Why stratification questions precede mobility questions

Among the early members of the International Sociological Association's Research Committee 28 on Social Stratification and Mobility, Van Heek (1945: 35-36) most succinctly stated the sequence in which questions in this field are to be answered. In a monograph on the town of Enschede, the Netherlands, Van Heek listed four consecutive questions:

1) With which yardsticks are the inhabitants of a society to be divided into strata?
2) What does the distribution of a society's members over these strata look like?
3) To what extent do persons move between strata?
4) Which factors influence this mobility?

Glass's (1954: 3-10) set of questions on social mobility in Britain is decidedly less lucid. In 1958, when reviewing Dutch results obtained so far, Van Heek & Kuiper stated that the consequences of mobility, for both group solidarity and individual adjustment, had remained unexplored.

Questions sometimes presuppose answers to other questions. In Van Heek's sequence, to establish causes (and effects) of mobility, movements must already have been established. To determine whether persons moved into their present stratum, one must already know that stratum. And it is impossible to assign persons to strata without first having delimited these strata. As mobility is movement between strata, mobility questions have to build on answers to stratification questions. Thus one reason why RC28 was named "stratification and
mobility" and not "mobility and stratification".
Even though Van Heek's sequence is 40 years old, it is useful for stock taking. Did different generations of RC28 give diverging answers to its first question? Did later ones follow it better than earlier ones? Have definitive answers now been given to its last question? Are there difficulties in answering any of its questions? With these queries, this paper's next paragraph takes stock of three RC28 generations.
This paper's central paragraph sets out lines for future research by correcting and extending Van Heek's sequence. Given difficulties with some of its questions, how should these questions be improved? How to press on after its last question? Which questions should be added to it now? The argument holds that mobility questions are to be generalized into openness questions. There should also be a return to stratification questions, especially on inequalities and cumulative effects. It is desirable to return to stratification questions on account of the second reason that RC28 was named "stratification and mobility". Behind that name lurks the notion that mobility inhibits stratification. This idea has not been implemented, does not tell the whole story, and is actually misleading.
The other main paragraph of this paper consists of analytical exercises on Dutch data sets. It addresses questions figuring in Van Heek's improved and elongated sequence. The final paragraph explores the relationship between theoretical sociology and the field of stratification and mobility, gauging the self-sufficiency of the latter area.

**Taking stock: the field of mobility without stratification**

*Prestige or class? Why not also income?*

Van Heek's answer to his first question was a scale for occupational prestige. Such a scale also figured in Blau & Duncan (1967), the exemplar of the second generation. Whereas Van Heek improvised when stumbling upon occupational titles absent from prestige scales, Blau & Duncan used an index for all occupations. Influential studies of the third generation grouped persons into classes after the market and employment situation of their occupation (Goldthorpe, 1980).
The issue of class versus prestige is to be defused by the argument that more than 67 varieties of stratification and mobility may exist. Most (production and consumption) goods are scarce, and stratification is about inequality in any scarce good's distribution. There is certainly no necessity to restrict questions to persons with a job. Given the high unemployment in various western industrial nations in the eighties, (un-)employment mobility is a prime research topic. If a free choice could be made about the kind of mobility to be studied, neither occupational prestige nor class mobility would be chosen. If orthodox surveys would yield reliable indicators of a person's present income and the past income of that person's parents, income mobility might be the most frequently addressed question. The distribution of many a consumption good is derived from that of income. In addition, one of the marginals of an income mobility table pertains to the income distribution of a society at a certain point in time. Analysis of income mobility tables provides answers to questions about income mobility and inequality. Economists have studied inequality in an income distribution for quite some time. Indeed, Atkinson, Bourguignon & Morrison (1988) are implementing a project on comparative earnings mobility. An inventory of answers to Van Heek's first question shows various valuable ones. It suggests that the first question is not the yardstick by which individuals are to be divided into strata. It is whether instruments exist, applicable in studies with limited time and money, for measuring the strata persons belong to at various dates in their lives.

Neglecting questions about unequal distributions

Of all features of an income distribution economists single out that of inequality (Pen, 1971). In RC28 a distribution of individuals after occupational prestige is hardly ever characterized this way. Also, whether the structure of occupations polarized, upgraded or downgraded in the 20th century (Form 1987), has until now remained a stray question. In the literature distributions are left to speak for themselves. So much for the answers to the second question of Van Heek's sequence.
Of course, some members of RC28 showed a concern with differences between the marginals of a mobility table. Yet others treated these differences as non-problems. This situation can be traced back to a criticism of one interpretation of marginal differences (Duncan, 1966).

This interpretation holds that differences between the marginals of a father-son mobility table indicate changes in occupational structures. According to Duncan, the marginal of that table for son's present occupation pertains to an historical distribution. That for their father's occupation does not: it refers to various points in time, and leaves out men without sons, while those with sons are represented according to the number of sons. Marginal differences do not stand for changes in occupational structures. Thus Duncan's criticism. Exit questions about marginal differences.

Sociologists address questions about father-son and career mobility. Does Duncan's criticism also apply to career mobility? As McFarland (1970) argued and Duncan acknowledged (Duncan, Featherman & Duncan, 1972: 209), it does not. Since father-to-son mobility still attracts more attention than career mobility, it remains necessary to repeat this point.

