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## Intragenerational mobility in the United States, Norway and West Germany: a comparative study

Arbeitspapier / Sonderforschungsbereich 3, Mikroanalytische Grundlagen der Gesellschaftspolitik, J.W. Goethe-Universität Frankfurt und Universität Mannheim, No. 322

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# **SONDERFORSCHUNGSBEREICH 3**

## **Mikroanalytische Grundlagen der Gesellschaftspolitik**

INTRAGENERATIONAL MOBILITY IN THE  
UNITED STATES , NORWAY AND WEST  
GERMANY : A COMPARATIVE STUDY \*\*

BY

JUTTA ALLMENDINGER \*

Working paper N<sup>o</sup> 322

**Goethe-Universität Frankfurt und Universität Mannheim**

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UNITED STATES , NORWAY AND WEST  
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J. Richard Hackman and Aage B. Sørensen .

INTRAGENERATIONAL MOBILITY IN THE UNITED STATES,  
NORWAY AND WEST GERMANY:

A COMPARATIVE STUDY.

**Abstract**

Retrospective data on the career trajectories of men from three countries are used to examine how contextual and individual-level variables interactively determine mobility rates and mobility dynamics over time and across nations. The sample consists of men from West Germany, Norway, and the United States (white and black populations), all of whom were born around 1930. Separate analyses are performed for job mobility (i.e., all job transitions, whether upward, lateral, or downward) and career mobility (i.e., only those transitions that result in status gains). Results show that job mobility rates are significantly higher in the United States than in the two European nations, while career mobility rates are similar across the four populations. In addition, the processes that underlie job and career mobility dynamics found to differ substantially across nations, which casts doubt on the proposition of convergence theory that occupational structures become increasingly similar over time in industrialized societies.

**Introduction**

This paper addresses two questions: How do contextual and individual variables interactively shape job and career mobility processes, and how similar are these processes and their outcomes across the United States, Norway, and West Germany?

Both questions are in a longstanding tradition of social mobility research, and both are subject to a long tradition of controversy as well. Research aimed at identifying the major influences on mobility processes tends to rely on data about individual characteristics such as educational attainment, on-the-job training, and labor force participation. The controversy here centers on the validity and generality of individual-focussed theories such as human capital theory and status attainment models. Research aimed at identifying cross-national differences in mobility patterns, on the other hand, tends to rely on data about the social context within which

mobility occurs. Here, the debate centers on the validity of convergence theory, which gives prime attention to a single structural variable--namely, the stage of industrialization of national economies. Connecting these two lines of sociological research reveals a major gap in knowledge. Although contextual variables play the dominant role in crossnational studies, they receive little attention in single nation mobility studies. And while individual variables receive much attention in single nation studies, they often are completely overlooked in crossnational research.

Given this state of affairs, it is not surprising that empirical crossnational studies of mobility have yielded inconclusive and contradictory results. Some researchers [such as Erikson et al. (1982), McRoberts & Selbee (1981), Hope (1984), Grusky & Hauser (1984), and Erikson & Goldthorpe (1986)] find that industrialization leads to similar intergenerational mobility regimes in all societies with market economies and nuclear family systems<sup>1</sup>. Others [(such as Tyree et al. (1979), Hazelrigg & Garnier (1976), and McClendon (1980)] conclude that it is the variability that exists across nations, not the similarity among them, that is most noteworthy. Even studies that do agree on the amount of cross-national variation in intergenerational mobility rates come up with very different inter-national rank orders. An example is provided by comparing the conclusions of Lenski (1973) with those of Hazelrigg and Garnier (1976). Lenski studied nine industrial nations--among them the United States, Norway, and West Germany--using a simple mobility table approach and concluded that mobility across manual-nonmanual class boundaries is highest in the United States, that Norway ranks fifth, and that West Germany ranks seventh. Hazelrigg and Garnier, using the concept of comparative circulatory mobility, found Norway at the top, West Germany at position four, and the United States at position five.

Why does empirical research yield such contradictory results? Three possibilities merit consideration. First, as pointed out earlier, is the fact that comparative mobility studies almost never consider both individual-level and contextual influences. Second is an excessive reliance on aggregate mobility outcomes and the use of very broad summary measures to compare mobility regimes across nations. When this is done,

the opportunity to learn about the processes that generate the mobility outcomes is lost--because the relevant variables are not included in the research. This, of course, makes it impossible to discover the degree to which mobility processes are similar cross-nationally. All that results are some (often disputed) facts about the relative rates of mobility in different countries. The third possible explanation for the contradictory findings in mobility research has to do with time. Although all researchers acknowledge that mobility processes develop over time, few explicitly incorporate temporal variables in their research designs. Thus, seemingly contradictory findings may derive simply from the different decisions that different researchers make about when to take their own "snapshots" of mobility processes.

Each of the three possibilities sketched above can be a trap for mobility researchers--something that, if not attended to, can generate misleading or seriously incomplete findings. In the paragraphs that follow, I review each of these three traps in more detail, starting with the third one and working back to the first. Then I explain how I attempted to circumvent these traps in the comparative study of mobility processes reported in this paper.

### Change Over Time

By definition, social mobility takes place over time. In intergenerational mobility studies, this process unfolds between one generation and its offspring; the guiding question is the extent to which children inherit the occupational status of their parents. In intragenerational mobility studies, the process unfolds in the course of the worklife; the guiding question is the number and kinds of changes in occupations, or in jobs, that occur over individual lives.

In existing research, both questions typically are answered by using cross-national data to generate log-linear models of relative mobility. This "mobility table" approach method fails to capture temporal phenomena for three reasons: (1) the destinations observed in a mobility table so generated are not common destinations, but a set of

different locations for people of different ages; (2) the origins observed in mobility tables also differ because fathers have children at different ages and at different stages of their own careers--thus making it impossible to know precisely when the process of mobility started and when it ended; and (3) different historical periods with different effects on opportunities for mobility remain unidentified (Sørensen, 1987). Hence, neither (individual) age-specific nor (historical) time-specific processes can be detected with precision.

The above problems are most pronounced in intergenerational mobility studies that cover a long timespan; they are less serious in studies that restrict the observation time by decomposing mobility processes into (a) an intergenerational component (the comparison of the origin position with the position at the time of entry into the labor market), and (b) an intragenerational component (the comparison of the entry position with a position held later in the work history). Such studies have been conducted inter-nationally by Erikson and Goldthorpe (1985), who compare England and the United States; by König and Müller (1986), who compare France and Germany; and by Aage B. Sørensen, Allmendinger, and Annemette Sørensen (1986), who compare Norway, West Germany, and the United States. Other studies, however, focus exclusively on comparisons of intra-generational mobility across countries, and analyze rather short periods in the worklife (five or ten years), apparently assuming that the distribution of occupations within nations does not significantly change over time. This assumption bypasses the problem of identifying absolute and relative mobility rates (e.g. Müller & König, 1986). Such studies provide evidence that worklife mobility is less stable across countries than inter-generational mobility--a result which often is explained a posteriori by pointing to cross-nationally different institutional environments.<sup>2</sup>

With the exception of Sørensen et al., the above mentioned comparative studies rely on log-linear models and cross-sectional or panel data collected in two or three waves. They mostly provide only "snapshots" taken at particular times. Reliable measurement of mobility processes, however, requires "movies"--continuously



observed variables in continuous time, as well as methods for the analysis of dynamic variables.<sup>3</sup> In this paper, I attempt a set of comparative empirical analyses of data from "movies"--specifically, retrospective life history data from the United States, Norway, and West Germany.<sup>4</sup>

### Mobility Outcomes and Mobility Processes

Crossnational mobility research typically focusses exclusively on mobility outcomes. How the determinants of social mobility actually generate mobility outcomes, and whether mobility processes are similar crossnationally, are important issues but not often researched.

