

Who Marries Whom?

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# Who Marries Whom?

*Educational Systems as Marriage Markets  
in Modern Societies*

*edited by*

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## PREFACE

Marriage and social inequality are closely interrelated. Marriage is dependent on the structure of marriage markets, and marriage patterns have consequences for social inequality. This book demonstrates that in most modern societies the educational system has become an increasingly important marriage market, particularly for those who are highly qualified. Educational expansion in general and the rising educational participation of women in particular unintentionally have increased the rate of “assortative meeting” and assortative mating across birth cohorts. Rising educational homogamy means that social inequality is further enhanced through marriage because better (and worse) educated single men and women pool their economic and sociocultural advantages (and disadvantages) within couples.

In this book we study the changing role of the educational system as a marriage market in modern societies from a cross-national comparative perspective. Using life-history data from a broad range of industrialized countries and longitudinal statistical models, we analyze the process of spouse selection in the life courses of single men and women, step by step. The countries included in this book vary widely in important characteristics such as demographic behavior and institutional characteristics. The life course approach explicitly recognizes the dynamic nature of partner decisions, the importance of educational roles and institutional circumstances as young men and women move through their life paths, and the cumulation of advantages and disadvantages experienced by individuals. The book consists of thirteen country-specific studies, each conducted by researchers who have an intimate understanding of the country in question. Most studies employed nationally representative data, covering cohorts of men and women over a broad historical period. As far as possible, very similar statistical analyses were used. But we preferred to avoid complete standardization of method because both the educational system and the age at marriage vary from one country to another and over time. The book is theoretically driven and combines demographic approaches with rational choice theory to explain assortative mating.

The initial idea for this cross-national comparative project was stimulated by empirical results from an event history analysis carried out on West Germany. This research clearly indicated that educational expansion has increased the rate of educational homogamy in Germany. There has been an increasing closure of social structure and social networks as an unintended consequence of educational expansion. In addition, we found that in Germany social origin has a strong effect on educational homogamy. There have been strong direct and indirect effects of father’s education on marriage patterns.

The primary aim in our thirteen-nation comparison was to check the generalizability of our findings and interpretations for Germany. Taking into account the inevi-

table constraints of data availability and expertise, we tried to include countries varying widely in important characteristics, such as educational systems, family tradition, and the extent to which the roles of men and women have undergone a progressive transformation. The countries included in our comparison are West Germany, the Netherlands, Flemish Belgium (Flanders), France, Italy, Spain, Great Britain, Denmark, Sweden, Hungary, Slovenia, the United States of America and Israel.

As editors of the book and organizers of the cross-national research project, we would like to thank all the contributors for their fruitful cooperation and for the enormous effort they put into their analyses and country-chapters. We tried to use comparable data and made a commitment to apply a common research design to study the changes in “assortative meeting” and “assortative mating”. However, the contributors did not simply help us carry out a previously designed analysis. As clearly indicated by the wealth of information in the country-specific chapters, much of the work in this book represents the creative contributions of our collaborators.

We are grateful to Gijs Beets who made very valuable suggestions on earlier drafts of the manuscript and supported its publication as a volume in the European Studies of Population series. All the chapters in the book were peer-reviewed by the members of the international group and revised several times. They were also evaluated by two anonymous Kluwer Academic Publishers reviewers. We are very grateful for their thoughtful comments and constructive suggestions which improved the quality of this book.

The major financial support for the comparative project, in particular for the joint workshop held in Bremen, was a grant from the German Research Foundation (Deutsche Forschungsgemeinschaft) for the Sfb-186 research project “Household Dynamics and Social Inequality” at the University of Bremen. During the final stages of preparing this book, support was also provided by a grant from the Volkswagen Foundation (Volkswagen Stiftung) for the GLOBALIFE project at the University of Bielefeld and the Otto Friedrich University Bamberg.

Our thanks go to our former colleagues at the University of Bremen for their superb collegial support. In particular, we wish to thank Faith Dasko who, as a native speaker, copy-edited the entire manuscript with great sensitivity. We also thank Julie Winkler-Vinjukova, who helped us organize the workshop, and improved the English of several chapters with great care. In various stages of the project, our student assistants, Teresa Lankuttis, Lars Borchert, Thorsten Schneider and Ruben van Gaalen, supported us with commitment and professionalism in coordinating the project and preparing the typescript.

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# 1

## EDUCATIONAL SYSTEMS AS MARRIAGE MARKETS IN MODERN SOCIETIES: A CONCEPTUAL FRAMEWORK

HANS-PETER BLOSSFELD AND ANDREAS TIMM

### INTRODUCTION

The answer to the question Who marries whom? is central for an understanding of the reproduction of social inequality in modern societies (Mare 1991). Rates of homogamy reflect the degree to which individuals of similar social origin and with the same characteristics such as education, religion, race, ethnicity, or occupation, marry each other (Kalmijn 1991, 1998; Kalmijn, Flap 2001). They indicate the degree of exclusion through the social structure and the extent to which social networks are closed to outsiders (Glass 1954; Simmel 1917/1970; von Wiese 1967; Laumann 1973).

The growing interest in assortative marriage over the last several years (see Kalmijn 1998) might suggest that there is no need for another study on that issue. But this impression is wrong. There is not only a lack of systematic cross-national comparative analysis about the mechanisms of how single people meet, form couples and eventually marry, but also a paucity of dynamic analysis on the processes of assortative mating in the life course. Most of the current studies have been *ex post facto* analyses of the stock of marriages at a given point in time (Jürgens 1973; Mayer 1977; Tegtmeier 1979; Galler 1979; Haller 1983; Ziegler 1985; Handl 1988; Teckenberg 1991; Ultee, Luijkx 1990; Jones 1991; Mare 1991; Kalmijn 1991; Erikson, Goldthorpe 1992; Uunk, Ganzeboom, Robert 1993; Jones, Luijkx 1996; Uunk 1996; Wirth 1996, 2000; Teckenberg 2000). This kind of research starts from marital matches, normally observed in cross-sectional studies, and then tries to “explain” patterns of assortative mating through the spouses’ individual characteristics. The methodological problems of such a “causal approach” are obvious: this type of analysis not only starts from the outcomes (the unions) and then goes back in time to

their causal conditions (the individual characteristics), but also often excludes all those persons from the study who are still single at the time of the interview. An appropriate causal analysis, however, should proceed the other way around. It should study the mechanisms of how change in some property earlier in time induces change in still other properties later in time. In other words, research on assortative mating should start with young single men and women and move along the time axis to reconstruct the effects of changes in earlier social circumstances in the life course on people's later marriage decisions (Lichter 1990; Lichter, Anderson, Hayward 1995; Blossfeld 1996; Blossfeld, Müller 1997).

The aim of our cross-national comparative study in this book is to achieve exactly that goal. Using life-history data from a broad range of industrialized countries and longitudinal statistical models, we reconstruct the process of spouse selection in the life course of single men and women step by step. We compare the results across countries and within each country across successive birth cohorts covering long historical periods, often the time span after the end of World War II. Of central interest for our analysis is the extent to which young men and women pool their educational resources at the time of their first marriage. Education is considered in this book as a central variable for marriage because (1) education is the most important determinant of occupational success in industrialized societies (Shavit, Müller 1998, p. 1) and (2) it reflects cultural resources influencing individuals' preferences for specific partners. Thus, from a life course perspective, educational homogamy implies that the degree of social inequality engendered in an individual's life course is further enhanced through marriage because advantageous (and disadvantageous) economic and sociocultural resources of two individuals are then pooled and cumulated (Mayer 1977).

In most modern societies the participation in higher education has increased dramatically in recent decades (Shavit, Blossfeld 1993, p. 14), and more for women than for men (Erikson, Jonsson 1996; Shavit, Blossfeld 1996). We are therefore especially interested to explore the role of the educational system as a marriage market and to analyze the changes induced by educational expansion. Educational expansion means that there is an increasing chance to meet people of the opposite sex with the same educational level at an age when individuals typically begin to form couples. Educational expansion should therefore increase the likelihood of educational homogamy across cohorts and, as a consequence, not only reinforce social inequality among married couples from one birth cohort to the next (see Blossfeld, Drobnic 2001), but also lead to a growing divergence of social opportunities for the next generation of children.

The overall result of current studies on assortative mating is that there is a strong correlation between characteristics of both spouses in terms of their social origin and level of education (see e.g. Ziegler 1985; Ultee, Luijkx 1990; Teckenberg 1991; Wirth 1996; Mare 1991; Kalmijn 1991; Smeenk 1998; Teckenberg 2000). This suggests that there are important social mechanisms in modern societies that influence *intragenerational* spouse selection and lead to an *intergenerational* reproduction of social inequality. However, since marriages are not arranged anymore and contemporary young men and women are not forced to marry particular persons today, the

interest in explaining how social inequality actually is reproduced in marital decision-making seems to be gaining momentum. We propose in this book that any empirical analysis has to take into account the dynamic interplay of opportunity structures to meet potential partners in specific phases in the life course - i.e. the chance to meet someone of the opposite sex within the social networks structured through the educational system for example - as well as individual's preferences determining the choice of partners within these social circles (Blossfeld 1996; Blossfeld, Müller 1997; Blossfeld, Prein 1998). In particular, we would like to investigate how independently taken individual marriage decisions at the micro level lead to a reproduction of social inequality at the macro level and, conversely, why a significant number of men and women succeed in escaping these forces of social reproduction by marrying a partner who does not have the same social origin or educational background.

This book presents the findings of twelve very similar longitudinal studies on assortative mating. The countries included are West Germany, Flanders, France, the Netherlands, Italy, Spain, Great Britain, Denmark, Sweden, Hungary, Slovenia, and the United States of America. The primary aim of this comparison has been to test the generality of earlier country-specific findings and interpretations (see Kohn 1987) about the role of the educational system as a marriage market in West Germany (see Blossfeld, Timm 1997). This longitudinal study revealed that the German educational system has become an increasingly important marriage market, particularly for those who are highly qualified, with the effect that educational homogamy has been increasing drastically in West Germany across birth cohorts. The cross-societal comparisons in this book provide the opportunity to test the generality of these findings on Germany and assess the impact of broader historical, cultural, and societal contexts influencing marriage decisions in the life course. Finally, at the end of this book, these longitudinal comparisons are enriched by a cross-sectional case study of educational intermarriage in Israel, a society with unique multiple and cross-cutting divisions.

## THEORIES AND HYPOTHESES

Most theories of assortative mating describe spouse selection as the result of a long-term, cumulative and continuously changing life course process (see e.g. Haller 1983; Lichter 1990; Lichter, Anderson, Hayward 1995). From a social structural point of view, this process begins with the economic and cultural conditions of primary and secondary socialization in the family of origin during childhood and youth, branches off when young people are selected into the various tracks within the educational system, and further differentiates into the manifold occupational fields and job careers after entry into the employment system. All of these role transitions in the life course are connected with a permanent restructuring of social networks and interaction relationships (Laumann 1973) with continuous changes in the opportunities to meet certain potential spouses in everyday activities. In the following, we first describe the specificities of the educational system as a marriage market, then we develop a general partner search model and discuss the consequences of

gender-specific preferences and the mechanisms of social origin for marital choice, and finally, we describe our cross-national comparison.

### *The Educational System as a Marriage Market*

Partner decisions and spouse selection are most often made in the phase of transition from youth to adulthood. This phase of the life course cannot be specified by rigid age categories but rather has to be conceptualized as the gradual adoption of adult roles and differential participation in certain "adult" activities (Hogan 1978; Marini 1984, 1985; Blossfeld, Nuthmann 1989). Thus, partner decisions and the decision to marry are itself a defining characteristic of the normative conception of the transition to adulthood (Featherman, Hogan, Sorensen 1984). The other significant transitions are completion of education and entry into first stable jobs which are determined by the country-specific institutional structures of the school and university systems and the organization of the employment and industrial relations systems. The focus of our discussion in this book is on the role of the educational system as a marriage market.

First of all, the organization of the educational system in all modern societies (Shavit, Blossfeld 1993) imposes normally a relatively rigid age-graded logic on the life course of youth and young adults. Although the degree of tracking in the educational system varies across modern countries, educational careers are as a rule structured in a sequence of selection barriers or hurdles that have to be mastered by each generation (Shavit, Blossfeld 1993). In most societies, educational decisions are also concentrated on specific ages and they are normally hard to postpone or to revise once they are made (cf. for example Blossfeld 1989, 1990). At every educational hurdle, a certain proportion of young men and women fail to succeed in the process of acquiring higher qualifications. The probability of a successful transition at a particular educational attainment level depends (1) on the number of positions available at the next level relative to the origin level for each cohort, and (2) on the social allocation of these positions according to mechanisms such as gender and social origin (cf. Shavit, Blossfeld 1993).

This stepwise selection process in the educational system has three important consequences for the role of the educational system as a marriage market. *First*, in each generation the less able and educationally disadvantaged are leaving the educational system at earlier selection barriers (and at younger ages). The selection process in the educational system therefore creates increasingly homogeneous groups within the educational system with rising age. From one step in the selection process to the next, only those youth or young adults who remain together longer will attain either the same or eventually a higher educational level. According to Blau (1994), this structural homogenization has important consequences for social networks because the probability that friendships develop is first of all dependent on contact opportunities. Thus, educational selection produces a structurally increasing likelihood of establishing a social relationship with a similarly qualified partner - and then perhaps of later marriage - due to the mere fact that one has continued together in the educational system. It is important to note that we mean here not only the



contacts that one makes directly within the classroom or the educational institution itself, but also those within everyday life activities. This means friends, and friends of friends, contact opportunities in free-time and sports activities and the like which, of course, are also to a large extent structured directly or indirectly by the fact that young people participate in the educational system.

Conversely, the structural chance of meeting a partner with a different level of educational attainment decreases significantly with time in school because (1) those in each age group with lower qualifications have already left the educational system and have thereby taken other life course trajectories (with different and normally more heterogeneous social networks); and (2) because of "ceiling effects" the chances of meeting a partner with higher qualifications clearly decreases as individuals' levels of educational attainment advance. In other words, the growing opportunity of meeting people with the same level of qualification in the course of the educational career is a by-product of the selection process in the educational system and therefore indirectly increases the likelihood of educational homogamy.

*Second*, the process of selection in education means that the more highly qualified will leave the educational system at a later age. Since attaining an education makes it difficult to adopt family roles in most countries (Marini 1985) and involves a high degree of economic dependence on parents or the state (see e.g. Blossfeld, Nuthmann 1989), most young men and women participating in the educational system are therefore normally "not ready" to start a family. Completion of education is thus an important step in the normative (and economic) conception of the transition to adulthood and, in this way, becomes a socially significant precondition for entering into marriage (Blossfeld, Huinink 1991; Blossfeld, Jaenichen 1990; Blossfeld 1995; Smeenk 1998).

Since the more highly qualified postpone the starting of a family longer, the probability will grow that they will then quickly "catch up" with their age cohort after leaving school and eventually marry the partner who became a boy or girl friend during the period of education. Thus, for the highly educated, the decision of marrying a person of the same educational attainment level should be highly age-graded directly after leaving the educational system.

*Third*, in this process of educational selection, the less qualified enter the labor market and employment system at an earlier age. This transition is often connected with a more heterogeneous social network at work and leisure and implies an increase in the frequency of contacts to people with different social characteristics such as age, occupation, or educational attainment level. The chances of meeting a spouse with a different level of education is thus structurally increased for these groups at younger ages. Many of these contacts will occur by chance and be unimportant. But without the chance to meet, no new social relationships can develop. Sometimes life-long friendships and marriages begin with such kind of "accidental" encounters (Blau 1994). Thus, lower qualified people are not only prepared to marry at an earlier age (because they are leaving the educational system earlier and that involves a higher degree of economic independence on parents or the state) but their - conscious or latent - "readiness" meets with a more heterogeneous marriage market at the workplace and leisure activities. A lower level of educational attainment

should therefore be related to a less age-graded marriage behavior and a higher likelihood of heterogamy at an earlier age.

On the other hand, lower qualified young adults who have left the educational system earlier in the life course will for a longer time tend to meet at the workplace similarly aged single people with the same lower educational attainment level. If it is true that individuals tend to prefer spouses of approximately the same age, this should then reinforce the tendency of homogamous marriage also among the less qualified. Having left the educational system earlier, however, gives lower qualified people more time to choose an appropriate partner in the life course. Thus, homogamy among the lower qualified should therefore be less age-graded than for the higher educated.

In summary, the structural opportunities to meet a potential spouse with the same qualification level in the life course should be strongly dependent on the educational attainment level. This opportunity will be highly time-dependent because it is based on the logic of a stepwise selection process producing filtered educational groups with rising age. The likelihood of educational homogamy should therefore increase significantly with the level of educational attainment. A logical implication of this structural life course process is that educational expansion (cf. Shavit, Blossfeld 1993; Müller, Karle 1993; Erikson, Jonsson 1996) should produce higher levels of educational homogamy across cohorts because both the level of educational attainment and the duration of educational participation increases for a growing number of young people within each cohort (cf. Blossfeld 1985, 1989).

#### *A Decision Model of Marital Choice*

The opportunities to meet people with the same educational attainment level are only the necessary (structural) conditions for educational assortative mating (Blau 1994). Young men and women still have to choose a particular partner from their selective social networks (cf. Blossfeld 1996; Blossfeld, Müller 1997). Partner search is, however, an important but rather difficult type of decision making process under uncertainty (Todd, Miller 1999). In this search process, (1) individuals encounter prospective partners in a temporal sequence, (2) who are appearing in random order and (3) are coming from a population with unknown parameters; (4) there are search costs and (5) time limits for partner decisions; (6) there is the difficulty of backtracking to previously rejected prospects (because they might have found another partner in the meantime); (7) there is temporal discounting; and above all, (8) there is the problem that mating must be mutually acceptable to both prospective partners.

In the literature, various search models have been suggested making more or less realistic assumptions on the search process (Gigerenzer, Todd 1999). We do not discuss here in detail all the models that have been proposed (see the discussion in Todd, Miller 1999), for example, by statisticians (models for the so-called "secretary problem," see Ferguson 1989 or Gilbert and Mosteller 1966), by economists ("optimization models under constraints," see Lippman, McCall 1976), by biologists (models on animals engaging in mate search, (see Anderson 1994 or Johnstone

1997) or by economic game theorists (models on “two-sided matching,” see Roth, Sotomayor 1990). Instead we are following the footsteps of Giegerenzer and Todd (1999) who suggested that individuals with limited time and knowledge normally use simple and frugal heuristics to make reasonable inferences in complex decision situations. These heuristics do not require finding out or guessing about what all the prospective partners and their life courses may hold in the future, as, for example, the economic models of optimization under constraints do (see also the discussion in Blossfeld, Prein 1998). Instead, these heuristics limit the search for partners or information using easily applicable decision rules and may be considered as specific models of bounded rationality.

The most important heuristic in the context of this book is Simon’s (1956) concept of satisficing. Satisficing is a method for making a partner choice from a set of alternatives encountered sequentially when one does not know much about possible partners ahead of time (Simon 1999). Typically, in such situations, there may be no optimal solution for when to stop looking for prospective marriage partners and settle down with a particular one. Satisficing takes the shortcut of setting an adjustable aspiration level and ending the search for further alternatives as soon as one is encountered that exceeds the aspiration level (Simon 1956). Following Todd and Miller (1999), we assume that the adjustable aspiration level is based on individuals’ past life course experiences and the mate values of those who do and do not show interest.

In the context of this book, we assume that the educational attainment process, as a process of cultural transmission and cultural learning, plays an important role in determining the individual’s conception of an acceptable partner (Haller 1983). We assume that the standards of an appropriate (marriage) partner in terms of educational attainment level rise with the individual’s educational attainment level. Thus, people are assumed to orientate their more or less vague and conscious idea of what they consider to be an acceptable (marriage) partner (Oppenheimer 1988) on their respective educational attainment level reached at each point in the life course. Individuals who are below this level are less attractive partners or might not be seriously considered, and those who do, must not necessarily be the “ideal partners”. In other words, we do not have to assume that the search will be continued until a “perfect” partner has been found (Oppenheimer 1988). Individuals’ definitions of an acceptable partner, however, are assumed to reflect the already reached educational attainment level in the life course (Lichter, Anderson, Hayward 1995).

An important additional feature of mate selection is that at the same time when individuals are evaluating prospective mates, they are also evaluated in return (Todd, Miller 1999). In other words, partner decisions are consensual choices. This means that if a person wants to let a first encounter or repeated rendezvous develop into a long-term intimate relationship or even marriage, then this can only happen if both partners agree (Blau 1994). Both partners must therefore have an interest in the continuation and stability of the intimate relationship and in turning it into a marital union at a certain point in time. Thus, preferences of both partners of the opposite sex have to be taken into account if we are going to explain marriage decisions. We

therefore concentrate on the impact of gender on partner decisions and its change over time.

### *Gender-Specific Preferences and Their Changes*

If there was no gender-specific division of labor in the family and the labor market, then, according to Becker (1981, p. 73), men and women would benefit mostly from each other if they resemble themselves as much as possible in all their personal traits (intelligence, health, education, religion, social origin etc.). This view implies that the preference (and utility) structure of men and women tends to be inherently prone to (educational) homogamy, i.e., that “the like likes the like”. It might seem that this general claim is consistent with empirical evidence, as shown by Blau (1994, p. 4).

However, research also shows that modern societies are still characterized by high levels of sex-segregation in the workplace (Bielby, Bielby 1988), gender-specific income and occupational structures (Hakim 1998), and a gendered division of work within the family (Brines 1994; Blossfeld, Drobnič 2001). Although the gender structure has changed significantly in these societies across cohorts, these changes have been quite asymmetric for women and men. Female labor market participation has multiplied and most young women are today forced to juggle household and family demands with involvement in paid work, while young men still seem to be constrained to their role as provider by the traditional gender-based division of household and employment responsibilities (see Blossfeld, Drobnič 2001).

Becker (1981) asserts that the fundamental reason for the difference in the utility functions of men and women is the gender-specific division of work in society. In this view, women and men do not only marry to fulfill their intimacy needs or because they want to have children together. Rather they marry because the gender roles are inherently complementary (Becker 1981). In a gender-traditional society, men expect to benefit from their wives, since women have been socialized to be more orientated towards taking charge of the household and raising children. On the other side, women count on benefiting from their husbands since men have specialized in life-long gainful employment. In a gender-traditional society, a good education is therefore particularly important for men, since husband's income position determines the economic and social status of the family. In such a context, women thus tend to prefer men with high levels of education and good labor market opportunities and compete for them in the marriage market.

On the other hand, traditional men have ambiguous or mixed preferences with regard to women's education in gender-traditional societies (Becker 1981). As discussed above, husbands have the greatest advantage if their wives are as similar as possible in their traits, including educational level. However, these men are also providers and need wives who assume the bulk of family care and domestic functions and therefore should not have invested too much into their own career resources (or income potential). Thus, in the Becker model they prefer women with similar qualifications but low labor market orientation.

Since women in gender-traditional societies attach less value to their own formal education, the average level of education of these women remains far below that of the men. In other words, only some men can structurally succeed in finding women with the same level of education, while many of them have to marry downwardly regarding educational attainment level. Yet this downward marriage does not in fact frustrate them because traditional women are supposed to stay at home and their lower educational attainment level is therefore not as consequential. In sum, Becker's gender-traditional model suggests a tendency towards educational hypogamy for men and a tendency towards educational hypergamy for women, in particular for the older birth cohorts in the country-studies of our book. This discussion also suggests that it would be misleading to separate preference-based explanations (the preferences of men and women in a gender-traditional society) from structural marriage-market explanations (the structural force of men to marry downwardly) in an artificial way. Both mechanisms are quite interdependent and constitute a dynamic system.

Becker's model also implies that women who are marrying downwardly (or men who are marrying upwardly) should be an exception in gender-traditional societies because these couples diverge with regard to the distributive realities regarding the gender of providers and dependents in traditional society. But this might not be the only explanation. According to the "doing gender" approach, they also violate socially sanctioned arrangements offering recurrent opportunities to advance claims about the self as "naturally" male and female (Berk 1985). Thus, breadwinning wives and dependent husbands in more gender-traditional societies risk (a) social accountability, (b) negative judgements from relatives, friends, colleagues, and (c) even a threat of their gender identities (Brines 1994).

Yet these social and interactional pressures should not only be important in gender-traditional societies. We expect that they also conspire to slow down the diffusion of equal gender roles across cohorts. In particular, they should limit the speed of a symmetric change in gender roles (Brines 1994) and therefore even constrain the choice of women to marry downwardly among later born cohorts. With asymmetric role change, we mean the empirically well-documented "failure" of husbands to increase their housework and child care participation more substantially when their wives work (Brines 1994), or their insistence on the provider role, for example, in West Germany (Blossfeld, Drobnič 2001). However, it remains an empirical question to which extent the structural and cultural context of work and family roles change enough across cohorts to profoundly alter this normative context in different societies.

In general, the probability that young men and women change gender norms in successive birth cohorts should strongly depend on the degree of conformity with these norms in the preceding cohorts as well as their usefulness under new structural constraints. We claim that social norms are changed by rational actors, if the actions of others objectively change costs and benefits to an extent that these norms do not facilitate the actor's means-ends relationships anymore (Blossfeld, Prein 1998). We therefore argue that men's preferences regarding women's educational attainment should dramatically change across cohorts. When the continuous gainful employ-

ment of wives becomes normal and the wife's income becomes a significant determinant of the living standard and "lifestyle" in dual-earner families (see also Egebeen, Hawkins 1990), men will increasingly prefer women with a high income potential. Since the level of education is a major determinant of labor market, career and income opportunities in modern societies (Shavit, Müller 1998), men in each later birth cohort should increasingly prefer highly qualified women. This change in preferences, together with men's structurally increased chance of meeting women of equal qualification in the educational system, should therefore raise the level of educational homogamy and reduce educational hypogamy of men across cohorts.

Of course, men with low qualifications in each successive cohort will also increasingly prefer women with higher qualifications and income potential, but these qualified women might be still socially accountable if they marry downwardly, at least as long as the male breadwinner ideology plays an important role in a specific society. Thus, we assume that the continuation of the male breadwinner norm in an emerging dual-earner society will keep the proportion of women who marry less qualified men low across cohorts. Many dual-earner couples in modern societies still try to maintain the image of wives as secondary providers by defining husband's income as essential and wife's salary for "extras" (Blossfeld, Drobnič 2001). This model also suggests that the best educated women and the worst educated men should have the highest likelihood of remaining single (see, e.g. Lichter, Anderson, Hayward 1995). The former because, if they are not successful in finding an equally qualified partner, it is still socially and psychologically costly for them to marry downwardly; the latter because they are not very attractive marital partners in face of the male breadwinner and dual-earner norm.

### *Mechanisms of Social Origin*

The aspect of assortative mating that most intrigues sociologists is the role of the family of social origin. Social origin refers to a conglomerate of highly correlated economic and social characteristics of parents such as wealth, household income, prestige, jobs, education etc. These correlates not only make status differences between educational groups of parents symbolically more important, but also function as barriers between social circles. With increasing level of father's education, we therefore expect the social networks to become more exclusive so that the father's educational attainment level should have a positive *direct effect* on the rate of educational homogamy of the children.

However, expansion of education has increased the number of children from disadvantaged backgrounds in institutions of higher education and thus makes contacts between children of different social origin easier (see also Shavit, Blossfeld 1993; Müller, Karle 1993; Müller, Haun 1994; Henz, Maas 1995; Erikson, Jonsson 1996). This should diminish the social barriers between children from different social classes and increase the probability of coupling among these children. We therefore assume that the positive effect of father's educational attainment level on educational homogamy of his children decreases across cohorts. This effect should be the

stronger the greater the degree of openness and the less rigid the degree of tracking in the educational system.

With regard to the *indirect effects* of social origin on the choice of friends and marriage decisions, we formulate the following six hypotheses:

The opportunity of meeting an equally qualified partner in the educational system is the highest if the level of education of son/daughter corresponds to that of the father. In this case, the social networks of the family of origin and the social networks mediated through the educational system will overlap the most and mutually reinforce each other.

On the other hand, those sons/daughters who have attained higher education levels than their fathers will have access to new social networks via school. We assume that these sons/daughters will not only prefer partners with the same education, but will also try to secure their higher social status through homogamous marriage. We therefore expect that the likelihood of educational homogamy also increases in this case.

However, these upwardly mobile sons and daughters also retain their networks with people from their social origin (friends, acquaintances, relatives, etc.) (Blau 1994). Thus, we expect that these social networks will increase the likelihood of choosing a partner from their social origin and therefore to marry downwardly. This effect of social origin on downward marriage should be particularly important for traditionally oriented men, as discussed above. Yet, it might also become important for women across cohort.

Sons and daughters who are downwardly mobile in their educational career should, of course, be less inclined to educational homogamy at this lower level. Thus, we assume a negative effect of social origin on homogamy for this group.

Since these downwardly mobile people can also utilize the social networks of their family of origin, they should have a chance to meet better educated partners and to marry upwardly. This will especially be the case for traditionally oriented women, but might also be an increasingly important mechanism for men marrying upwardly.

Finally, in terms of social networks, the likelihood should be very small that sons and daughters who are upwardly (downwardly) mobile due to their educational career, marry up (down) even further. Such double upward (downward) mobility should be difficult to achieve due to the lack of social networks.