Duncan himself (1966: 62-63) provided an alternative and more fruitful interpretation of marginal differences. It now may be phrased as follows. Cells of a mobility table inform about outcomes of competition between persons of different origins to achieve or avoid various jobs (Goldthorpe, 1980: 77). Differences between marginals tell about the competitive situation itself. Sometimes more prizes are distributed than the number of old prize-winners participating, sometimes less. In the first case, the "competitive balance" (Ultee & Luijckx 1986) or "opportunity structure" is favorable, in the second unfavorable. If employers take the social origin of prospective employees into account, they rank them after origin. The resulting distribution is the formerly misinterpreted marginal of a mobility table.

RC28's third generation paid less attention to loglinear modelling of marginal differences than of cell frequencies. While Hauser et al. (1975) argued in favour of explaining marginal differences, and Hauser (1978) presented parameters for cell frequencies, Hauser & Grusky (1988) present models for
marginal differences. Expanding upon Hope (1981), Ultee & Luijkx (1986) introduce "polarization and compression" models for marginal differences. When applied to the marginals of an intragenerational mobility table, parameters of these models indicate whether inequality is becoming larger or smaller. These models thus answer inequality questions of economists. Technical studies have not as yet addressed the issue of whether parameters for marginal differences from loglinear models (and for Hope's halfway model equalizing marginals) are related to well-known measures for inequality. Only after that issue has been settled, will it be possible to address Van Heek's second question at an adequate level.

How to characterize mobility patterns

In the third generation it became clear how Van Heek's third question is to be answered. The first generation answered the question of how much mobility there is in a society by providing the percentage of its population that was mobile. It then appeared that percentages do not tell the right story about a society's openness. They are polluted by effects of differences between the marginals of a mobility table. In the second generation standardized regression coefficients eliminated effects of marginal differences. This was fully appreciated in the third generation, when parameters of loglinear models for cell frequencies were also found to oust them (Hauser, 1978: 923). Loglinear parameters were said to pertain to "relative mobility chances" or "social fluidity" (Goldthorpe, 1980:57).

Still no answers to questions about causes of mobility

Van Heek's fourth question was about causes of mobility. From the outset it was clear that no test was possible of the thesis that individuals from a society's lower strata show more upward mobility if they attend school during a period their government offers them more generous scholarships. In the fifties, the condition that is stipulated by this hypothesis did not differ between older and younger cohorts in the Netherlands. This hypothesis therefore remained to be tested by comparing Dutch data with those of countries differing in generosity of
scholarships to students from the lower strata. RC28 had been founded for reasons of this type.

RC28's first generation was enthusiastic about comparative research. Glass's monograph on mobility in Britain from 1954 was followed in 1956 by Lipset & Zetterberg's comparison of 10 industrial countries. The second generation, after a much longer period, yielded a comparison of path models for the stratification process in a similar number of industrial countries (Treiman & Yip, 1989). Müller stated of the third generation: "... a more skeptical view of the feasibility and meaningfulness of comparisons of stratification and mobility patterns among large numbers of societies has prevailed" (Rogoff Ramsoy & Müller, 1983: 25). This skepticism had its price. Erikson & Goldthorpe (1987) compared industrial countries only if they could obtain strongly similar recodings of occupational titles into classes. Since the number of countries dwindled to nine, few degrees of freedom are left for fitting models accounting for the mobility patterns of the various countries. Is there a way out of this dilemma of choosing between a historically informed comparison of strongly similar data from a few countries, and a strictly quantitative comparison of more countries whose data are less alike?

Bringing stratification back into mobility research

RC28's name suggests that mobility inhibits stratification. After studying the causes of mobility, it therefore is fitting to return to stratification questions. One way of doing so is by asking whether differences between strata are smaller if more mobility occurs between them. Lipset & Zetterberg (1956) took this road when comparing data on origin, destination and voting in three industrial nations. However, other stratification questions have a higher logical priority. Also, Lipset & Zetterberg's question needs rephrasing in the light of later developments. That question is presented after four ways - ranging from novel to standard - of reverting to stratification questions. One question is the extent inequality is lessened by mobility. Another one is how strongly reiterated mobility is accompanied by cumulative (dis)ad-
vantages. A third question is to what extent heterogamy lessens inequality. A fourth one is the degree stratum differences are larger for persons who are stable in the upper and lower strata than for persons moving into them.

Computing inequality measures for the distribution of individual scores summed over time

One answer to Van Heek's second question holds that in a particular society the distribution of individuals over its strata scores x on some measure for inequality. Pressing forward, it may be asked how much less inequality is displayed by a distribution obtained by adding the stratum scores of an individual at various points in time than by the already characterized distribution for one single moment\(^2\). The notion that mobility might inhibit stratification has not as yet been implemented in this way.

This question may seem trivial. Yet the idea that mobility lessens inequality is not a tautology. It neglects the distinction between mobility rates, social fluidity and opportunity structure: if everyone's income goes up, and higher incomes go up faster, inequality increases. The relationship between loglinear parameters for social fluidity and for marginal differences is empirical. So is that between fluidity and coefficients for overall inequality (inequality in the distribution of added individual scores). Given the distribution of individual scores at one point in time, the relationship between fluidity and total inequality may indeed be a logical one. It is not well-known and it is underused\(^3\). This first new question about stratification thus provides a link with longstanding questions of economists on income inequality, especially those on lifetime income. Answers yield corrections of familiar estimates of inequalities obtained from data pertaining to one point in time. How much less inequality is there in the distribution of scarce goods over a society's members after taking mobility into account?
Cumulative (dis)advantages in the mobility process

When determined by adding scores over two points in time, the extent to which mobility reduces inequality may be overstated. Mobility between two dates does not preclude mobility over more points in time from displaying cumulative outcomes and thus strengthening stratification. This potential deception gives rise to a second novel question on the extent to which mobility inhibits stratification.