Convergence theory states that the functional requirements of modern societies demand a division of labor involving differences in authority and skill. Differences in authority and skill inevitably involve differences in power, which in turn give rise to differences in privilege and prestige. Since modern societies require similar structural divisions of labor, occupational structures are expected to become essentially the same in all industrialized societies.<sup>5</sup> Empirically, Lipset and Zetterberg (1959) were the first to test this theory, and they found that in the process of industrialization, similar occupational structures do develop which eventually result in similar mobility regimes. Featherman, Jones and Hauser (1975) modified this thesis. They found that while absolute mobility rates differ across nations, relative mobility rates (i.e., mobility rates controlling for change in the occupational structure) show a basic similarity in all societies that have market economies and nuclear family systems. These and other empirical studies have in common that they test whether mobility outcomes are basically the same across nations--but only after inter-national differences in the stage of industrialization have been taken into account.<sup>6</sup>

Even if the strong functionalist version of convergence theory is accepted, it remains necessary to study the processes that actually generate mobility outcomes. Convergence theory suggests that industrialization leads to similar institutional structures which serve the demands of an industrialized economy. If this is so, then

not only mobility rates but also the underlying processes which generate mobility should be similar cross-nationally. Because convergence theory requires that mobility processes as well as mobility outcomes be similar crossnationally, both must be studied.

### Individual and Contextual Variables

We can return now to the problem posed at the beginning of this paper--namely, how individual and contextual factors interact to shape social mobility. The interaction is important because work histories are not shaped exclusively by individuals' predispositions, preferences, and expectations, nor are they entirely determined by economic and institutional environments. Instead, work histories evolve from the interaction of (a) societal conditions that constrain or expand opportunities for occupational moves and (b) individuals' abilities to take advantage of these opportunities (Sørensen, 1977; White, 1970). The first component deals with what Sørensen calls the "set of positions" available in a system. Opportunities to move are provided by vacant positions (which are either newly established or created by people leaving the system) and by the relations among these positions. The second component is dependent on individual resources, such as educational attainment, vocational training, and labor force experience.

The distinction between the two components and how they are operationalized is crucial in crossnational research<sup>7</sup>. Because economic conditions, institutions, and institutional reward structures differ across nations, opportunity structures for individuals must differ crossnationally as well. Consider, for example, one particular institution--the system of formal schooling. In the cohort that is subject of the following analyses (men born around 1930), most American students obtained a high school degree, but only ten percent of German students were awarded the "Abitur"--even though the number of school years needed to attain these two degrees is about the same. Moreover, the rewards attached to these degrees differed widely for American and German students, as has been shown by analyzing their entries into the labor force and their career opportunities thereafter (Allmendinger, 1989a). Thus,

crossnational studies require both understanding institutional differences, and developing or locating indicators that capture such differences. Moreover, since economic and institutional contexts can change over time within a nation, it also is necessary in crossnational mobility research to employ variables that are time-dependent.

#### Approach of the Present Study

In the present study, I use a four-part strategy to surmount the challenges to comparative mobility research reviewed above. First, I restrict the analyses to intragenerational mobility, using highly comparable longitudinal data that allow change in jobs to be traced for any stage in the work life. Second, I attend to both individual and contextual variables that may influence occupational mobility. The main individual-level variables examined are educational attainment and labor force experience. The contextual variables included assess macroeconomic conditions. Third, using data for Americans, Norwegians, and West Germans, I perform tests of inter-nation similarity separately for mobility outcomes and mobility processes. To determine if mobility outcomes are the same across industrialized nations, I pool the national data sets and test whether "nationality" makes a significant difference in the probability of job changes. To assess inter-nation similarity in the mobility processes, I first analyze the situation within each country and then compare mobility dynamics across the three nations. Fourth, I distinguish two different types of mobility. The first type relates to occupational mobility proper and does not take into account the degree to which job transitions also lead to changes in occupational status. This type of mobility is called job mobility. The second type comes closer to the traditional notion of what constitutes a career by focussing on the degree to which job transitions lead into status higher jobs. This type of mobility is called career mobility.

In sum, I distinguish mobility outcomes and mobility processes for two mobility types--job mobility and career mobility. And I use longitudinal data sets that are

comparable across three nations to determine how individual and contextual variables interactively shape occupational mobility regimes.

### Data Sets, Variables, and Statistical Approach

#### Data Sets

Three retrospective life event data sets are used--from the United States, Norway, and West Germany. These datasets consist of representative national samples of adult men of different birth cohorts. Data were collected by asking respondents to recall the exact timing and details of different times in their lives--such as their childhoods, their families of origin, and their educational and occupational activities from age fourteen until the time of the interview.

The American Life History Study (Blum, Karweit, & A. B. Sørensen, 1969), commonly referred to as the "Johns Hopkins Study," was conducted as part of the Social Accounts Program at the Center for Social Organization of Schools at the Johns Hopkins University.<sup>8</sup> The universe for the Life History Study is the total population of males 30-39 years old in 1968 (the date of the interview). The total number of interviews obtained was 1589: 738 black and 851 white respondents. Two samples are available. One sample is a nationally representative sample which weights white and black Americans according to their proportion in the population. The second sample overrepresents black American citizens. Research on the mobility patterns of white and black Americans shows that work histories differ across the two populations and that the major determinants of career trajectories (such as education, labor force participation, and labor market conditions) do not have the same effects on career processes for blacks and whites (Coleman et al., 1972). Given this finding, it is clear that all analyses must be stratified by race. Since the nationally weighted sample would not provide any advantage, I use the unweighted sample (which overrepresents black American citizens) and treat black and white American citizens as two distinct populations.

The Norwegian data are from the Norwegian Occupational Life History Study, directed by Natalie Rogoff-Ramsøy (Rogoff-Ramsøy, 1984). The sample is comprised of men living in Norway in 1970 (including immigrants) whose year of birth was 1921, 1931, or 1941. Interviews were conducted between November 1971 and March 1972. Total sample size is 3,470.

The German data are from the West German Life History Study, originated and directed by Karl Ulrich Mayer between July 1981 and October 1983 (Mayer & Brückner, 1989). A representative national sample of German citizens born between 1929 and 1931, between 1939 and 1941, and between 1949 and 1951 was drawn. The total sample size for the three cohorts is 2,172, of whom 1,079 are men.

There are three important differences among the three data sets. First is the universe studied. The exclusion of women in the American and Norwegian data is especially consequential, because female career trajectories cannot be compared cross-nationally. Second is the selection of birth cohorts. The cohort born in 1921 (Norway), and the cohort born in 1949/1951 (Germany) do not have counterparts in the other samples. To resolve these differences, I use only males who were born between 1929 and 1931. There remains, however, a third difference: the date of the interview. The histories of men of the birth cohort 1929/31 are reported until age 50 in Germany, but only until age 40 in Norway and the United States. I therefore truncated the German data file by one decade; all observations which refer to events after 1970 have been excluded, and appropriate adjustments have been made to other variables that are affected by this decision.<sup>9</sup>

In sum, while differences among the three national samples are not trivial, it was possible to adjust the three data sets to achieve high comparability across them.

### Variables

There are two major groups of variables: (1) individual-level variables, including education, amount work experience before last exiting schooling, labor force

experience, and occupational prestige, and (2) macroeconomic variables, including unemployment rate, change in gross national product, percentage of males in agriculture, and percentage of foreign workers. Figure 1 provides a summary of these variables, which are described in detail below.

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Figure 1 here  
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### Individual-level Variables

As was argued earlier, educational opportunities and the specific structures of educational systems are as consequential for mobility in labor markets as are the attributes of the individuals who make their careers in those markets. The conceptual challenge is to find variables that capture the impact of crossnational differences of educational systems on career mobility pattern. Elsewhere (Allmendinger, 1989a) I have argued that four variables are particularly useful in this regard: the years spent in education, the level of educational attainment, the number of job spells before last exiting schooling, and the duration of job spells before last exiting schooling.

#### Education

The variable "years of education" is an indicator of the length of time spent in either formal education or in vocational training. The indicator "level of educational attainment" identifies the actual degree or certificate the respondent holds. This measure is important because not only years of training but also degrees matter, particularly in stratified and standardized educational systems such as those in Norway and Germany (Allmendinger, 1989a). This variable is used as a set of dummy variables that specifies whether or not each academically relevant degree has been attained.

### Work experience before last exiting schooling

Labor force experience acquired before last exiting schooling indicates the degree to which the transition from school to work is clear-cut (vs. a transition involves movements in and out of schooling, and in and out of working). Previous research on the same data (Allmendinger, 1989b) has shown that in systems with tightly coupled educational and occupational sectors, the amount of time spent in the "transition stage" between school and work is considerably shorter than in educational systems in which the coupling is loose. For example, 47 percent of white Americans but only seven percent of West Germans undergo a transition stage. White Americans spend about seven years in the transition stage, of which three years are spent in the work force. The few West Germans who have a transition time spend less than one year in it, almost always without any labor market contact. Findings of the earlier research show that early contact with the labor market has a long term impact on the unfolding of the career trajectory--it increases a workers' knowledge about how labor markets work, as well as his or her range of work-relevant contacts and networks.