In summary, if children from privileged (underprivileged) social origins fail (succeed) in the course of their educational career and fall below (go beyond) the educational attainment level of their fathers, then we expect a counter-mobility through marriage which then will at least partially correct the individual failures (achievements) in educational attainment. On the other hand, there will also be a certain proportion of children from the underprivileged classes who will succeed through their own educational career and then be able to secure this upward mobility through educational homogamy. These latter sons and daughters, we would call the "true beneficiaries of educational expansion." The percentage of these couples and its change across generations should thus be an excellent indicator of the degree of

social openness in modern societies. In this book we will examine which of these partially opposing tendencies has been dominant in various countries.

## DATA AND METHODS

In chapters 2 to 13, we use individual-based event history data and longitudinal analytical methods and techniques (Blossfeld, Rohwer 2002) to test our hypotheses. The majority of data used in this book came from retrospective or longitudinal panel surveys collected in the 1990s. This included the German Socio-Economic Panel (GSEOP) (chapter 2), data from the Panel Study on Belgian Households (PSBH) and the Fertility and Family Survey including data on Flanders and Brussels (chapter 3), the French Survey on Education and Qualification (FQP) (chapter 4), the Netherlands Family Survey and the Family Survey Dutch Population (chapter 5), the Italian Household Longitudinal Survey (chapter 6), the Spanish Socio-demographic Survey (chapter 7), the British Household Panel Study (BHPS) (chapter 8), the Panel Study of Income Dynamics (PSID) (chapter 9), the IDA database for Denmark (chapter 10), the Swedish Level of Living Survey (LNU) (chapter 11), the Hungarian Social Mobility and Life History Survey (1992) (chapter 12), and the Quality of Life Survey in Slovenia (chapter 13).

The basic analytical framework of event history analysis is a discrete state space and a (continuous or discrete) time axis. The following twelve country-specific chapters analyze transitions across a set of discrete destination states (upward, downward or homogamous marriage), including the length of time in the state 'single.' The time axis or clock used in this book is age, starting at a predefined year, normally the age at which people are legally allowed to marry. Dependent on the available country-specific datasets, discrete- (Yamaguchi 1991; Vermunt 1997) or continuous-time event history models (Blossfeld, Rohwer 2002) were used. There is, however, no principal difference between discrete-time and continuous-time event history models since the earlier are a special cases of the latter. The usual kind of censoring in the data is right-censoring. In this case the end of the episode of being 'single' is not observed but the observation of the episode is terminated at an arbitrary point in time. This type of censoring typically occurs in life course studies at the time of the retrospective interview or in panel studies at the time of the last panel wave. Because the timing of the end of the interview or observation window is determined independently from the substantive process under study, this type of right censoring is unproblematic and can easily be handled with event history methods (Blossfeld, Rohwer 2002).

The central concept of event history analysis is the transition rate:

$$r(t) = \lim_{t' \rightarrow t} \frac{\Pr(t \leq T < t' \mid T \geq t)}{t' - t}$$

The transition rate provides a local, time-related description of how the marriage process evolves over time. It can be interpreted as the propensity (or intensity) to



change from the origin state 'single' to one of the destination states (upward, downward or homogamous marriage), at time  $t$ . But one should note that this propensity is defined in relation to a risk set ( $T \geq t$ ) at  $t$ , i.e. the set of units that still can experience the marriage event because they have not yet experienced the marriage event before  $t$ .

The central idea in event history analysis is to make the transition rate, which describes the marriage process evolving in time, dependent on age ( $t$ ) and on a set of (time-constant ' $x$ ' and time-varying ' $x(t)$ ') covariates:

$$r(t) = g(t, x, x(t))$$

The causal interpretation of the transition rate requires that we take the temporal order in which the marriage process evolves very seriously. In other words, at any given age,  $t$ , the transition rate  $r(t)$  can be made dependent on conditions that happened in the past (i.e., before  $t$ ), but not on what is the case at  $t$  or in the future after  $t$ . There are several possibilities to specify the functional relationship  $g(\cdot)$  (see Blossfeld, Rohwer 2002) as is shown in the country-specific chapters.

The most important scientific progress permitted by event history analysis is based on the opportunity to include explicitly measured time-varying covariates in transition rate models (Blossfeld, Rohwer 2002). These covariates can change their values over process time (age) in the marriage analysis. Time-varying covariates can be qualitative or quantitative, and may stay constant for finite periods of time or change continuously. From a substantive point of view, time-varying covariates can be conceptualized as observations of the sample path of parallel processes. These processes can operate at different levels. In the context of this book, the impact of parallel processes at the level of the individual's different domains of life, at the intermediate level (e.g., organizational features of the school systems), at the macro level (e.g. educational attainment levels of birth cohorts) as well as any combination of such processes are studied.

In dealing with such systems of parallel processes, the issue of reverse causation is often addressed in the methodological literature (see, e.g., Kalbfleisch, Prentice 1980; Tuma, Hannan 1984; Blossfeld, Hamerle, Mayer 1989; Yamaguchi 1991; Courgeau, Lelièvre 1992). Reverse causation refers to the (direct or indirect) effect of the dependent process (here: marriage) on the independent covariate process(es) (here, for example, educational participation). Reverse causation is often seen as a problem because the effect of a time-dependent covariate on the transition rate is confounded with a feedback effect of the dependent process on the values of the time-dependent covariate. However, Blossfeld and Rohwer (2002) have developed a causal approach to the analysis of interdependent processes that also works in the case of interdependence. For example, if two interdependent processes,  $Y_t^A$  and  $Y_t^B$ , are given, a change in  $Y_t^A$  at any (specific) point in time  $t'$  may be modeled as being depend on the history of both processes up to, but not including  $t'$ . Or stated in another way: What happens with  $Y_t^A$  at any point in time  $t'$  is conditionally independent of what happens with  $Y_t^B$  at  $t'$ , conditional on the history of the joint process  $Y_t = (Y_t^A, Y_t^B)$  up to, but not including,  $t'$  ('principle of conditional independence'). Of

course, the same reasoning can be applied if one focuses on  $Y_t^B$  instead of  $Y_t^A$  as the 'dependent variable.' Beginning with a transition rate model for the joint process,  $Y_t = (Y_t^A, Y_t^B)$ , and assuming the principle of conditional independence, the likelihood for this model can then be factorized into a product of the likelihoods for two separate models: a transition rate model for  $Y_t^A$  which is dependent on  $Y_t^B$  as a time-dependent covariate, and a transition rate model for  $Y_t^B$ , which is dependent on  $Y_t^A$  as a time-dependent covariate. From a technical point of view, there is therefore no need to distinguish between defined, ancillary, and internal covariates (see, e.g., Kalbfleisch, Prentice 1980) because all of these time-varying covariate types can be treated in the estimation procedure. In this book, estimating the effects of time-varying processes on the (upward, downward or homogamous) marriage rate was normally achieved by applying the method of episode splitting (see Blossfeld, Rohwer 2002).

#### THE CROSS-NATIONAL COMPARATIVE PERSPECTIVE: COUNTRY AS CONTEXT

Previous life course analysis using West German data clearly supported the above hypotheses about the increasing importance of the educational system as a marriage market as well as the direct and indirect effects of social origin on educational homogamy (Blossfeld, Timm 1997). However, in the absence of appropriate cross-national evidence, there would be no way of knowing whether this interpretation applies also outside the particular historical, institutional, and cultural context of West Germany. No analysis based only on West Germany could tell us whether the increasing importance of the educational system as a marriage market as well as the specific effects of social origin on educational homogamy are an integral part of the social-stratification system typical of modern postindustrial societies, or are to be found only in countries that have a specific educational system, or only in countries characterized by a particular economic or political system. Replications of our research by competent colleagues in other countries, particularly standardized case studies as used in this book, make it possible to check the generality of the German findings and the validity of our theoretical interpretations.

The aim of this book is therefore to study the process of spouse selection in the life course of single men and women in various modern countries and to compare these longitudinal patterns across these societies. Using the countries as contexts (see Kohn 1987), we are primarily interested in testing the consistency of the relationships discussed above in various structural settings. Insofar as the following twelve national case studies yield similar findings, our interpretation of the relationship between social origin and educational expansion on the one side and educational homogamy on the other, in large part, can abstract from whatever differences there may be in the cultures, educational, political, and economic systems, as well as historical circumstances of the particular countries. But when the empirical findings differ from case study to case study, then we must look to what is idiosyncratic about the particular countries for our interpretation of the mechanisms (Kohn 1987). In the latter case, cross-national differences might well be instances of more general

lawful cross-national regularities. But developing such more general cross-national hypotheses is a difficult task because it is normally hard to identify which of the many differences in history, culture, educational, political or economic systems between countries (or between studies) lies at the heart of the differences in findings.

The countries included in this book vary widely in important characteristics, such as the timing and degree of the transition into the service society (compare for example, Italy and Spain on the one side and Sweden as well as Denmark on the other), the political system (democracies and (former) socialist states); the societal emphasis on social equality and the connected types of welfare state regimes (e.g., liberal, social democratic, or conservative; see Esping-Andersen 1990, 1999), the organizational form of the school system (nationally centralized in most countries, decentralized in the United States of America, and regional in Germany) including the degree of "tracking" (mostly rigid with the exception of the United States of America and Sweden; see Erikson and Jonsson 1996) and educational attendance rates. The countries included in this cross-national comparison are West Germany, the Netherlands, Flanders, France, Italy, Spain, Great Britain, Denmark, Sweden, Hungary, Slovenia, and the United States of America. In each of the country-specific chapters, the organizational aspects of the educational system and the historical and cultural context within which individuals have to make their partner decisions are taken into account. This life-course approach explicitly recognises the dynamic nature of partner decisions, the importance of educational roles and institutional circumstances as young men and women move through their life paths, and the cumulation of advantages and disadvantages experienced by individuals. In particular, we are trying to better understand how spouse selection of single men and women from different social classes evolves over the life cycle, along with shifts in the educational system as well as country-specific constraints and opportunities.

Chapter 2 reports on the empirical results for West Germany. Chapters 3 to 13 then present the case studies on Flanders, France, the Netherlands, Italy, Spain, Great Britain, Denmark, Sweden, Hungary, Slovenia, and the United States of America. Each study was conducted by researchers, who have an intimate understanding of the country in question, and most employed relatively recent nationally representative data, covering cohorts of men and women educated over a broad historical period. We also employed very similar statistical analyses, but preferred to avoid complete standardization of method because both the educational system and the age at marriage themselves varied from one country to another. However, we did attempt to maintain sufficient standardization to enable a systematic comparison of the results. Thus almost all of these case studies follow a common set of guidelines. In Chapter 14 these comparisons are enriched by a cross-sectional case study of educational intermarriage in Israel, a society with unique multiple and cross-cutting divisions. Finally, Chapter 15 summarizes the cross-national similarities and differences and draws more general conclusions about educational homogamy in modern societies.

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# 2

## WHO MARRIES WHOM IN WEST GERMANY?

HANS-PETER BLOSSFELD AND ANDREAS TIMM

### INTRODUCTION

In this chapter, we report the results of the pilot study on assortative mating in West Germany which served as a model for most of the following country-specific chapters in this book. We do not repeat the theoretical discussion of Chapter 1 here again but go directly into the description of the empirical analysis and its results.

In the past, there have been only few studies on assortative mating on Germany. All these studies have been *ex post facto* analyses of already married couples neglecting the life courses of single people (Jürgens 1973; Mayer 1977; Tegtmeyer 1979; Galler 1979; Ziegler 1985; Handl 1988; Klein 1998; Teckenberg 1991, 2000; Wirth 1996, 2000). In this chapter we want to analyze the process of assortative mating as a life course process. Using unique biographical data from the German Socio-Economic Panel (GSOEP), we reconstruct the process of spouse selection in the life course of single men and women in West Germany and compare the marriage patterns of successive birth cohorts over the last 50 years. Of central interest is the question that asks to which extent young people pool their resources at the time of their first marriage. In addition, we study the impact of social origin on the process of assortative mating in the life course.

### DATA, METHODS AND VARIABLES

Our empirical analysis is using the German Socio-Economic Panel (GSOEP). There is an ample number of descriptions on GSOEP data (cf. e.g. Krupp 1985; Hanefeld 1987; Rendtel 1988, 1989), which makes it unnecessary to provide more detailed information on this data set here. However, it should be mentioned that the data are unique for our purpose because they allow us to reconstruct the step by step educational careers and the processes of entry into the first marriage in the life course of single men and women. We used the retrospectively gathered biographical

histories of 1984 which have been updated by prospectively gathered data in the course of 11 panel waves (1984 - 1994). Since the aim is to obtain a long-term description of the changes in the marriage process, the analysis has been limited to German men and women in West Germany.

Using causal-type transition rate models, it is possible to model the interdependencies between educational career and the marriage process (see Blossfeld, Rohwer 2002; Blossfeld et al. 1999; Pötter, Blossfeld 2001). With this methodological approach, one of these processes can be specified as the dependent one and the other one as the independent. Technically speaking, this is done with the help of time-dependent covariates and is extensively described in Blossfeld and Rohwer (2002). The basic idea can be summarized in the following way:

$$\Delta X(t) \longrightarrow \Delta r(t') \quad t < t'$$

Meaning that at any point in time,  $t$ , in the life course of single men and women we examine how a change in educational attainment in the respective past (i.e., before and not including  $t'$ ) leads to a change in the transition rate of marriage ( $\Delta r(t')$ ) in the present and the future. This modeling strategy requires that we take the temporal order in which the processes evolve very seriously.

We use an exponential model with time-constant ( $X_1$ ) and time-dependent ( $X_2(t)$ ) covariates with three destination states (competing risks; see Blossfeld, Rohwer 2002):

$$r_{jk}(t | X_1, X_2(t)) = \exp(\beta_{jk0} + \beta_{jk1}X_1 + \beta_{jk2}X_2(t))$$

with:  $j = 0; k = 1, 2, 3$

This means that the origin state for women and men is 'single' ( $j=0$ ) and that at time of marriage they can make a transition into one of three destination states: (1) husband's (wife's) educational attainment is higher than that of the wife's (husband's) at the time of marriage (upward marriage:  $k=1$ ); (2) husband's (wife's) educational attainment is the same as wife's (husband's) at the time of marriage (homogamous marriage:  $k=2$ ); and (3) husband's (wife's) educational attainment is lower than that of the wife's (husband's) at the time of marriage (downward marriage:  $k = 3$ ). The observation of the marriage process begins for each individual at the age of 15 and ends at the event of the first marriage, at the age of 60 (right censored), or at the last panel interview in 1994 (right censored). With these transition rate models we acknowledge that marriage decisions always consist of two partial decisions that have to be taken simultaneously and belong together like the two sides of a coin: (1) the decision to marry at all and (2) the decision to marry a particular partner, i.e., to marry upwardly, downwardly, and homogamously. We think that it would be artificial to separate these two genuinely coupled decisions in methodological terms.

The covariates used in our longitudinal analysis are defined as follows:



(1) *Non-Monotonic Age Dependence of the Marriage Process*: The well-known non-monotonic age dependence of the transition rate into first marriage is modeled with a combination of the following two variables (for a detailed discussion see Blossfeld and Huinink (1991) or Blossfeld and Jaenichen (1990)), where “i” is an index of the i-th year since the age of 15:

$$\text{Log}(D_i) = \log(\text{Current Age} - 15)$$

$$\text{Log}(R_i) = \log(60 - \text{Current Age})$$

Using both variables as time dependent covariates in an exponential model leads to the following term:

$$\exp(\text{Log}(D_i) * \beta + \text{Log}(R_i) * \beta) = D_i^\beta * R_i^\beta$$

(2) *Education*: In order to model the educational attainment process in the life course of women and men, we use the average number of years, which are normally necessary to attain a certain educational attainment level in the German system (see Blossfeld 1985, 1990): lower secondary school qualification (Hauptschule) without vocational training (HOB) = 9 years; middle school qualification (Mittlere Reife) without vocational training (MOB) = 10 years; lower secondary school qualification (Hauptschule) with vocational training (HMB) = 11 years; middle school qualification (Mittlere Reife) with vocational training (MMB) = 12 years; higher secondary schooling qualification (Abitur) without vocational training (ABI) = 13 years; higher secondary school qualification (Abitur) with vocational training (ABIMB) = 15 years; professional college qualification (Fachhochschule) (FHS) = 17 years; and university degree (UNI) = 19 years. In our analysis educational attainment is a time-dependent covariate. Depending on the educational career, this variable contains the educational qualification level at each point in the life course. We have to include this variable also as a control variable in our analysis because a person’s chances to marrying up, down, or lateral, depend upon this person’s level of education attained in the life course.

(3) *Interaction of Education With Age*: The following two time-dependent covariates take into account that the marriage rate might be dependent on an interaction between level of education and the age:  $\text{Log}(\text{Current Age} - 15) * \text{Education}$  and  $\text{Log}(60 - \text{Current Age}) * \text{Education}$ .

(4) *Cohort Trend*: Due to the expansion of higher education in the past four decades, the level of educational attainment has changed considerably. To control for the structural changes in the distributions of educational attainment for men and women we include two measures: (1) *Linear Cohort Trend* which is a variable assigning (to each five-year cohort) a value from 1 (earliest born cohort) to 11 (latest born cohort) and (2) *Structural Marriage Opportunities* which is a variable that measures the structural chance to marry upwardly, downwardly, or homogeneously for the various educational attainment levels within each birth cohort (the values are updated every time a higher educational level is reached).

(5) *Duration in School*: This clock is used to test the hypothesis that the longer the duration in the educational system, the higher the rate of homogamous marriage. It is a time-dependent variable. At the age of 15 the value of this clock starts with 0 and then it increases continuously for each year spent in the educational system by 1 until leaving the school system. After the educational system is left, the clock is set back to 0 because the individuals are no longer participating in the educational system.

(6) *Not in School*: The postponement of marriage and the catching up process is modeled by two different covariates: (1) the time-dependent dummy variable *Not in School* (0/1-coding; reference category: In school); and (2) a set of seven time-dependent dummy variables indicating time periods after men and women have left the educational system (with "1" otherwise "0"; reference category: In school): *1-2 Years After School*, *3-4 Years After School*, ..., *11-12 Years After School*, *More Than 12 Years After School*. With these variables, it is possible to control for any kind of the time-dependent marriage effect immediately after individuals have left school.

(7) *Direct Effect of Social Origin*: We are using the variable *Father's Education* in order to model the direct effect of social origin. This variable corresponds to the classification of education used for sons and daughters (see above).

(8) *Father's Education \* Linear Cohort Trend*: To catch the changes in the effect of social origin on marital selection, we include an interaction term: *Father's Education \* Linear Cohort Trend*.

(9) *Indirect Effects of Social Origin*: These indirect effects of social origin refer to the relation of the educational attainment levels of fathers to their daughters'/sons'. We use a set of three (1/-1) dummy variables (centered effects). Each of these variables expresses a specific relation between the father's and his daughter's/son's educational level at each point in time: (1) *Father's Educational Level < Daughter's/Son's*; (2) *Father's Educational Level = Daughter's/Son's*; and (3) *Father's Educational Level > Daughter's/Son's*. The centered effects of these three variables compare the intergenerational relationship to a hypothetical grand mean.

## RESULTS

### *Changes in Educational Assortative Mating Across Cohorts*

In recent public and sociological discussions, it is often claimed that modern societies are becoming individualized and that social structures are fading away (Beck 1986; Giddens 1991). The pluralization of lifeworlds, the differentiation of life paths, the evacuation of tradition from our everyday decision-making processes and the weakening of communal or social control suggests that rates of educational homogamy should have decreased in the course of history. The theoretical foundation of such a claim is generally based on modernization (cf. Treiman 1970; Blau, Duncan 1967; Bell 1975; Parsons 1971), industrialization (Kerr 1983) or individualization theories (Beck 1986; Hradil 1987; Giddens 1991). These approaches assume an inherent logic of development in the processes of industrialization and social mod-

ernization and infer a trend towards social openness and meritocratization in modern societies.

We therefore describe first educational assortative mating across cohorts and show to what extent educational homogamy has changed in West Germany over the last 50 years. Table 2.1 shows the trends in upward, downward, and homogamous marriage for men and women from successive birth cohorts. This table contains empirically observed (O) and predicted percentages (P) to evaluate the degree of absolute and relative educational homogamy. The predicted values are based on the assumption that marriage decisions were taken randomly, given the distributions of educational attainment of men and women in each birth cohort. Thus, the predicted percentages take into account the differences in group size between male and female educational categories across cohort.

Five results in Table 2.1 are important for our research question. First, if we exclude the cohorts at the opposite ends (born before 1919 and after 1963), as they suffer from specific selectivities in this study, one observes a clear monotonic trend of rising educational homogamy (from approximately 44% to about 70%) across cohorts. Thus, empirical evidence in Table 2.1 contradicts clearly the thesis of a trend towards social openness and individualization. It rather points to an increasing exclusion through the social structure and a rising closure of social networks over time (see also the papers by Mare (1991) and Kalmijn (1991)).

Second, in Table 2.1 it is evident that the proportions of upward marriages of women (and of downward marriages of men) are surprisingly high (particularly among the older birth cohorts). This indicates that in West Germany up the 1970s, as in most industrialized countries (McRae 1986), the traditional gender role model was orienting young women towards acquiring lower levels of education than young men, and thus structurally forced many women to marry men who had a higher level of education. These gender norms were part of a male breadwinner ideology making husbands responsible for lifelong gainful full-time employment and assigning housework tasks and the rearing of children to their wives. In such a context, women tend to prefer men with high levels of education and good labor market opportunities, while women's education is less important for men because these women are supposed to stay at home. Thus, downward marriage does not frustrate these men.

Third, from birth cohort to birth cohort there is also evidence that traditional upward marriages of women are becoming gradually less important. While it was standard that women born around 1929-33 married upwardly (approximately 54%), the percentage of these women fell to about 21% in the cohort 1959-63. Nonetheless, this means that among the later born cohorts the traditional upward marriage pattern of women is still surprisingly widespread in about one-fifth among the married couples.

Fourth, there has always been a small proportion of women and men who have deviated from the traditional male breadwinner marriage norm. These women have married less qualified men (or conversely, these men have married more highly qualified women). Interestingly, this proportion has remained quite stable across cohorts, fluctuating at levels between 4% and 8%, but without any clear trend across the cohorts. This finding is particularly astonishing if we take into account that

women profited far more than men from educational expansion in West Germany (Shavit, Blossfeld 1993).

The predicted percentages (P) assume a random marital matching between men and women in the birth cohorts and take into account the changing educational structure of men and women across cohorts. They show that marrying a lower qualified man actually should have continuously increased for women of each later born cohort (see Table 2.1). Thus, there is an increasing divergence between the empirically observed (O) and predicted percentages (P) of women's downward marriage over time. For instance, for women born between 1924-28 the difference between the predicted (8.8%) and observed values (4.0%) still was 4.8 percentage points, while it grew to 12.2 percentage points for females born 1954-58 (predicted proportion: 17.7%, observed proportion: 5.5%). Thus, social and interactional pressures with regard to the male breadwinner norm seem to be significant also for younger women and men in West Germany. This norm defines wives as secondary providers and makes it difficult for women to marry downwardly in terms of educational level. It not only slows down the diffusion of more symmetric gender-specific marriage behavior but also produces gender-specific patterns to marry at all. Table 2.2 shows that in West Germany highly educated women and low educated men have the highest percentages of never married at age 36. The former because, if they do not succeed to marrying up or lateral, it is normatively difficult for them to marry downwardly in the face of the male breadwinner norm; and the latter because they are not very attractive and competitive marital partners in the face of the male breadwinner norm. Of course, this also implies that change in marriage patterns is not necessary symmetric across educational levels: Increasing homogamy for members at one level (e.g., persons with a high educational level) across cohort does not necessarily mean more homogamy for members of other educational groups. Thus the rates of homogamous marriage over the life course and across cohort might change quite differently across educational levels, as we will show below in Figure 2.1.

Finally, the comparison of the observed (O) with the predicted (P) values across cohorts shows two further interesting patterns (see Table 2.1). First, the proportions of observed educational homogamy (O) have always been above the proportions of the "random marriage model" (P) and this tendency has been further reinforced by the expansion of education across cohorts. Thus, the increasing preference of later born men with regard to women's educational level in a dual-earner society, together with men's structurally increased chance of meeting women of equal qualification in the educational system, seems to raise the level of educational homogamy across cohorts. Second, the observed percentages (O) of women who marry upwardly have always been quite close to the predicted values (P) of the "random marriage model". In other words, based on the gender-specific distribution of educational attainment, women's upward marriage has always been in line with "structural pressure".

Given the rising educational homogamy in West Germany across cohorts, the challenge for the following longitudinal analysis is to reconstruct in the life course of successive cohorts how these patterns of association have been produced by structural forces at the microlevel.

*Table 2.1. Changes in Upward, Downward, and Homogamous Marriages (Partners' Highest Educational Attainment Level at Time of Marriage)*

	Upward Marriage		Homogamous Marriage		Downward Marriage	
	O	P	O	P	O	P
	%	%	%	%	%	%
<u>Wives</u>						
(before 1919)	48.4	50.6	50.3	40.2	1.3	9.1
1919-1923	52.1	53.9	43.9	38.7	4.0	7.4
1924-1928	46.7	50.0	49.3	41.6	4.0	8.8
1929-1933	54.4	51.3	40.8	37.8	4.8	11.0
1934-1938	37.8	42.1	56.0	47.1	6.2	10.8
1939-1943	36.9	39.5	58.1	50.6	5.0	9.9
1944-1948	26.7	33.4	65.5	52.6	7.8	13.9
1949-1953	27.0	33.4	68.8	52.5	4.2	14.1
1954-1958	23.9	27.1	70.6	55.0	5.5	17.7
1959-1963	21.6	24.5	70.0	58.4	8.4	16.7
(1964-1978)	22.3	28.3	69.9	49.2	7.8	22.7
<u>Husbands</u>						
(before 1919)	1.9	9.1	51.7	40.2	46.5	50.6
1919-1923	5.8	7.4	44.8	38.7	49.4	53.9
1924-1928	4.6	8.8	42.5	41.6	52.9	50.0
1929-1933	5.9	11.0	45.6	37.8	48.5	51.3
1934-1938	5.8	10.8	57.5	47.1	36.7	42.1
1939-1943	5.1	9.9	61.6	50.6	33.3	39.5
1944-1948	5.4	13.9	66.8	52.6	27.8	33.4
1949-1953	6.3	14.1	70.7	52.5	23.0	33.4
1954-1958	3.8	17.7	73.7	55.0	22.5	27.1
1959-1963	7.7	16.7	71.5	58.4	20.8	24.5
(1964-1978)	13.4	22.7	65.2	49.2	21.3	28.3

O = Empirically observed percentages.

P = Predicted percentages, based on the assumption that marriage decisions were taken randomly (given the distributions of educational attainment levels of women and men for each birth cohort).

Source: German Socio-Economic Panel, Waves 1984-94

Table 2.2. *Never Married Men and Women According to Educational Attainment Level and Age (Percentages)*

Education	Percentage of Never Married Men and Women at Age				
	20	24	28	32	36
<u>Women</u>					
Low <sup>a)</sup>	73	34	15	10	6
Medium <sup>b)</sup>	76	35	19	11	8
High <sup>c)</sup>	97	69	40	27	20
<u>Men</u>					
Low <sup>a)</sup>	96	57	35	24	19
Medium <sup>b)</sup>	94	57	28	16	10
High <sup>c)</sup>	98	80	48	28	16

<sup>a)</sup> Lower secondary school qualification (Hauptschule) without vocational training; and middle school qualification (Mittlere Reife) without vocational training. <sup>b)</sup> Lower secondary school qualification (Hauptschule) with vocational training; middle school qualification (Mittlere Reife) with vocational training; higher secondary school qualification (Abitur) without vocational training; and higher secondary school qualification (Abitur) with vocational training. <sup>c)</sup> Professional college qualification (Fachhochschule), and university degree.

Source: German Socio-Economic Panel, Waves 1984-94

### *Effects of the Educational System on Homogamy*

We begin our longitudinal analysis with a description of the process of homogamous marriage over the life course. For this purpose, we estimate a transition rate model for women (Model 1 in Table 2.3) and men (Model 1 in Table 2.4) that contains only the most important lifecourse variables. The estimates take into account the well-known age-dependence of the marriage rate (Blossfeld, Rohwer 2002), the current educational attainment level of men and women, and whether the individual is still in school or not. It is important to note that all covariates in Model 1 are time-dependent. It is easy to see that the process of homogamous marriage varies with age and is also strongly dependent on the interaction between age and educational attainment level. As expected, the effect of education is strong and positive. In other words, the rate of homogamous marriage increases for men and women as the educational attainment level of the individual rises. The estimates of the covariate *Not in School* are also significantly positive. This shows that completion of education increases the rate of homogamous marriage strongly for men and women.