If social fluidity is not complete, a person’s stratum at $t_1$ influences this person’s stratum at $t_2$, and a person’s stratum at $t_2$ that person’s stratum at $t_3$. On top of the latter effect, the stratum of a person at $t_3$ may be influenced by that person’s stratum at $t_1$. If multiple effects occur, mobility processes make for cumulative (dis)advantages. Consequences of a low (high) origin reassert themselves. Does reiterated mobility display cumulation?

An affirmative answer to that question has unwittingly been given by path models for the stratification process. In Blau & Duncan’s (1967: 170) model for the USA one path goes from father’s occupation to son’s first occupation, another from father’s occupation to son’s present occupation, while there is also a path from son’s first occupation to son’s present occupation. According to its authors, this model tells about achievement and universalism. It tells another story too.

A model for the Netherlands showed no path from father’s job to son’s present one (Flap & N.D. de Graaf, 1986: 147). Are accumulations absent form this country’s stratification process? No. The same model shows that father’s education has a direct influence on son’s education and present occupation. Also, son’s education directly affects son’s first and present occupation. Multiple father effects are present.

Following Sorensen (1975), it is wrong to compare coefficients for paths going out from the same variable in standard models of the stratification process. Coefficients just do not pertain to time intervals that are equal for all sons. For cumulative effects of education, it is more fitting to study direct effects of education on a person’s first job after leaving school, job five years later, job after 10 years, etc. Is there a direct
effect of a person's education on that person's job so many years after completing education, and does that effect decrease as the number of years since completing education increases? A pertinent analysis is Ultee, Dessens & Jansen (1988a). It answers the question whether someone's (un)employment at the end of a three-month period is influenced by this person's (un)employment at the beginning of that period, and by this person's (un)employment at the start of the previous one. The authors do so by multiplying two adjacent three-month mobility matrices under the assumption of independence, and comparing the predicted six-month matrix with the actual one.

**Mobility, openness and heterogamy**

A third new question regards mobility as one of several ways of constraining stratification. Take the case of father-son mobility. A society's strata are open if mobility takes place. Now men do not simply have sons. In order for births to take place male-female couples must have been formed first. A society is also open if spouses come from different strata. The notion that mobility dampens stratification does not tell it all: heterogamy does so too. Or: just as competition in the labour market may have an unequal outcome, so may competition in the marriage market.

This suggests the question of how much mobility and heterogamy there is in a society. If father-son mobility is absent, inequality is "reproduced" from generation to generation. If homogamy prevails, it is "reconstituted" within generations. Questions on "reproduction" of inequality are to be amalgamated with those on its "reconstitution". If a country displays more mobility than another country, does it have more heterogamy too? Does mobility within a society equal heterogamy, or is it higher (lower) than heterogamy?

By way of questions about heterogamy and mobility, a dilemma of the third generation may be avoided. It is that of choosing between a small number of countries for which similar data are available and a larger number of countries for which dissimilar data exist. It is, of course, tempting to opt for the more similar data. However, in that case, as the number of alternative explanations of one and the same phenomenon increases,
the degrees of freedom decrease. In a similar situation, Campbell (1975) pointed out that if hypotheses do not explain just one but several phenomena, degrees of freedom increase anew. In this way tests of alternative explanations again become possible. If hypotheses predict numerous phenomena, predictions need not be identical: some consequences may be stronger than others. Mobility and heterogamy measure up to Campbell's proposal for increasing the degrees of freedom. By joining questions on these phenomena into an overarching question on openness, even with a small number of countries, the dilemma of the third generation may be avoided. Ultee & Luijkx (1989) show for 23 industrial nations that as class fluidity increases relative chances of educational heterogamy rises too, and that within each country fluidity is higher than heterogamy.

Additional questions may be asked about the extent heterogamy diminishes stratification. One question is similar to that about the distribution of individual scores added over time: add the scores of persons forming one couple, compute the inequality in that distribution, and ask how much lower it is than that in the distribution of individual scores. This sum is determined when economists compute income of families without working children. These two questions may be combined: add individual scores over time and couples. Another additional question is whether there are multiple spouse effects. Persons might marry one another because they have the same education, and spouse's education might directly influence the other's occupation. Ultee, Dessens & Jansen (1988b) show multiple spouse effects on unemployment. Campbell's proposal may be implemented in two ways that do not involve phenomena other than mobility. If more than two strata are distinguished, one may improve upon hypotheses about effects of country properties for one single fluidity parameter for the complete mobility table, by decomposing the overall mobility table in all possible adjacent two-by-two tables and specifying separate hypotheses about social fluidity in each of these tables (Grusky & Hauser, 1984). It is also possible to test hypotheses holding that effects of country characteristics on fluidity are stronger for certain than for other persons (say,
younger versus older persons). Here the models of Mason, Wong & Entwistle (1983) are applicable (cf. DiPrete and Grusky, 1988). This course exploits the fact that hypotheses are multilevel statements: their units are not only countries, but also individuals.