Work experience before last exiting schooling is measured by two variables. The indicator "number of jobs in the transition stage" is the total number of jobs held prior to entering the labor force after last leaving school, and the indicator "length of job in transition" (a dummy variable) indicates whether at least one of the jobs held before last leaving schooling lasted for more than one year.

### Labor force experience

The likelihood of changing jobs varies with the time spent in the labor force: in the early years of labor force participation, the probability of change is higher than in later years. To measure the time spent in the labor force in a meaningful way, the beginning month of the first job after last leaving full time education was identified. The variable "labor force experience" was then constructed by adding up the duration of all job spells from that date until the beginning month of any new job held. If the respondent interrupted the occupational career to join the military or was temporarily unemployed, these times were not counted as part of the individual's total labor force

experience.<sup>10</sup>

#### Occupational prestige (SAS)

Generally, occupational prestige is measured by scales that are independent of time and national context. Sørensen (1979), however, has developed a "Social Attainment Scale" (SAS) which adjusts the prestige level of a given occupation to the overall distribution of occupational prestige at a given time in a given national system. The SAS metric was developed in the context of his vacancy competition model of the status attainment process. The basic idea underlying the SAS scale is that status is exponentially distributed. That is, the status of a given occupation is dependent on how many persons hold this occupation and how many persons hold occupations that are higher in status. One advantage of the SAS metric is that its application allows development of prestige scores that can be compared meaningfully across nations. Thus, the SAS score that is assigned to a Norwegian worker in occupation X differs from the SAS score assigned to an American worker in the same occupation if the distribution of people in occupations differs across the two nations. Moreover, the application of the SAS metric allows derivation of prestige scores that differ over time within each nation. Thus, because the occupational distribution within Norway changed between 1950 and 1970, the occupational prestige assigned to an occupation in 1950 differs from that assigned to the same occupation in 1970 (for more detail see Allmendinger, 1989b).

#### Macroeconomic Variables

In all empirical analyses, two macroeconomic variables are used: annual change in the gross national product, and the percentage of males employed in the agricultural sector. Additionally, the "unemployment rate" is used in analyses pertaining to the United States only,<sup>11</sup> and the "percentage of foreign workers" is used in analyses pertaining to West Germany.<sup>12</sup>



### Change in gross national product

The indicator "change in gross national product" controls for the impact of changing economic conditions on the development of career trajectories. According to standard economic theory, times of a positive change in gross national product provide many vacancies available into which people can move. Thus, a positive change in GNP should increase the rate of job shifts.

### Employment in agriculture

The indicator "employment in agriculture" is a proxy for the stage of economic development in a given nation. In general, one should expect a negative relation between the proportion of males employed in agriculture and the likelihood of job changes simply because farmers are less likely than other workers to change jobs. During the years under study, however, employment in agriculture dropped considerably, which increased the overall likelihood to job changes. Hence, I expect that the higher the proportion of males employed in agriculture, the higher the rate of job moves throughout the labor force.

The two macroeconomic indicators included in all models ("change in GNP" and "employment in agriculture") measure labor market conditions across nations in similar ways. Their intercorrelation is low and does not create multicollinearity problems. Both indicators are treated as attributes of each job spell<sup>13</sup> in the life event history files. Thus, average scores are calculated over the time in which the jobs have been held.

### Statistical Approach

The succession of jobs (or the move from one job into another job) can be considered as a qualitative change (event) that occurs in time. It therefore is appropriate to use event history analysis to model the determinants of the timing of such events--i.e., the rate at which job moves occur (Allison, 1984; Tuma & Hannan, 1984). In models of life event analyses, the dependent variable ( $r$ ) is a hazard rate, defined as

the instantaneous probability of an event (here a job shift) occurring in the next moment of time. The definition of the hazard rate is

$$r(t) = \lim_{\Delta t \rightarrow 0} \frac{1}{\Delta t} * P(t < T < t + \Delta t | T > t). \quad (1)$$

I will estimate the influence of exogenous variables which influence the rate of job transitions using the proportional hazard model of Cox (1972). This model is defined as

$$r(t/x) = r'(t) * \exp(x'\beta) \quad (2)$$

where  $r'(t)$  is the hazard rate,  $x'$  is a vector of covariates,  $\beta$  are the parameters to be estimated, and  $t$  is the waiting time until a job shift occurs. As covariates, both individual-level variables and macrostructural variables will be analyzed.<sup>14</sup>

The analyses proceed by introducing the covariates in a hierarchical manner. This procedure makes it possible to determine if each set of covariates adds useful information for estimating the probability that a job shift will occur. Statistically, this is assessed by a log likelihood test that compares the fit of the alternative models<sup>15</sup>.

As reported above, I study two different processes of worklife mobility: job mobility and career mobility (upward occupational mobility). The waiting time until the next event occurs must therefore be calculated in two different ways. In the case of job mobility, the waiting time ( $t$ ) is defined as the duration (in months) from the date the respondent entered one job (origin job) until the date he entered the next job (destination job). This next job may be status lower, status equal, or status higher. If the event of a job shift does not occur before the time of the interview, the observation is censored. In the case of career mobility, the waiting time ( $t$ ) is defined as the duration between the date the respondent entered one job (origin job) until the date the respondent entered a job which has a higher occupational prestige.<sup>16</sup> If a job is not followed by a status higher job, the observation is censored.

## Findings

The findings are organized in two main sections, one on job mobility and the other on career mobility. Each section examines both (a) how individual-level variables and macroeconomic variables interactively shape mobility processes, and (b) the degree to which mobility processes are similar across nations.

### Job Mobility

One of the most basic measures of work histories is the number of jobs a person holds over one's working life. In the total sample of American, Norwegian and German men, workers reported an average of 6.4 job spells after last exiting schooling. Figure 2 shows the average number of job spells in each population as deviation from this mean. Norwegian men of the birth cohort 1930 report on the average more jobs (7.5) than white Americans (6.5), black Americans (5.6), and West Germans (3.5).

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here Figure 2  
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What factors explain these inter-nation differences? And do differences in mobility rates and dynamics disappear once individual-level and macroeconomic variables are controlled, as would be predicted by convergence theory? We take up these questions separately, looking first at mobility rates and then at mobility processes.

#### **Job Mobility Rates,**

On the basis of the pooled data (i.e., across the Norwegian, German, and American samples), I estimate four models of job mobility. Models 1 to 3 test for the effects of individual-level and macroeconomic variables. Most useful for assessing crossnational mobility rates is model 4, which controls for national context. All models are

described below and presented in Table 1.

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here Table 1  
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**Model 1** has one independent variable--labor force experience at entry into the origin job. From this model, it is clear that time spent in the labor force is an important factor in determining job shifts. Specifically, workers change jobs more frequently early in their career than they do later. This effect is consistent throughout the models and fits with the theoretical predictions derived from both human capital theory (a supply side approach) and vacancy competition theory (a demand side approach).

**Model 2** introduces the remaining individual-level variables. We see that men who have earned the highest level of formal educational attainment are substantially more likely to experience job shifts than are those who have not; indeed, the rate of change for persons with gymnas/college degree is 38 percent higher than for persons without such a degree. The indicator for years of education has a smaller and negative impact on the rate of job shifts. Work experience before last exiting schooling also significantly influences the rate of job changes. The more jobs held in this transition stage, the higher the rate of subsequent job shifts. Indeed, workers who held jobs with a duration of more than one year during the transition period have a rate of subsequent job changes that is six percent smaller than those who held short-duration jobs during that period. Regarding occupational prestige, we find that the higher the prestige score of the job of origin, the lower the opportunity to move into a any other position.

In **Model 3**, macroeconomic variables--specifically "change in GNP" and "percent of male labor force in agriculture"--are introduced.<sup>17</sup> Including these variables increases the fit of the models significantly (assessed by using a log likelihood ratio test), showing that macroeconomic conditions indeed do affect mobility rates. The

coefficients of both indicators are highly significant and in the expected direction: A positive change in GNP increases the likelihood of job shifts, as does a decrease in the number of people employed in agriculture.