The problem of these complex dynamic analyses in Tables 2.3 and 2.4 is that it is hard to see how the various time-dependent influences combine at each age and change the rate of homogamous marriage in the life course. As an example, we estimated therefore the rates for single women (Figure 2.1) with different levels of educational attainment (in school, unskilled, with vocational training, and with a university degree). The resulting plots of the rates are based on the coefficients of Model 1 in Table 2.3. These curves clearly show that there is no simple general age-specific marriage rate as was assumed, for example, in Blossfeld and Huinink (1991), Blossfeld and Jaenichen (1990) or Blossfeld (1995). In Figure 2.1, one can see that the process of homogamy for unskilled women begins very early and then stretches over a relatively long age span. This is because these women enter the employment system at a relatively early age and are therefore "ready to marry" at a younger age. In contrast, the homogamy rate of women of the same age who remain in education is very low. Not until these women have also left the educational system does their rate of homogamous marriage rise. And, moreover, the increase in the rate is greater and steeper the higher women's level of qualification. The sudden rise in the rate to marry homogamously is due to having remained longer in education and having delayed the decision to marry. In this simulation, women with vocational training leave the educational system at the age of 18, while women with a university degree exit at the age of 25. The curves in Figure 2.1 clearly show that for women the rate to marry homogamously is dependent on women's educational attainment level as well as the participation in the educational system. This is particularly true and stronger for women directly after completion of education and even more so for those who graduated from university. The shapes of the rates for various levels of educational attainment in Figure 2.1 can be considered as evidence for the complex effects that the institutional structure of the educational system has upon individual's decisions to marry homogamously.

We now discuss more direct indicators for the theoretically supposed time-dependent forces on the process of assortative mating and address first the question of whether the increased percentage of homogamous marriage in Table 2.1 might not be explained by a changing opportunity structure across cohorts. To address this question, we use two time-dependent variables: (1) the covariate *Linear Cohort Trend* in Model 2 and (2) the covariate *Structural Marriage Opportunities* in Model 3. In Models 2 and 3 it can be seen that the coefficients of these variables are positive and highly significant for homogamous marriage for both men and women (Tables 2.3 and 2.4). Thus, educational homogamy is partly structurally produced by a change in the gender-specific educational attainment levels of men and women (see Blossfeld, Timm 1997). However, this is not the only reason.

The educationally homogenous populations increasingly emerge from one educational attainment level to the next. Within each generation the less qualified are leaving the qualification process earlier. Therefore, those young women and men who stay together longer have attained a similar level of education. The structural possibilities of meeting a similar or (later) higher qualified partner, and then to possibly marry that person, should therefore increase with *Duration in School*. In models 2 and 3 of Tables 2.3 and 2.4, this time-dependent covariate is included in the

model. This variable for women and men has the expected significantly positive effect on the homogamy rate and the rate of upward marriage. It is not significant for downward marriage. In other words, the more time women and men spend in the educational system, the greater the chance of marrying a partner with similar or (later) higher qualification. This implies that the educational system has increasingly become a marriage market and that educational expansion prompts this mechanism of increasing educational homogamy across cohorts.

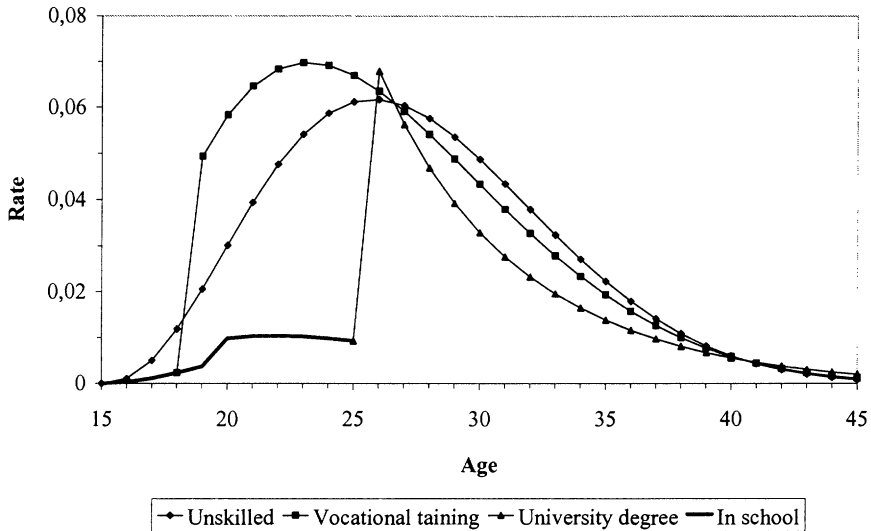


Figure 2.1. Educational Homogamy Rates of Women

Another hypothesis was that students in the educational system (especially those at a higher level in education) increasingly postpone family formation in school and then often catch up after leaving school. In other words, we assumed that after leaving the educational system the tendency to marry homogamously should first increase and then, with increasing exposure to a more heterogenous environment outside the educational system, decrease again. In Models 2 and 3 of Tables 2.3 and 2.4 we therefore used a sequence of period-specific dummy variables which allow us to describe this non-monotonic pattern in a flexible way. The coefficients of these seven time-dependent dummy variables (*1-2 Years After School*, ..., *11-12 Years After School*, *More Than 12 Years After School*) show that this non-monotonic relationship is indeed observed. The rates of homogamous and upward marriage are indeed non-monotonic. Woman's rate of homogamous marriage jumps up immediately after leaving school and then gradually declines; men's rate of homogamous marriage first increases, reaches a maximum, and then decreases again. It seems that men first have to establish themselves in the labor market before they are able to marry homogamously, while women can marry homogamously directly after school.



In summary, there is for both sexes not only a postponement but also a catching-up process which decreases with exposure to more heterogeneous environments.

### *Effects of Social Origin and Their Changes*

The *direct effect of social origin* on educational homogamy should increase with the educational level of the father. This should be the case because social origin is a conglomerate of various highly correlated parental characteristics such as wealth, income, prestige, etc., which are positively correlated with education and reinforce the barriers between social groups. Tables 2.3 and 2.4 provide empirical evidence for this hypothesis. There is a significant positive effect of father's education on the rate of homogamous marriage for both daughters and sons. Thus, social networks seem to be increasingly closed with relation to increasing social origin.

But, has the direct effect of social origin changed in the course of modernization? In order to answer this question, we included the interaction variable *Father's Education \* Linear Cohort Trend*. The coefficients of this variable in Model 2 are significantly negative for women (Table 2.3) and men (Table 2.4). This means that the direct effect of social origin has slightly declined across generations. Thus, there seems to be some kind of equalizing effect.

As a last step in this analysis, we discuss the *indirect effects of social origin*. These influences are modeled by three time-dependent dummy variables. To make the interpretation easier, centered effects have been employed, meaning that the effects represent differences to a grand mean.

The probability of a son/daughter marrying an equally qualified partner is especially high if the daughter/son has the same educational level as the father. This is because the social networks of the family of origin and the networks mediated through the educational system complement and strengthen each other. Models 2 and 3 of Tables 2.3 and 2.4 show that this effect is indeed there for homogamous marriages. The coefficients of the dummy variables *Father's Education = Daughter's/Son's Education* are positive and highly significant.

It is also assumed that those sons and daughters who are educationally upwardly mobile establish new social networks through school. Because these individuals not only prefer finding a partner with the same educational level but also want to secure their new social status, it is predicted that there is a high probability that they will marry homogamously with regard to education. Models 2 and 3 of Tables 2.3 and 2.4 reflect this argument. The coefficients of the dummy variables *Father's Education < Daughter's/Son's Education* are both positive and highly significant with respect to homogamous marriages.

In regard to upwardly mobile men and women, it is assumed that they would also continue to stay in contact with the people with whom they grew up (friends, acquaintances, relatives, etc.). Therefore, it seems likely that these men and women will still meet persons from the network of their social origin and eventually marry downwardly. Models 2 and 3 of Tables 2.3 and 2.4 also support this hypothesis. The coefficients of the dummy variables *Father's Education < Daughter's/Son's Education* have a significant positive effect on downward marriage.

Table 2.3. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Women (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	66.97**	57.41**	30.48	-68.23**	-49.20**	-23.24**	-80.96**	-63.39**	-68.80*
Log(Current Age-15)	-8.85**	-7.30**	-3.63*	6.22**	5.06**	1.65	4.72*	3.84	5.95*
Log(60-Current Age)	-13.01*	-11.83**	-8.25	13.71**	8.01**	3.41	16.36*	12.89	14.44*
Log(Current Age-15)*Education	1.24**	1.06**	0.64**	-0.39**	-0.35**	-0.01	-0.20	-0.10	-0.31
Log(60-Current Age)*Education	2.36**	1.98**	1.53**	-0.57**	-0.31	0.19	-0.52	-0.33	-0.64
Education	-11.61**	-9.78**	-6.89**	2.96**	1.84	-0.66	2.64	1.66	2.73
Not in School <sup>a)</sup>	0.29			2.00**			2.81**		
Duration in School <sup>b)</sup>		0.21**	0.27**		0.34**			-0.30	-0.22
1-2 Years After School <sup>c)</sup>		1.93**	2.44**		3.89**			0.72	0.82
3-4 Years After School <sup>c)</sup>		2.01**	2.71**		4.42**			0.24	0.45
5-6 Years After School <sup>c)</sup>		1.93**	2.73**		4.62**			0.07	0.28
7-8 Years After School <sup>c)</sup>		1.87**	2.71**		4.57**			0.36	0.51
9-10 Years After School <sup>c)</sup>		1.82**	2.69**		4.40**			0.39	0.45
11-12 Years After School <sup>c)</sup>		1.78**	2.66**		4.26**			-0.90	-0.91
More Than 12 Years After School <sup>c)</sup>		1.36*	2.18**		4.18**			-0.34	-0.61
Father's Education		-0.07	-0.04		0.18**			-0.04	-0.07
Father's Education*Linear Cohort Trend		-0.01	0.01		-0.01**			0.00	0.01**
Father's Education>Daughter's Education <sup>d)</sup>		-0.31**	0.10		0.31**			0.49*	0.80**
Father's Education=Daughter's Education <sup>d)</sup>		-0.32**	-0.27**		0.41**			0.78**	0.66**
Father's Education<Daughter's Education <sup>d)</sup>		0.63**	0.17		-0.72**			-1.27**	-1.46**
Linear Cohort Trend		0.16			0.23**			0.07	
Structural Marriage Opportunities			2.74**			1.68**			4.33**
Number of Events	792	792	792	1394	1394	1394	129	129	129
Subsides	43465	43465	43465	43465	43465	43465	43465	43465	43465
Likelihood Ratio Test (LR) <sup>e)</sup>	2834.82	3430.58	3679.02	2834.82	3430.58	3679.02	2834.82	3430.58	3679.02
Degrees of Freedom	6	19	19	6	19	19	6	19	19

a) Reference category: in school.. b) Measured in numbers of school years after age 14. c) Dummy variable (reference category: in school). d) Centered Effects.

e) LR = 2 \* (likelihood (model with covariables) - (loglikelihood (model without covariables))). \*\*p = .01; \* = .05

Source: German Socio-Economic Panel, Waves 1984-94

Table 2.4. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Men (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-31.18	-16.00	-46.12**	-75.56**	-69.18**	-61.80**	-73.20**	-63.16**	-65.20**
Log(Current Age-15)	-2.40	-1.73	3.63	7.02**	7.31**	5.88**	6.23**	6.38**	7.01**
Log(60-Current Age)	11.08*	5.96	8.20*	16.09**	13.41**	12.44**	14.65**	11.87**	12.49**
Log(Current Age-15)*Education	0.69**	0.59*	0.02	-0.32**	-0.38**	-0.24**	-0.27**	-0.39**	-0.29**
Log(60-Current Age)*Education	-0.21	-0.10	-0.38	-0.75**	-0.71**	-0.60**	-0.67**	-0.59**	-0.65**
Education	-1.46	-1.56	1.23	3.30**	3.23**	2.59**	3.11**	2.99**	3.06**
Not in School <sup>a)</sup>	-1.49**			0.66**			2.09**		
Duration in School <sup>b)</sup>		0.27**	0.38**		0.13**	0.10*		0.05	0.05
1-2 Years After School <sup>c)</sup>		2.01	3.21**		1.50**	1.29**		2.01	1.60
3-4 Years After School <sup>c)</sup>		2.01	3.21**		1.97**	1.67**		1.99	1.67
5-6 Years After School <sup>c)</sup>		1.91	3.40**		2.15**	1.83**		2.29*	1.97*
7-8 Years After School <sup>c)</sup>		1.60	3.15*		2.15**	1.82**		2.33*	1.99*
9-10 Years After School <sup>c)</sup>		1.25	2.83*		1.93**	1.60**		2.12	1.78
11-12 Years After School <sup>c)</sup>		1.17	2.79		1.75**	1.41**		2.19	1.84
More Than 12 Years After School <sup>c)</sup>		0.07	1.71		1.51**	1.18*		1.67	1.34
Father's Education		-0.24	0.07		0.13**	0.02		-0.09	-0.10**
Father's Education*Linear Cohort Trend		0.01	-0.01*		-0.01*	0.00		0.00	0.01**
Father's Education<Son's Education <sup>d)</sup>		-0.47*	0.16		0.21**	0.09		0.15*	0.13
Father's Education=Son's Education <sup>d)</sup>		-0.57**	-0.33*		0.09*	0.06		0.39**	0.20**
Father's Education>Son's Education <sup>d)</sup>		1.04**	0.17		-0.30**	-0.15		-0.54**	-0.33*
Linear Cohort Trend		-0.04			0.17**			-0.15*	
Structural Marriage Opportunities			4.48**			1.22**			3.67**
Number of Events	118	118	118	1377	1377	1377	795	795	795
Subepisodes	45053	45053	45053	45053	45053	45053	45053	45053	45053
Likelihood Ratio Test (LR) <sup>e)</sup>	2775.44	3103.26	3319.40	2775.44	3103.26	3319.40	2775.44	3103.26	3319.40
Degrees of Freedom	6	19	19	6	19	19	6	19	19

a) Reference category: in school... b) Measured in numbers of school years after age 14. c) Dummy variable (reference category: in school). d) Centered Effects.

e) LR = 2 \* (likelihood (model with covariables) - (loglikelihood (model without covariables))). \*\*p = .01; \* = .05

Source: German Socio-Economic Panel, Waves 1984-94

Downwardly mobile men and women would be less interested to marry educationally homogamous at this lower level. Models 2 and 3 of Tables 2.3 and 2.4 are in accordance with this hypothesis. The coefficients of the dummy variables *Father's Education > Son's/Daughter's Education* have a significant negative effect on the homogamous marriage.

On the other hand, these downwardly mobile men and women with lower educational attainment still have the opportunity to meet better educated partners through their social network of the family of origin and are therefore likely to marry upwardly (see Models 2 and 3 of Tables 2.3 and 2.4). The coefficients of the dummy variables *Father's Education > Son's/Daughter's Education* have indeed a significant positive effect on upward marriage.

Finally, the hypothesis is formulated that in terms of social networks, the likelihood should be very small that sons and daughters who are upwardly (downwardly) mobile due to their educational career, marry up (down) even further. Such double upward (downward) mobility should be difficult to achieve due to the lack of social networks. Models 2 and 3 of Tables 2.3 and 2.4 show that this hypothesis is also true. The coefficients of the dummy variables *Father's Education < Daughter's/Son's Education* (*Father's Education > Daughter's/Son's Education*) have a significant negative effect on upward and downward marriage.

In summary, we would like to stress two points: (1) Sons and daughters who have exceeded (not attained) the educational level of their family of origin show a tendency of countermobility through marriage and indeed partially correct their individual educational success (or failure). This means that the forces of the family of origin does succeed inadvertently in the end. But there is also an opposite force: (2) Sons and daughters who have climbed upwards due to individual effort are able to some extent to consolidate their position by marrying homogamously. These young people might be called the winners of educational expansion. The change in proportion of these people across generations is therefore an important indicator for the degree of openness or exclusiveness of intergenerational inequality structures in modern societies. In West Germany, for daughters the proportion has increased from 6% (1919-1933 cohort) to 14% (1949-1963 cohort) and for sons from 9.2% (1919-1933 cohort) to 13.5% (1949-1963 cohort). In other words, the effect of educational expansion seems to have been quite limited in opening social circles.

## SUMMARY AND CONCLUSIONS

The aim of this study was to investigate the effects of the educational system and educational expansion on marriage patterns in West Germany. We reconstructed the marriage process of single German men and women and compared the marriage patterns of successive birth cohorts over the past 50 years.

Our description of the development of educational homogamy across birth cohorts has shown a long-term trend towards more educational homogamy. This trend is, on the one hand, "structural" due to an increasing equality of educational opportunities of men and women across cohorts and, in part, a consequence of social networks that are structured by educational institutions. The proportion of women mar-

rying upwardly has sharply decreased across birth cohorts although it still makes up one-fifth of all marriages amongst the later born cohorts in West Germany. Finally, it has been shown that there has always been a small percentage of men and women who have not married in accordance with the traditional gender pattern. These women married less qualified men (or these men married better educated women). In particular, it was quite surprising that the probability of younger women to marry a less qualified man has not increased substantially, though women of later birth cohorts have profited more than men from educational expansion. It seems that the strong male breadwinner norm in Germany defines wives as secondary providers and makes it difficult for highly educated women to marry downwardly (and thus to marry at all) (Blossfeld, Drobnič 2001).

Increasing educational homogamy across cohorts does not support the idea of a general, long-term trend leading to individualization in the course of the modernization process (Beck 1986; Hradil 1987). Instead, the development of educational homogamy across cohorts demonstrates an increasing closure of social structure and social networks (see Teckenberg 1991, 2000). Higher (and lower) educated men and women pool their good (and bad) sociocultural and economic resources at marriage.

Our micro-macro longitudinal analysis of marital choice in the life course shows that the educational system has become an increasingly important marriage market, particularly for those who are highly qualified. Educational homogamy increases with the duration that a man and woman stay in school. Since the duration of schooling has been increasing from birth cohort to birth cohort, rising educational homogamy has been the result. The tendency to marry an educationally homogamous partner is especially pronounced right after leaving school and increases with one's educational level. This is especially the case because higher qualified men and women (1) increasingly stay in an educationally homogeneous environment, and, (2) postpone marriage until they finish school. The longer that they are out of the educational system, the less likely it is that they will enter an educationally homogamous marriage because they are increasingly exposed to an educationally heterogeneous environment.

Furthermore, our analysis showed that the better situated parents had a strong effect on educational homogamy. Thus, social circles become more exclusive in higher social classes. The direct effect of social origin also declined only marginally across cohorts. Some indirect effects of social origin deserve special mention. Those sons and daughters who exceeded the educational level of their family of origin (or failed to attain this level) showed a tendency of countermobility through marriage, which in part corrected individual educational success (or failure). There is also a small, but slowly increasing proportion of sons and daughters in West Germany, who have managed to move up intergenerationally through individual efforts and have been able to consolidate that level by marrying homogamously with regard to education. Our empirical results for West Germany therefore do not show that there is a greater openness of social networks through marriage in the course of modernization and individualization process. On the contrary, educational homogamy has strongly increased across cohorts and social structure and social circles seem to be more closed than ever.

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# 3

## WHO MARRIES WHOM IN FLEMISH BELGIUM?

MARTINE CORIJN \*

### INTRODUCTION

In a Western European context Belgium can be considered a traditional country. This is obvious in its ideological and political history and in the family formation behavior. The country has a Catholic tradition. In the beginning of the 1990s 65% of the Belgian population still defined themselves as Catholics (Dobbelaere, Voyé 1992). On the political level, the Christian Democrat Party has been part of the government since 1947 till 1999 and has held the position of Minister of Family and Welfare during most of this time. In a Western European context the age of females at first marriage among the post war cohorts in Belgium is relatively young (27.0 years in 2001) and approaches the ages observed in Eastern European countries (Sardon 1992). Unmarried cohabitation is still exceptional, as by 1991 it did not exceed the 10% in any age group (De Boosere 1994). In 1995 17% of the births were out-of-wedlock (NIS 2000). The divorce rate in Belgium is, as in other European countries, increasing, but at a medium level. The total divorce rate amounts up to 0.44 in 1999 (Council of Europe 2001).

The main thesis of this volume is that the educational system is an important marriage market. As such, the educational institution - and its related networks - are considered as important settings where young people meet. The educational system in Belgium has some particularities that must be taken into account. Data on when and where young people enter the partner or marriage market have however been and still are scarce.

Considering the educational system, in terms of its physical units as a potential (heterosexual) partner and marriage market makes only sense as far as those units

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are gender-mixed. In Belgium this was and still is in general not the case. Moreover, the whole Belgian educational system is differentiated according to ideology, which is relevant for the gender issue, as particularly the Catholic schools were segregated by gender. The educational system, in terms of age and level, structures a lot of school-related and non-school related activities in leisure time. Schoolmates meet in organised leisure time activities (sports clubs, youth organisations) and in less organised activities (pubs, cultural manifestations). These meeting places are a potential marriage market as far as they are gender-mixed. Some of the organised leisure activities for youth are segregated by gender and, moreover, sometimes organised according to political or religious affiliation.

Some related data are available for Flanders (the Flemish speaking part of Belgium). Both the educational system and the youth organisations there were to a great extent structured by ideological affiliation and by gender. Even in the 1970s and 1980s up to 63% of the high schools were Catholic schools and up to 75% of the pupils attended a Catholic high school (MVG, s.d.). Institutions for higher education and universities are also differentiated by ideology. Recently 63% of the students in higher (non-university) education were attending a Catholic school. Of the four universities, the Catholic one has the largest student body. However, with regard to higher education, the availability and quality of an education in a certain field is more important when choosing which institute to attend than ideological background. Given the dominance of Catholic high schools and the afore mentioned segregation practices at least up to the 1970s, these schools were only in a restricted way potential marriage markets. A rationalisation of the diverging options within the orientations of the high schools in the 1980s led to the merging of Catholic high schools into gender-mixed schools. Recent data show that 22% of the Catholic high schools are now gender-mixed (40% to 60% boys) and that 19% of all high school pupils in a Catholic high school are in a gender-mixed school (MVG, s.d.). Non-Catholic schools have tended to be more gender-mixed: 64% to 55%, respectively. In general, the selectivity in the educational system creates increasingly homogeneous groups since less qualified students leave the educational system. This selectivity is reinforced if schools are structured by orientation and/or if they are gender-specific. Together all factors strongly reduced the chances of meeting potential spouses in everyday school activities.

A lot of organised leisure activities are organized by ideologically oriented institutions. And, once more, of these cases, Catholic organisations tended to organize gender-segregated events. Recently, half of the youth work units in Flanders were part of traditional Catholic youth organisations. An important development in youth work was the shift from private to public initiatives. In the 1990s, almost 60% of the 16 to 24 year olds stated that they were an active member of an organisation. Sport clubs (34%) and youth organisations (17%) were the most popular among them. Youth organisations became less popular in the second half of the 1980s but have experienced a revival since then. Youth organisations recruit particularly in higher educated Catholic social milieus (Bral 1997). Catholic youth organisations and most sport clubs have almost always been structured by gender.

Thus research on the Belgian educational system as a marriage market has to take into account 1) that the educational system was strongly structured by gender, which restricted the opportunities of young individuals, at least up to the end of high school, to meet the other gender in a school context and 2) that the educational system was strongly structured by ideological affiliation, with Catholic schools being less gender-mixed than non-Catholic religious institutions. The same holds for youth organisations. Ideological differentiation, however, no longer implies a strict membership policy.

The answer to the question ‘Who marries whom in Belgium?’ is central to understanding the reproduction of social inequality in terms of educational attainment and the degree of opening or closure of social circles in terms of ideological affiliation. Unfortunately, Belgium has a weak tradition in research on social mobility and marital homogamy.

Throughout the twentieth century men and women were less likely to have been forced to marry a person of a particular background or social circle. As such, any explanation of spousal selection has to rely on the dynamic interplay of opportunity structures and marriage markets on the one hand, and of individual preferences and strategies, on the other.

The aim of this study is similar to that of Blossfeld and Timm (see chapter 2 in this volume). First, some information is given on where and when young people enter the partner and marriage market. This is followed by a description of the degree to which individuals with similar and different social characteristics, such as age, education and religion, marry each other and how this degree of homo/heterogamy has changed across time. Thirdly, the process of spousal selection in the life course of single people is reconstructed by looking at the role of the educational system and social origin on the educational homo/heterogamy of marriages. Marital homogamy implies that the social inequality and social segregation in an individual’s life course can be further increased, since the good and bad socio-cultural and socio-economic resources corresponding to characteristics of the partners are cumulated at marriage. The level of educational attainment is considered a main characteristic of social inequality, as it determines an individual’s labour market, income and career chances and influences the cultural resources of the family, as well.

## DATASETS

In the search of appropriate datasets for this study, there were two considerations. One was to have data on Belgium as a whole (which can be difficult in a country with a federalized political system). The second was to cover a cohort range as large as possible. Both conditions are fulfilled in the Panel Study on Belgian Households (PSBH) organized by the Universities of Antwerp and Liège (SGP 1995). The oldest members of the households of this panel study, which started in 1992, were born at the beginning of the twentieth century. Another data source was the fifth Fertility and Family Survey – FFS V (Cliquet et al. 1992). This survey gives data on the 1951-70 birth cohort and was organized by CBGS in 1991-92. It covers Flanders

(Callens 1995) and a limited sample of Brussels, the Capital (Daelemans, Callens 1994). As analyses using this dataset have already been done, among others on the transition to adulthood, some results are borrowed to describe the entry to the partner and marriage market (Corijn 1996).

The differential availability of official statistics (e.g. on the educational system) and of survey data (e.g. on partner and marriage timing) on Belgium and its regions for the purpose of this study limits this analysis. For this reason the geographical range that is covered will be continuously pointed out.

#### WHERE AND WHEN DO YOUNG PEOPLE ENTER THE PARTNER AND MARRIAGE MARKET?

Data on where young individuals meet their (first) steady partner and/or marriage partner are scarce. For France, Bozon and Heran (1989) investigated how places where people meet their marriage partner have changed since 1914. They find that contrary to popular view, the incidence of meetings at work or study have remained stable over time, as though the search for a spouse was not affected by the raising of the school leaving age and by the increasing accession to the labour force. Even among college graduates, only 14% met their spouse at university or college. Close correlations were rather observed between social class and meeting place.

For Flanders, we do have some information on when young people enter the partner market. Among the 1951-70 birth cohort of the FFS V sample, 17% said they had already had a first steady partner by age 16. The first quarter of the male group had a first steady partner by age 18; for the respective female group this was by age 16.5-17. The median ages reached respectively about 20 and 18. Boys start on average a first steady partnership after finishing school, while girls start earlier. Within the limits of the quality of data on reconstructing the partnership history, about 60% of the respondents stated that they later married their first steady partner. As young adults in Flanders postpone starting a first steady partnership less strongly than getting married, they remain longer on the partner market (from 3.5 to 5 years) confirming, testing and/or revising partner choices. On average there were for men about 5.5 and for women about 4 years between the end of educational enrolment and first marriage (Corijn 1996). Multivariate analyses revealed that educational enrolment keeps young men out of the steady partner market, as they consequently postpone the start of a first steady partnership. It does not keep young men from having partners, as many more young men than young women use the category 'loose partnership style' to describe their partnership history before age 22. Not educational enrolment, but unemployment excludes young women from networks to meet potential partners. The impact of the educational level on the timing of the start of the first steady partnership was dependent on age: soon after the age of 24, highly educated young men catch up their delay; whereas highly educated young women catch up already between age 21 and 23 (Corijn 1993, 1996).

## CHANGES IN AGE, EDUCATIONAL AND RELIGIOUS HOMOGAMY

Marital homogamy in Belgium concerns age, educational and religious homogamy. High schools (and youth organizations), particularly the Catholics ones, have structured the social networks of young adults in selective ways. The potential access to school-related networks involving the other gender and other affiliations widened only after high school. Pupils who do not go beyond (Catholic) high school miss these opportunities - a situation affecting a not insignificant percentage of the population: in 1994 only 23% of the population aged 25-64 in Belgium had a degree beyond high school (MVG, s.d.).

Based on the PSBH-sample, *age homogamy* seems to increase somewhat across cohorts, but this development can be attributed to the fact that the youngest cohort postpones marriage and that the age differences of the strongest postponers could not be taken into account at the time of the interview. For the cohorts over age 40, the median age difference between partners in a first marriage is two years, with in one fifth of the cases the man being younger than the woman and in one fifth of all cases an age difference of more than five years.

Trends of *educational homogamy* are related to the Belgian educational system. Education is compulsory from the age of 6. The upper age for compulsory education increased during the twentieth century. In 1983 education became compulsory for 12 school years. Up to age 15, this consists of full-time education, after age 15 of part-time education (MVG s.d.). Primary school takes six years. This is followed by high school which offers diverse educational orientations: a general, a technical, a vocational and one for the arts. In the 1990s about 42% of pupils pursued the general orientation, 32% the technical one, 24% the vocational one and 2% the arts orientation (MVG s.d.). Up until the 1980s the basic structure of high school constituted two cycles of three years each. As the largest share of the cohorts dealt with in this study attended high school before the 1980s, the results refer to this structure. Thereafter reforms lead to a structure consisting of three cycles of two years each. Basically, a lower level certificate takes four years in the technical, vocational and arts orientations and three years in the general one. The higher level of all orientations takes six years. After high school, most degrees of higher non-university education take another 2 or 3 years. Most university degrees take 4 years. Converted into years usually spent in education, schooling tends to vary between 6, 9, 10, 12, 14/15 or 16 years.

Since the Second World War there has been an increase in the number of young Belgians staying in education longer than is compulsory as well as in the proportion of those obtaining a high school certificate. In a West European context, the Belgian population has a low educational level. In 1994 half of the population (i.e. 35% of the active population aged 25-59) had at maximum a certificate of the lower level of secondary education; this is a much higher percentage with such a low level of educational attainment than in the Netherlands or Germany. But 18% (i.e. 30% of the active population) had a higher educational degree and this is a somewhat higher percentage than in the surrounding countries (MVG 1997; VRIND 1996). This means that half of the population left school before age 15. Therefore, a school set-

ting can not really be considered a potential marriage market for them. In contrast among the PSBH-cohorts the median age at leaving the educational system increased from about 16 years to about 21 years. This prolonged stay opens the school as a potential marriage market. In the oldest and youngest cohort, 55% and 8%, respectively, had no education beyond high school.