**Micro-effects and Sobel's diagonal models**

The imagery of stratification is rich. It suggests that the distribution of individuals over a society's strata at one point in time is quite unequal. It hints that stratification advances if mobility and heterogamy decrease. And it evokes the effects of belonging to some stratum: a society is more strongly stratified if the life chances of strata differ widely in several respects. A fourth question following on Van Heek's sequence is the extent that, for persons who are stable in the higher and lower strata, life chances differ more than for persons climbing into the upper strata and persons falling to the lower ones. A similar question arises about heterogamy. They may be combined into one question on the effects of stratum of person, spouse and father.

How are these longstanding questions to be answered? Sobel (1981) showed that older techniques do not fit the substance of questions about effects of characteristics of persons, spouse and father, whereas diagonal models do. Sobel argues that diagonal models are applicable to acculturation processes. If strata have different values, the question arises of what happens to the values of mobile persons. According to one hypothesis mobiles will discard the values of the stratum they belonged to and adopt the values of their destination stratum. For mobile persons, the values of their destination are those of persons who are stable in that stratum. The values of the stratum a mobile person belonged to are those of persons who are stable in the origin stratum of mobile persons. Acculturation will not be immediate: the values of mobiles will be somewhere between those of their origin and destination. A technique squaring with these substantive hypotheses takes stable persons as references and estimates where exactly between these stables specific mobiles are located. Diagonal models do just that.
Diagonal models are appropriate too when persons follow their interests. Voting may have more to do with interests than values. Now persons who are stationary in a stratum have a better knowledge of their interests and thus act more strongly in accordance with them. Mobile persons, at one time belonging to a stratum different from their present one, know their current interests less fully and thus act less strongly in accordance with them. They come to do so gradually, after learning from stable persons what is now in their interests. Diagonal models estimate the extent to which mobile persons act according to their interests. Diagonal models are also applicable to "hard" consequences of background characteristics. A person's health is affected by involuntary and unavoidable exposure to toxicants. Low prestige jobs may involve more such exposure. Persons stable in a low prestige job for a long time have been exposed, while those stable in a high prestige job have not been exposed. The health of mobile persons will be somewhere between that of those stable in their origin and that of those stable in their destination. This argument applies to intragenerational mobility, intergenerational mobility and heterogamy. It holds if toxicants have delayed, irreversible, or carry-over effects. Diagonal models apply to data on health and persons', spouse's and father's stratum.

**Macro-effects of total mobility and opportunity structure**

Van Heek distinguished between consequences of mobility on individual adjustment and group solidarity. Goldthorpe (1980: 18-20) connected prestige mobility with individual strains, and class mobility with class formation. However, individual effects of mobility (for instance, on mental and physical health) and social consequences of mobility (say, electoral outcome) are not mutually exclusive. Past and present stratum affect individual voting behavior, which is then transformed into an electoral outcome (a macro-effect). The consequences of past and present stratum on the health of individuals in the end imply diseases disproportionately striking certain strata (another macro-effect).
Macro-consequences of mobility on, say, electoral outcomes depend on the individual relationship between mobility and voting and the pertinent aspect of a country's mobility pattern. Lipset & Zetterberg asked if mobility shifts election results to the right. Nowadays total mobility, social fluidity and competitive balance are distinguished. How is Lipset & Zetterberg's question to be restated?

N.D. de Graaf & Ultée (1989) start from two hypotheses on individual consequences of past and present stratum on voting behavior. According to one, economic interests of an individual are dominant. According to another, status is the main motive. Both hypotheses allow consequences of belonging to another stratum at an earlier point in time. While these effects are the same for upwardly mobiles, they differ for downwardly mobiles. If voting is a matter of economic interests, downwardly mobiles soon act according to their new interests. If status is dominant, downwardly mobiles are reluctant to admit sliding down the social scale, and in the meantime hang on to their old voting behavior.

Moving on from the micro- to the macro-level, N.D. de Graaf & Ultée show with numerical examples that if economic interests are dominant, the percentage favouring a party depends on a country's opportunity structure. If status motives prevail, total mobility is operative. The last new question for Van Heek's sequence is whether total mobility or opportunity structure influences electoral outcomes.

**An improved and extended sequence**

This paragraph's arguments for improving and extending Van Heek's sequence of stratification and mobility questions, after some rearranging, may now be summed up in the following new sequence:

1. In studies with limited time and money, with which yardsticks are the inhabitants of a society to be divided into strata?
2. How much inequality is displayed by the distribution of its members over these strata at one point in time?
3. To what extent do persons move between and marry across strata?
4. Which factors influence this mobility and this heterogamy?
5. How much more (or less) inequality is displayed by the distribution of its members over these strata at one point in time than by the distribution obtained by adding stratum scores for individuals over time and couples?
6. Does a person’s first stratum have cumulative consequences on this person’s later strata? Are there multiple effects of spouse’s stratum?
7. To what extent are a person’s life chances influenced by this person’s present stratum, and by the stratum of this person’s father and spouse?
8. Does a country’s electoral outcome shift to the right as total mobility increases, or as opportunity structures become more favorable?

The next paragraph seeks to answer some questions of this sequence, with Dutch data sets.

Analytical exercises

How far do mobility and heterogamy reduce inequality?