Finally, in **Model 4**, I address the question of inter-national similarity in job mobility rates. The national effects are tested by introducing three dummy variables (representing white Americans, black Americans, and Germans) into the hazard model. Norway is the reference country. Results for Model 4 reveal that mobility rates do differ across the four populations. First, the overall fit of Model 4 is significantly better than that of Model 3 (assessed using a log-likelihood ratio test). This means that nation specific mechanisms operate in addition to individual-level and macroeconomic variables. Moreover, we find significant positive coefficients for both the white and black American samples, and a non-significant negative coefficient for the German sample. White Americans have, after the inclusion of all variables, a rate of job moves 87 percent larger than the rate for Norwegians, and black Americans have a rate 48 percent larger than that of the Norwegians. The German and Norwegian rates do not differ significantly. These results imply that the macroeconomic variables are sufficient to account for differences in job mobility rates of Norwegian and German workers, but not for the differences between the European and the American populations.<sup>18</sup>

These findings answer the question of whether job mobility rates are similar across the four populations. When analyses are based on longitudinal data, comprise all job transitions, and are limited to intragenerational job mobility, the answer clearly is no. However, this does not necessarily mean that the underlying mobility processes also are dissimilar crossnationally. We turn next to an explicit test of this second question.

### **Job Mobility Processes**

The crossnational similarity of mobility processes can be assessed in two ways. One is by introducing into the models discussed above interaction terms between the

covariates and the population dummies. The other is by estimating the models for each population separately and then testing whether the coefficients obtained differ significantly across populations. I chose the second strategy. However, rather than presenting a separate table with the estimates of models 1 to 3 for each of the four populations, population-specific coefficients are only shown for model 3. Table 2 displays, in a condensed format, the coefficients and their standard errors estimated for each population separately<sup>19</sup>

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here Table 2  
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Table 2 provides two sets of results. First, it identifies those indicators that significantly affect mobility within each population. Second, it shows the degree to which different indicators differentially affect mobility across the four populations. This second set of results is of special interest because it tells us whether or not the processes that generate mobility patterns are basically similar across nations--as would be predicted by convergence theory.

Let us begin by examining the impact of <time in the labor force> on the rate of job shifts. Time in the labor force significantly decreases the likelihood for job transitions for all but black American workers. Statistical test of between-nation differences in the size of the coefficient for this variable shows one significant difference: duration of labor force participation decreases the rate of job moves more powerfully in Norway than in West Germany. Differences in effect sizes for all other populations are nonsignificant.

Labor force experience acquired before last exiting schooling significantly affects future job trajectories only for black and white Americans. For black Americans, the number of such transition jobs has a significantly positive effect on the likelihood of future job changes. For white Americans, it is the duration of such jobs that matters: having worked in a job for more than one year before last exiting schooling significantly decreases the rate of future job transitions. Tests of crossnational

differences in effect size for these two indicators show that the effect of the number of transition jobs is significantly stronger for black Americans than for white Americans and Norwegians.

Two variables assess the impact of schooling on the rate of job transitions. The level of the educational degree attained significantly increases the rate of future job moves for Norwegians and West Germans but not for white and black Americans. It is years of formal and vocational training that significantly increases the rate of job transitions for white and black Americans. This variable is nonsignificant (and, indeed, has the opposite sign) for Norwegians and West Germans. These findings are consistent with predictions derived from study of the educational systems in these nations (Allmendinger, 1989a). Moreover, the effect size of educational level on job transitions is significantly higher for the two European populations (which have stratified school systems) than for the two American populations (where the school system is unstratified). The effect size for years of education, by contrast, is significantly lower in the two European than in the two American populations. Thus, the impact of education on career trajectories is found to be highly dependent on the national environment.

The higher the occupational prestige of a job, the lower the likelihood of leaving the job. Although this relation is very strong for all four populations, there are significant differences in effect size among nations. The negative relation between and occupational prestige and job transitions is far stronger for white Americans than for any other population, while the differences among black Americans, Norwegians and West Germans are not significant.

Macroeconomic conditions shape individual work trajectories in all four populations. There are, however, several noteworthy differences across nations in the potency of specific macroeconomic indicators.<sup>20</sup> Positive change in the gross national product, which reflects a time of economic growth, is significantly associated with the rate of job transitions for white Americans, black Americans, and Norwegians, but not for

West Germans. The percentage of the work force that is unemployed, a measure often used in analyses of the impact of depressed economic times on individual careers, is significantly associated with job shifts for black Americans, but not for white Americans. The percentage of the workforce employed in the agricultural sector positively and significantly influences the rate of job transitions for Norwegian and West German workers, but not for Americans. To understand this finding, one must note that there was a continuous decrease in the number of farmers in both Norway and West Germany in the years under study. When people move out of agriculture they have to find other jobs, and this process results in a higher overall rate of job transitions. Thus, it is not surprising that the association between agricultural employment and job shifts is strongest in Norway, where the decline of employment in agriculture also was most pronounced. The last macroeconomic variable examined is the percentage of foreign workers in the economy, which was analyzed only for West Germany. The relation between this variable and job transitions is positive and significant: the larger the number of foreign workers employed in West Germany, the higher the rate of job shifts among West German workers.

Taken together, these results provide a clear answer to our question about the cross-national similarity of mobility dynamics: the differential impact of specific variables in affecting the rate of job shifts refutes the proposition that the processes that generate mobility patterns are similar across nations.

#### **Summary: Job Mobility**

Overall, the findings in Tables 1 and 2 show that the rate of job transitions declines over the working life and that certain groups of workers have a lower probability of changing jobs than do others--specifically, workers with apprenticeships, those who do not enroll in the labor market prior to last leaving school, and those with jobs near the top rather than the bottom of the occupational hierarchy. Moreover, we have seen how labor market conditions affect the career trajectories of individuals by speeding up, or slowing down, the rate of job transitions--sometimes in interaction with individual resources, sometimes independently.



Regarding inter-national differences, we find that both mobility rates and mobility processes differ substantially across nations. The relative impact of individual-level and macroeconomic variables differs substantially across populations, as does the absolute importance of economic conditions in shaping career trajectories. Although including macroeconomic variables does diminish the extent of crossnational differences in the rate of job transitions, we must conclude that both mobility rates and mobility processes are indeed different across nations. This suggests that pooling national datasets in mobility research runs a real risk of generating misleading conclusions--unless nation-specific interaction terms are included or models are estimated separately for each nation.

### Career Mobility

Let us now turn to analysis of the opportunities people have for upward occupational mobility--that is, for gain in occupational status in the course of the work life. Figure 3 shows the occurrence of upward job shifts (after last exiting schooling) in the four populations. We see that white and black Americans experience 2.5 job shifts with distinct status gains, which is close to the average across the four populations. Norwegians experience slightly more upward moves (2.8) than do Americans, and Germans somewhat fewer (2.0). Thus, while we found large inter-nation differences in the overall number of job shifts (see Figure 2), the number of upward job transitions is very similar across the four populations.

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here Figure 3  
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It is informative to compare the number of upward transitions with the overall number of transitions for each population. For white Americans, 59 percent (and for black Americans, 51 percent) of all job transitions do not lead to higher

occupational prestige; instead, they conserve the status quo or result in a loss of prestige. For Norwegians, the figure is 65 percent: on average, only every third job transition leads to a distinctive status gain. German workers enjoy the opposite pattern: only 30 percent of all job transitions do not lead to a gain in occupational prestige. In sum, Americans have one upward move for every lateral or downward move, Norwegians have one upward move for every two downward or lateral moves, and Germans have one lateral or downward move for every three upward moves.<sup>21</sup> Even though West German workers change jobs less frequently than do Americans and Norwegians, the transitions they do make are predominantly into considerably better jobs. Thus, we can conclude that West German work trajectories are both more structured and more directed than are the trajectories of American and Norwegian workers.

#### Career Mobility Rates,

Let us turn now from this descriptive characterization of crossnational differences to an analysis of the factors that affect the likelihood of upward moves in a career. Are these factors different for career trajectories as compared to job trajectories (in which all moves, whether upward, lateral or downward are included)? The method and models used to answer this question are the same as in the previous section on job trajectories. There are, however, two noteworthy differences in the analysis. One, of course, is that only job transitions that result in gains in occupational status are analyzed. The other is that the dependent variable (i.e., time between job shifts) is not the time spent in the previous job (as was the case in the previous section), but rather the time spent in a state of no distinctive gains in occupational status--regardless of how many lateral or downward shifts may occur during that time. Results are presented in Table 3 for the same four models used in analyzing job trajectories (see Table 1).