Table 3.1. Distribution of Upward, Downward and Homogamous Marriages With Regard to Educational Attainment Level for Different Educational Classifications, by Birth Cohort, Among Couples in Belgium (in %)

Classification <sup>a)</sup>	Upward Marriage					Homogamous Marriage					Downward Marriage				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
<b>Cohorts</b>															
<b>Husbands</b>															
1900-1929	4	8	8	16	17	85	68	67	49	45	11	24	25	35	38
1930-1939	5	11	11	20	23	82	65	62	43	39	13	24	27	37	38
1940-1949	9	16	16	20	21	75	56	50	42	39	16	28	34	38	40
1950-1959	14	23	24	29	30	73	55	45	37	36	13	22	31	34	34
1960-1969	20	31	33	35	36	73	57	47	44	41	7	12	20	21	23
1900-1969	11	18	19	24	26	77	60	54	43	40	12	22	27	33	34
<b>Wives</b>															
1900-1929	9	22	23	32	35	86	69	68	51	47	5	9	9	17	18
1930-1939	13	23	24	34	36	82	66	65	47	43	5	11	11	19	21
1940-1949	16	29	35	41	43	75	57	51	40	37	9	14	14	19	20
1950-1959	15	24	31	33	34	72	55	47	40	38	13	21	22	27	28
1960-1969	8	13	21	23	24	71	55	44	40	38	21	32	35	37	38
1900-1969	12	22	27	32	34	77	60	53	43	40	11	18	20	25	26

1. High school or less / more than high school. 2. lower secondary level or less / higher secondary level / more than high school. 3. lower secondary level or less / higher secondary level / higher education / university degree. 4. primary school / lower secondary level or less / higher secondary level / higher education / university degree. 5. primary school / general lower secondary level / technical lower secondary level / higher secondary level / higher education / university degree.

Source: Panel Study on Belgian Households, University of Antwerp

The gender-specific distribution of the educational level changed across the PSBH-cohorts. As the Second World War disturbed educational careers of respective cohorts, those cohorts to be discussed were in high school after the war. Across

those cohorts the most important development is that the gender difference with regard to the third level of higher education inverts from a male to a female dominance. This development reflects, however, the increase of women in higher non-university education and the decrease of any gender difference with regard to university education which almost disappears.

In the context of democratization and prolongation of education social inequality remained. Children of highly educated families still participate in higher education three to four times more than those of less educated families (Tann 1998).

The educational attainment of the PSBH-sample was classified in five ways in this study. A first classification distinguishes between having finished at most high school and having completed some third-level degree. The second classification adds a distinction between a higher level of secondary education and a lower level or less. A third classification adds the distinction between a non-university higher education and a university education. The fourth classification distinguishes between primary school or less and a lower secondary level. The fifth classification adds the distinction between a general and a non-general orientation at the lower level of secondary school. In the process of the educational expansion and the legal prolongation of school enrolment, the social consequences and opportunities of different educational certificates and thus the social meaning of these classifications changed. In this connection the second classification has had strong social relevance: category 1 did at most what was compulsory before the 1980s; category 2 and 3 went beyond it, category 3 went beyond high school.

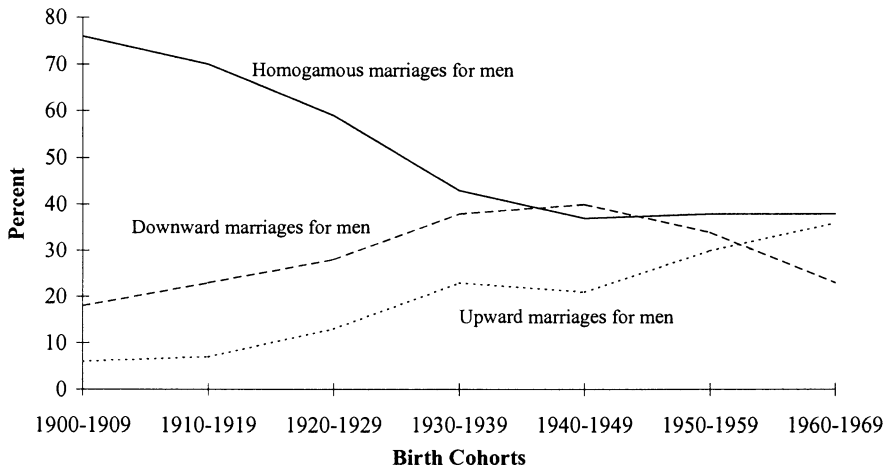


Figure 3.1. Marital Educational Homo/Heterogamy Across Birth Cohorts in Belgium (%)

Table 3.1 describes the trends of the *educational homo- and heterogamy* among men and women, mainly from the same first marriages as households were the analytical units in the PSBH-sample. Figure 3.1 combines data on the marriages in the households from the male perspective with those of the parents(-in-law) of these marriage partners - assuming that parents are about 30 years older - as a proxy to lengthen the historical period. The results reveal that in Belgium educational homogamy decreased until the birth cohorts of the 1940s and then stabilised at a level of about 40%. As such, after a period in which the related kind of social inequality diminished, there was a period in which the degree of social inequality inherent to marital homogamy did not change much. The developments with regard to educational heterogamy also changed since the birth cohorts of the 1940s. The share of traditional marriages, i.e. men marrying downward, increased among the oldest cohorts but decreased since the 1940s cohort; the share of non-traditional marriages, i.e. men marrying upward, increased continuously, resulting in about equal shares of heterogamy. Both developments indicate that about half of the married population pool their equal educational resources and thus cumulate their advantages and disadvantages; the other half pool their unequal educational resources and thus mix their advantages and disadvantages. In this last case, a gender-specific pattern is no longer dominant. Forces for maintaining and breaking social inequality are at work in the same degree. According to Engelstad (1998), a combination of equalisation of education among men and women and a constancy in homogamy creates a more inflexible system of social stratification and greater inequalities between households. This is the case in Belgium, where the process of further increasing expansion of state welfare coincides, even in recent years, with an increase in income inequality (Cantillon et al. 1993).

The trends regarding educational homogamy and heterogamy occurred in a demographic context of a rather young age at marriage, even in the process of the postponement of marriage, of a rather low level of living alone or unmarried cohabitation among young adults (particularly in Flanders) and a high share of ever-married people (Corijn 1996). Moreover, they happened in a socio-cultural context of a very high degree of religious homogamy (see below). Finally, these developments must be understood already in the 1960s in a socio-economic context of a high (full-time) activity rate of women, also of married women and mothers (EC 1997). However, as in other countries, these activity rates are strongly related to the educational level of women (Callens et al. 2000). Particularly higher educated women have a high work orientation (Van Dongen et al. 1995). Female activity rates fall sharply only after the birth of a third child (Callens et al. 2000). This high (full-time) activity rate suggests that already in the 1960s women valued their own (educational) investments in an employment career in addition to that of their (less, equal or higher educated) husband. Among Flemish married couples aged 20 to 50, it was found in 1992 that in 44% of the families, the man's share in the family income was 50 to 75% and the woman's share was 25 to 50% - a substantial female monetary contribution in a substantial share of families (Van Dongen et al. 1995).

Looking at the trends in homogamy and heterogamy, regardless of the educational qualifications of their marriage partner, it can be concluded that in Belgium a

large proportion of women is strongly oriented toward their own education, which is rather low in a Western European context and its related opportunities on the labour market, which are rather high in the Western European context. Contrary to traditional behavior, for the youngest female cohort, marrying a higher educated man occurred least frequently.

These particular developments with regard to educational marital homo- or heterogamy have to be checked with the changing educational attainment across cohorts and with the diminishing educational gap between men and women. The developments in Figure 3.1 take into account the differentiation of non-university and university third-level education, two levels with contrasting gender developments as we saw above. The extreme categories can only move in two directions. Educational homogamy is strongest at the lowest educational level, but it decreased strongly across cohorts. It is also high for university-educated women, but it decreased across cohorts. Educational homogamy is low for university-educated men, though it increased across cohorts. University-educated men found more university-educated women on the partner market, but the group of university educated women augmented to the extent that this lead to downwards marriage, as well. Upward educational heterogamy is strongest among those with a general lower secondary level; it increased strongly across cohorts, particularly for men. Downward educational heterogamy is strongest among men with a third-level education; it decreased, as more women with the same level of education became available. Among the four middle categories, the rule is that the higher the level, the more homogamy, the more downward marriages and the less upward marriages.

*Table 3.2. Distribution of Upward, Homogamous and Downward Marriages With Regard to Educational Attainment Level by Birth Cohorts*

	Upward Marriage of Men		Homogamous Marriage of Men		Downward Marriage of Men	
	O %	P %	O %	P %	O %	P %
<b>Men born</b>						
1930 – 1939	23	32	43	26	38	41
1940 – 1949	25	34	37	20	40	46
1950 – 1959	30	38	38	22	34	40
1960 – 1969	36	44	38	24	23	32

O % = Empirically observed percentages.

P % = Predicted percentages, based on the assumption that marriage decisions were taken randomly (given the distributions of educational attainment levels of women and men for each birth cohort).

Source: Panel Study on Belgian Households, University of Antwerp



Table 3.2 summarises the trends in marrying upward, downward and homogamous according to birth cohort for couples and their parents' generation using education classification 4 and also contains estimations of the predicted development of marriage patterns under conditions of statistical independence. The predicted values reflect the tendency to marry assortatively, given a random selection of spouses and given the distribution of educational attainment level of women and men in each birth cohort. The observed share of upward and downward marriages is lower than expected. The share of homogamous marriages is much higher than expected; this difference increased across cohorts. Educational homogamy has always been above chance, during the process of an educational expansion as well as in the process of a reduction in gender differences in educational attainment. As women's educational level increased, they had 'by chance' more opportunity to go downward; and that was what they did, reducing the difference between the observed and estimated share for male upward marriages.

Compared to some other countries (see other chapters in this volume), the Belgian levels and trends with regard to educational marital homo/heterogamy are completely different. Smits (1996) tries to explain the differences in educational homogamy between countries in terms of the level of development, political democracy, dominant religion and technological background. Among the 65 countries in his study, Belgium (data from 1979), the Netherlands (1977) and Great Britain (1972) had the lowest levels of educational homogamy. Relevant to our data is that Smits expects and finds the dominant religion to be an important explanatory variable. He expects an effect of religion on educational marital homogamy because religions differ according to their degree of traditionalism. In a traditional society children conform more to their parents. This makes the role of status characteristics in the partner choice stronger and the role of romantic love weaker. This is evident in Catholic countries which show significantly more educational homogamy than Protestant countries (Smits 1996). The relatively low degree of educational homogamy in Belgium contrasts however with the observed effect of the dominant (Catholic) religion.

Roman Catholicism was, and continues to be, the dominant religion in Belgium. In the beginning of the 1980s, 72% of all Belgians called themselves Catholics; by the beginning of the 1990s this fell to 65%. The process of secularisation, particularly in the post war period, is evidenced by a significant reduction in the number of people attending church regularly. In the beginning of the 1970s, 32% attended church weekly; by the end of the 1980s this declined to 19%. At both points in time there were of all marriages, respectively, 82% and 60% religious marriages (Dobbe-laere, Voyé 1992).

As stated earlier, education and leisure time were strongly organised by ideological affiliation in Belgium. *Religious homogamy* is dominant. Data on the religious homogamy at the time of marriage are however not available for Belgium. The FFS V-data document the religion of the respondent at the time of the interview, which can be up to 20 years after the first marriage. In this survey 70% called themselves Catholics. This information may not correspond to religion at the time of first marriage, since religious practice can change particularly after marriage and during

the further family formation process. Using these data, we observe therefore only a degree of religious homo/heterogamy at different stages of the marriage and family formation process. Religious homogamy for post war cohorts in Flanders amounts to almost 90% if Catholics and non-Catholics are distinguished. It amounts to about 75% if among Catholics three frequencies of church attendance (at the time of the interview) are distinguished and if among the non-Catholics, the atheists/agnostics and the freethinkers are distinguished. Changes across these birth cohorts are hard to observe. Homogamy levels among older cohorts are assumed to be even higher. The high degree of Catholic homogamy does not seem to interfere strongly with the mechanisms of educational homo/heterogamy. At least among the Flemish post war cohorts, the relation between educational level and religion is weak (Corijn, 1993).

### HYPOTHESES, METHOD AND VARIABLES

For the theory on the educational system as a marriage market and for the hypotheses concerning the impact of the educational system and that of the direct and indirect effects of the social origin on marital behavior we refer to Blossfeld and Timm (see chapter 2 in this volume). The interdependencies of the relationship between the educational career and the marriage process are modeled by causal-type transition rate models (Blossfeld, Rohwer, 1995). The transition rate of a particular kind of marriage (homogamous, upward, downward) is the dependent variable. The observation of the marriage process begins at the age of 15 and ends at the time of the first marriage, at the age of 45 or at the date of the interview, whichever comes first. As downward and upward marriages are respectively impossible for people with the lowest and the highest educational level, the populations at risk are different. To model the marriage rate of each kind of marriage, an exponential model with time-constant and time-dependent covariates is used. For a homogamous marriage all individuals are at risk; they start as single (origin state) and can marry a partner with similar educational attainment. For an upward marriage, people with a university degree are excluded from the risk set; the others start as single and can marry a partner with higher educational attainment. For a downward marriage, people with a lowest level are excluded from the risk set; the others start as single and can marry a partner with lower educational attainment. The relations equal, higher and lower are based on the educational classification with five categories defined above.

The covariables used have been defined as follows. The educational attainment level was expressed as the average number of years, which are necessary to attain a certain level of education (see above). The variable is made time-varying. To model the non-monotonic age dependence of the marriage process two log-variables were constructed. The first one,  $\log(\text{age}-15)$ , indicates the decline after the peak of the bell-shaped curve; the second,  $\log(45-\text{age})$ , indicates the initial rise. An interaction of the educational attainment with age takes into account that the tendency to marry at a certain age depends on the level of education. To control for changes across historical time, birth cohorts were constructed. The number of cases made it necessary to make 10-year cohorts. As the cohort trends seemed to be non-linear, a linear and a squared cohort factor were used. The duration in school is measured by a time-

dependent variable indicating the number of years spent in school since age 15. A dummy variable indicates whether the respondent is in the educational system or has left it. The duration since leaving school is in model 2 measured as the time-varying number of years since leaving the school system. To check for non-linearity a set of time-dependent dummy variables that assign smaller time intervals to the time since leaving the educational system is constructed. The father's educational attainment is used as an indicator of social origin. To control for changes in the effect of the social origin, an interaction variable of father's education and the linear cohort trend is created. To measure the indirect social origin effects, three dummy variables are created that contain the relation between a father's and son's/daughter's educational level at each point of time: (1) father's educational level is lower than son's/daughter's; (2) father's educational level is equal to son's/daughter's; and (3) father's educational level is higher than son's/daughter's. Centred effects are used; these effects show the differences to a hypothetical common mean.

## RESULTS

Estimated rates for a homogamous marriage of single people with different levels of educational attainment are represented in Figure 3.2 and 3.3 for men and women respectively. The resulting curves represent simulations based on the coefficients of Model 1 in Table 3.3a and 3.3b. Rates to marry homogamously clearly differ according to educational level. In Belgium the rate of educational homogamy decreases with the educational level. For higher educated people we observe a steep rise of the educational homogamy after the exit from the educational system.

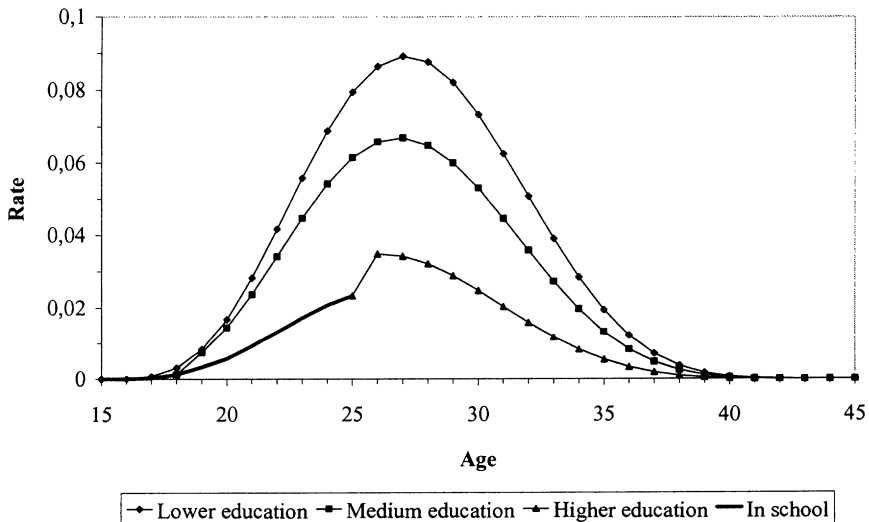


Figure 3.2. Educational Homogamy Rates of Men

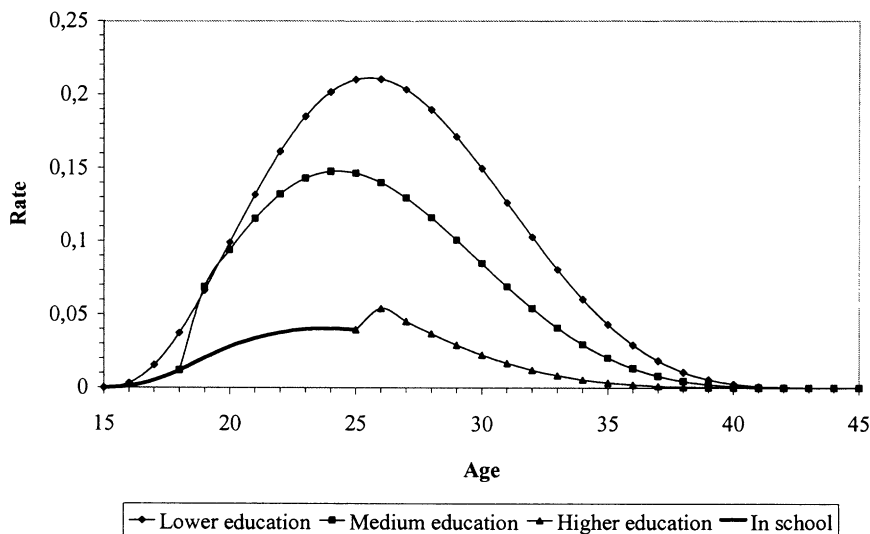


Figure 3.3. Educational Homogamy Rates of Women

#### *Time-Dependent Effects of the Educational System on Marriage Patterns*

The structural possibilities of developing a partnership with a similarly qualified person, and then possibly marrying that partner, are expected to increase the longer the time spent in education, as increasingly homogeneous groups are created across the duration in school. This expectation is confirmed in our data. But an effect of duration in school also shows up for downward and upward marriages.

As expected, the inclination to marry is much lower as long as young individuals are in the educational system. The marriage rates increase very strongly once one has left the educational system. Completion of education is a key event leading to entry into marriage as the effects of being in school are strongly negative.

As the hypothesis goes, the tendency of homogamy is supposed to fall and that of heterogamy is supposed to increase, the longer a person has been out of school. In our data we find as expected that the longer young women are out of the educational system, the more they marry downward. However, the longer young Belgians are out of the educational system, the less they marry upward.

Moreover, the tendency to marry homogamously is supposed to first increase and only afterwards to decrease because the relationships that were formed in school will have gradually turned into marriages; only afterwards does the tendency to marry homogamously start to decrease due to the increasing influence of educationally heterogeneous environments. In the Belgian data we observe this kind of catching-up effect. But such a catching-up effect can also be observed for upward and downward marriages. The latter happens 5 to 6 years after leaving school for men

and 3 to 4 years after leaving school for women. Only for downward marriages of women can a more linear trend be observed: the longer women wait to marry, the more chance they have to marry downwards.

The developments regarding educational homo- and heterogamy change across cohorts but not in a linear way as the squared cohort effect is significant, except in one case. Changes in the educational homo- and heterogamy are partly structurally produced by a change in gender-specific differences.

### *Effects of Social Origin and Their Changes*

The direct effect of the social origin on educational homogamy is supposed to increase with the educational level of the father since social networks become more exclusive. In Belgium the social origin of men has no direct effect on their educational homo- or heterogamy. For women one observes that the higher the father's educational level is, the more chance there is that the daughter will marry upward, i.e. show traditional behavior. Besides one observes that the higher the father's educational level is, the less the daughter marries homogamously and this is in contradiction with the hypothesis. Social networks of the higher social classes in Belgium do not seem to be more exclusive in this respect than those of the lower classes. They only encourage their daughters to marry traditionally i.e. upwardly. As origin class does not directly influence the marriage pattern of the sons, gender-specific mechanisms seem to be at work. Some direct effects of social origin changed across cohorts.

With regard to *homogamous marriages* the expectation was that the probability of the son/daughter marrying an equally qualified partner is high, if the son/daughter has the same educational level as the father because in this case social networks overlap and mutually reinforce each other. This hypothesis is confirmed in the Belgian data. Marriages are particularly likely to happen within the social class and networks of the family of origin. This mechanism is stronger among women. By this mechanism social inequality is maintained. A second expectation with regard to homogamous marriages was that the probability of the son/daughter marrying an equally qualified partner is higher, if the son/daughter has a higher educational level than the father because these individuals want to secure their new status. This hypothesis is not confirmed in the Belgian data. Educational marital homogamy seems to be very difficult when children became upwardly mobile. Upwardly mobile children can not secure their new status in a homogamous marriage. In contrast, downward mobile sons try not to go further downward and instead tend to maintain their new status by homogamous marriage.

With respect to *downward marriages* the expectation is that sons and daughters will marry downward after having achieved a higher educational level than their parents because they remain in close contact with the people from their social origin over a considerable period of time. In contrast, we find that downward marriages in Belgium are rare for upwardly mobile daughters. Such a mechanism of returning to the social origin is not at work. For sons marrying downwards seems to be unrelated to their social origin.

With regard to *upward marriages*, the expectation is that sons and daughters will marry upward after having gone downwards because they will have the opportunity to meet better educated partners through the social networks related to their social origin. Indeed, in Belgium upward marriages happen particularly after downward social mobility. The downward mobility is compensated by upward marriage, both for men and women.

In case of a *lack of any social mobility* the expectation was that when children keep the same educational level as their father, they will marry more homogamously because both their networks overlap and mutually reinforce each other. This is also true in Belgium. People remain in their own social class. In case of *upward social mobility* of the children, the expectation is that the children will marry more homogamously because they want to secure their new status or marry more downwardly because they remain in close contact with their social origin. To the contrary, the data shows that if the son's/daughter's educational level is higher than that of the father, the probability of marrying homogamously is particularly lower. Having moved upward, young people in Belgium do not confirm or secure this new status by choosing a marriage partner with the same educational level. Having moved upward, daughters are less inclined to go downward again or to go further upward by their marriage. In case of *downward social mobility* of the children, the expectation is that they will show no tendency to marry an equally educated partner because they want to reach a new the status of their family of origin, but that they will show a tendency to marry upward because this way they can remain in contact with the social networks related to their social origin. In the case of educational downward mobility, the probability of the son marrying homogamously is particularly higher than expected. In general there is a higher probability to marry upwards, confirming the expectation. Lastly the hypothesis that upward and downward mobile sons are unlikely to marry upwards and daughters unlikely to marry downwards could only partially be reconfirmed in the Belgian context. Here, upward mobile daughters have a reduced probability to marry further upward. In other cases, there are no strong relationships.

#### SUMMARY AND CONCLUSIONS

Marital homogamy in Belgium is mainly a matter of age and religious homogamy. Educational homogamy decreased across the twentieth century and is now stabilized at about 50%. Educational heterogamy changed strongly. Traditional male downward marriages decreased and non-traditional male upward marriages increased to result in an equal share of about 25%. Recently factors promoting educational homo- and heterogamy are equally strong; while conditions seem to favor upward and downward marriages, too.

The historical trends regarding educational homo/heterogamy in Belgium have developed in the context of an educational system characterised by the educational expansion, the prolongation of compulsory education, the tradition of single-gender schools at least for the cohorts born up to the 1950s, a tradition of gender-segregated youth organisations and a tradition of persisting strong religious homogamy.

Table 3.3a. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Men (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-28.76**	-33.91**	-37.80**	-32.73**	-31.29**	-33.41**	-21.99**	-21.31**	-21.34**
Log(Current Age-15)	6.02**	5.84**	5.78**	4.81**	4.51**	4.79**	3.86**	3.76**	3.39**
Log(45-Current Age)	3.97**	5.00**	5.65**	6.32**	5.84**	5.93**	1.30	1.11	0.31
Log(Current Age-15)*Education	-0.10*	-0.10*	-0.07	-0.05*	-0.07**	-0.06*	-0.12*	-0.11*	-0.11*
Log(45-Current Age)*Education	0.05	0.02	0.00	0.01	0.02	0.00	0.23**	0.22**	0.22**
Not in School <sup>a)</sup>	0.79**	1.79**		0.88**	2.45**		0.94**	2.00**	
Duration in School <sup>b)</sup>		0.12**	1.52**		0.18**	1.14**		0.11*	2.62**
Duration Since Leaving School <sup>c)</sup>	-0.13**	-0.08*		0.00	0.00		-0.02	-0.05	
1-2 Years After School <sup>d)</sup>			1.69**			1.76**			3.14**
3-4 Years After School <sup>d)</sup>			1.72**			1.61**			3.48**
5-6 Years After School <sup>d)</sup>			1.82**			1.74**			3.16**
7-8 Years After School <sup>d)</sup>			1.34			1.49**			3.17**
More Than 9 Years After School <sup>d)</sup>			1.08			1.37**			2.39**
Father's Education		0.13	0.13		0.02	0.02		0.05	0.05
Father's Education*Linear Cohort Trend		-0.03	-0.03*		0.00	0.00		-0.04**	-0.04**
Father's Education<Son's Education <sup>e)</sup>		-0.12	-0.11		-0.54**	-0.55**		-0.04	-0.04
Father's Education=Son's Education <sup>e)</sup>		-0.35**	-0.37**		0.13*	0.13*		-0.09	-0.08
Father's Education>Son's Education <sup>e)</sup>		0.47**	0.49**		0.41**	0.42**		0.13	0.12
Linear Cohort <sup>f)</sup> Trend		1.40**	1.42**		0.59**	0.57**		0.79**	0.79**
Linear Cohort <sup>f)</sup> Trend		-0.13**	-0.14**		-0.11**	-0.11**		-0.12**	-0.11**
Number of Events	352	352	352	1023	1023	1023	422	422	422
Subepisodes	27369	27369	27369	34085	34085	34085	25623	25623	25623
Likelihood Ratio Test (LR) <sup>f)</sup>	502	616	786	1380	1504	1348	884	1008	764
Degrees of Freedom	6	14	17	6	14	17	6	14	17

a) Reference category: in school. b) Measured in numbers of school years after age 14. c) Measured in number of years after school d) Dummy variable (reference category: in school). e) Centered Effects. f) LR = 2 \* (likelihood (model with covariables) - (loglikelihood (model without covariables))). \*\*p = .01; \* = .05add sign for smaller then

Source: Panel Study on Belgian Households, University of Antwerp

Table 3.3b. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Women (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-32.93**	-42.37**	-41.03**	-24.21**	-22.97**	-23.29**	-43.03**	-40.92**	-26.05**
Log(Current Age-15)	4.99**	5.35**	4.94**	3.91**	3.45**	3.64**	6.32**	5.86**	6.69**
Log(45-Current Age)	6.29**	8.02**	7.50**	4.50**	4.18**	3.77**	5.56*	5.12**	-0.42
Log(Current Age-15)*Education	-0.08	-0.08	-0.09*	-0.13**	-0.14**	-0.14**	-0.28**	-0.27**	-0.43**
Log(45-Current Age)*Education	0.04	0.00	0.01	0.06**	0.08**	0.07**	0.39**	0.38**	0.49**
Not in School <sup>a)</sup>	0.56**	0.74*		1.19**	2.38**		0.97**	1.81**	
Duration in School <sup>b)</sup>		0.03	0.54*		0.18**	0.85**		0.11	0.29**
Duration Since Leaving School <sup>c)</sup>	-0.13**	-0.07*		-0.02	0.02		0.18**		
1-2 Years After School <sup>d)</sup>			0.69**			1.58**			1.32**
3-4 Years After School <sup>d)</sup>			0.77**			1.55**			1.76**
5-6 Years After School <sup>d)</sup>			0.72**			1.52**			1.93**
7-8 Years After School <sup>d)</sup>			0.46			1.58**			2.25**
More Than 9 Years After School <sup>d)</sup>			1.17			1.32**			1.52**
Father's Education		0.24**	0.24**		-0.11*	-0.11*		-0.04	-0.04
Father's Education*Linear Cohort Trend		-0.03**	-0.04**		0.02	0.02		-0.01	-0.01
Father's Education<Daughter's Education <sup>e)</sup>		-0.36**	-0.37**		-0.38**	-0.39**		-0.45	-0.47*
Father's Education=Daughter's Education <sup>e)</sup>		-0.06	-0.07		0.28**	0.27**		0.26	0.25
Father's Education>Daughter's Education <sup>e)</sup>		0.42**	0.44**		0.10	0.12		0.19	0.22
Linear Cohort Trend	1.83**	1.83**	1.83**		0.51**	0.51**		0.28*	0.26*
Linear Cohort <sup>2</sup> Trend	-0.23**	-0.23**	-0.23**		-0.08**	-0.08**		-	-
Number of Events	534	534	534	961	961	961	297	297	297
Subepisodes	24684	24684	24684	28962	28962	28962	23781	23781	23781
Likelihood Ratio Test (LR) <sup>f)</sup>	660	780	626	1216	1346	1508	714	764	1032
Degrees of Freedom	6	14	17	6	14	17	6	14	17

a) Reference category: in school. b) Measured in numbers of school years after age 14. c) Measured in number of years after school d) Dummy variable (reference category: in school). e) Centered Effects. f) LR = 2 \* (likelihood (model with covariables) - (loglikelihood (model without covariables))). \*\*p = .01; \* = .05 add < twice

Source: Panel Study on Belgian Households, University of Antwerp



As elsewhere, the educational system influences the marriage market as enrolment strongly hinders marriage formation. Decisions on education seem to influence individual decisions about commitments for love, both in terms of partnership and marriage. Having left the educational system, more heterogeneous environments are entered and there is a catching up effect of the traditional upward marriages.