Given interval measurement of occupational prestige, one yardstick for inequality in a prestige distribution is the standard deviation. That statistic is now presented. Study P0839 of the Steinmetz Archive in Amsterdam is the data set of a survey conducted in 1982 among a random sample of Dutch males aged between 18 and 65 years. It contains respondent’s occupation at time of marriage, the occupation of this person’s wife at time of marriage, that of this person’s father when the respondent was 12 years old, and year of marriage. All four variables were available for 237 respondents. To determine trends, respondents were divided into four cohorts: married between 1943 and 1952, married between 1963 and 1962, between 1963 and 1972, and between 1973 and 1982. Job titles were recoded into prestige scores ranging from 13 to 87 (Sixma & Ultee 1984a).
Table 1
Standard deviations for marriage cohorts in the distribution of (1) occupational prestige of males, (2) average prestige of males and father, (3) average prestige of males and wife, (4) average prestige of males, wife and father; and reductions in standard deviations for marriage cohorts: (5) for males plus father versus for males only, (6) for males plus wife versus males only, (7) for males plus father and wife versus males only.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>43-52</td>
<td>18.9</td>
<td>16.1</td>
<td>15.1</td>
<td>14.1</td>
<td>.85</td>
<td>.80</td>
<td>.75</td>
<td>26</td>
</tr>
<tr>
<td>53-62</td>
<td>18.8</td>
<td>15.8</td>
<td>13.1</td>
<td>12.8</td>
<td>.84</td>
<td>.70</td>
<td>.68</td>
<td>46</td>
</tr>
<tr>
<td>63-72</td>
<td>18.1</td>
<td>14.7</td>
<td>14.1</td>
<td>12.7</td>
<td>.81</td>
<td>.78</td>
<td>.70</td>
<td>92</td>
</tr>
<tr>
<td>73-82</td>
<td>17.6</td>
<td>13.7</td>
<td>12.5</td>
<td>11.0</td>
<td>.78</td>
<td>.71</td>
<td>.63</td>
<td>79</td>
</tr>
<tr>
<td>All</td>
<td>18.1</td>
<td>14.7</td>
<td>13.5</td>
<td>12.3</td>
<td>.81</td>
<td>.75</td>
<td>.68</td>
<td>237</td>
</tr>
</tbody>
</table>

Column 1 of Table 1 gives the standard deviation of the distribution of respondent's occupational prestige for four cohorts. The standard deviation decreases as year of marriage increases, thus showing a lessening of inequality in the course of time. No significance test was performed.

To answer the question of how unequal occupational prestige is distributed after taking mobility and heterogamy into account, three computations were performed. Respondent's and father's prestige were added and divided by two, and so were respondent's and partner's prestige. Respondent's, father's and partner's prestige were summed and divided by three. The standard deviations of the resulting distributions are shown in columns 2 through 4 of Table 1. Two columns show a decrease in standard deviation, while one column contains an exception to a trend towards a reduction of inequality.
To answer the question of the extent mobility and heterogamy reduce initial inequality, standard deviations in columns 2 through 4 were divided by those in column 1, resulting in columns 5 through 7. Heterogamy reduces inequality more than mobility. An emerging rule of thumb holds that mobility reduces inequality by a fifth, heterogamy by a quarter, and mobility plus heterogamy by a third. Reductions in recent cohorts seem larger than in older ones.

Findings on the Netherlands show that income inequality decreased (Hartog & Veenbergen, 1978), and that educational heterogamy (as loglinear parameters for cell frequencies, Sixma & Ultee, 1984b), class fluidity (Ganzeboom et al., 1987) and occupational prestige fluidity (Ganzeboom & P. de Graaf, 1984) increased. If these findings were made with one single criterion of stratification and other things remained equal, they might logically imply that overall inequality decreased. However, findings were not made this way. Also, other things did not remain equal: marginal differences of mobility tables changed, but changes cannot be described by simple parameters (Ganzeboom & P. de Graaf, 1984), while opportunities for marrying a person with equal education increased (Sixma & Ultee, 1984b). This paper's findings show that overall inequality in occupational prestige in the Netherlands had decreased since the second world war. Mobility and heterogamy contributed to this decline.

Reiterated mobility and cumulation of (dis)advantages?

Steinmetz Archive Study P0839 contains data on all jobs held by males. They were used to answer questions about reiterated mobility and cumulation of disadvantages. Given the small number of cases, no cohorts were compared. Analysis remained limited to those 212 cases for which years of schooling, prestige of first job, of occupation after 10 years, and of job 20 years later were available. Prestige was measured according to Sixma & Ultee (1984a).

Figure 1 gives the resulting unconventional path model of the stratification process. Years of schooling significantly (at the .05 level) affects job prestige at all three career points. Its effects decrease with the passage of time. The direct path from
first job to that after 20 years is borderline significant at the .10 level (which is remarkable given the few cases and high zero-order correlations). Multiple effects of schooling are found too. Those who already have higher occupational prestige, will obtain even more prestige as a consequence. Those starting out in a job with low prestige, remain in a low-prestige job.

Figure 1
Standardized effects of education for occupational prestige at time of entering the labor market, after 10 years, and after 20 years, Dutch males in 1982

Father and spouse effects on health?