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here Table 3  
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Table 3, Model 1 shows the coefficient of labor force experience. The size of this coefficient (-.0105) is considerably larger than the corresponding coefficient in the model pertaining to all job transitions (-.0014). This result shows that upward job shifts occur relatively more often in the early stages of the work life.

Model 2 introduces the remaining individual-level variables. The significant effect of labor force experience persists once these variables are introduced, which is counter to the predictions of vacancy competition theory. In that theory, experience is viewed as an indicator of the discrepancy between resources and attainment because it shows how far a person is in the career trajectory. If measures of both labor force experience and occupational prestige are considered, then experience itself should have no effect.<sup>22</sup> Educational attainment, measured both by years of schooling and attainment of a college or gymnas degree, effects the rate of upward job shifts positively and significantly. The coefficient for college or gymnas degree is .9201, which means that people with such a degree have a probability of experiencing upward job shifts 62 percent higher than people without one. This effect is considerably stronger than was found in the earlier model which considered all job transitions (that coefficient was .3253). The same is true for years of schooling. The coefficient of this variable changed from -.0529 in the job mobility analysis to .0717 in the career trajectory analysis. Work experience before last exiting schooling is not significantly related to upward occupational attainment, which also is counter to the previous findings for job mobility. Finally, the coefficient of occupational prestige is negative and highly significant, indicating that as occupational rewards increase, the room for further improvements decreases. There is, it appears, a powerful "ceiling effect" for upward career moves.

Model 3 introduces the macroeconomic variables--change in gross national product and percent males employed in agriculture. Adding these variables improves the fit of the model significantly (assessed using a log-likelihood test), indicating that economic conditions do substantially influence rates of the upward mobility. The coefficients of both macroeconomic indicators are positive and significant. The

coefficients for individual-level variables do shift once macroeconomic variables are introduced, but not to a statistically significant extent.

We turn finally to Model 4 to see whether there are crossnational differences in rates of upward mobility. As before, this test is performed by introducing three dummy variables representing the white American, black American, and West German populations. The coefficients for the population variables are all non-significant, indicating that rates of upward mobility are not significantly different among four populations--even though the overall fit of the model does improve significantly once population is controlled. With this finding, we can answer the question of whether upward mobility rates are similar across the four populations. The answer is yes. For career mobility, contrasting with job mobility, transition rates are not significantly different across the four populations.

#### Career Mobility Processes

Although the rates of upward mobility clearly are similar across nations, we cannot yet say whether the factors that influence upward mobility are also similar cross-nationally. To address this question, I estimated Model 3 for each of the four populations separately. The population specific models are shown in Table 4. In the following paragraphs, I discuss both the results pertaining to each of the four populations and crossnational differences in the effect sizes of single indicators.

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here Table 4  
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Duration of labor force participation significantly decreases the rate of moving into better jobs for white and black Americans only. This result is just opposite to what was found for the rate of moving into any job--in that analysis (Table 2), the coefficients were significant for Norway and West Germany only. Taken together, these findings imply that transitions into any job are more equally distributed over

the entire work trajectory for Americans, while transitions into prestige higher jobs are more equally distributed over the entire career trajectory for West Germans and Norwegians.<sup>23</sup> Returning to the question whether mobility processes differ across nations, we find no significant difference across the four populations in the impact of time in the labor force on the rate of upward job shifts.

Labor force experience acquired before last exiting schooling matters for upward occupational mobility only in Norway. Here, workers with many job spells before last exiting schooling have a significantly higher probability experiencing upward career moves than those who do not, while workers who developed a strong attachment to one particular job before last exiting schooling have a significantly lower likelihood of upward job shifts. A crossnational comparison of effect sizes shows no significant differences in the duration of transition jobs. The coefficients for number of transition jobs, however, are significantly different for white Americans compared to Norwegians.

The importance of educational credentials and years of formal and vocational training on the rate of upward job shifts clearly varies with the nations studied. For white and black Americans, it is not educational degrees but years of schooling that significantly improve one's chances for upward mobility. For Norwegians and West Germany, educational credentials as well as years of schooling are helpful. Although effect sizes for years of schooling are not significantly different across nations, the importance of educational degrees for future job shifts is significantly higher in the two European nations than in the United States.

The occupational prestige of a person's job has very consistent effects on the rate of upward moves: the higher one's occupational prestige, the lower the likelihood of experiencing upward job moves. This is true for all four populations, and there are no significant between-nation differences in the size of the effect.

We now turn to the several indicators of macroeconomic conditions. An increase in gross national product accelerates the likelihood of moving upwards in all populations. There are, however, significant crossnational differences in the degree to which increases in GNP spur upward moves: the effect is significantly stronger for black Americans and West Germans than it is for white Americans and Norwegians. The impact of the unemployment rate on individual career trajectories was estimated only for black and white Americans. While a high unemployment rate decreases chances for upward moves in both populations, the effect is significantly stronger for blacks than for whites, showing that macroeconomic conditions can have dissimilar effects for subgroups of workers within the same nation. The importance of the size of the agricultural sector on peoples' careers differs widely across nations. It has a negative effect for Americans and Germans but a positive influence on upward mobility for Norwegians, and the effect sizes for Americans differ significantly from those for the Europeans. The positive Norwegian effect is explained by the decline of the agricultural sector in that country and the accompanying increase of jobs in the public sector--jobs that usually have higher occupational prestige. In the years under consideration, the transformation of the occupational structure was less dramatic in the United States and West Germany. In these nations, the impact of agricultural employment on upward career moves is negative simply because there are few higher status jobs into which farmers can move. Finally, we see in Table 4 that the percentage of foreign workers in the West German economy positively affects the likelihood of upward moves in that society. Because foreign workers in West Germany typically entered the workforce in jobs near the bottom of the occupational structure, their presence provided increased opportunities for West Germans to move up into higher status jobs.

#### **Summary: Career Mobility**

Overall, the findings reported above point to many population-specific differences in the factors that affect workers' prospects for upward career moves. The impact of education, occupational prestige, and macroeconomic conditions on the probability of obtaining a higher status job all vary as a function of the nation in which a person

works. Thus, we must conclude that while upward mobility rates are quite similar across populations, the processes that generate upward mobility are quite different. These results, like those regarding job mobility (Tables 1 and 2), suggest that simple pooling of national data sets in mobility research is not warranted unless nation-specific interaction terms are specified or models are estimated separately for each nation.

### Summary and Conclusion

Retrospective life event data provide the opportunity to move beyond mobility tables and to use models of time dependent transition rates. With time-dependent models it is possible to estimate the probability of changing jobs at any stage in an individual's worklife. Moreover, by distinguishing between two types of mobility--the process of moving into any job, whether upward, downward, or lateral, and the process of moving into better positions--it is possible to learn how job mobility and career mobility operate differently. Finally, by including both individual-level and macro-economic variables in the analyses, it is possible to determine how these two classes of factors interactively shape mobility regimes within a society, and to assess inter-nation differences in mobility rates and dynamics.

The research generated two main findings. The first addresses the question of how individual-level and contextual variables interactively determine occupational mobility regimes. Results showed that both sets of variables significantly shape job and career mobility processes. In general, economic conditions were found to be less influential in affecting job and career mobility processes than were individual-level variables--i.e., individual attributes acquired in specific institutional and organizational settings. It also was found, however, that economic conditions modify the impact of individual-level variables on the probability of changing jobs.

The second overall finding addresses the question of whether mobility rates and mobility processes are similar crossnationally. Results showed that mobility rates are similar across nations only when the analysis is restricted to transitions into higher prestige positions (career mobility). Mobility rates differ substantially across nations when all job transitions are included in the analysis (job mobility). Even after controlling for major influences on mobility processes, Americans had twice as many job transitions as did Norwegians and West Germans.

The processes that underlie occupational mobility regimes were found to be dissimilar crossnationally for both job mobility and career mobility. The roots of this phenomenon appear to lie in the way schooling and vocational training are organized. West Germany, for example, has an educational system that is, relative to those of the other two nations, much more standardized (Allmendinger, 1989a). Standardized systems inhibit downward occupational mobility because qualifications are not firm-specific, and therefore are relatively easily transferred to other employers. Unstandardized systems, such as in the United States, generate increased risk of downward mobility in the case of forced job transitions, since qualifications and seniority benefits tend to be firm specific. Thus, it is not surprising that West Germans experience significantly fewer job shifts than do workers in the United States--and that most of the transitions that are made by West German workers are to higher prestige jobs.