National differences have also become apparent. In Belgium social class has no direct impact on the marital homo/heterogamy of sons. Daughters of higher social classes are directed towards upward marriages and are steered away from downward marriages. The indirect effects of the social origin reveal different mechanisms that are gender-specific. Daughters are restricted in their choice of marriage partners due to their social class of origin. Sons that moved up, go back in a traditional downward marriage. Sons that moved down, go further downwards in a traditional downward marriage. Sons and daughters that moved downward remain at that level. Mechanisms of compensation do not seem to be at work. Individual choices about love and commitment seem to reflect different forces with regard to social (in)equality.

The loss of education can be compensated by an upward marriage and can be further stopped. The gain of education is not lost again by a marriage, but can not be secured.

The specificity of the Belgian case will be better understood in international comparison.

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# 4

## WHO MARRIES WHOM IN FRANCE?

AN ANALYSIS OF THE COHORTS BORN BETWEEN 1934 AND 1978

DOMINIQUE GOUX AND ERIC MAURIN

### INTRODUCTION

Educational homogamy reflects the degree to which individuals with the same level of education tend to marry each other. Education being the most important source of individual earnings, educational homogamy is one of the key aspects of contemporary societies: for any given structure of *individual* earnings, the higher the educational homogamy, the higher the level of income inequality between *families*.

In continental European countries, where wage setting is highly institutionalized and where the distribution of individual wages is very stable, changes in educational homogamy are a potentially very important factor of changes in the overall level of income inequality between families.

Education is a source of individual earning, but it is also one of the most important parental resources. In France, the main determinants of inequalities in educational opportunities among children are inequalities in education among parents (Goux, Maurin 1995). As a consequence, for any given distribution of education among adults, the higher educational homogamy, the higher inequalities in educational opportunities among children and the higher the expected inequalities in the next periods.

Educational homogamy determines income inequalities between families today and shapes income inequalities between individuals for tomorrow.

In France, as we will see, the level of educational homogamy remains very high. Broadly speaking, it is twice as high as what would be observed if partners were selected at random. The reasons for this high and stable level of educational homogamy are however not very clear. Virtually all of the existing studies of educational homogamy in France are based on the analysis of already married couples (see for instance Forse, Chauvel 1995). This kind of approach starts with the outcomes of

marriages rather than with their initial social conditions. The standard approach is also unable to separate the role of the time spent in the school system (as a marriage market) and the role of educational status per se (as a resource on the marriage market). Generally speaking, within the traditional approach, it is very difficult to understand the causes of persisting educational homogamy.

In this chapter, we try to take some steps towards a better understanding of the causes of persistent homogamy in France using the only French data set where detailed information is collected on both the schooling career and the date of the first marriage. This data set makes it possible to model the transition process from the "single" state towards the "married" state as a function of the variations across the life course of the time spent in the school system, the level of education and the age (see the seminal contribution by Blossfeld, Timm, Dasko 1997). To our knowledge, it is the first attempt to model the timing and outcomes of marriage in France taking account of the intrinsically longitudinal dimension of the marriage process.

The chapter is organized as follows. In section 1, we describe basic trends in education and marriage in France for cohorts born between 1934 and 1978. Educational homogamy remained very stable for cohorts born after World War II in spite of structural changes in the distribution of education that should have led to a strong decline in educational homogamy.

In the following sections, we test whether these trends can be accounted for by the rise in the importance of the educational system as a marriage market. Using duration models, we show that the conditional probability to marry homogamously (that is, the probability to marry homogamously given marriage) decreases across the life course with both the time spent in the school system and the level of educational achievement. Neither the increase in the time spent in the school system or the changes in the distribution of educational resources independent of gender are able to explain the persistence of high persistent rates of homogamy in contemporary France.

Our interpretation for these findings is that education is becoming an increasingly crucial stratification principle in France which has increased in strength in the same proportion as the strong structural shifts in favor of heterogamy and "non-traditional" marriages.

## EDUCATION AND MARRIAGES IN FRANCE: SOME BASIC TRENDS

In this section, we describe the main changes in education and family formation in France for cohorts born between 1934 and 1978. We are going to identify and document five basic trends:

(a) French men and women tend to postpone marriage and to marry much later than two or three decades ago. One proximate cause for marriage postponement is the rise in consensual unions among French young adults.

(b) Men marry later than women. The absolute age-differential between married persons remained stable over the last two decades (about 2 or 3 years), but the relative age-differential is declining.

(c) Women and men spend much more time in the school system than three decades ago. The increase in the level of education is, however, stronger for women than for men. French women are now on average better educated than men.

(d) The distribution of education among women and men is neither more nor less similar in the nineties than in the seventies, but both distributions are now much less concentrated at the bottom of the educational hierarchy. As a consequence, the structural opportunities to marry homogamously are strongly declining.

(e) For cohorts born after 1945, the rate of educationally homogamous marriages is very stable. There is a rise in the share of "traditional" marriages, that is with men being more educated than women.

### *Postponement of Marriages*

Table 4.1 presents trends in marrying for men and women. In France as in most western industrialized countries, traditional marriage is still a very dominant form of family formation. The share of never-married persons becomes, however, more and more important. In 1993, more than 33% of men aged between 20 and 59 never married in the course of their life, against only 20% in 1970. The figures are similar for women.

One straightforward interpretation for this rise in the share of never-married persons within the total population is that marriage is a declining institution and that the share of persons who will actually never marry is increasing across cohorts. This would be consistent with Becker's (1981) basic theory, which predicts that the increase in women's employment opportunities (an earning power) is likely to lower their absolute propensity to marry and, ultimately, to lower marriage rates. We would need long-term panel data, and to follow cohorts from birth to death to properly test this hypothesis.

Another interpretation is that people still marry in the same proportion within each cohort, but postpone their marriage. As a matter of fact, the most dramatic drop in the percentage of married persons concerns young people: among individuals between 20 and 24 years old, the percentage of married men and married women was five times lower in 1993 than in 1970.

Changes in marriage timing have been especially rapid since 1968. Within the generation born between 1941-45 - which became adults before 1968 - almost 78% of the men had married before the age of 30. The 1956-60 generation - which became adult after 1968, in the seventies - waited until the age of 40 to reach the same proportion of married men.

One proximate cause for these rapid changes is no doubt that consensual unions became a much less radical choice after 1968. Cohabitation became, indeed, a common prelude to marriage in the seventies (see de Saboulin, Thave 1993) and the decrease in the marriage rates has been accompanied by a progressive increase in the propensity of living in consensual union.

For now, the increase of consensual unions has however not been strong enough to compensate for the decrease in the marriage rates: the proportion of individuals

living in either consensual union or marriage declined for all age groups between 1990 and 1998 (see Table 4.2).

*Table 4.1. Proportion of Married Persons in 1970 and 1993 With Regard to Gender and Age (Including Divorced Persons and Widowed)*

Age	Men		Women	
	Married in 1970	Married in 1993	Married in 1970	Married in 1993
20-24	32.0	4.6	51.0	11.8
25-29	77.8	33.7	84.5	51.9
30-34	85.8	63.5	92.0	75.1
35-39	88.7	78.6	93.3	86.6
40-44	90.2	86.6	93.4	90.3
45-49	91.5	91.0	93.3	93.4
50-54	94.0	92.1	94.4	92.8
55-59	92.1	93.5	94.2	93.9
Total	79.8	66.2	85.7	72.7

Source: FQP Survey, 1993, INSEE.

*Table 4.2. Proportion of Cohabiting Men and Women in 1990 and 1998 With Regard to the Birth Cohort (\*)*

Age	Men		Women	
	Cohabiting in 1990	Cohabiting in 1998	Cohabiting in 1990	Cohabiting in 1998
25-29	21.2	30.0	18.8	30.0
30-34	13.1	23.9	10.4	20.2
35-39	8.4	15.9	5.6	13.6
40-44	4.1	10.8	4.1	8.6

Field: People aged 25 to 44 at the time of the survey.

(\*) Note: This is an underestimation of the real rate of cohabiting persons. It has been estimated as follows: we subtracted the married persons from the population of people living with a partner, official or not. It is possible that someone is married with a different person than with the one he or she is living with.

Source: Labor Force Surveys, 1990, 1998, INSEE.

It is not yet clear whether we should consider consensual unions as an extension of the dating process or as an actual substitute to marriage. In the French case, it should be noted, however, that the contributions of married persons to the welfare of their families are much more protected by law (in case of divorce) than the contribution of partners in a consensual union. In other words, marriage maintains a much stronger insurance device for each partner than consensual unions. If the amount of

personal resources (material and moral) that people invest in a relationship is proportional to the strength of the insurance they contract before their investment, then marriage decision is -on average- the prelude to a much stronger investment than consensual unions. This is the reason why we think that trends in the marriage process are of great importance per se and have to be studied and understood separately.

*Decline in the Relative Difference in Marriage Age Between Men and Women*

In France as in most western societies, women tend to marry younger than men. In 1993, the majority of women has already married before the age of 30, against only one third of the men. Within the generation of persons born between 1959 and 1963, the majority of women were married before the age of 24, while the majority of the same male cohorts waited until the age of 28 to get married.

One simple explanation for these age differences is that marriage is a means for exchange between men and women (see Collins, Coltrane, 1991; Bozon 1990): women trade their looks and childbearing abilities (which decline with age) against men's income (which increases with age).

Another straightforward interpretation for these age differences is that they reflect social inequalities between men and women. In a society where women have the same job opportunities as men, age plays the same informational role for both men and women: the older you are, the more explicit is the social level you will ultimately be able to reach. In a society where women have no actual access to high-level occupations, there is less incentive to choose relatively old women than relatively old men.

Generally speaking, the absolute age-differential between married persons remained very stable in France over the last thirty years. The average age of men who married for the first time in 1991 was 28.0 years old, while women were on average 26.0 years old. Twenty years earlier, the average age for the first marriage was 24.4 for men and 22.4 for women (de Saboulin, Thave 1993). Given that a difference of two years is more substantial to a 22-year old person than to a 26-old, one can observe, however, a decline in the relative age differences between men and women. This is consistent with the decline in gender inequalities on the labor market.

*Rise in the Average Level and in the Dispersion of Educational Attainment*

In France, as in most industrialized countries, there was a continuous rise in the education level during the last decades. In 1993, more than 20 % of French young adults (25 to 29 years old), graduated from universities or comparable institutions of tertiary education, as against 10% in 1970, twenty-five years earlier (see Table 4.3).

Women have profited more from the expansion of the educational opportunities than men.<sup>1</sup> At the beginning of the seventies, French young women left school with lower qualifications than young men. Today, on the contrary, a higher percentage of women have on average higher diplomas than men. In particular, the rise in the share of *bacheliers* (i.e. individuals who are at least high school graduates) was stronger for women than for men: in 1970 about 20% of both women and men be-

tween 25 to 29 years old are *bacheliers*. In 1993, about 42.5% of women 25-29 years old have at least their *baccalauréat*, compared to 34.5% of the men in this age group.

Table 4.3. Rise in the Educational Level (1970 - 1993)

Educational Level	1970		1993	
	Men	Women	Men	Women
3. Post- <i>Baccalauréat</i> Degree	9.0	12.2	19.5	23.6
2. <i>Baccalauréat</i>	9.7	10.5	15.1	18.8
1bc. Vocational Degree	30.9	23.3	41.8	37.3
1a. No Degree	50.5	54.0	23.6	20.3
Total	100.0	100.0	100.0	100.0

Field: People aged 25 to 29 at the time of the survey. The definition of qualifications employs the CASMIN schema, and corresponds to the classification which defines homogamy, marrying upward and marrying downward (see text).

Source: FQP Surveys, 1970, 1993, INSEE.

From the marriage viewpoint, it is important to distinguish between two key aspects of the distributions of educational attainment between men and women, that is their degree of *similarity* and their degree of *concentration*. From a purely statistical viewpoint, the more similar and concentrated the two distributions, the higher the probability of homogamous marriages.<sup>2</sup>

Concerning overall similarity, there is no clear trend towards a more or less similar educational distribution for men and women. When we distinguish four levels of education, the "distance" between the two distributions has not increased or decreased since 1970. The minimum proportion of men and women that should change category for the same educational distributions to be observed<sup>3</sup> for both sex is indeed the same in 1970 as in 1993 (about 7.5% ).

The two educational distributions are neither more or less similar, but they are now much less concentrated than they were thirty years ago. In 1970, the majority of the population was without any educational degree, even at the bottom of the educational hierarchy; in contrast in 1993 individuals with very low educational levels do not represent more than 10% of the population. In 1970, the minimum proportion of men that should change educational category to observe a uniform educational distribution<sup>4</sup> was 15%; that is twice as high as in 1993 (7.5%). The trends are similar for women.

The consequences for this rising dispersion is a decline in the rate of structural homogamy: that is the rate of homogamous marriages that would be observed if spouses were selected at random<sup>5</sup>. This structurally induced homogamy rate is twice as small for cohorts born before World War Two as for cohorts born in the sixties'.

Another important aspect of the changes in the distribution of education across men and women is the increase of the relative level of women's education. This implies a very strong rise in the rate of structural hypogamy for women, that is the



rate of marriages with women having higher education than their husbands that would be observed if spouses were selected at random. This structural hypogamy rate was about 25% for cohorts born before World War Two compared to about 40% for cohorts born in the sixties.

All in all, if the propensity of spouse selection has not changed across cohorts and if the only driving forces were structural shifts in the distribution of education, we should observe a decrease in homogamy and an increase in non-traditional marriage.

### *Decline in Educational Homogamy*

Concerning actual trends in educational homogamy, Table 4.4 shows trends in upward, homogamous and downward marriages for French men and women, according to birth cohorts. This table also contains estimations of the predicted trends in marriage rates under the assumption of statistical independence, that is the rates of homogamous, upward and downward marriages that would be observed if spouses were selected at random in each birth cohorts.

We observe three basic trends.

First, the proportion of homogamous marriages is higher for the oldest cohorts than for the more recent ones. This decline is however less significant than the decline in the structural homogamy rates, that is the decline that would have been observed if the only driving forces were changes in the distribution of education across men and women. Furthermore, most of the decline corresponds to cohorts born before 1943, that is cohorts which have not really been affected by the expansion of the educational system. For cohorts born after 1943, we observe persisting rates of educational homogamy in spite of a significant decline in structural homogamy.

Secondly, the proportion of upward marrying women has been strongly increasing, from about 14% for cohorts born before 1940 to about 30% for cohorts born after 1964. Symmetrically, the proportion of downward marrying men increases substantially. These increases cannot be explained by changes in the distribution of education. If these structural changes were the only determinants for trends in educational heterogamy, we should indeed observe stable proportions of upward marrying women and downward marrying men.

Thirdly, the proportion of upward married men and downward married women ("non-traditional" marriages) remained stable across cohorts. If the propensity to marry non-traditionally had remained stable and if the only driving factor was structural changes, we would have observed a strong decrease in these marriages. Here again, the structural shifts in the distribution of education do not provide a convincing explanation to observed trends. This suggests some significant changes in individual attitudes towards marriage and towards the problem of spouse selection.

All in all, in spite of significant structural changes that favor heterogamy and "non-traditional" marriages, the homogamy rates remained stable and traditional marriages increased.

*Table 4.4. Distribution of Upward, Downward and Homogamous Marriages With Regard to Educational Attainment Level for Birth Cohorts*

	Upward Marriage		Homogamous Marriage		Downward Marriage	
	O	P	O	P	O	P
	%	%	%	%	%	%
<u>Wives</u>						
1934-1938	13.9	24.2	56.1	50.4	30.0	25.4
1939-1943	13.4	32.6	47.7	38.7	38.9	28.7
1944-1948	18.4	34.6	39.9	32.8	41.7	32.6
1949-1953	20.9	34.0	39.2	31.3	39.9	34.7
1954-1958	23.5	34.1	44.0	29.2	32.5	36.7
1959-1963	28.3	32.4	38.2	28.7	33.5	38.9
(1964-1978)	29.6	32.2	43.5	26.2	26.9	41.6
Total	21.7	37.5	43.3	29.0	35.0	33.5
<u>Men</u>						
1934-1938	18.2	25.4	56.7	50.4	25.1	24.2
1939-1943	22.3	28.7	50.9	38.7	26.8	32.6
1944-1948	26.0	32.6	41.7	32.8	32.3	34.6
1949-1953	21.9	34.7	42.5	31.3	35.6	34.0
1954-1958	22.9	36.7	38.8	29.2	38.3	34.1
1959-1963	18.1	38.9	44.5	28.7	37.4	32.4
(1964-1978)	21.0	41.6	40.4	26.2	38.6	32.2
Total	21.7	33.5	44.8	29.0	33.5	37.5

O = Empirically observed percentages.

P = Predicted percentages, based on the assumption that marriage decisions were taken randomly (given the distributions of educational attainment levels of women and men for each birth cohort).

Note: Married, divorced and widowed men and women at the time of the survey.

Source: FQP Survey, 1993, INSEE.

### *Two Aspects of Educational Expansion*

One simple global interpretation for the previous results is that there is an increasing aversion to educational heterogamy and that French society is more and more stratified by education as a source of social status. This kind of social "rigidification" of French society against structural trends would be very similar to what we

observe when we analyze social mobility: absolute mobility rates increase but relative mobility rates remain highly stable (see Goux, Maurin 1997).

Another possible interpretation is that educational expansion not only modifies the distribution of education but also increases the role of the educational system as a marriage market.

Blossfeld, Timm and Dasko (1997) argue that an increase in the duration of educational participation is likely to increase the probability to meet and select a partner with the same educational level and, therefore, favor educational homogamy.

Another hypothesis would be that the educational system represents a more fluid and less stratified marriage market than the workplace. Under this assumption, the increase in the time spent in the educational system can favor the rise in the relative importance of heterogamous and non-traditional marriages.

Generally speaking, the dominant effect of an increase in the time spent in the educational system should depend on the relative fluidity of the educational system and of the labor market. In the next section, we develop a strategy to evaluate this relative fluidity in the French case.

#### UNDERSTANDING TRENDS IN HOMOGAMOUS MARRIAGES: DATA AND METHOD

The empirical challenge is now to reconstruct the trends in marriage patterns in France as an aggregate of individual decisions in the life course. We will focus on one main issue: to what extent observed trends can be explained by educational expansion? To what extent do they reflect actual changes in the attitude towards marriage? One of the main difficulties is that educational expansion means two very different things: it means that individuals spend much more time within the educational system and that the educational system as a marriage market plays an increasing role. But it means also that the distribution of educational status between men and women changed across cohorts and that the structure of marriage opportunities is now very different than it was some decades ago.

To identify these two effects, it is necessary to go beyond usual modeling. Most of the available studies analyze the distribution of already married couples, typically through loglinear analyses. One drawback of these analyses is that they exclude those who are single, that is they do not control for the actual shifts in the distribution of education. They also very often analyze the distribution of marriage according to the education of partners at the time of the survey, not at the time of their marriage, that is they are exposed to confound the effect of education on marriage and the effect of marriage on education. More importantly, the usual static approach cannot disentangle the effect of the time spent in the educational system (understood as a marriage market) and the effect of the education itself (understood as an asset on the marriage market). To address this issue, we need to follow individuals over the life course and to analyze how their propensities to marry vary with the continuously changing set of opportunities to meet people and find a partner.

In the following two subsections, we describe (a) the only large-scale French data set that provides both a detailed information on schooling and social careers

and on the timing of marriage (b) a simple duration model that makes it possible to identify the impact of the time spent in the school system on the propensity to marry and on the conditional probability to marry homogamously (that is the probability to marry homogamously).

### *Data and Variables*

The study is based on the French survey on Education and Qualifications (*enquête Formation et Qualification Professionnelle*, hereafter FQP) led in 1993. The sample is a sample of households. It was designed to represent the French adult population, aged 20 to 64 years, at the time of the survey. It was stratified along three main variables : the region, the place of residence (urban vs. rural agglomeration), and the number of adults in the household. The procedure of stratification and the sampling fractions were fixed so each individual aged between 20 and 64 has the same probability to be in the sample. The sample yielded 12,640 households, of which 88.4 percent actually responded. The number of individual (and usable) responses makes up 18,023 cases. In this study, we focus on men and women born between 1934 and 1963, who were single at age 16. The actual number of usable male responses is thus 7,784 while it is 7,609 for women.

The FQP survey contains detailed information on the educational attainment of each respondent. The survey gives detailed information on educational careers, and degrees obtained. Every respondent retraces his school career, year by year, describing his successive classes, successive passed degrees, successive specializations. Consequently, it allows to determine retrospectively the educational level of each individual year by year since the age of 16.

The FQP survey also records the date of the first marriage (month and year), which is unique in the French surveys. The survey does not provide information about the level of education of the spouse at the date of the first marriage. It contains, however, information on the spouse of the partner at the date of the survey: if the respondent has a partner (official or not) the survey records his/her educational level. For the remainder of the paper, we made the assumption that the educational level of the first official partner is the same as the educational level of the present partner (even when he/she is a different person). According to this definition of the educational level of the first spouse, 2,475 women had a homogamous first marriage (2,373 men); 1,879 women have had a downward first marriage (1,705 men), 1,099 women have had an upwardly mobile first marriage (1,055 men); and 2,087 women were still not married at the date of the survey (2,580 men).

Given this longitudinal data about educational careers and first marriages, we have been able to construct a panel data set with one observation for each individual and each year, from the age of 16, until the age of the first marriage for those who married, until the age of 60 for those who were still single at 60, and until the date of the survey for those who were still single in 1993 (whatever their age) with time-dependent information about education for each elementary observation. All in all, 80,395 annual transitions (date $\times$ individual) are available for men, and 63,628 for women.

Lastly, the FQP survey gives detailed information on the social background of each respondent. We will mostly use the educational level of the father. A small fraction of the respondents did not give this piece of information. The models that include effects of social background are estimated on a slightly smaller sub-sample of 7,430 men and 7,220 women (i.e. 77,343 annual transitions for men, and 60,781 annual transitions for women).

### *Dependent and Independent Variables*

The dependent variable is the *duration until first marriage*. All individuals are at first single, and at time of marriage they can make a transition into three destinations: (1) upward marriage (spouse having a higher level of education); (2) homogamous marriage (spouse having the same level of education); (3) downward marriage (spouse having a lower level of education). The classification into these three destinations is based on a four-level classification of education: no diploma of the former primary school leaving diploma (CEP); some lower secondary school leaving diploma (general or vocational); the *baccalauréat* or some equivalent<sup>6</sup>; other post-secondary degrees corresponding to education beyond *baccalauréat*.

The *educational level attainment* is measured by the average number of years which are necessary to obtain the degree. The correspondence between degrees and number of years of schooling is the following: former primary school leaving diploma (the CEP, now abolished), or no diploma at all amounts to 9 years; some general lower secondary school leaving diploma (BEPC) is equal to 12 years; short-course vocational training diplomas (CAP and BEP) and nothing else 11 years; vocational training diplomas (CAP and BEP) and the general lower secondary school leaving diploma (BEPC) corresponds to 12 years; higher secondary school leaving diploma with vocational training (BEI, BEC, BEA) corresponds to 13 years; technical or professional secondary school leaving diploma (*baccalauréat technique, professionnel, brevet professionnel*) requires 14 years; general secondary school leaving diploma (*baccalauréat*) amounts to 14 years; medical and social degrees awarded after two years of post-baccalauréat study corresponds to 17 years; other degrees awarded after two years of post-baccalauréat study (BTS, DUT, DEUG) amounts to 16 years; engineering qualifications (*Grandes écoles, écoles d'ingénieurs*) correspond to 18 years; other post-secondary degrees corresponding to strictly more than two years of education beyond *baccalauréat*: doctor's degrees, bachelor's degrees, thesis, PhD in medicine, pharmacy, etc. require 19 years.

The *father's educational level attainment* is measured with the same classification as above.

We built a *linear generation variable* from the five-year birth cohorts. This variable assigns a value from 8 for the oldest five-year birth cohort (1934-1938) to 13 for the youngest five-year birth cohort (1959-1963).

Finally, the *duration in school* is the number of years spent in the educational system since the age of 15 (1 when the individual is at school and is 16 years old etc.). After the educational system is left, the value of this variable is set to 0.

### *A Duration Model*

Given the available data, the issue is now to model the variation of the propensity to marry as a function of the variation in the time spent in the school system, the variation of the educational level and the variation of age. To handle this problem, the natural approach is to model the duration in the "non-married" state as a function of time-varying context variables.

To be more specific, let us consider a population of persons in the same origin state, that in our case the state of being single. They can leave this state for one of three possible destination states ( $K=3$ ), labeled  $k$ ,  $k=1,2,3$ . These destinations are mutually exclusive and exhaust the possible destinations. In our case, the three possible destination states are "married upward", "married homogamously", "married downward". Let  $T$  be the duration of stay in the initial state, i.e. the duration of being single/unmarried. Conventionally, we assume that our whole population enters in the single state at the age of 15, a time that we shall identify as  $T=0$ . Now, we define the probability that a person who has occupied the initial state for a time  $t$  leaves this state for one of the  $K$  states within the interval  $dt$  at or after  $t$ ,  $P(t \leq T \leq t+dt | T \geq t)$ .

Let  $r(t)$  be the instantaneous rate of leaving celibacy per unit time period at  $t$ , called the hazard function:

$$r(t) = \lim_{dt \rightarrow 0} \frac{P(t \leq T < t + dt | T \geq t)}{dt}$$

For a small  $dt$ ,  $r(t)dt$  is the probability of exiting being single in the interval  $dt$  after  $t$ , conditional on being single at  $t$ . For example,  $r(10)dt$  is the proportion of twenty-five-year-old singles who marry within  $dt$  of their twenty-fifth birthday (with our convention that  $T=0$  at the age of 15).

Now, let  $D_k$  be a dummy variable which takes value 1 if state  $k$  is entered and 0 otherwise. The instantaneous rate of leaving the state of being single for state  $k$  is:

$$r_k(t) = \lim_{dt \rightarrow 0} \frac{P(t \leq T < t + dt, D_k = 1 | T \geq t)}{dt}$$

Here,  $r_k(t)dt$  gives the probability of exiting the state of being single to state  $k$  in the short interval  $dt$  after  $t$ , given being unmarried at  $t$ .  $r_k(t)$  is called the transition intensity to state  $k$ . We have:

$$r_k(t) = \lim_{dt \rightarrow 0} \frac{P(t \leq T < t + dt, D_k = 1 | T \geq t)}{dt}$$

If  $F$  is the duration distribution function of  $P$  ( $F(t)=P(T < t)$ ), and  $f$  is the corresponding probability density function ( $f(t)=dF(t)/dt$ ), then:

$$P(t \leq T < t + dt \mid T \geq t) = \frac{F(t + dt) - F(t)}{1 - F(t)}$$

Therefore,  $r(t) = \frac{f(t)}{1 - F(t)}$ .

$1 - F(t)$  is the proportion of the cohort who is still single at  $t$  (the survivor function). Since  $f(t) = dF(t)/dt$ ,  $r(t) = \frac{f(t)}{1 - F(t)}$  is a differential equation whose solution is:

$$1 - F(t) = \exp\left(-\int_0^t r(u) du\right).$$

So, it is possible to calculate the survivor function from the hazard function quite easily.

We suppose that the transition intensities can be written:

$$r_k(t) = \exp(\beta_k X), \quad k = 1, \dots, K$$

where  $\beta_k$  is a parameter vector to estimate, while  $X$  is a vector of time-independent covariates. Then the unconditional survivor function is equal to:

$$1 - F(t) = \exp\left(-\sum_{k=1}^K \exp(\beta_k X) t\right)$$

The difference in the probabilities of exiting the state of being single to state  $k$  in the short interval  $dt$  after  $t$ , given the state of being unmarried at  $t$ , for two persons with characteristics  $X_1$  and  $X_2$  is given by:

$$\frac{r_k(t \mid X_1) dt}{r_k(t \mid X_2) dt} = \exp(\beta_k (X_1 - X_2))$$

Unfortunately, our data follow people from their fifteenth birthday to 1993 and not to their first marriage. So, the duration  $T$  may be right censored. One can find more details in Lancaster (1990).