Study P0761 in the Steinmetz Archive stems from 1983 and contains data on health (a checklist of 27 chronic and other serious illnesses), and respondent’s, spouse’s, and father’s education. These data on one of the most valued goods in life are used to answer the question whether a person’s health is affected by these factors. To circumvent the difficulty that health affects job, the focus is on education.
Ulttee, N.D. de Graaf & Van Puijenbroek (1988) applied the following diagonal model to 2628 cases from this file:

\[ Y_{hijk} = u_{hij} + E_{hijk} \]  

\[ u_{hij} = f_{hhh} + s_{iii} + r_{jjj} \]  

(a) \( h = 1,2,3,4; i = 1,2,3,4; j = 1,2,3,4; k = 1, \ldots, n_{hij} \)  

(b) \( f + s + r = 1 \)  

(c) \( 0 \leq f \leq 1; 0 \leq s \leq 1; 0 \leq r \leq 1. \)

In these equations, \( Y_{hijk} \) is the value of the criterion variable in the case of \( k \) observations for the cell \( hij \) of a mobility plus heterogamy table. Subscript \( h \) stands for father's education, \( i \) for spouse's education, and \( j \) for respondent's education. The expression \( u_{hij} \) indicates the population average on the criterion variable for observations in cell \( hij \). \( E_{hijk} \) is a stochastic term with 0 as expected value. Expressions \( u_{hhh} \), \( u_{iii} \) and \( u_{jjj} \) are population averages for cells \( hhh \), \( iii \) and \( jjj \). There are four levels of education. The influence of father's education is given by \( f \), that of spouse's education by \( s \), and that of respondent's own education by \( r \). These effects are made to sum to unity.

Results of fitting this model are as follows. With 2621 df, the residual mean square is 2.11861. \( u_{111} \) is estimated at 1.84, \( u_{222} \) at .98, \( u_{333} \) at 1.06, and \( u_{444} \) at .65 illnesses. The value of \( r \) turns out to be .64, \( s \) takes on the value of .26, while \( f \) is .10. The last coefficient is barely twice its standard error, the others are decidedly so. A person's health is primarily influenced by person's own education, then by the education of person's spouse, and only slightly by the education of person's father.

*Does electoral outcome depend on total mobility or opportunity structure?*

Lipset & Zetterberg asked whether mobility shifts a country's political balance to the right. Since total mobility, social fluidity and opportunity structure are now distinguished, the question arises which of these phenomena influence electoral outcome. The answer requires comparative research. However,
Lipset & Zetterberg's macro-hypothesis may be derived from individual hypotheses about the influence on voting behaviour of person's and father's strata, and additional assumptions about total mobility, fluidity or opportunity structure. Micro-explanations of macro-hypotheses provide opportunities for testing that do not require comparative research.

In one such test, N.D. De Graaf & Ultee (1989) estimate two diagonal models on data obtained by pooling three Dutch election surveys from the seventies (studies P0136 and P0354 from the Steinmetz Archives, the first study containing two separate surveys). Names of political parties preferred by 1585 males were converted to scores on a seven point left-right scale. Six categories were delimited for occupational prestige of these males and their fathers.

The first diagonal model estimated the fit of the hypothesis that the economic interests of a male's present and past strata affect individual voting behaviour. Its equations, with notation as previously, are:

\[ \gamma_{hjk} = u_{hj} + \varepsilon_{hjk}; \quad (3) \]
\[ u_{hj} = f.u_{hh} + r.u_{jj}; \quad (4) \]
\[ (d) h = 1,2,3,4,5,6; j = 1,2,3,4,5,6; k = 1,...,n_{ij}; \]
\[ (e) f + r = 1; \]
\[ (f) 0 \leq f \leq 1. \]

Equations for the hypothesis that individual voting behavior is influenced by the status motives of this person's current and previous strata, run as follows:

\[ \gamma_{hjk} = u_{hj} + \varepsilon_{hjk}; \quad (3) \]
\[ u_{hj} = f.u_{hh} + r.u_{jj}, \quad \text{if } h < j; \quad (5) \]
\[ u_{hj} = r.u_{hh} + f.u_{jj}, \quad \text{if } h > j; \quad (6). \]

Now as to the fit of these models. The economic interest model, with 1578 df's, had a residual mean square of 1.65012, while the status motives model, with the same df's, had a fit of 1.65344. The economic interest model therefore provided a better fit. The estimated u-parameters of the best fitting model were 2.93, 3.81, 3.95, 4.51, 4.36 and 4.51 (all twice their
standard error). The $f$-parameter was estimated at .66. Father's stratum is more influential than person's stratum!

These results for the Netherlands answer the question whether electoral outcome depends on total mobility or opportunity structure. If the status motive hypothesis also holds for other decades than the seventies, electoral outcome changed as opportunity structures developed, not as total mobility fluctuated. Since mobility necessitated by opportunity structures is almost always smaller than total mobility, and since Lipset & Zetterberg only paid attention to total mobility, the shift to the right in a country's political balance as a consequence of mobility may have been overstated in earlier generations of RC28.

**Conclusion: theoretical sociology and the field of inequality, openness and cumulation**

This paper was about questions in the field of stratification and mobility, not about explanations and theories in that area. It was not an exercise in theoretical sociology, but a specimen of - if one may say so - "problematic sociology". It redrew the map of stratification and mobility as that of inequalities, openness, and cumulations. The field of stratification and mobility is a central part of the discipline of sociology. Those in theoretical sociology take a natural interest in its development. Their judgement is that changes all too often amount to application of the latest technique for its own sake. This opinion, as this paper hopefully has made clear, is mistaken. Methods have been replaced, but new procedures answered old and novel substantive questions. These questions include questions raised against the background of discussions in theoretical sociology. To conclude this paper, a review is given of the links between the questions sequenced in this paper and three of these exchanges - the resurgence of marxism in the early seventies, the rise of neo-weberianism in the late seventies and early eighties, and the present micro-macro debate. An afterthought is added on explanations the programme of providing micro-foundations for
macro-sociology might have in store for the field of stratification and mobility.