Overall, the research showed--both inter-nationally and intra-nationally--that there is no single factor that tilts people or nations towards similar mobility regimes. There are no inescapable economic demands. Rather, organizational, institutional, and economic conditions interact to affect the careers and lives of workers. These results raise serious questions about the functionalist argument that socio-economic developments necessarily lead to convergence in cultural patterns. To the contrary, we can agree with the conclusion of the Aix school that the "effets sociétales et culturelles" persist rather than disappear over time.



The present study is, however, only a modest step towards more inclusive understanding of how institutional factors shape worklife mobility processes. Foremost, we need to know more about specific organizational characteristics---such as internal versus external recruitment and promotion practices--that clearly are consequential for worklife mobility. Inter-population differences in the importance of time spent in the labor market, for example, probably cannot be explained merely by population-specific attributes. More likely, such differences derive from variations in labor market structures and from characteristics of the organizations to which the members of the four populations were exposed.

The above sentences are not a call for more and more variables to be incorporated into mobility models. Empirical analyses conducted without benefit of theoretical guidance surely would leave researchers lost in a myriad of potential variable linkages. Hence, an orienting theoretical position is paramount. It remains a task for future research to generate the empirical data and the conceptual models that will allow ever more informative analyses of the interdependencies among individuals, households, organizations, and societies. To the extent that progress is made on this task, there will indeed be an ongoing evolution of social mobility research.

## BIBLIOGRAPHY

- Allison, Paul D. 1984. *Event History Analysis: Regression for Longitudinal Event Data*. Beverly Hills: Sage.
- Allmendinger, Jutta. 1989a. "Educational Systems and Labor Market Outcomes." *European Sociological Review* 5: 231-251.
- 1989b. *Career Mobility Dynamics. A Comparative Analysis of the United States, Norway, and West Germany*. Schriftenreihe des Max-Planck-Instituts für Bildungsforschung, Studien und Berichte 49. Stuttgart: Klett-Cotta.
- Blum, Zahova, Nancy Karweit, and Aage B. Sørensen. 1969. *A Method for the Collection and Analysis of Retrospective Life Histories*. Bloomington: Johns Hopkins University.
- Coleman, Jim S., Zahove Blum, Aage B. Sørensen, and Peter H. Rossi. 1972. "White and Black Careers during the First Decade of Labor Force Experience. Part I: Occupational Status." *Social Science Research* 1: 243 - 304.
- Cox, David R. 1972. "Regression Models and Life Tables." *Journal of the Royal Statistical Society, Serie B* 34: 187-202.
- Erikson, Robert, John H. Goldthorpe, Lucienne Portocarero. 1982. "Social fluidity in industrial nations: England, France and Sweden." *British Journal of Sociology* 33: 1 - 34.
- and John H. Goldthorpe. 1985. *Commonality and Variation in Social Fluidity in Industrial Nations; Some Preliminary Results*. Universität Mannheim. CASMIN Project, Work. Pap. 4.1.
- and John H. Goldthorpe. 1986. *National variation in social fluidity*. Rome: Paper presented at the meeting Research on Comparative Social Stratification.

- Featherman, David L., Lawrence Jones, and Richard M. Hauser. 1975. "Assumptions of social mobility research in the US The case of occupational status." *Social Sciences Research* 4: 329 - 60.
- Grusky, David B. and Richard M. Hauser. 1984. "Comparative social mobility revisited: Models of convergence and divergence in 16 countries." *American Sociological Review* 49: 19 - 38.
- Hazelrigg, Lawrence E. and Maurice A. Garnier. 1976. "Occupational mobility in industrial societies: A comparative analysis of differential access to occupational ranks in seventeen countries." *American Sociological Review* 41: 498 - 511.
- Hope, Keith. 1984. "Comparative mobility: Can the structural model cope?" *Comparative Sociological Research* 7: 427 - 41.
- Kerr, Clark. 1983. *The Future of Industrial Societies*: Cambridge: Harvard University Press.
- König, Wolfgang and Walther Müller. 1986. "Educational systems and labour markets as determinants of worklife mobility in France and West Germany: A comparison of men's career mobility, 1965 - 1970." *European Sociological Review* 2: 73 - 96.
- Lenski, Gerhard. 1973. *Macht und Privileg: Eine Theorie der sozialen Schichtung*. Frankfurt: Suhrkamp.
- Lipset, Seymour M. and Hans L. Zetterberg. 1959. "Social mobility in industrial societies." In: *Social Mobility in Industrial Society*, edited by S. M. Lipset and R. Bendix. Berkeley: University of California Press.
- Lutz, Burkhard. 1976. "Bildungssystem und Beschäftigungsstruktur in Deutschland und Frankreich." Pp. 83 - 151 in *Publikationsreihe des Instituts für Sozialwissenschaftliche Forschung*, edited by H.G. Mendius et al., Frankfurt: Aspekte.

- Maurice, Marc and François Sellier. 1979. "A societal analysis of industrial relations: A comparison between France and West Germany." *British Journal of Industrial Relations* 17: 322 - 336.
- Mayer, Karl Ulrich und Erika Brückner. 1989. "Lebensverläufe und Wohlfahrtsentwicklung." In: *Materialien aus der Bildungsforschung Nr. 35*, Schriftenreihe des Max-Planck-Instituts für Bildungsforschung, Berlin.
- McClendon, M.J., 1980. "Occupational mobility and economic development: A cross-national analysis." *Sociological Focus* 13: 331 - 42.
- McRoberts, Hugh A. and Kevin Selbee. 1981. "Trends in occupational mobility in Canada and the United States: A comparison." *American Sociological Review* 46: 406 - 21.
- Müller, Walther, Wolfgang König, and Peter Lüttinger. 1988. *Education and Class Mobility*. Casmin Working Paper No. 14, 1988.
- Rogoff Ramsøy, Natalie. 1984. *Codebook and documentation of the Norwegian life history study*. (M. Visher, transl.).
- Sengenberger, Werner and Christoph Köhler. 1983. "Beschäftigungselastizität und Arbeitsmarktstruktur. Ein Vergleich interner Arbeitsmärkte in der deutschen und amerikanischen Automobilindustrie. In: *Beschäftigungssystem im gesellschaftlichen Wandel*, edited by M. Haller and W. Müller. Frankfurt and New York: Campus.
- Sørensen, Aage B. 1977. "The Structure of inequality and process of attainment." *American Sociological Review* 42: 965 - 978.
- 1979. "A model and a metric for the process of status attainment." *American Journal of Sociology* 85: 361 - 384.
- 1983. "Processes of allocation to open and closed positions in social structure." *Zeitschrift für Soziologie* 12: 203 - 224.

- 1987. "Theory and Models of Mobility." *Institut für Höhere Studien Journal* 3: 83 - 98.
- , Jutta Allmendinger, and Annemette Sørensen A. 1986. *Intergenerational Mobility as a Life Course Process*. Paper presented at the meeting of the American Sociological Association, New York.
- Treiman, Donald J. 1975. "Problems of Concept and Measurement in the Comparative Study of Occupational Mobility." *Social Science Research* 4: 183 - 230.
- Tuma, Nancy B. and Michael T. Hannan. 1984. *Social Dynamics. Models and Methods*. Orlando: Academic Press.
- Tyree, Andrea, Moshe Semyonov, and Robert Hodge. 1979. "Gaps and Glissandos: Inequality, Economic Development, and Social Mobility in 24 Countries." *American Sociological Review* 44: 410 - 424.
- White, Harrison C. 1979. *Chains of opportunity. System models of mobility in organizations*. Cambridge: Harvard University Press.