## RESULTS

Let us first consider the evolution of the propensity to marry (i.e.  $r(t)$ ) over the life course. The estimated rates of leaving the state of being unmarried per unit time for single men and single women are reported on Figures 4.1 and 4.2. The simulations are based on the results from Model (2), Tables 4.5 and 4.6, and for the cohorts

born 1934-1938 and 1959-1963. Let us first consider the variations in men's propensity to marry over the life course (Figures 4.1a and 4.1b).

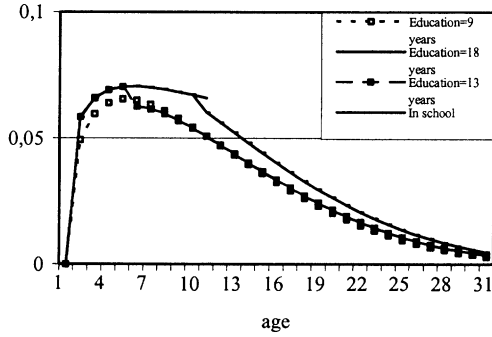


Figure 4.1a. Men's Propensity to Marry - 1959-63 Cohorts

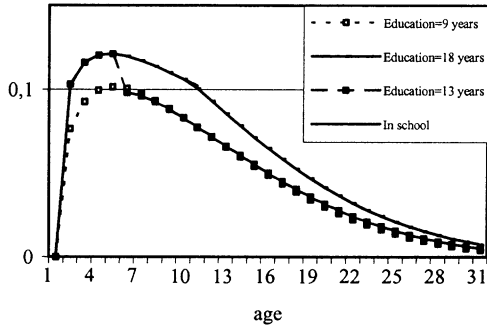


Figure 4.1b. Men's Propensity to Marry - 1934-38 Cohorts

(a) At each age, the propensity to marry is higher for men who are still in the educational system than for men who have already left school.



- (b) After their leaving school, the propensity to marry is higher for men with the highest level of education than for men with lower education.
- (c) Regardless of the level at which they leave school, men's propensity to marry is lower after their leaving school than before.
- (d) Men's propensity to remain single increases across cohorts.

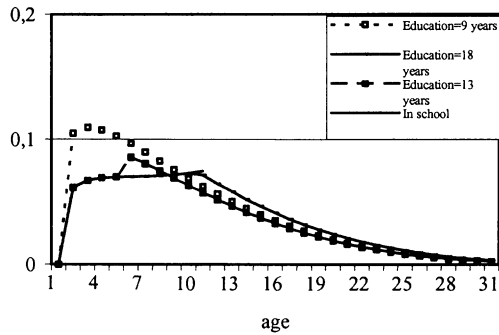


Figure 4.2a. Women's Propensity to Marry – 1959-63 Cohorts

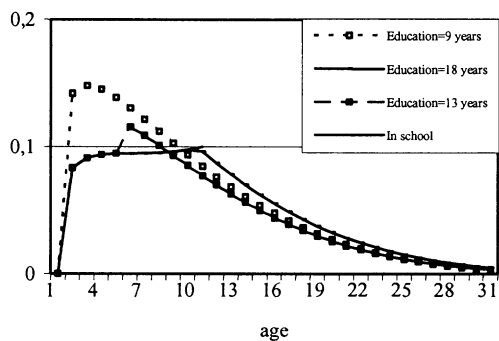


Figure 4.2b. Women's Propensity to Marry – 1934-38 Cohorts

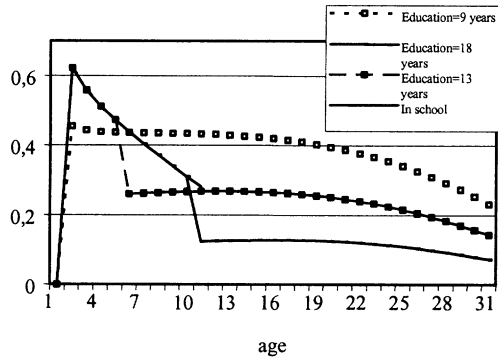


Figure 4.3a. Men's Conditional Propensity to Marry Homogeneously – 1959-63 Cohorts

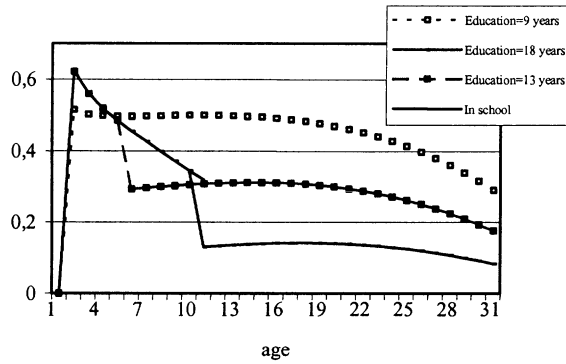


Figure 4.3b. Men's Conditional Propensity to Marry Homogeneously – 1935-38 Cohorts

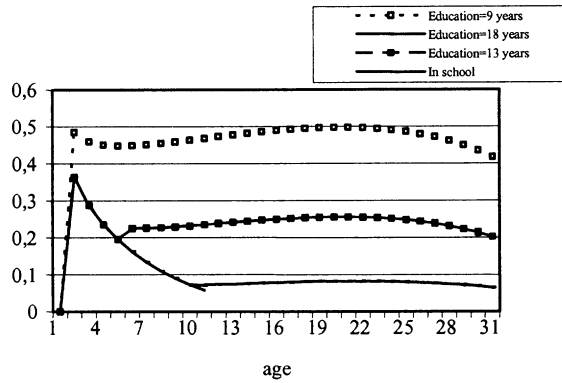


Figure 4.4a. Women's Conditional Propensity to Marry Homogeneously – 1959-63 Cohorts

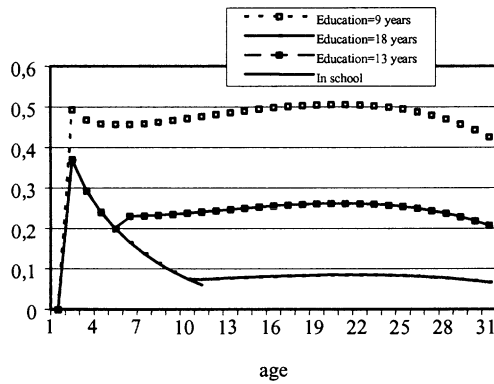


Figure 4.4b. Women's Conditional Propensity to Marry Homogeneously - 1934-38 Cohorts

Table 4.5. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Women (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	2.71	-5.77*	-12.43*	-26.74*	-23.33*	-16.88*	-18.26*	-15.17*	-16.02*
Log(Current Age-15)	1.24*	0.71*	0.61*	0.18*	0.05	0.22*	-0.26*	0.01	-0.02
Log(60-Current Age)	-2.80*	0.59	2.46*	6.37*	6.00*	4.33*	4.44*	3.28*	3.47*
Log(Current Age-15)*Education	-0.12*	-0.02*	0.005	-0.006	0.004	-0.02*	0.07*	0.03*	0.03*
Log(60-Current Age)*Education	0.10*	0.02*	0.008	-0.02*	-0.04*	-0.04*	-0.06*	-0.02*	-0.02*
Not in School <sup>a)</sup>	0.34*	-0.78*		0.58*	0.68*		0.21*	0.74*	
Duration in School <sup>b)</sup>		-0.17*	-0.19*		0.07*	0.07*		0.10*	0.10*
Duration Since Leaving School <sup>c)</sup>	-0.17*	-0.15*		0.08*	0.06*		-0.04*	-0.05*	
1-2 Years After School <sup>d)</sup>			-1.07*			0.75*			0.63*
3-4 Years After School <sup>d)</sup>			-1.43*			0.82*			0.63*
5-6 Years After School <sup>d)</sup>			-1.77*			0.90*			0.58*
7-8 Years After School <sup>d)</sup>			-2.02*			0.91*			0.42*
9-10 Years After School <sup>d)</sup>			-2.26*			0.89*			0.29*
11-12 Years After School <sup>d)</sup>			-2.52*			0.88*			0.20*
More Than 12 Years After School <sup>d)</sup>			-2.67*			1.08*			-0.07
Father's Education		-0.05	-0.05		-0.10*	-0.12*		0.05*	0.05*
Father's Education*Linear Cohort Trend*10		0.004	0.004		0.004	0.005*		-0.003*	-0.003*
Father's Education<Daughter's Education		0.88*	0.91*		0.67*	0.63*		-0.59*	-0.58*
Father's Education=Daughter's Education		-0.34*	-0.35*		0.32*	0.33*		-0.08*	-0.08*
Father's Education>Daughter's Education		Ref	Ref		Ref	Ref		Ref	Ref
Linear Cohort Trend		-0.10*	-0.10*		-0.10*	-0.11*		-0.03*	-0.03
Number of Events	1099	1066	1066	2475	2358	2358	1879	1803	1803
Subepisodes	63628	60781	60781	63628	60781	60781	63628	60781	60781
Degrees of Freedom	21	39	54	21	39	54	21	39	54

a) Reference category: In school. b) Measured in numbers of school years after age 14. c) Measured in numbers of leaving school.

d) Dummy variable (reference category: In school).

Table 4.6. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Men (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	3.71*	-5.10*	-11.83*	-29.98*	-25.31*	-16.50*	-15.55*	-16.34*	-16.41*
Log(Current Age-15)	1.15*	0.48*	0.29*	0.03	0.17*	0.35*	0.02	0.33*	0.29*
Log(60-Current Age)	-3.18*	0.74*	2.61*	7.13*	6.24*	3.83*	3.46*	2.87*	2.82*
Log(Current Age-15)*Education	-0.10*	0.01	0.04*	0.04*	0.02*	-0.013*	0.05*	0.012*	0.01
Log(60-Current Age)*Education	0.10*	0.005	-0.01	-0.02*	-0.03*	-0.013*	-0.04*	-0.004	-0.001
Not in School <sup>a)</sup>	0.34*	-0.82*		0.42*	0.52*		0.16*	0.52*	
Duration in School <sup>b)</sup>		-0.16*	-0.16*		0.04*	0.05*		0.05*	0.06*
Duration Since Leaving School <sup>c)</sup>	-0.16*	-0.14*		0.09*	0.06*		-0.03*	-0.03*	
1-2 Years After School <sup>d)</sup>			-1.08*			0.63*			0.47*
3-4 Years After School <sup>d)</sup>			-1.27*			0.76*			0.50*
5-6 Years After School <sup>d)</sup>			-1.50*			0.88*			0.51*
7-8 Years After School <sup>d)</sup>			-1.82*			0.95*			0.51*
9-10 Years After School <sup>d)</sup>			-2.05*			0.94*			0.42*
11-12 Years After School <sup>d)</sup>			-2.24*			0.87*			0.26*
More Than 12 Years After School <sup>d)</sup>			-2.54*			0.77*			0.07
Father's Education		0.03	0.04		-0.02			0.20*	0.20*
Father's Education*Linear Cohort Trend*10		0.002	0.002		0.004*	0.005*		-0.02*	-0.02*
Father's Education<Son's Education <sup>e)</sup>		1.21*	1.23*		0.43*	0.39*		-0.67*	-0.67*
Father's Education=Son's Education <sup>e)</sup>		-0.44*	-0.47*		0.28*	0.28*		-0.21*	-0.22*
Father's Education>Son's Education <sup>e)</sup>									
Linear Cohort Trend		-0.25*	-0.25*		-0.15*	-0.17*		0.15*	0.16*
Number of Events	1055	1017	1017	2373	2292	2292	1705	1638	1638
Subepisodes	80395	77343	77343	80395	77343	77343	80395	77343	77343
Degrees of Freedom	21	39	54	21	39	54	21	39	54

a) Reference category: In school. b) Measured in numbers of school years after age 14. c) Measured in numbers of leaving school. d) Dummy variable (reference category: In school). e) Centered effects.

Let us now analyze women's variations in the propensity to marry (Figures 4.2a and 4.2b). They are somewhat different than for men.

(a) Before age 25, the propensity to marry is *lower* for women who are still in the school system than for women who have already left school. After 25, the propensity to marry becomes higher for women who are still in the school system than for those who have left.

(b) The propensity to marry is higher for highly educated women than for women with a lower level of education.

(c) For women who leave school after completing a secondary education, the propensity to marry increases after their leaving school.

(d) Women's propensity to remain single increases across cohorts.

As it turns out, both the time spent in the school system and the educational attainment *increase* men's propensity to marry, which is consistent with the idea that both actual and expected educational statuses increase the value of men on the marriage market. The effects of educational expansion are less clear for women. Time spent in the educational system is clearly a factor of marriage postponement for women, but education per se is not a factor that lowers the propensity to marry after leaving school. It is much more problematic to have a child during the schooling period for a woman than for a man and this is no doubt why time spent in the educational system does not have the same positive effect on women's propensity to marry as on men's propensity to marry.

All in all, educational expansion is a factor that modifies marriage timing. Generally speaking, it seems to favor a decline in the difference in marriage age between men and women. At the same time, it does not seem to be the driving force of marriage postponement. Regardless of the age or the educational level of men and women, our estimates reveal indeed a strong net decline in the propensity to marry across cohorts.

Let us now consider the evolution of the probability to marry homogamously given marriage (i.e.,  $r_2(t)/r(t)$ ).

For men this probability to marry homogamously given marriage declines over the life course until entry to the labor market (see Figures 4.3a and 4.3b). It declines with the time spent in the school system, it drops after leaving school and then remains stable.

For women, this probability declines with the time spent in the school system and then remains stable (see Figures 4.4a and 4.4b). There is no drop after leaving school.

For both genders, the higher the level of education, the lower the conditional probability to marry homogamously. We only observe a slight decline in the conditional propensity to marry homogamously across cohorts.

All in all, educational expansion is a factor of decline for the share in homogamous marriages and cannot account for the persisting rates of educationally homogamous marriages.

Lastly, for both men and women, the higher the father's educational level, the lower the propensity of marrying homogamously, given marriage (see Table 4.5 and 4.6). The effect of father's education is thus similar to the effect of respondent's

education. In the French case, heterogamous marriage turns out to be similar to a cultural consumption: it is all the more frequent that the cultural context in which you live or in which you grow up is high.

### CONCLUSION

In the French case, the increase in the time spent in the school system has the same kind of effects as changes in the distributions of educational attainment across men and women: it tends to favor a decline in the propensities to marry homogeneously. In other words, the two main structural changes linked to the expansion of the educational system cannot provide a convincing explanation for the stability of educational homogamy rates in France. Our longitudinal analysis actually reinforces previous diagnosis on trends in social mobility in France : French society in general -and French marriage market in particular- seems more and more stratified by education.

Further research is needed to provide a deeper understanding of this re-stratification process. In this paper, we focus on the educational system and its expansion, but we think that substantial progress should now come from focusing on the labor market and the transformation of the workplace. In France, we have clear evidence that the within-firm occupational structures are becoming more and more homogeneous (Kramarz, Lollivier, Pelé 1996). We see as highly plausible that workplaces are becoming more and more educationally homogenous and play an increasing role in the process of assortative mating. This hypothesis could easily be tested using straightforward extensions of the longitudinal approach developed in this paper.

### NOTES

1. The same holds true in most industrialized countries (see Shavit and Blossfeld, 1993).
2. Let's consider a given distribution of education across men,  $x_1, \dots, x_N$ , where  $x_i$  denotes the share of men with level of education  $i$ . Let us denote  $i_0$  as the level of education that corresponds to the maximum of  $x_i$ . It is straightforward to check that the distribution of education across women  $y_1, \dots, y_N$  that maximizes the structural homogamy rate  $H = \sum x_i y_i$  corresponds to the case where all women are concentrated in  $i_0$ . The corresponding structural homogamy rate is equal to  $x_{i_0}$ : it is itself the maximum when all men are concentrated in  $i_0$  that is when concentration and similarity are at their highest level.
3. If  $x_i$  ( $y_i$ ) represent the share of men (women) with educational level  $i$ , this minimum proportion is given:  $\frac{1}{2} \left( \sum_i |x_i - y_i| \right)$ .
4. If  $N$  represents the number of educational level categories, this minimum proportion is given by  $\frac{1}{2} \left( \sum_i |x_i - \frac{1}{N}| \right)$ . In our case  $N=4$ , a uniform distribution of educational achievement correspond to 25%=1/4 of the sample within each educational level.
5. If  $x_i$  ( $y_i$ ) denotes the share of men with level of education  $i$  the structural rate of homogamous marriage is  $H = \sum x_i y_i$ .
6. The *baccalauréat* is a prerequisite for admission to university and other post-secondary education.

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## THE WHEN AND WHOM OF FIRST MARRIAGE IN THE NETHERLANDS

NAN DIRK DE GRAAF, WILMA SMEENK, WOUT ULTEE AND  
ANDREAS TIMM

### FROM AGRARIAN TO (POST) INDUSTRIAL SOCIETY

Sociologists are interested in societies, the shape they have and the changes in their profile. For instance, societies consist of privileged and disadvantaged classes. This stratification is indicated by the extent to which at one point in time resources like income are distributed unequally among the members of a society. This phenomenon has been studied extensively and intensively by economists and sociologists. Independent of income disparities, benefits and handicaps may be transmitted to a smaller or larger extent from parents to their children. This is the question of intergenerational social mobility or reproduction of inequalities. That question has been studied primarily by sociologists.

Some pondering makes clear that no matter what quantity of resources a privileged father transmits to his children, this transmission does not necessarily make for the *reproduction* of inequalities occurring between the individuals as a part of a society. At least in contemporary (post)industrial societies, children are reared by their father and mother; both transfer resources to their children. A father with a lot of resources does not necessarily have a spouse with many assets too. The degree to which inequalities are transmitted from one generation to another is higher to the extent that inequalities are *reconstituted* within couples. So, the extent to which a society is stratified, is also indicated by the degree of heterogamy displayed by the marriages of its members. The converse of heterogamy has been called homogamy.

For good reasons, education is considered as the main resource when studying marriage behavior in (post)industrial societies. Agreeing with Parkin (1991), who declared the occupational order to be the backbone of the reward system of (post)industrial societies, Ultee and Luijkx (1990) held that education is the spinal chord of those societies. Although education is not everything, it affects almost anything, including a person's destination in life. Indeed, some go as far to call

(post)industrial societies 'information societies' (Lyon 1988), or 'knowledge societies'. Therefore, if questions on the reconstitution of inequalities are to be addressed for (post)industrial societies, they should be questions on who marries whom with respect to education.

Comparing (post)industrial societies with agrarian ones, Goode (1982) postulated three important shifts regarding the reconstitution of inequalities. The first one involves the persons who make decisions about who is marrying whom. In those agrarian societies from which contemporary societies in Europe developed, decisions were taken not by the persons who actually married each other, but by their parents. Secondly, in agrarian societies these decisions involved the standing of the parents of the marrying persons: the amount of land parents owned and the wealth their occupation brought them. In (post)industrial societies, these decisions came to consist primarily of the level of education of the unmarried persons themselves. Thirdly, decisions in agrarian societies were guided by norms prevailing within society at large and in particular its highest social circles. These norms disapproved of marrying below one's standing (*mésalliances*). Of course, if marriages below one's standing is condemned and this rule is followed fully, marriages above one's standing does not occur either, even if all parents would like their children to do so.

In contrast, in (post)industrial societies there are no norms disapproving of certain socio-economic types of marriages. To begin with, every unmarried person of a certain sex is legally free to marry any other unmarried person of the opposite sex. Secondly, if there exists a public norm or a norm among parents, this norm stipulates that the marrying persons should love one another. The marrying people indeed do love one another, but it turns out that love, although it may strike like thunder, is not socially blind.

In this normative vacuum people wishing to get married, spend time looking for a suitable match, and while doing so they may be rejected by persons they fall for, and they may encounter competition from other persons searching for a partner. People wish themselves a good life, and a telling indicator of what the future has in store, is education and the level of education of a prospective partner. All other things remaining equal, the higher this person's level of education, the higher this person's earning capacity and therefore the level of living of a couple including this person. The members of (post)industrial societies act on this piece of knowledge, and people wishing to get married prefer a partner with a higher level of education to a partner with a lower level of education.

Yet, although persons prefer a more to a less educated spouse, and perhaps even have the strongest preference for a partner with the highest level of education, things work out differently in practice. A couple in which one half marries up, also is a couple in which the other half marries down. People as a complement to the preference to marry up, have an aversion to marry downwardly on the social scale. As a result, there will be a tendency towards like-marrying, such as with respect to education. So, despite - or rather because of - these preferences, (post)industrial societies display a tendency towards women with the highest level of education being married to the men with the highest level of education, and men with the lowest level of education being married to women with the lowest level.

FROM QUESTIONS ON ABSOLUTE HOMOGAMY TO QUESTIONS ON  
RELATIVE CHANCES

Goode's thesis of a three-fold shift implies that whereas questions on intermarriage in agrarian societies should focus on the degree to which intermarriage patterns deviate from a norm stipulating equal standing, questions on intermarriage in (post)industrial societies should focus on the outcome of a competition in which the imbalance between demand and supply plays an important role. Indeed, in (post)industrial societies where the educational distribution for men differs from that for women, it may be the case that no couple is exactly educationally homogamous, but that all men with the highest levels of education, are marrying the women with the highest level of education available; similarly the women with the lowest level of education are espousing the men with the lowest level of education. The matching which goes on, then, is based upon the relative position of a person within that person's own queue, a row of males for a man and a line of women for a woman. In agrarian societies demand and supply imbalances are less of an influence, since the number of sons with a father of a certain standing, will more or less be equal to the number of daughters of exactly the same standing.

Therefore, questions about who marries whom with respect to education, need not only be about whether a person married at the same level, downward or upward, and about the changes in the percentages of homogamous couples in a society in the course of time. These questions lump couples who married homogamously at the lowest level of education in the same category as couples who married homogamously at the highest level of education. This seems rather odd given the idea that education acts like a resource in competition. Questions about who marries whom with respect to education, also involve the chances of men (women) with a higher level of education to marry women of a higher rather than a lower level of education, relative to the chances of men with a lower level of education to marry women (men) with a higher rather than a lower level of education.

In our view, a shift in research questions is paramount. In older studies research questions dealt with are about the percentage of homogamous marriages in a society. At the individual level older questions involve a dependent variable comprising three categories: married homogamously, educationally downward, and educationally upward. Questions of the format we like to pursue are about competitions within birth cohorts and their outcomes in terms of relative chances. Men (women) with a higher level of education compete with men (women) with a lower level of education. And they compete for women (men) with a higher rather than a lower level of education. Such a shift from absolute percentages towards relative chances occurred in social mobility research too.

In this chapter we seek to contribute to the knowledge of who marries whom with respect to education in the contemporary Netherlands. Before reviewing hypotheses on percentages of homogamous couples and relative chances of educational heterogamy, we pinpoint another shift in research on who marries whom as far as education goes: the shift from a comparison of states for stocks of couples involving whole societies, to a comparison of events for birth cohorts.

FROM QUESTIONS FOR STATES AND STOCKS TO QUESTIONS FOR  
EVENTS AND BIRTH COHORTS

There have been several studies for the Netherlands on who marries whom with respect to education. Several of them take as a starting point the stock of all existing marriages in the Netherlands (Ultee, Arts, Flap 1996: p. 349; Hendrickx, Uunk, Smits 1995). However useful for descriptive purposes percentages of homogamous marriages and parameters for competitive outcomes pertaining to all existing marriages may be, they do lead to two difficulties when explanatory research is attempted.

The first difficulty perspires from Ultee and Luijkx (1990). They collected intermarriage tables from articles/books and foreign scholars, wound up with tables for 23 industrial countries in the 1970s, compared parameters for relative chances taken from these tables, and sought to test hypotheses about the influence of country characteristics like level of economic development and political climate on these measures for competitive outcomes. However, they were at loss when it came to the matter at what point in time these characteristics should be measured: at the time all marriages considered were in existence or some other point in time. Ultee and Luijkx had to assume that, on average, existing marriages had lasted for some two decades. So they made their country characteristics refer to 20 years prior to year for which relative chances of educational heterogamy were calculated. The same difficulty plagues Smits, Ultee and Lammers (1998).

Yet it is even better to establish the consequences of level of economic development and political climate, if indeed such effects are to be estimated, by assigning each separate existing marriage in each country considered a value on these variables for the years a marriage was concluded. If economies and politics are influential, it is the economic and political situation at the time a marriage was concluded, not a time which is sometimes two decades earlier or two decades later. However, given the data at hand, Ultee and Luijkx could not implement a research design involving marriage cohorts and recordings of the year a marriage was concluded into direct indications for the economic and the political situation in a country.

The decision to study marriage cohorts taken from cross-sectional surveys seems warranted by the assumption that few marriages result in divorce. If this supposition holds, changes in the extent of educational heterogamy can be studied fruitfully. If this assumption is not a proper approximation, studies on heterogamy taking all existing marriages as a starting point, are superseded by studies taking all in one year concluded marriages as the primary unit of analysis. In this way disbanded marriages are included. An example of doing so for the Netherlands is Uunk and Ultee (1996).

Yet studies comparing marriages concluded in a certain year with marriages concluded in another year, are not fully satisfactory from an explanatory point of view either. Perhaps in certain cases it seems plausible to replace the question of societal change by the question of changes between marriage cohorts. In the present case this has some drawbacks. A prime one is that the cohorts distinguished in these studies are not independent entities. Indeed, it is easy to think of several dependencies. In

addition, if something has changed in contemporary industrial societies, it is the age at which people marry. Given this change, it is paramount to investigate the question of whether a rise in age at marriage makes for more or less unequal chances in who marries whom as far as education goes. This question cannot be studied easily when cohorts are defined on the basis of year of marriage.

The second difficulty with questions on states for stocks may now be stated as follows. When the stock of all couples in a society at one point in time is being studied, members of this society who at that point in time are not married, are excluded, for obvious reasons, from the analysis. So are people who married earlier on but who now are divorced, without having remarried. Yet single people may at one time marry. Indeed it may be the case that persons with a higher level of education are more likely to marry later in life than persons with a lower level of education. Thus, if the average age at marriage in a society is going up, this does not mean that irrespective of education people are marrying at a later age, but only that more people are studying for a longer period. It also may be the case that a couple who at the moment of the investigation is educationally homogamous, was not so as the time of marriage, or the other way around. Education perhaps once was a life-long characteristic, but the number of persons studying later in life is increasing, and it may be the case that persons with a low level of education are more likely to study later in life than persons with a low level of education and a spouse with a high level of education. Given this difficulty, it is not advisable to study the state of being married or not being married. It is pertinent to study the question of when unmarried people marry, if they do, whom they marry with respect to education, and how the timing of marriage and the education of the spouse depend upon the education of the person.

For that reason, the study of societal change nowadays is pinned down as the study of events for birth cohorts. Blossfeld and Timm (1997) did so in their study for Germany, which might be taken as an exemplar for studies on other countries. The example for the Netherlands is Smeenk (1998). The comparison of birth cohorts and the focus on the timing of marriage is the design we follow in the present contribution. We study first marriages, not only those first marriages in existence at the time of interview, but also those disbanded at that moment. For that reason, our data were not collected in a one-moment design, but in a study on a cross-section of the population including retrospective items on present marriage and possible earlier unions.

#### PROBLEM LOSSES?

Kuhn (1962) has argued that progress in any scientific field is accompanied by 'problem losses'. For instance, in the present chapter on changes in the timing of events between birth cohorts, we do not address the question of the extent to which changes in states for stocks of existing marriages after educational heterogamy are to be accounted for by an increase in longevity, which depends upon education. Thus, in our case the shift from questions on absolute homogamy within stocks to questions on relative chances in cohorts involves problem losses. How serious are these losses?

By raising this question, we do not dismiss the value of the change in the unit of analysis from societies to individuals and the value of grouping individuals after birth cohorts. Following methodological individualism (Popper 1945: chapter 14, Ultee 1998), it is helpful to reformulate macro-questions as micro-questions. Rather, if losses are to be limited, individuals are to be characterized not only by their own inherent properties, but also by the features of the cohorts they belong too (Lazarsfeld, Menzel 1961). In addition, explanations are to be devised in which the timing of marriage and the educational level of the spouse of persons belonging to one cohort, are accounted for by the characteristics of other cohorts. In this way the step from the macro-level to the micro-level is made with as few losses as possible. Thus, problem losses when moving from the macro- to the micro-level are larger, when contextual properties of individuals feature less prominently in explanations. In our case, when raising questions about relative chances of heterogamy for birth cohorts in the Netherlands, we seek to test hypotheses on inherent and on contextual properties.

There also is the matter of going back from individual outcomes to the macro-level. In our case, this macro-level may not only be taken as the cohort, but also and perhaps primarily as the stock of marriages existing in a society at one point in time. As far as we see it, there is no general agreement on how taking that step. However, we do think that the shift in intergenerational mobility research from the distinction between forced and circulation mobility to absolute mobility rates and parameters for relative chances, are part of going back from the individual level to the macro-level. As Goldthorpe argued, if the distinction between forced and circulation mobility has any meaning, it only has so at the macro-level. It just cannot be said of two mobile persons that one person is an instance of forced mobility and the other person an example of circulation mobility. Indeed, the idea of subtracting structural mobility from total mobility, and obtaining exchange mobility is erroneous. In contrast, according to Goldthorpe (1980: p. 78) parameters for relative chances computed for the well-known square social mobility tables, can be interpreted as the outcome of a competition for higher and lower destinations within a society between persons from higher and lower origins. We here maintain that proper equivalents exist in research on the question who marries whom as far as education goes. According to Goldthorpe, relative mobility chances together with structural changes (as expressed in marginal distributions) entail absolute mobility rates (Erikson, Goldthorpe 1992: p. 59). We hold that relative chances of intermarriage together with the balance in educational structures for men and women, result in heterogamy- and homogamy rates.