In the early seventies various strands of neo-marxist and marxisant theorizing attacked established sociology. According to Goldthorpe (1980) their criticism of the field of RC28 is to some extent responsible for the shift from questions on occupational prestige mobility to questions on occupational class mobility. Several questions of this paper's sequence follow up on this change.

Although a move towards class mobility has been justified by the argument that questions of class formation are otherwise neglected, these questions have not until now been addressed by way of comparative research on the micro- and macro-consequences of mobility on class differences in health, class identification, class imagery, trade union membership, voting, or other indicators of class formation. This paper's sequence not only gave a prominent place to questions on class formation, but also provided answers obtained by a technique better suited to substantive questions.

This paper also displayed an interest in inequality, another phenomenon focussed by neo-marxism. Bourdieu (1970, 1982) and his circle (Desrosiers 1978) not only raised questions on "reproduction of class inequality" between generations, but also on what might be called "reconstitution of inequality" within generations. This paper's sequence of questions contains one question comprising mobility and heterogamy.

Neo-weberianism followed neo-marxism in theoretical sociology. This paper's argument that there might be more than 67 varieties of mobility is rooted in neo-weberianism. An array of mobility questions is generated by its individualistic core that a person's resources influence that person's life chances. It is rendered manageable by the additional statement that means of production, destruction and persuasion are prime resources (cf. Runciman 1989), and another one holding that health and life expectancy, income and living standard, and culture and life style are major aspects of a person's life chances (cf. Ultee 1984).

Another neo-weberian statement is pertinent to this paper's questions on mobility and heterogamy. In various passages Weber (1920: 32-45 and 132, and 1921: 177-182) conceives of
stratification as a process of closure passing through various stages. This notion attracted less attention from early Weber commentators than explicit statements about classes, estates and parties (Weber 1921: 177-182 and 531-540). It stands behinds this paper's overarching question about the state of openness - or the process of closure. The specifics of the notion that stratification is a process of closure with various stages are as follows. To maintain their position, guilds in Europe during the middle ages restricted access by way of quota. Rules still allowed apprentices free choice of a master. In this way occupational inheritance remained limited. In India with its caste system, occupations were always inherited. Despite rivalries between guilds in the West, conviviality between them was widespread. Marriages between various guilds took place. Although in Europe marriages between estates were infrequent, if these marriages took place, no legal (and certainly no religious) punishments were applied. In India meals and marriages between castes were absent, and forbidden by religion. These observations can be reformulated into a general neo-weberian statement. To protect attained advantages, those favourably placed take short-term measures that, if successful, as a by-product maintain inequality and limit occupational mobility. In the long run occupational inheritance becomes formalized. Also, marriage outside one's own occupation becomes infrequent. In the end outmarriage carries, apart from a legal punishment, a religious penalty. And: if stratification relaxes, mobility increases first, while outmarriage increases only later. This neo-weberian statement adds precision to questions on openness: does more mobility than heterogamy take place between a society's strata, and does a factor making for more mobility increase heterogamy less strongly? Right now the micro-macro debate is being staged in theoretical sociology. Opponents of an autonomous macro-sociology have justified their enterprise by pointing towards paradoxical macro-effects emerging from individual actions. This paper has postulated two of these effects with respect to stratification and mobility. The first is that reiterated mobility is accompanied by cumulation, the second that social fluidity does not shift a country's political balance.
These paradoxical macro-effects not only yield novel questions in the field of stratification and mobility, but also touch upon new explanations. To finish this paper with some theoretical sociology proper: what are the prospects for constructing micro-explanations of macro-phenomena in the field of stratification and mobility?

The programme of providing micro-foundations for macrosociology may hold more promises for new predictions on stratification and mobility than neo-marxism and neo-weberianism. Revivals are not renewals. Yet, so far, few macrostructures have been erected on micro-foundations. Becker (1981) provided old predictions on mobility and heterogamy. Olson (1982: 256-257) selectively quoted findings on differences in mobility between countries.

There may be a special reason why the micro-macro debate has not yielded much for the field of stratification and mobility. The hypotheses in that area are mostly multi-level statements, statements taking both individuals and societies as their units. However, the micro-macro debate hinges on the distinction between statements pertaining to individuals and those referring to societies. In this way, statements actually occurring in a particular field are ignored, although they have a role in bridging the micro-macro gap12.

To take an example. There is not much difference between this multi-level statement with societies as its prime unit:

"societies with more generous governmental scholarships for children from lower strata display more upward mobility by children from these strata than societies with less generous ones".

and the next multi-level one principally about individuals:

"children from the lower strata living in societies whose governments offer them more generous scholarships will be more upwardly mobile than children from these strata in societies whose governments offer them less generous scholarships",

However, this argument cuts two ways. There are different kinds of multi-level statements with individuals as their
principal unit. To continue the example: there is an important
difference between the just presented multi-level statement
principally about individuals, and the following multi-level
statement also with individuals as its main unit:

"children from the lower strata in a society whose
government offers them more generous scholarships, will
attain a higher education, and they who in this way
obtained it also will reach a higher occupation, resulting
in more upward mobility for children from the lower
strata".

Moving on to the last statement ensues some progress. Whereas
the first statement postulated an association between macro-
variables, and the second one at best hinted at an intervening
variable, the last one pinpoints a mechanism between them,
yielding new testable predictions. This paper's question about
mobility and voting was obtained this way.

