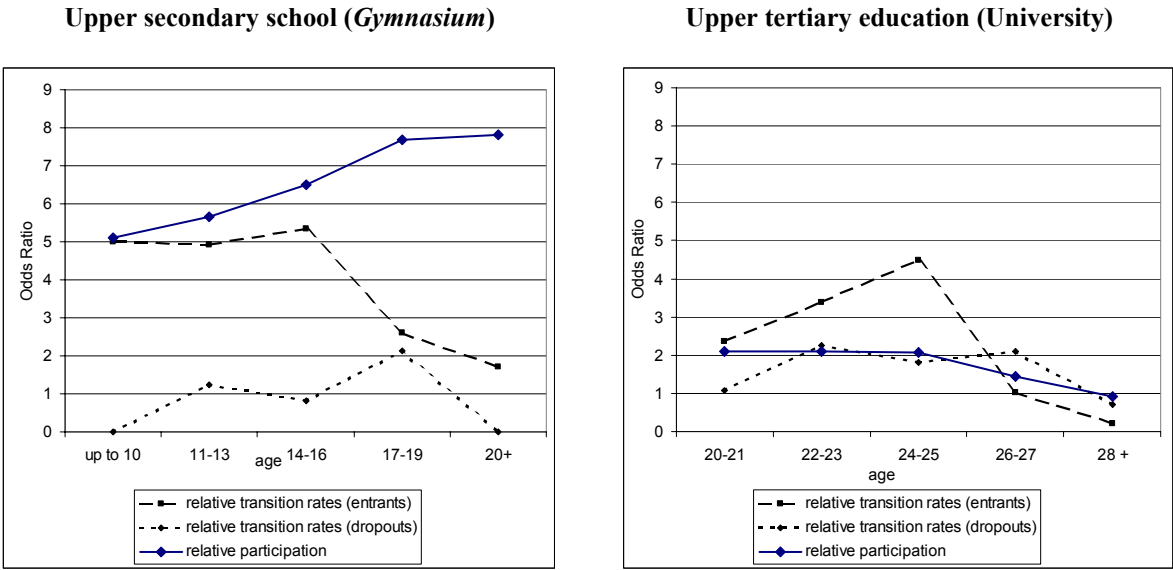
Figure 1: The institutional structure of the German educational system and (the most relevant) transitions leading to and away from the academic track



Solid lines: transitions within the general school system

Dotted lines: transitions within the system of vocational and academic training

Figure 2: Relative transition rates and relative participation, by age (odds ratios)



^a Compared are the relative chances of children from high (parents hold *Abitur*) vs low educational background. Source: (West-)German Life History Study (birth cohort 1964), own calculations

Figure 3: Selections and social selectivity on the academic track in Germany