#### GENERAL HYPOTHESES

Marrying, like any other human behavior, depends upon preferences and possibilities, upon values and opportunities (Homans 1961, Coleman 1990). This is the most general hypothesis of the various brands of rational-choice explanations, which until now has not been replaced by another hypothesis of equivalent content. For societies like the contemporary Netherlands, the higher a prospective partner's level

of education, the more attractive this person is to someone searching for a partner. But there are competitors, sometimes with a lower level of education, sometimes with a higher level of education. And the supply of partners with a certain level of education is at least in the short run limited. In industrial societies, within each birth cohort the number of men with the higher levels of education surpassed the number of women with those levels of education. Only in recent cohorts we notice that women have caught up. For that reason, complete homogamy in an absolute sense within at least the old cohorts is impossible. And for that reason, the study of relative chances of intermarriage is indicated. So, in our models, we will not have as the 'dependent variable' the difference between a person's level of education and the level of education of that person's spouse. We use as a baseline the preference that on the marriage market people go for a partner with a high rather than a low education.

Consequently, in our study, the dependent variable involves the level of education of the spouse, and the level of education of the person forms one of the independent variables. Well-known absolute rates for homogamy, marrying up, and marrying down are to be regarded as unintended macro-outcomes of competitions on the marriage market between people having identical preferences but varying opportunities. Among these opportunities are a person's own level of education, and the balance between the educational structure for men from a specific cohort and the educational structure for women from that cohort. Next, we go into these hypotheses more specifically.

#### *Preferences of Alter as Limited Opportunities for Ego*

There are arguments about preferences which lead to the prediction that (post)industrial societies will display a tendency towards more equal relative chances in the competition between persons of varying levels of educations for partners with a high rather than a low level of education. Following this line of reasoning, education in those societies is becoming a less effective resource for marrying a person with a high level of education.

Given the most general rational-choice hypotheses, concluding a marriage is like buying a good. Marrying a person of a high level of education makes for better chances in life than marrying persons with a low level of education. However, by definition, if a person with a low level of education marries a person with a high level of education, a person with a high level of education marries a person with a low level of education. That is why there will be a tendency towards like marrying like. Or, in other words, the preferences of the opposite sex, limits the opportunities for a person with a low level of education to marry a person with a high level of education. Our *first hypothesis* therefore holds that the higher a person's level of education, the higher the level of education of the spouse of this person will be. This hypothesis may be expanded by holding that not only a person's own level of education acts as a resource in the competition for highly or lowly educated persons of the opposite sex, but that the level of education of this person's father does so too. After

all, a father's level of education makes for distinctions within the category of persons with the highest level of education.

Of course, the presented argument sounds as if people nowadays are terribly calculating and egoistic. But then, in olden days concluding a marriage was a matter decided by the financial interests of families. Historians do research to find out when 'love marriages' became more common, with love being a phenomenon which is not strongly dependent on the similarity of education of the two persons who are in love and wish to marry each other (Shorter 1975). The consensus seems to be that even in the second wave of the industrial revolution in the midst of the 19th century, love marriages were quite uncommon for members of the privileged classes. So, we hold that a love marriage and a union of a highly educated person with a partner with a low education, for the first person is a 'luxury good'. If the general standard of living of cohorts rises, such an indulgence becomes affordable (compare Prais and Houtakker 1971 on income elasticities). The resistance in England at the end of the 18th century against marriages between men from the nobility and actresses and the condoning of 'affairs' (Murray 1998: chapter 7), and again at the end of the 19th century (Cannadine 1990: chapter 8), shows how wealthy families reacted to the tendency towards love-marriages.

The question now is under which conditions the outcomes of competitions between persons differing in level of education for spouses with a high rather than a low level of education will be more equal. Assuming that the general standard of living rises, this argument about increasingly weak preference for going after the higher rather than the lower in socio-economic terms, yields the prediction that in successive cohorts the extent of unequal relative chances weakens. However, this prediction is conditional. If it so happens that the general standard of living falls, then the relative chances will become more unequal. Against this background it may be worthwhile to point out that although since the oil crisis of the mid-seventies per capita gross national product, adjusted for inflation, has been rising in (post)industrial countries like the Netherlands, the proportion of the population doing paid work, has been rising too. Indeed, nowadays it is sometimes said that both spouses, if they want to maintain the standard of living of preceding cohorts, are obliged to work. In olden days the work activities of the male bread winner were enough. So, our argument that a preference for a luxury good results in a trend towards more equal relative chances in who marries whom with respect to education, implies for certain industrial countries in specific periods a tendency towards more unequal relative chances during the last decades. It all depends upon developments in per capita gross national product discounted by developments the number of hours spent in paid worked by an average adult member of the population. We just state this hypothesis here, without testing it. As yet we would like to limit our tests to hypotheses involving education, the supposedly one of the most valued good in (post-)industrial societies.



*Educational Expansion as an Opportunity Factor*

There is a tendency within sociology to explain the outcomes of choices by preferences. We have pointed out that when it comes to marrying in (post)industrial societies, a preference for a spouse with a high rather than a low level of education, cannot always fully hold sway: supply and demand never balance. And if preferences can be realized by specific individuals, perhaps the costs for doing so are prohibitive. People who find the right partner when they are 40 years old, after having become sexually mature at age 18, possibly have missed a lot of fun in their life. For that reason, explanations invoking various opportunities are interesting too.

It has been held by Blossfeld and Timm (1997), who explain whether people married homogamously, up or down with respect to education (and therefore focus on homogamy- and heterogamy-rates rather than relative chances), that the upward shift in the educational distribution of (post)industrial societies, increased the chances for persons with a level of education beyond compulsory schooling, to marry a person with a level of education above the minimum. For all these people the pool of eligibles has increased. Here we raise objections against this hypothesis. These objections involve the shift from questions on the percentage of homogamy in a cohort, to questions on the relative chances of competitive outcomes within a cohort.

Primarily, we wonder whether a case in favor of the hypothesis of educational expansion and a higher percentage of educational homogamy can be made in line with the assumption that behavior is the outcome of preferences and opportunities. We have two arguments which state that such a derivation is not possible.

To begin with, it just cannot be held that with educational expansion, for a person of *whatever* level of education beyond primary schooling, the probability of marrying a person with the same level of education increased. People visiting a university are at a marriageable age, and they are supposed to be more likely to marry a person also at university because of the abundant opportunities they have to meet. But people who have lower secondary school only, when visiting that school are not at a marriageable age. Indeed, the same goes for persons with higher level secondary education only. So, the expansion argument only holds for people going to university or the highest level of vocational education. These persons are at school when they are looking for a partner, and the educational system makes them bump into one another.

This argument implies that the percentage of persons marrying a person of the same level of education, increases in the course of time only because the percentage of the population going to the highest levels of education increases. For persons at the highest level of education, the odds of marrying someone from the highest level rather than a lower level may have remained the same. The macro-outcome that the percentage of educationally homogamous marriages increased, is a simple result from changes in the composition of cohorts after level of education. Therefore, hypotheses about the percentage of people marrying someone of the same level of education, should be complemented by hypotheses about competitions between men (or women) of different levels of education for women (or men) varying in level of

education. Thus, a *second hypothesis* might be that with educational expansion, the extent increases to which a person's level of education makes for marrying a person with a higher level of education, with the relative chances of educational heterogamy pointing towards more unequal competitive outcomes.

Secondly, we wonder whether educational *expansion* as such, even for the persons with the highest level of education, increases the chances of marrying a person from the highest level of education rather than a lower level of education. Surely, for one man with the highest possible level of education, the supply of women with the highest level of education has increased. But the number of men competing for these women has increased too. Education did not only expand for women, it also expanded for men. So, relative chances for competitive outcomes may not have changed. Thus, the Blossfeld-Timm hypothesis on educational expansion and an increase in the percentage of educational homogamy, misses the point of *competition* between persons of the same sex looking for a spouse of the other sex.

#### *Gender Inequality in Education as an Opportunity Factor*

Of course, extending the argument we just commenced, if with educational expansion gender *differences* in education decreased and the competitive balance became more equal, the extent to which who marries whom as far as education goes, whether in an absolute or a relative sense, may have increased. But then again, if in the beginning of educational expansion, education of men increased more than education of women, the degree to which a person's level of education acts as a resource in the competition for higher rather than less educated spouses, making the relative chances of heterogamy more equal.

We now are able to specify another opportunity factor, and according to our line of arguing a more influential factor. This factor does not point towards educational expansion as such, but towards the decreasing gender inequalities in education. If the educational system expands with gender inequalities in education remaining the same, the relative chances of marrying someone of the highest rather than a lower level of education will not increase. But it does so, if the educational expansion for women is stronger than the educational expansion for men, or in other words, if gender inequalities in education decrease. Therefore, the prime opportunity factor seems to be the resemblance between the educational distribution of men from a certain birth cohort, compared to the educational distribution for women born in the same year. The main factor driving changes between cohorts in who marries whom as far as education goes, is not educational expansion as such. Educational expansion without a stronger gender resemblance in education only increases the percentage of persons marrying someone of the same level of education because of a composition effect. If gender differences in education become smaller too, the absolute percentage of educationally homogamous couples also increases.

Yet the hypothesis that the smaller within birth cohorts gender differences in education are, the higher the percentages of educational homogamy will be, has the air of a triviality if not a tautology. As in social mobility research, the focus should be on competitive outcomes given the competitive balance. Of course, mobility will

increase if the available number of high level jobs increases, but is a society's stratification system becoming more open in the sense that it is easier for persons from a lower class origin to win in the competition for higher class destinations? Only the competitive balance may have changed, not the rules of the game. So, the parallel hypothesis for who marries whom research, is that in cohorts with smaller gender differences in education, the extent increased to which a person's level of education contributes to marrying a person with a higher level of education, making the outcomes of competitions between persons of one gender differing in education for persons of the opposite gender differing in education, more unequal. This is a *third hypotheses* on unequal competitive outcomes.

Yet the derivation of this specific hypothesis from the most general rational-choice hypotheses is not obvious. Are there always more opportunities to realize preferences when gender differences in education are smaller? In countries with campus universities and dormitories, the opportunities for like meeting like are larger than in countries with community colleges and students living in the house of their parents. The former is the case in the United States, the latter in the Netherlands. For that reason, we are not expecting strong effects of gender differences in education. So, if mobility research has been dominated by the issue of whether relative mobility remain more or less the same despite an increase in upward mobility, the future issue in intermarriage research might be that although education expanded and gender inequalities in education diminished, the effect of a person's education on the chances of marrying a person with one rather than another level of education (and therefore the relative chances of educational heterogamy) remained the same.

#### *Age at Marriage as an Opportunity Factor*

We add that Blossfeld and Timm's argument about opportunities to meet prospective marriage partners while being in school, implies that people who marry while still in school, are more likely to marry someone of the same level of education as they themselves have than persons who marry after leaving school. This is a hypothesis about differences within one cohort, and it is an hypothesis about educational heterogamy in an absolute sense. It also may be taken as a hypothesis on educational heterogamy in a relative sense, since arguments about marriage at school only apply to people at the highest levels of education possible for both men and women within an educational system. In that case marrying homogamously at the level of higher vocational or university education, amounts to more unequal relative chances for the competition between the higher and the lower men (women) for the highest or lower women (men). Thus, a *fourth hypothesis* holds that for unmarried persons still at school, the chances of marrying someone of a high rather than a low level of education are higher than for unmarried persons who are no longer in school.

This argument may be extended by comparing within the category of persons who married after leaving school, the persons who married shortly after leaving school with those who married later. The number of years people remained unmarried after leaving school, may be viewed as an opportunity factor too. After all, if

people marry shortly after they have left school (an institution of which ever level), the fewer opportunities they have had to meet people with a different level of education, and the more likely they are to marry a person with the same level of education. So our *fifth hypothesis* says that the higher for unmarried persons the number of years is they have been out off school, the more equal their relative chances of educational heterogamy will be.

### *Explaining Age at Marriage*

In this chapter the events being studied are not only getting married to a person with a high level of education and getting married to a person with a low level of education, but also the event of getting married at all. This is an implication of the choice of studying events rather than states. This implication has a specific advantage: whereas old studies more or less assumed that there is some general tendency in a society to marry homogamously in an absolute or a relative sense with respect to education, the extent to which who marries whom with respect to education, may now turn out to depend on the age people marry. Indeed, we already hinted at such hypotheses.

An obvious hypothesis on age at marriage is that the higher a person's level of education, the lower the chances of getting married at an earlier age, and the higher the chances of getting married at a later age. A second hypothesis is that people who have left higher education have a probability of getting married a certain number of years after leaving school, which is higher than the probability of getting married the same number of years after leaving school for people who did not continue their studies after secondary education. This hypothesis invokes the number of years since leaving any school. A third hypothesis is that with rising affluence, the probability of getting married at an early age has been going up. People can afford to marry.

Finally a hypothesis about the effect of an imbalance between the educational structures for men and women of a given cohort for the timing of marriage. The opportunity structure affects the time needed to find an eligible partner. If people search for a partner and if there are hardly gender differences in the educational distribution, searching will be less time consuming.

### *Inherent and Contextual Properties*

The first, fourth and fifth hypothesis on relative chances presented here invoke inherent properties of individuals: their level of education, whether they were in school or not, how many years they were out of school. The second and third hypotheses refer to contextual properties: the educational structure, as measured by for instance the proportion of people in a cohort with the highest possible level of education, and the discrepancy between the educational structure between the men and women of a certain cohort. Interestingly, when testing their hypothesis on educational expansion, Blossfeld and Timm (1997) used the variable year of birth available in the file they analyzed. Thus, here an occasion was missed to turn a seemingly inherent property of individuals into a contextual property, with that contextual

property providing a better approximation of the intended phenomenon. Prime examples of recoding year of birth and age into contextual properties in other fields than the when and whom of first marriage are Blossfeld (1986) and De Graaf (1988). Smeenk (1998) made such recodings in the field of intermarriage.

Our argument about inherent and contextual properties of individuals implies that after having entered cohort as a simple interval variable for year of birth into a multivariate analysis, this variable is to be replaced by another variable measuring the contextual property more directly. The question at hand is the extent to which the effect of the seemingly inherent variable age is interpreted by contextual variables. In this case there is no necessity that a variable like 'gender differences in educational structures' is fully correlated with the variable 'year of birth'. Indeed, the one purpose of the analysis is to determine whether the contextual variable explains deviations from the trend predicted by the 'year of birth'-variable.

#### DATA DESCRIPTION

In order to test our hypotheses on marriage behavior, we use the Netherlands Family Survey 1992/1993<sup>1</sup> (Ultee, Ganzeboom 1995) and the Family Survey Dutch Population 1998<sup>2</sup> (De Graaf, De Graaf, Kraaykamp, Ultee 1998). These surveys are similar in format and were conducted among a representative cross-section of the Dutch adult population. The first survey concerns a selection of those between 21 and 64 years of age and the second survey is a selection of the population aged between 18 and 70. Retrospective data regarding several life-events - including religious, educational and occupational careers - as well as retrospective data regarding marriages and common-law relationships were collected from respondents and, when present, their spouse at the time of the interview. A total of 2,128 respondents were interviewed.

On basis of these data we constructed a person-period data-file. For each year of age of the respondent, up to the moment when this person married or started living together with a partner, we made a record. The starting age for being at risk is 15. If a person does not marry or does not start living together with a spouse, there is a record for this person until the moment of interview. The person-period data-file contains 23,681 records.

In order to measure who married whom with respect to education, and to measure the percentage of a birth cohort who married up or down or at the same level of education, we used an ordering of levels of education which runs as follows (between ordinary brackets the Dutch abbreviation of this level of education) [between square brackets the years of education]: (1) primary education (finished or not: (LO) [6]); (2) junior vocational training (LBO) [9]; (3) junior general secondary education (MAVO [10]), and senior vocational training (MBO) [12]); (4) senior general secondary education (HAVO [11]), and pre-university education (VWO) [12]); (5) vocational colleges (HBO) [15]; (6) masters degree from a university [17], and dissertation (Ph.D.) [21].

The initial coding for father's level of education was the same.

We now present a list of time-constant variables and a list of time-varying variables on our person-period file. Time constant variables are father's education and the cohort one belongs to. Other time constant variables are our two contextual indicators for the marriage market, i.e. educational expansion and gender inequalities in education. For this purpose we used information on basis of 538.261 cases obtained from a combined data-file consisting of the labor market surveys from Statistics Netherlands, the EBB-surveys 1991, 1992, 1994, 1995, 1996, and 1997.<sup>3</sup> This large data-set gives stable estimates of the educational distribution for each year and for men and women separately.

Concerning the pool of highly educated persons, we calculated for each cohort year the percentage in the cohort with either a vocational college degree or a university degree. This contextual indicator ranges from 7.3 to 24.8 %.

To measure gender inequality in the educational distribution for a cohort, some theoretical amplification is necessary. Our contextual hypothesis invokes gender inequalities in education, or imbalances in educational structures for men and women belonging to the same birth cohort. However, it will not do to talk about more or less favorable opportunity structures, as in the case of social mobility. It is obvious that an opportunity structure which is favorable to women with a high level of education, in the sense that there are more men with a high level of education than women with this level of education, amounts to an opportunity structure which is unfavorable to men with a high level of education. Unlike social mobility, educational heterogeneity is a two-sided choice. And it takes two to tango.

In order to quantify the opportunity structure that affects the chances to marry a highly educated partner, the prima face but wrong choice is to use for each birth cohort the ratio between the odds that a man is highly rather than lowly educated and the odds that a woman is highly rather than lowly educated. A number higher than 1 implies a larger stock of males than females with a high education, and a figure below 1 implies a larger stock of females compared to males with a high education. Here is the snag. How about the recent cases in which the opportunity structure for men is not unfavorable, but favorable because there are more highly educated women than highly educated men?

One could argue that a relative large stock of highly educated females makes the searching process more easy for males. It does, in the sense that a man is more likely to find in a short time the woman he particularly likes. Yet it does not, in the more important sense that the woman found by a man turns out to prefer that man. Women are searching as well, and a good match for a particular man is not necessarily a good match for the female involved. This implies that in a market where men are searching for women and women for men, the time to search is lowest if the supply of highly educated women equals the stock of highly educated males. *Any* deviation from a balanced structure makes for a delay and for more equal relative chances, and the stronger this deviation, the longer the delay and the more equal the relative chances.

So, determinative in studies in which men are the unit of analysis and the education of their wife (husband) the dependent variable, is not the degree to which the opportunity structure is favorable or unfavorable to men (women). The pivotal factor

is the opportunity structure which is the most unfavorable, whether this is the structure for men or that of women. In most cases this is the male opportunity structure, but of recently this is the female opportunity structure, since nowadays women attain in the Netherlands a higher level of education than men.

Thus, the ratio mentioned above is a proper indicator in case the ratio is larger than 1. However, we need the inverse of the ratio if the ratio is lower than 1. This means that a ratio of for example  $1/2$  is the same as a ratio of 2. We could coin this ratio-index as a mirrored ratio of higher educated men versus women. In our empirical research we used the ratio between the odds that within a certain cohort a man has vocational college or university rather than lower education, and the odds that a woman has vocational college or university rather than a lower level of education. In case the measure is lower than 1, we take the inverse. As a next step we used the logarithm of this ratio, which implies that the most favorable opportunity structure gets a score of 0. Hence, a number higher than 0 implies a larger stock of highly males compared to higher educated as well as a larger stock of highly educated females compared to males. The actual scores of this log odds ratio ranges from 0 till 1.13.

The time varying co-variables are:

- age (i.e. risk age)
- education
- not in school
- duration since leaving school

In our analysis, we did not model the chances for an unmarried person to marry as monotonous dependent upon the age of the person. To model a bell-shaped age effect, like Blossfeld and Huinink (1989), we constructed two log-variables, The first,  $\log(\text{age}-14)$ , indicates the decline after the peak of the bell-shaped curve. The second,  $\log(72-\text{age})$ , indicates the initial rise. In our regression exercises, the term for the interaction of education and age, indicates the tendency to marry at a certain age depends on the level of education. The interaction term of father's education and cohort tests for a declining influence of family background.

Several of our hypotheses amount to the specification of interaction effects. For instance, in the analysis in which remaining single or getting married is being explained, the hypothesis that smaller gender differences in education makes searching less time-consuming, implies an interaction effect between the gender imbalance in education and the number of years an unmarried person has been out of school. Also, if educational expansion makes for unequal chances of who marries whom with respect to education, in an analysis in which the level of education of the spouse is the dependent variable, there will be an interaction of the educational structure variable and the level of education of the person.

## DESCRIPTION OF MARRIAGE PATTERNS

In the present paragraph we present tables following the format of Blossfeld and Timm (1997) in the chapter *Who Marries Whom in West Germany* in this volume. We do so to add to the comparability of results. However, as stated, we feel rather

uncomfortable with having married up, down or at the same level as the dependent variable and with figures for the percentage of homogamous marriages expected under statistical independence. It seems as if prime arguments in the paradigm shift in mobility research have been dismissed. Percentages for marrying up and down bring in ceiling- and bottom-effects (Blau/Duncan 1967), and percentages under the condition of statistical independence confound the parameters of a model with the fit of a model (Featherman, Hauser 1978). We also think that a focus on marrying up, down or at the same level, does away with the idea of competition in several of the possible hypotheses about educational heterogamy. According to the assumption of rational choice, people do not simply aim for a spouse of the level they have, they aim for the highest and settle for lower depending upon the opportunities. These opportunities comprise the number of competitors. Perhaps a pure search theory still squares with the notion of marrying up, down or at the same level. After all, search is possible without competition. But we think the notion of a marriage market implies more than search, it implies competition and search because of competition. That is why we like to take, at the end, the level of education of the spouse as the dependent variable.

Table 5.1 shows for the Netherlands the trends in marrying up, down or at the same level for men and women. In one case we calculate educational heterogamy using four educational levels and in another instance using six educational levels. We use rather broad cohort categories in order to have a reasonable number of cases for each cohort. Since the youngest cohort suffers from strong selectivity, we exclude this category when we interpret the results. However, the one but most recent cohorts suffers to some extent from this drawback too.

In Table 5.1, we first of all notice an increase in the percentage of homogamous marriages observed. It increases from 46% to 55 % for wives and from 39% to 53% for men when we distinguish four educational levels. Secondly, we notice an decrease in the percentage of women marrying up and men marrying down. A mirror trend, although less strong, can be observed for men marrying up and women marrying down. Thirdly, the percentage of women marrying a more highly educated male, a phenomenon which often is regarded as a traditional marriage, is only for cohorts 1940-47 and 1948-1955 slightly higher than the percentage of women marrying homogamously when we use six educational levels. Of course, the outcome of this comparison depends upon how many levels of education are distinguished. In case of four educational levels homogamous marriages are always in majority. The typical non-traditional marriages, however, are relatively scarce. Between 22 and 28 % of the women marry down and between 18 and 24% of the males marry up<sup>4</sup>

The transition rates for unmarried women (Figure 5.1) and unmarried men (Figure 5.2) to homogamous marriage, were estimated for those with different levels of educational attainment (primary education, senior vocational training, and university degree). These curves are the result of a simulation based on model 1 of appendix 1 and 2. Note that these figures do not differentiate between cohorts. They do away with the old way of speaking that people with a certain level of education have a higher tendency to marry a person of the same level than people with another level of education. The tendency to marry homogamously, according to these figures,



depend upon age. Indeed, the question of whether educational homogamy is stronger within some educational categories than others, seems a question that just cannot be asked or at least involves computing averages that flatten out a lot of dispersion around a central tendency.

*Table 5.1. Distribution of Upward, Downward and Homogamous Marriages with Regard to Educational Attainment Level for Birth Cohorts (Partners' Highest Educational Attainment Level at Time of Marriage)*

	Upward Marriage		Homogamous Marriage		Downward Marriage	
	4 Lev-els	6 Lev-els	4 Lev-els	6 Lev-els	4 Lev-els	6 Lev-els
	%	%	%	%	%	%
<u>Wives</u>						
(1928-1939)	26	30	46	42	28	28
1940-1947	31	38	43	34	26	28
1948-1955	32	38	42	35	26	27
1956-1963	23	29	55	44	22	28
(1964-1980)	26	31	51	44	22	25
<u>Husbands</u>						
(1928-1939)	18	18	39	36	43	46
1940-1947	21	22	46	43	33	35
1948-1955	21	25	48	41	30	34
1956-1963	24	29	53	39	23	32
(1964-1980)	20	26	60	51	20	23

*4 Levels of education:* (1) Primary education; (2) Junior vocational training (LBO); (3) Junior general secondary (MAVO), Senior vocational training (MBO), Senior general secondary education (HAVO), and Pre-university education (VWO); (4) Vocational colleges (HBO), Masters degree and Ph.D. *6 Levels of education:* (1) Primary education; (2) Junior vocational training (LBO); (3) Junior general secondary (MAVO) and Senior vocational training (MBO); (4) Senior general secondary education (HAVO) and Pre-university education (VWO); (5) Vocational colleges (HBO); (6) Masters degree and Ph.D.

Source: Dutch Family Survey 1993: Age 21-64; Family Survey Dutch Population 1998: Age 18-70

The results for women clearly show that a higher education makes the tendency to marry homogamously begin later. After the age of 16 the rate of homogamy for those having primary education, increases till the age of 23 and then slowly drops. The same process starts 2 years later for those having senior vocational training.

Those with a university degree leave the educational system at about 25 years of age. We notice for those persons an enormous increase in the homogamy rate right after 25.

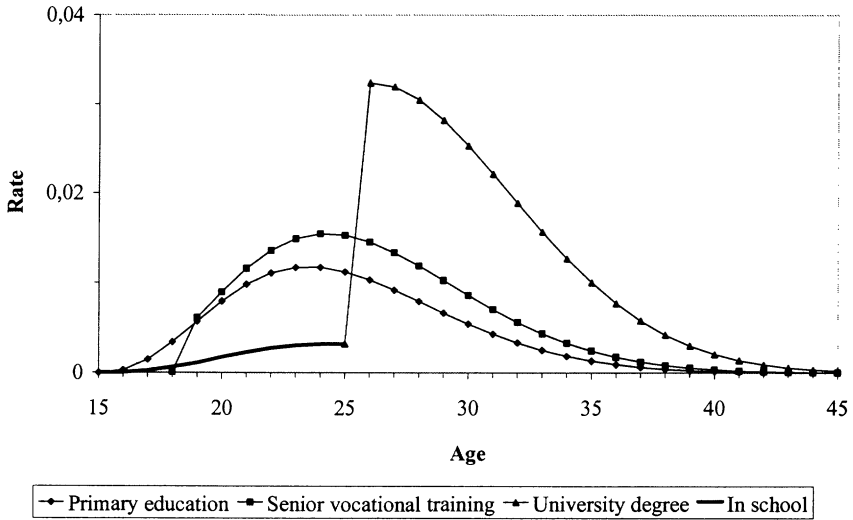


Figure 5.1. Educational Homogamy Rates of Women

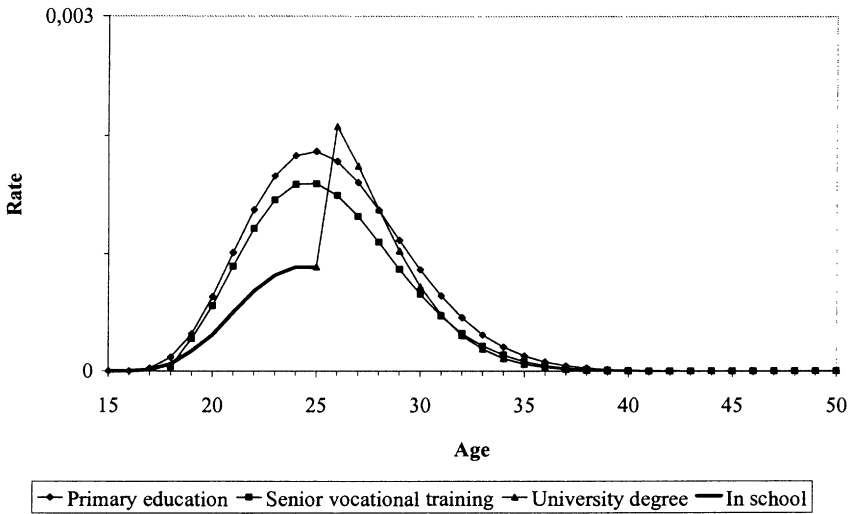


Figure 5.2. Educational Homogamy Rates of Men

Interestingly, we see a somewhat different pattern for men. Figure 5.2 shows the curves peak more closely to each other. For primary education and senior vocational training the curve peaks at age 25. It may be held that young men with a low education have not much income to offer on the marriage market, but then men still in school have even less money to offer. In addition, the homogamy rate for men drops off more slowly after the age of 28 than the homogamy rate for women.