Within the field of stratification and mobility itself there is
something of a drift from macro-explanations towards multi-
level ones. At this moment the macro-hypothesis that a
country's mobility pattern is influenced by its economic
development and political climate, is being replaced by the
multi-level hypothesis that a person's mobility is affected by
life-cycle, cohort and period factors (compare Grusky & Hauser,
1984 with Blossfeld, 1986; see also DiPrete & Grusky 1988, N.D.
de Graaf 1988). Restating macro-hypotheses as micro-ones with
contextual characteristics, is the easy part of executing the
programme of providing micro-foundations for a macro-
sociology. Multi-level hypotheses do not equal micro-explan-
ations. Indeed, Blossfeld intended no such thing.

To provide micro-foundations for macro-sociology, existing
macro-hypotheses are to be corrected by an explanation that
unifies them. Following this injunction, a country's economic
development may be taken as an instance of a structural
constraint produced by economic markets, and a country's
political climate as an instance of a structural constraint
provided by a political collective actor. These assumptions
reduce two macro-factors to the same denominator.

Are these assumptions tenable? Does this subsumption yield
new measurements of economic development and political climate? What interesting predictions may be derived? Do micro-foundations indicate that one structural constraint is more effective than another? Which joint effects do these constraints have? Are the cultural traditions stressed by neo-weberianism structural constraints too? The programme of providing micro-foundations for macro-sociology does not provide much guidance on these points. In fact, classical sociology - with its emphasis on monopolized markets, the state and traditions - has a richer imagery of structural constraints than this programme, which is new to sociology but has roots in neo-classical economics and shares a focus on free markets with the founders of economics. By moving on from economic level and political climate as macro-factors to life-cycle, cohort and period as contextual individual properties, correcting predictions have been derived (Blossfeld 1986). An example is the prediction that a person's occupational prestige at a certain date, is not only influenced by the economic development of this person's country at that time, but also by the unemployment level in that country when the person first entered the labour market.

Yet doing away with macro-factors and bringing in contextual characteristics makes the task of laying micro-foundations for macro-sociology more exacting. Life-cycle, cohort and period comprise more factors than economic development and political climate. How to incorporate them? Is each and every one a structural constraint? What is their ranking after effectiveness? Like the sequencing of questions, theory construction in the field of stratification and mobility - or as this paper argued: the field of inequalities, openness, and cumulations - remains a do-it-yourself matter.

Notes

(1) A principle of charity is applied in representing Van Heek's sequence after 44 years. Having answered the first question by opting for occupational prestige, Van Heek's second one was about differences in prestige between strata, not about differences in occupational prestige between individuals. When
actually answering the second question, Van Heek saw that lumping occupational titles into various strata is quite arbitrary, and that a straight run of individuals after occupational prestige is the interesting thing.

(2) This proposal is applicable only to interval measures.

(3) The question of how to partition frequencies for total mobility into frequencies for circulation and for structural mobility has been rendered out of date by loglinear models. The real question behind it may be how halfway parameters, parameters for structural differences and parameters for social fluidity combine into some measure for overall inequality. This is not the place to go into this matter.

(4) Sørensen (1975) recognized that the standard question of how much mobility there is in a society at a certain point in time contains an ambiguity. The notion of mobility in itself refers to movements between two points in time. The new question is how much mobility there is between \( t_1 \) and \( t_2 \), for all members of a society at \( t_1 \) and \( t_2 \).

(5) To answer this question, event analysis - the technique now favoured by Sørensen - is unnecessary. Hauser (1977) showed that regression models with auto- and lagged effects are sufficient. Given job histories, Hauser's model goes beyond Blau & Duncan's (1967: 184) synthetic cohort model.

(6) Old mobility monographs often studied heterogamy. However, comparative heterogamy is not now an established topic, and opportunities for testing provided by questions about mobility and heterogamy have not been exploited.

(7) How open or closed a society's strata are, is indicated by similarity within father-son and husband-wife dyads, but also by similarity within dyads of siblings and of friends.

(8) To assess consequences of higher income in a small sample of manual workers, Goldthorpe et al. (1969) in effect followed Campbell's strategy by distinguishing the political, normative and relational aspects of embourgeoisement.

(9) Collection of job histories and their mapping by way of event analysis is another way out of this dilemma. This strategy increases the number of mobility tables. (If the minimum length of a job spell has been put at one year, event analysis amounts to making every possible one-year mobility table and summing them. This, incidentally, does away with the
choice between taking events or individuals as the unit of analysis.) With more tables, degrees of freedom rise (thus allowing separation of life-cycle, cohort and period effects). Since existing data sets seldom contain job histories, whereas data on heterogamy are more readily available, proposals differ in applicability. Pragmatic arguments guided reformulation of Van Heek's first question, and here again enter into programm-ing of questions.

(10) In the British debate neither Parkin (1974) nor Murphy (1988) focused upon closure as a process with various stages. (11) This particularly holds for the French discussion (Boudon, 1977).

(12) This at least holds for the German debate. Raub (1984: 38, footnote 11) argues away multi-level statements. Hummell & Opp (1971) did allow contextual characteristics. But they defined statements as individual (collective), if their units are individuals (collectives). They thus failed to appreciate reinterpre-tation of absolute properties as relational or contextual ones (and global properties as structural or analytical ones) as a strategy for theory construction.

References

Becker, G.S., A treatise on the family, Chicago, 1981.
Campbell, D.T., ' "Degrees of freedom" and the case study', Comparative Political Studies, 1975, 8, p. 178-192.