## Notes

1. This is the revised version (Featherman, Jones & Hauser, 1975) of the convergence thesis, originally formulated by Lipset and Zetterberg (1959).
2. This interpretation is guided by the results of early cross-national studies which focused on organizations and labor markets within organizations. Examples are the work of Sengenberger and Köhler (1983) on the personnel strategies of American and German automobile firms in times of changing labor market conditions; the work of Lutz (1976), who analyzed organizational differences in French and German firms; and the research of the "Aix school," which originally also focused on Franco-German differences (Maurice & Sellier, 1979).
3. Of course, longitudinal data should be analyzed with indicators that are also time dependent. In regard to economic conditions (for example, unemployment rate and gross national product), this seems trivial: census data are readily available and can be linked to survey data. Other variables, however, are still conceptualized as static variables. The prestige level of a specific occupation, for example, is obtained by using a scale which is entirely independent of time and space--as if the prestige associated with a specific occupation does not change with the transformation of the occupational structure.
4. The limited availability of such data presently restricts researchers from studying intragenerational mobility patterns. Longitudinal data that cover more than one generation are not yet available.
5. This, in short, is Treiman's (1975) "structural theory of prestige determination."
6. Usually the researcher classifies, in the form of mobility tables, the occupational position of individuals at two points in time. In inter-generational studies, these two points in time span one generation. The resulting intergenerational mobility table is then decomposed into the mobility due to change in marginal distribution (structural mobility) and the remaining quantity ("exchange," "pure," or "individual" mobility). Hence, while what accounts for structural mobility is specified, it remains conceptually unclear how exchange mobility is generated--even though this is the quantity that is compared, and found to be similar, across nations.
7. See Grusky and Hauser (1984) for an explicit test of effects of macro-economic variables on mobility rates, and Müller, König and Lüttinger (1988) for an attempt to elucidate international peculiarities by examining differences in educational systems.
8. The Social Accounts Program was initiated by James S. Coleman and Peter H. Rossi.

9. This truncation was necessary only for (a) descriptive analyses and (b) the creation of the macro-economic indices that indicate the average economic conditions during the time a job was held. It must be noted, however, that differences in respondent's age at the time of the interview may have implications beyond those due to different observation periods.
10. Note that the time spent in jobs held prior to "career start" (i.e., before last exiting schooling) is reflected in separate indicators (see above).
11. In Norway and West Germany the intercorrelation between gross national product and unemployment was too high to permit to be considered both variables simultaneously.
12. In West Germany, active recruitment policies attracted workers from Turkey, Spain, and Italy. Around 1970, two million foreign workers were employed, a number amounting to 16 percent of all workers in the manufacturing sector. Because these workers were mainly assigned to unskilled jobs at the lowest levels of industry, they enhanced the prospects of German workers to gain higher status positions. Seen as a macroeconomic variable, employment of foreign workers thus reflects prosperous economic times.
13. I consider all reported job spells with more than 35 hours/week because particularly short job spells may indicate a changing occupational structure or swings in the labor market. This contrasts to much prior research, in which job spells that last less than six months are excluded.
14. The interpretation of the estimated parameters of the independent covariates is as usual: a positive parameter indicates that the independent variable increases the rate--in other words, that it increases the probability of changing a job at any point of time. A negative parameter indicates that the covariate reduces the likelihood of changing jobs.
15. To compare two models, one calculates twice the positive difference between their log-likelihoods. Under the null hypotheses of no difference, this statistic has a chi-square distribution (Allison, 1984:20). The associated degrees of freedom are the numbers of constraints that distinguish the two models, which is the difference between the number of variables in the two models.
16. Upward occupational mobility is defined as a transition between two jobs in which the destination job has a prestige score on the Social Attainment Scale that is at least ten percent higher than the SAS score of the origin job. Any job transition that does not result in a 10 percent increase in SAS is excluded. The choice of a ten percent difference is arbitrary, dictated by the wish to treat minor improvements in status as "noise."

17. All macroeconomic indicators are introduced in these models as time constant covariates. This procedure is not optimal. What one would ideally like to know is how the hazard of experiencing a job shift is affected by macroeconomic conditions at any given point in time. This could be achieved by introducing the macroeconomic variables as time-varying explanatory variables. The computer algorithms for constructing and maximizing such likelihood functions, however, are very complex and they enormously increase computing time (by a factor of 15 per time-dependent covariate). A precise estimation of the impact of the time series variables on the rate of job shifts would furthermore require collecting these data on a monthly rather than yearly basis because the time dependent covariates should be measured with the same frequency with which the occurrence of job changes is reported. Computing costs and manpower precluded proceeding with this approach.

18. This reasoning is based on the results of a model which does not include macrostructural variables and incorporates only the nation-dummies and the microstructural variables. In this model (not shown here but reported by Allmendinger, 1989b), the German coefficient is highly significant and negative. The coefficients for white and black Americans also are highly significant and negative. The introduction of macrostructural variables then (a) decreases the magnitude of all coefficients of the values reported in Table 1, Model 4, and (b) eliminates Norwegian-German differences.

19. These models include the following macro-economic variables: for both American samples "unemployment," "GNP," and "agriculture"; for Norway "GNP" and "agriculture"; and for West Germany "GNP," "agriculture," and "percent foreign workers." The full set of models for each population is given in Allmendinger, 1989:132-137.

20. Recall that the indicators percentage unemployed and percentage foreign workers in the economy were not estimated for all populations.

21. The German ratio is close to that reported by König and Müller (1986). On the basis of a supplement of the Microcensus 1971, they found 2.9 upward moves for every downward move in Germany.

22. See Sørensen, A. B. (1984, 1987:27).

23. The West German and Norwegian findings further support the vacancy competition model. Sørensen (1984, 1987) argues that educational resources are matched to appropriate jobs only when there are sufficient numbers of open positions. Open positions are created by other people leaving their jobs. Waiting queues of workers anticipating a vacant, status higher position are established and the likelihood of each worker getting a better job increases the longer the worker waits, i.e. the longer the worker stays in the labor force. According to this model, we therefore expect a positive effect of time spent in the labor force on the match between workers' (educational) resources and their occupational (prestige) outcomes. In our models, this should show in positive effect of labor force duration on the rate of upward



shifts as long as occupational outcomes are not controlled. Once occupational outcomes are controlled--as is the case when occupational prestige level is included in the models--time in the labor force should not have any significant effects.

Figure 1  
Summary of Variables

Educational and vocational training	(a) Years of formal and vocational training (b) Level of formal educational attainment: Dummy variable whether college, gymnas, or gymnasium degree has been attained
Work experience before last exiting schooling	(a) Number of all jobs in the transition stage (b) Length of jobs in the transition stage: Dummy variable whether at least one of these jobs was held for more than one year
Labor-force experience	Months spent in all jobs from the date of entry into the labor market until the beginning month of each new job spell
Occupational prestige	Nation- and time-dependent prestige scores, calculated following the Status Attainment Scale (A. B. Sørensen, 1977, 1979)
Macroeconomic indicators	(a) Change in GNP (b) Percentage of males in agriculture (c) National unemployment rate (d) Percentage of foreign workers in the German economy

Figure 2  
Average Number of Job Spells  
Cohort 1930

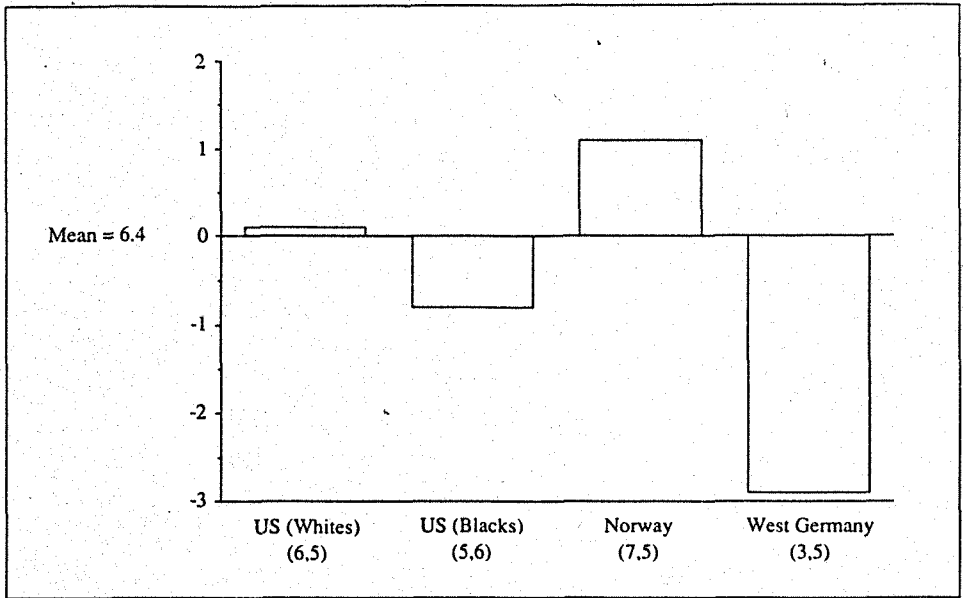


Table 1  
 Partial Likelihood Estimates of Models for Transition Rates to Any Job  
 All Populations, Cohort 1930

Estimates for model	1	2	3	4
-Log likelihood	100,997	100,746	100,546	100,405
Chi-square	112	461	855	1084
df	1	6	8	11
Labor-force experience	-.0014** (.0001)	-.0013** (.0001)	-.0004** (.0001)	.0005 (.0004)
Number of transition jobs		.0271** (.0048)	.0352** (.0049)	.0302** (.0056)
Duration of transition jobs		-.0654** (.0277)	-.1519** (.0281)	-.1120** (.0305)
Years of schooling		-.0529** (.0057)	-.0127* (.0062)	.0051 (.0069)
College/gymnasium		.3253** (.0426)	.2169** (.0432)	.1596** (.0446)
Prestige (SAS)		-.1541** (.0143)	-.1748** (.0144)	-.1595** (.0145)
Change in GNP			.0482** (.0052)	.0214** (.0056)
Percentage of males in agriculture			.0261** (.0014)	.0511** (.0074)
United States: Whites				.6304** (.1116)
United States: Blacks				.3929** (.1167)
West Germany				-.1033 (.1076)

\*  $p > .05$ .

\*\*  $p > .01$ .

Standard errors in parentheses.

Number of episodes: 13,610.

Percentage of censored observations: 14.86.

Note: Data basis is the pooled data file. German data have been truncated at 1970.

Table 2  
Nation-Specific Partial Likelihood Estimates of Models for Transition Rates to  
Any Job, Cohort 1930

	Labor-force experience	Transition jobs		Education		Prestige SAS	Macro-economic condition				N
		No.	Duration	Level	Years		GNP	Unem- ployment	Agri- culture	Foreign workers	
Whites	-.002***ab (.001)	.014 <sup>a</sup> (.012)	-.141** <sup>a</sup> (.072)	.129 <sup>a</sup> (.099)	.036* <sup>a</sup> (.013)	-.264** (.034)	.025*** <sup>a</sup> (.009)	-.013 (.031)	.029 <sup>a</sup> (.018)	- (-)	2184
Blacks	-.001 <sup>ab</sup> (.001)	.071** (.023)	-.120 <sup>a</sup> (.098)	-.162 <sup>a</sup> (.161)	.038*** <sup>a</sup> (.016)	-.134*** <sup>a</sup> (.056)	.030* <sup>a</sup> (.015)	-.113** (.040)	.023 <sup>a</sup> (.023)	- (-)	1553
Norway	-.003*** (.000)	.006 <sup>a</sup> (.007)	-.042 <sup>a</sup> (.033)	.275** <sup>b</sup> (.058)	-.020* <sup>b</sup> (.009)	-.111*** <sup>a</sup> (.010)	.031*** <sup>a</sup> (.008)	- (-)	.123** <sup>b</sup> (.010)	- (-)	8682
West Germany	-.001** <sup>b</sup> (.000)	- (-)	- (-)	.679** <sup>b</sup> (.196)	-.034 <sup>b</sup> (.023)	-.142*** <sup>a</sup> (.054)	.007 <sup>a</sup> (.017)	- (-)	.084*** <sup>ab</sup> (.035)	.083** (.034)	1225

- Variable not estimated for this population.

\*  $p > .05$ .

\*\*  $p > .01$ .

Variables that do not share a superscript are significantly different from one another ( $p < .05$ ).

Standard errors in parentheses.

Figure 3  
Average Number of Upward Job Spells in the Career History  
Cohort 1930

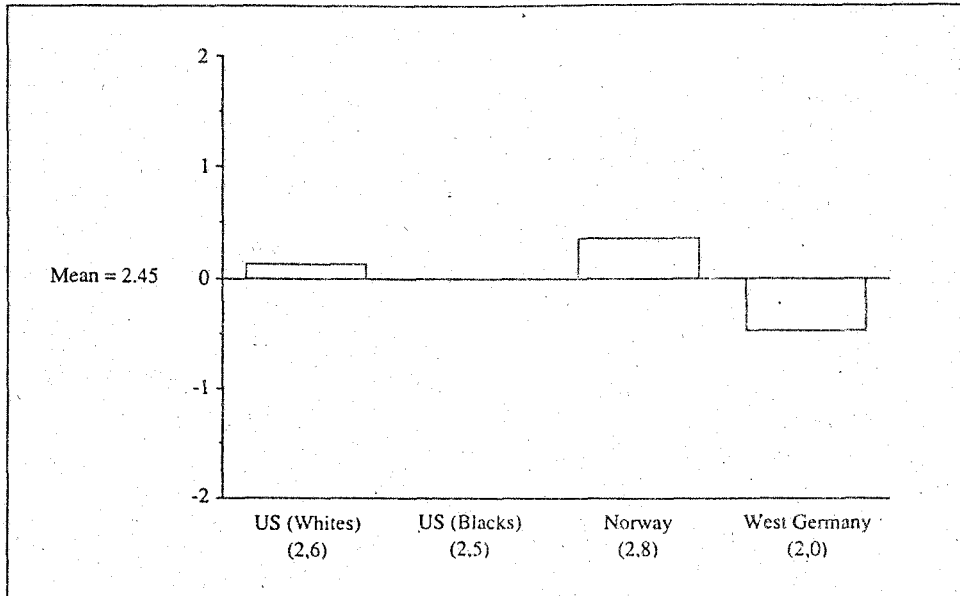


Table 3  
 Partial Likelihood Estimates of Models for Transition Rates to Jobs  
 Which Lead to a Gain in Occupational Prestige  
 All Populations, Cohort 1930

Estimates for model	1	2	3	4
-Log likelihood	32,348	17,194	17,099	17,078
Chi-square	483	1,041	1,237	1,263
df	1	6	8	11
Labor-force experience	-.0105** (.0005)	-.0052** (.0006)	-.0041** (.0006)	.0045** (.0009)
Number of transition jobs		.0148 (.0119)	.0231 (.0121)	.0071 (.0137)
Duration of transition jobs		-.0232 (.0632)	-.1785** (.0638)	-.1783** (.0699)
Years of schooling		.0717** (.0122)	-.1449** (.0137)	.1518** (.0151)
College/gymnasium		.9201** (.0854)	.6887** (.0879)	.6441** (.0898)
Prestige (SAS)		-1.2136** (.0457)	-1.2441** (.0464)	-1.2378** (.0468)
Change in GNP			.1237** (.0149)	.0910** (.0167)
Percentage of males in agriculture			.0381** (.0031)	.0339* (.0167)
United States: Whites				.1826 (.2566)
United States: Blacks				-.0831 (.2658)
West Germany				-.4077 (.2114)

\*  $p > .05$ .

\*\*  $p > .01$ .

Standard errors in parentheses.

Number of episodes: 4,298.

Percentage of censored observations: 47.07.

Note: Data basis is the pooled data file. German data have been truncated at 1970.

Table 4  
Nation-Specific Partial Likelihood Estimates of Models Estimating the Rates of  
Higher Prestige Jobs, Cohort 1930

	Labor-force experience	Transition jobs		Education		Prestige SAS	GNP	Macro-economic condition			N
		No.	Duration	Level	Years			Unem- ployment	Agri- culture	Foreign workers	
Whites	-.006*** (.002)	-.050 <sup>a</sup> (.028)	.215 <sup>a</sup> (.181)	.186 <sup>a</sup> (.227)	.196*** (.035)	-1.334*** (.117)	.107*** (.029)	-.953** (.099)	-.060** (.039)	- (-)	721
Blacks	-.005*** (.002)	-.017 <sup>ab</sup> (.056)	-.263 <sup>a</sup> (.219)	.290 <sup>a</sup> (.290)	.170*** (.033)	-1.394*** (.172)	.202** (.033)	-1.336** (.125)	-.082** (.040)	- (-)	563
Norway	-.003 <sup>a</sup> (.001)	.037 <sup>b</sup> (.017)	-.134*** (.056)	.735*** (.118)	.178*** (.023)	-1.068** (.056)	.085*** (.023)	- (-)	.079** (.023)	- (-)	2461
West Germany	-.003 <sup>a</sup> (.003)	- (-)	- (-)	1.127*** (.366)	.117*** (.045)	-1.319*** (.153)	.373** (.041)	- (-)	-.360** (.089)	.284* (.141)	553

- Variable not estimated for this population.

\* p > .05.

\*\* p > .01.

Variables that do not share a superscript are significantly different from one another (p < .05).

Standard errors in parentheses.