#### EXPLANATORY ANALYSIS: TIME-DEPENDENT EFFECTS OF THE EDUCATIONAL SYSTEM ON MARRIAGE PATTERNS

Following Blossfeld and Timm (1997) in the chapter *Who Marries Whom in West Germany* in this volume, our dependent variable refers to all persons unmarried at the beginning of a year, and their chances to be at the end of that year unmarried, married educationally homogamously, married up educationally, and married down educationally. The reference category in these logistic regressions is still unmarried. These tables are presented in the appendix (Table 5.6 and 5.7). We propose a different kind of analysis, which consists of two steps.

##### *Two-Step Versus One-Step Analysis*

There are several problems with the interpretation of the parameter estimates in the Appendix. In these tables we took the persons who remained unmarried at the end of a period in our person-period file as our reference category. This implies that when interpreting parameter estimates, effects of particular variables on timing of marriage and effects of these variables on marrying up, down, and at the same level, are not clearly separated from each other. Furthermore, we have problems with floor and ceiling effects. Those with a university degree cannot marry upward and those with primary education cannot marry downward. Finally, a person's own level of education does not feature in the tables. As if education is not a resource in the marriage market. But then, as Blau and Duncan (1967) have shown, bringing in education as an independent variable in an analysis with a difference between this variable and another variable as a dependent variable, only complicates matters, rather than doing away with it.

Thus, the transition from unmarried to married to partner with a particular education, can be viewed as a situation with competing risks: once a person has made the transition to one kind of event, a person is no longer at risk of another event (Allison 1984). Yamaguchi (1991) proposes a two-step analysis: (1) the transition from being single to marriage as such; (2) and the chances when marrying, of moving into one kind of marriage rather than another. The advantage of this two-step procedure, as already applied by Smeenk (1998), is that it distinguishes the fact that people are at risk of marriage, from the risk of marrying a partner with a certain educational level. For the first step we can use an event-history model. In the second step the outcome of the event (given that it occurred) can be analyzed using a multi-nomial logistic regression analysis, if one wants to model homogamous and heterogamous marriages. However, to avoid floor and ceiling-effects and to model the process of com-

petition more accurately, we prefer an ordered logistic regression analysis in which the education of the spouse is the dependent variable. Such a model reflects precisely the process in which people aim for a partner with the highest education possible. A related advantage is that we can include education of the respondent as an independent variable, without confounding it with the dependent variable. Education, after all, is a very important resource in the searching process.

In our analyses we will use the two-step sequence as suggested. This implies that, in contrast to the theoretical section of this chapter, we will start with the analysis of the probability of first marriage. After that we will test our hypotheses concerning the kind of marriage with regard to education level.

### *Factors Influencing the Probability of First Couple Formation*

Following our two-step procedure we start to model the transition from being single to first couple formation. The results for females are presented in Table 5.2 and for males in Table 5.3. To model a bell-shaped age effect, like Blossfeld and Huinink (1989), we constructed two log-variables, as well as an interaction with educational level, in order to allow these bell-shaped age effects to be different for educational levels<sup>5</sup> In the first model presented in Tables 5.2 and 5.3, we also include education, a dummy for not being in education, and the duration since leaving school measured in years. This model results in a fit of 787  $\chi^2$  against 7 degrees of freedom. The coefficients are log odds ratios of the relative chances of being in one category (married) rather than in the other (not married).

The parameter estimates for these initial models show first of all a clear bell shaped effect. The first effect of 'log (current age -14)' is clearly smaller than the second effect of 'log (72-current age)', indicating that the curve of the age effect is very much skewed to the left. This reflects the fact that most people marry before they are 35 years of age.

One hypothesis on the age of first household formation was that the higher educated will marry later. The interactions of the bell shaped age effect and level of education shows no significant effect. The implication is that our results do not confirm this hypothesis. We like to note that we get similar results when we distinguish all levels of education for this interaction effect. Interestingly, the main effect of education shows that the higher educated are less likely to marry at a certain age than the lower educated.

Before we interpret the other parameters, we will discuss our second model, in which we allow a non-linear effect of the duration since leaving school. With this model we can test our hypothesis on the probability to marry a certain number of years after leaving school. We expect that students postpone marriage because they do not have an income. However, when they leave education, they will probably have a tendency to catch up. This is modeled as a set of time dependent dummy variables for the number of years after schooling: 1-2 years; 3-4 years; 5-6 years; 7-8 years; more than 8 years. We allow furthermore cohort differences in the change to marry and add father's education. The extra 8 degrees of freedom result in substantial improvement in fit. The estimates show that compared to those in school, that

after 1 to 4 years after school one is most likely to marry or cohabit. In other words, people catch up in the first four years after they have left school. This effect becomes weaker the longer one has left school. After 9 or more years after one has left school, there is no difference in the probability to marry compared to those who are still in school.

As to the other parameters in our second model, we notice that the cohorts from 1940 till 1955 are most likely at a given age to form a first household unit. Father's education negatively affects the chance to form a first unit. Furthermore, the higher women's own education the less likely they will marry at a given age.

In order to test our hypothesis on the imbalance between educational structures for men and women we add in our third model the log odds ratio for gender differences in education and its interaction with the number of years after school. In Table 5.2 we can see that the use of an extra 7 degrees of freedom leads to an improvement of fit of 20  $\chi^2$ . The interpretation of the parameter is as follows. The main effects of duration after school applies to the situation that the ratio is 0, which is assumed to be the situation in which there are no gender differences in education and the marriage market in this respect is balanced. First of all, the overall ratio effect suggests that the more unbalanced the educational distribution (i.e. a large score on the ratio index) implies that a person is less likely to marry at a certain age. This is as predicted, since people take more time for the searching process.

Secondly, for the interaction effect with time since leaving school we see that when there is no gender inequality in the educational distribution people especially tend to marry between 1 and 4 years after leaving school and are less likely to do when people have left school for 9 or more years ago (i.e. compared to the situation that are still in education, which is the reference category). This situation does not apply when the gender differences in the educational distribution is unequal. In the most unequal situation (i.e. the ratio has a score of 1.13) people tend to marry after 9 years of leaving school (i.e.  $.77 = -.68 + (1.13 * 1.28)$ ). This implies, as predicted, that people search longer for an eligible partner the more unbalanced the educational market situation.

Table 5.3 reports the results for males. The results are to a large extent similar to those for women. The first effect of 'log (current age -14)' is also clearly smaller than the second effect of 'log (72-current age)', indicating that the curve of the age effect is also for men very much skewed to the left. The difference is that education interacts significantly with log(72-age). The positive parameter implies that the initial rise is larger for the higher educated. Similar to females, a high education of the father makes a first marriage less likely. Respondent's own education has the same effect as father's education, but it is not significant. We also notice a non-linear effect of duration since leaving school. People tend to marry between 1 and 8 years after leaving school. Furthermore, cohorts from 1940 till 1955 are most likely to enter a first union at a given age compared to other cohorts.

Model 3, however, reveals interesting differences. The overall effect of the ratio suggest that men have a higher chance to marry or cohabit at a given age, when the educational distribution among men and women is more unequal. This overall effect was not substantial nor significant for females.

*Table 5.2. Factors Influencing the Probability of First Household Formation (Either Cohabiting or Marriage) for Women (N = 10,944)*

Variable	Model 1	Model 2	Model 3
Constant	-95.11***	-73.65***	-70.75***
Log(Current Age-14)	4.51***	4.16***	4.00***
Log(72-Current Age)	21.60***	16.41***	15.74***
Log(Current Age-14) * High Educ	0.16	0.21	-0.24
Log(72-Current Age) * High Educ	0.05	0.23	0.24
Education <sup>1)</sup>	-0.28***	-0.25***	-0.23***
Not in School <sup>2)</sup>	-0.04***		
Duration Since Leaving School <sup>3)</sup>	-0.07***		
1-2 Years After School <sup>4)</sup>		0.48***	0.88***
3-4 Years After School <sup>4)</sup>		0.67***	1.04***
5-6 Years After School <sup>4)</sup>		0.28***	0.18
7-8 Years After School <sup>4)</sup>		0.34***	0.45
> 9 Years After School <sup>4)</sup>		0.10	-0.68*
Ratio Gender Ineq. in Education Per Cohort Year			0.04
Ratio * 1-2 Years After School			-1.03**
Ratio * 3-4 Years After School			-0.83 *
Ratio * 5-6 Years After School			0.18
Ratio * 7-8 Years After School			-0.20
Ratio * > 9 Years After School			1.28**
Cohort 1928-1939 <sup>5)</sup>		-0.57***	-0.59**
Cohort 1940-1947 <sup>5)</sup>		-0.10	-0.08
Cohort 1948-1955 <sup>5)</sup>			
Cohort 1956-1963 <sup>5)</sup>		-0.36***	-0.44**
Cohort 1964-1971 <sup>5)</sup>		-0.65***	-0.81***
Father's Education <sup>6)</sup>		-0.12***	-0.13***
Number of Events	795	795	795
X <sup>2</sup>	786.62	877.16	897.93
Degrees of Freedom	7	15	21

<sup>1)</sup> 6 Levels of education. <sup>2)</sup> Reference category: In school. <sup>3)</sup> Measured in number of years after leaving school. <sup>4)</sup> Dummy variable; Reference category: In school. <sup>5)</sup> Dummy variable; Reference category: cohort 1948-1955. <sup>6)</sup> 6 Levels of education.  
 \*\*\* p ≤ 0.01 \*\* p ≤ 0.05 \* p ≤ 0.10

Source: Dutch Family Survey 1993: Age 21-64; Family Survey Dutch population 1998: Age 18-70

When the ratio is zero, i.e. no inequality in the educational distribution between men and women, it takes longer for men to catch up after leaving school than for females. Also after 5 till 8 years after school males are more likely to marry at a

certain age compared to the situation of being in education. These effects disappear more or less in case the educational distribution among men and women becomes more unequal.

*Table 5.3. Factors Influencing the Probability of First Household Formation (Either Cohabiting or Marriage) for Men (N = 12,737)*

Variable	Model 1	Model 2	Model 3
Constant	-101.10***	-88.74***	-89.07***
Log(Current Age-14)	6.22***	6.00***	5.95***
Log(72-Current Age)	22.04***	19.08***	19.04***
Log(Current Age-14) * High Educ	-0.13	-0.39	-0.39
Log(72-Current Age) * High Educ	0.20	0.32*	0.32*
Education <sup>1)</sup>	-0.19***	-0.15***	-0.13**
Not in School <sup>2)</sup>	-0.00		
Duration Since Leaving School <sup>3)</sup>	0.04***		
1-2 Years After School <sup>4)</sup>		0.50***	1.10***
3-4 Years After School <sup>4)</sup>		0.32**	0.95***
5-6 Years After School <sup>4)</sup>		0.28**	0.58**
7-8 Years After School <sup>4)</sup>		0.37**	0.79***
> 9 Years After School <sup>4)</sup>		0.10	-0.04
Ratio Gender Ineq. in Education Per Cohort Year			1.17**
Ratio * 1-2 Years After School			-1.36***
Ratio * 3-4 Years After School			-1.38***
Ratio * 5-6 Years After School			-0.63
Ratio * 7-8 Years After School			-0.83*
Ratio * > 9 Years After School			0.16
Cohort 1928-1939 <sup>5)</sup>		-0.46***	-0.72***
Cohort 1940-1947 <sup>5)</sup>		-0.01	-0.10
Cohort 1948-1955 <sup>5)</sup>			
Cohort 1956-1963 <sup>5)</sup>		-0.38***	-0.26
Cohort 1964-1971 <sup>5)</sup>		-0.88***	-0.72***
Father's Education <sup>6)</sup>		-0.12***	-0.12***
Number of Events	791	791	791
X <sup>2</sup>	1000.87	1098.85	1118.72
Degrees of Freedom	7	15	21

<sup>1)</sup> 6 Levels of education. <sup>2)</sup> Reference category: In school. <sup>3)</sup> Measured in number of years after leaving school. <sup>4)</sup> Dummy variable; Reference category: In school. <sup>5)</sup> Dummy variable; Reference category: cohort 1948-1955. <sup>6)</sup> 6 Levels of education.  
 \*\*\* p ≤ 0.01 \*\* p ≤ 0.05 \* p ≤ 0.10

Source: Dutch Family Survey 1993: Age 21-64; Family Survey Dutch population 1998: Age 18-70

*Table 5.4. Factors Influencing the Odds for Women to Marry a Highly Educated Partner. Results From an Ordered Logistic Regression Analysis with Six Levels of Education for the Spouse (N = 791)*

	Model 1	Model 2	Model 3
Constant Level 1	-0.89	-1.01	-3.76*
Constant Level 2	-2.53***	-2.65***	-5.42***
Constant Level 3	-4.26***	-4.39***	-7.16***
Constant Level 4	-4.50***	-4.63***	-7.40***
Constant Level 5	-5.87***	-6.00***	-8.76***
Age at Risk	0.08***	0.08***	0.10***
Education <sup>1)</sup>	0.62***	0.63***	0.74***
Not in School <sup>2)</sup>	-0.91***	-1.02***	-0.90***
Not in School * High Education		0.36	
Duration Since Leaving School <sup>3)</sup>	-0.04	-0.02	-0.04
Duration * High Education		-0.10**	-0.08*
Father's Education <sup>4)</sup>	0.30***	0.31***	0.30***
Cohort 1928-1939 <sup>5)</sup>	-0.68***	-0.70***	-0.28
Cohort 1940-1947 <sup>5)</sup>	-0.14	-0.16	0.01
Cohort 1948-1955 <sup>5)</sup>			
Cohort 1956-1963 <sup>5)</sup>	-0.05	-0.06	0.01
Cohort 1964-1980 <sup>5)</sup>	0.05	0.02	0.40
Context			
% High Education Per Cohort Year			0.08
% High Education * High Education			-0.02
Ratio Gender Ineq. in Education Per Cohort Year			0.80
Ratio Gender Ineq. * High Education			0.58
Change X <sup>2</sup>	338.60	343.92	346.74
Degrees of Freedom	9	11	14
R-Square	36.70%	37.09%	37.37%

<sup>1)</sup> 6 Levels of education. <sup>2)</sup> Reference category: In school. <sup>3)</sup> Measured in number of years after leaving school. <sup>4)</sup> 6 Levels of education. <sup>5)</sup> Reference category: cohort 1948-1955.

\*\*\* p ≤ 0.01 \*\* p ≤ 0.05 \* p ≤ 0.10

Source: Dutch Family Survey 1993: Age 21-64; Family Survey Dutch population 1998: Age 18-70



*Table 5.5. Factors Influencing the Odds for Males to Marry a Highly Educated Partner. Results From an Ordered Logistic Regression Analysis with Six Levels of Education for the Spouse (N = 795)*

	Model 1	Model 2	Model 3
Constant Level 1	-1.13*	-1.75***	-3.77*
Constant Level 2	-2.98***	-3.61***	-5.67***
Constant Level 3	-5.43***	-6.08***	-8.14***
Constant Level 4	-5.78***	-6.43***	-8.49***
Constant Level 5	-7.85***	-8.53***	-10.56***
Age at Risk	0.11***	0.12***	0.13***
Education <sup>1)</sup>	0.50***	0.64***	0.72***
Not in School <sup>2)</sup>	-0.85***	-0.82***	-0.80***
Not in School * High Education		-0.10	
Duration Since Leaving School <sup>3)</sup>	-0.04	-0.03	-0.03
Duration * High Education		-0.10***	-0.10***
Father's Education <sup>4)</sup>	0.21***	0.20***	0.21***
Cohort 1928-1939 <sup>5)</sup>	-1.08***	-1.04***	-1.19**
Cohort 1940-1947 <sup>5)</sup>	-0.24	-0.21	-0.28
Cohort 1948-1955 <sup>5)</sup>			
Cohort 1956-1963 <sup>5)</sup>	0.31	0.33*	0.56**
Cohort 1964-1980 <sup>5)</sup>	0.50**	0.50**	1.03**
Context			
% High Education Per Cohort Year			0.05
% High Education * High Education			-0.03**
Ratio Gender Ineq. in Education Per Cohort Year			1.19
Ratio Gender Ineq. * High Education			0.57
Change X <sup>2</sup>	281.33	290.70	297.24
Degrees of Freedom	9	11	14
R-Square	31.7%	32.69%	33.26%

<sup>1)</sup> 6 Levels of education. <sup>2)</sup> Reference category: In school. <sup>3)</sup> Measured in number of years after leaving school. <sup>4)</sup> 6 Levels of education. <sup>5)</sup> Reference category: cohort 1948-1955.

\*\*\* p ≤ 0.01 \*\* p ≤ 0.05 \* p ≤ 0.10

Source: Dutch Family Survey 1993: Age 21-64; Family Survey Dutch population 1998: Age 18-70

*Factors Influencing the Level of Education of the Spouse*

As a next step we estimate for those who actually married or start living together, the level of education of the spouse. For this purpose we use an ordered logistic regression model.<sup>6</sup> The advantage of this model, also known as cumulative logistic regression model, is that the dependent variable is an ordered polytomous variable and that continuous as well as categorical predictors can be used. For women the results are presented in Table 5.4 and for men in Table 5.5.

The parameter estimates of our baseline model 1 show first of all that as the age at risk rises, the more likely a person will meet a partner with a high education. Not surprisingly we also notice, both for men and women, that a high education increases the chance to marry a highly educated partner as well. Also father's education has a positive effect on the educational level of the spouse, even after controlling for one's own education. This as to our first hypothesis and its extension.

Cohort effects reveal that especially males of the oldest cohort, i.e. born between 1928 and 1939, stood higher chances of marrying a less educated woman than those born between 1948 and 1955, which is the reference category. The youngest cohort (born between 1964 and 1980) of males clearly do better in this respect. We would like to stress, however, that regarding conclusions of the oldest cohort may be biased by selectivity. We know for example that the higher educated live longer and might be overrepresented in the oldest cohort.

In our second model we test our fourth hypothesis that the education for those who are still in school will give more of an advantage, i.e. they are more likely to marry or cohabit a highly educated partner than those who left school. We also test our fifth hypothesis that the longer ago one has left school the less important their own education. For this purpose we separated those with a vocational college degree or a university degree from those with a lower education. We make this distinction since the hypotheses are only relevant for those who are in education when they are not too young.<sup>7</sup> We interact this dummy with 'not being in school' and 'duration since leaving school'. Tables 5.4 and 5.5 show that for both women and men the inclusion of these interaction effects result in a significant improvement of fit. The estimates show that we can only corroborate the hypothesis regarding the duration since leaving school. Indeed, the longer the duration since leaving school, the less likely one marries a highly educated partner. The interaction estimate is  $-.10$ , both for men and women. This implies for women with a vocational college degree, that 9 years after leaving school, their educational effect amounts to  $2.25$  (i.e.  $(5 \times .63 - (9 \times .10) = 2.25)$ ), whereas this amounts to  $3.15$  (i.e.  $5 \times .63$ ) for women with a vocational college degree who marry just after leaving school. Interestingly, almost exactly the same applies for men.

In our third model we test our hypotheses regarding contextual effects. Our third hypothesis states that the more equal the educational distribution between men and women the less heterogamy. This implies a stronger effect of one's own education on spouse's education, if the gender distribution of education is more equal. The estimates in the third column of Tables 5.4 and 5.5 show that there are no such effects. Neither of the estimates is significant.

Our second hypothesis was about educational expansion as such. Table 5.5 shows that there is a significant interaction between the percentage of highly educated persons and a person's own education. It leads also to a significant improvement of fit compared to model 2. Interestingly, the effect is contrary to what we expected. A large pool of persons with the highest possible level of education, leads to a weaker effect of education for those having a vocational college or university degree. We can illustrate the implications with some figures. In case the stock of highly educated amounts to 7% the educational effect for those having a vocational college degree amounts to 3.39 ( $5 \times .72 - 7 \times .03$ ). In case the stock amounts to 25%, the educational effect amounts to 2.85 ( $5 \times .72 - 25 \times .03$ ). For women the amount of highly educated does not make a difference.

### RETROSPECT AND PROSPECT

In this chapter we argued in favor of a six-fold shift in stratification research. We first argued that it is useful to supplement more traditional questions about the reproduction of inequalities by the transfer of resources from one to the next generation, to questions on the reconstitution of inequalities within a generation through the formation of (common law) marriages between persons who differ strongly or less strongly as regards their social characteristics. Thus in the present chapter, we did not study questions about mobility, we focussed on questions about heterogamy.

Apart from a shift in the pertinent questions, we argued for a theoretical shift. To explain for contemporary (post)industrial societies the extent to which who marries whom with respect to education (or another social characteristic), it will not do to invoke norms which, admittedly, prevailed in pre-industrial societies. In a society like the contemporary Netherlands no norms exist which state the people should marry within their status groups, and if a norm prevails within the population at large, it is the norm that people should marry one another out of love, not for social reasons. Therefore, explanations should focus on the resources people command when competing on the marriage market. In the present chapter we regarded education as such a resource, with people having more education being better placed in the competition for the more attractive highly educated persons of the opposite sex.

In the present chapter we argued for yet another theoretical shift. Of course, a person with a higher level of education is better placed in the competition for persons of the opposite sex with a higher level of education, than a person of a lower level of education. But important as well is the percentage of persons with a higher level of education, and the persons of persons of the opposite sex with a higher level of education. In the present chapter we sought to include, apart from an individual characteristic like a person's level of education, also contextual characteristics. These characteristics were the level of education in general (the percentage in education after secondary school) and the gender imbalance in the level of education (the extent to which men are more educated than women, or women more than men).

We fourthly argued in favor of a shift in research design. To study changes in the extent to which like marries like, it will not do to compare the stock of all marriages existing in a country at one point in time with all marriages existing at another point

in time. Given changes in the age at marriage and the length of marriages (because of early death or divorce), it is paramount to compare birth cohorts with one another as to the age at first marriage, and the level of education of the spouses. If both vary over time, the causes of changes are more difficult to pinpoint. In the present chapter we compared birth cohorts for the Netherlands stretching from 1928 to 1980.

We fifthly argued in favor of a change in analytical strategy when studying heterogamy which is akin to a change in the analytical strategy when studying social mobility. In mobility research, Blau and Duncan (1967) pointed towards the pitfalls of taking a person's extent of upward or downward mobility - the difference between a person's social position at one point in time and the social position when still with the parents - as the dependent variable to be explained. In the present chapter we do not take heterogamy, the difference between a person's level of education and the level of education of this person's spouse, as the dependent variable to be explained. What is to be explained is the level of education of a person's spouse, and the level of education of a person's spouse is to be explained by the level of education of this person, plus other individual and contextual variables.

Finally, in the present chapter we opted for a fully dynamic analytical strategy. We not only compared the people from a cohort who married as regards the level of education of their spouse, we started from all people aged 15 years and therefore unmarried, and we asked for each consecutive year whether they remained unmarried or married, and if they married, what the level of education of their spouse was. When doing so, we allowed for changes in the independent variables in the course of time, like a person's changing own level of education, and the number of years a persons has left school and was unmarried.

Our results may now be summarized as follows. First our results as to age at marriage. First of all the higher educated are less likely to marry at a certain age than the lower educated. However, the higher educated do not marry at a later age, given they are not in school. Concerning contextual effects several findings are to be noted. First, the more unbalanced the educational distribution between men and women the less likely men marry at a certain age. Secondly, for the interaction effect with time since leaving school we noticed that when there is no gender inequality in the educational distribution people especially tend to marry between 1 and 4 years after leaving school and less likely at a later point in time. However, when the gender differences in the educational distribution are unequal, people tend to marry later after leaving school. As predicted, people search longer for an eligible partner in a more unbalanced educational market.

Our results with respect to the level of education of a person's spouse indicate that not only a person's own level of education is important, but also the level of education of a person's father. In addition, the more years a person has been out of school, the less likely a highly educated person is to marry a person of the opposite sex with a high level of education. Our results with respect to the effects of contextual characteristics were decidedly mixed. In our theoretical section we were on basis of more general hypotheses about the opportunities available and the barriers faced by persons, unable to derive the hypothesis that with educational expansion, the relation between a person's education and the education of this person's spouse

increases. Contrary to this hypothesis stated in the literature, we argued that it is not expansion as such, but a stronger expansion for women than for men - smaller gender inequalities in education - which make for like marrying like. We found no empirical support for our gender-imbalance hypothesis: all parameters were insignificant. And whereas we expected insignificant parameters for our expansion-hypothesis, we found a significant parameter, but a parameter with a sign opposite to that predicted by the hypothesis within the literature.

The present chapter explored hypotheses that follow from the proposed six-fold shift in stratification research. Partly, these were exploratory in nature, as we argued that distinctions were stressed that were not considered before. One of these concerned the plea for an analytical and empirical distinction between the effect of contextual factors on the timing of marriage and the choice of partner separately. The results show that contextual effects indeed differentially influence timing of marriage and choice of partner. This suggests that it is wise to separate these two as is possible with the two-step procedure. Also, as the literature on marriage opportunities ('marriage squeezes') has traditionally been vague, predicting that marriage market opportunities affect either timing or choice of partner, these results suggest that it does so one more than the other, and as such we can now raise more specific questions and formulate hypotheses on why such is the case.

Also, as we stressed the development from research questions and hypotheses from the angle of stratification research, we did not pay attention in this chapter to the literature on timing of marriage and choice of partner in demography and sociology of the family. The theoretical and empirical implications of acknowledging this literature are more fully elaborated elsewhere (see Smeenk, 1998). For the present analysis it implies that important individual variables were unaccounted for (for example job status and job prestige), which in future research should be incorporated to fully understand possible differential effects for males and females.

Another recommendation for future research is that our operationalisation of the two contextual factors is up for improvement, or that perhaps important other contextual variables have to be included. Knowing the differential age at marriage of men and women and their different preferences for ages of their partners, it may have been wrong to assume that men from a certain birth cohort compete for women of the same birth cohort. In spite of these measurement issues, the finding that contextual factors affect timing of marriage more so than choice of partner, is an important one. Also, we see that contextual factors add to the explanation of marriage chances, and that they explain the effects of birth cohort and age, in line with the advocated approach in the study of career mobility. As such, they contribute to our understanding of changes over time and over the life course. This is progress compared to previous research.

To end, we like to repeat these instances of progress we have attained in our contribution. First, we addressed the question of education and age of marriage, and then the question of, when marrying, whether a person with a certain level education marries another person with a high or low level of education. The latter replaces questions about marrying up or down. Second, we made progress by performing a two-step analysis. Third, we argued that educational differences between men and

women in the population at large do not have the effects on educational heterogamy that sometimes have suggested. Fourth, we argued that hypotheses about educational differences between men and women in the population at large are hypotheses about contextual effects. We still think it is worthwhile to explore hypotheses about various contextual influences. It forces researchers to think about what exactly causes differences over time.

## NOTES

1. The response rate amounts to 43%.
2. The net response rate is 49.5%.
3. We would like to thank Theo van der Weegen for combining these surveys.
4. In Appendix 1 we also reported the estimations of patterns of marriage under statistical independence. These estimated percentages supposedly take into account changes in educational distributions of men and women. Not surprisingly, we notice lower percentages of men and women marrying homogamous. Interestingly, the differences in observed and estimated percentages increase remarkably for women marrying downward and decrease for men marrying downward. This implies that the changes in the educational distribution have had substantial consequences for who marries whom (see also chapter 7 of Smeenk 1998).
5. Distinguishing each level of education caused for some models somewhat unstable results due to the high association with education. We therefore used the contrast between those with a vocational degree or university degree versus any lower level of education. Experimenting with various models showed no substantial differences in results. We therefore prefer to show the most stable results.
6. The program to be used within the SPSS-syntax can be obtained from the following WWW-address: <http://baserv.uci.kun.nl/~johnh/mlogist/ologit.html>.
7. We also used the original educational codings to model the interaction effects, but these interactions resulted in high correlations with education. Although the results were largely similar we have more confidence in the results presented in Table 5.4 and 5.5.

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Appendix 1. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Women (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-59.29*	-47.58*	-41.91*	-61.80*	-64.13**	-62.36**	-73.93*	-128.61*	-113.27*
Log(Current Age-15)	3.11**	2.90*	2.80*	2.36*	2.10*	2.60*	5.57*	5.66	4.70
Log(69-Current Age)	13.58*	10.14*	7.99*	13.84**	14.17**	13.65*	14.46	28.43	24.55
Log(Current Age-15)*Education	0.01	-0.02	0.01	0.06*	0.07	0.01	-0.30	-0.22	-0.14
Log(69-Current Age)*Education	0.01	0.06	0.24	-0.17*	-0.13	-0.18	-0.34	-0.73	-0.38
Education	-0.26	-0.31	-0.85	0.57*	0.36	0.69	2.13	3.50	2.12
Not in School <sup>b)</sup>	0.51*			1.67**			1.61**		
Duration in School <sup>b)</sup>		0.15*	0.17*		0.17*	0.15*		0.11	0.12
1-2 Years After School <sup>c)</sup>		1.43*	1.45*		2.71**	2.53**		2.07	2.11
3-4 Years After School <sup>c)</sup>		1.38*	1.30*		2.65**	2.59**		2.30	2.32
5-6 Years After School <sup>c)</sup>		1.33*	1.24*		2.87**	2.69**		2.63*	2.66*
7-8 Years After School <sup>c)</sup>		1.31*	1.15*		2.73**	2.98**		2.84	2.91
9-10 Years After School <sup>c)</sup>		1.28*	1.07		2.62**	2.62**		2.76*	2.88*
11-12 Years After School <sup>c)</sup>		1.39*	1.03		2.28**	2.50**		2.73	2.78*
More Than 12 Years After School <sup>c)</sup>		0.71	0.16		2.09**	2.03**		2.66*	2.63**
Father's Education		0.03	-0.25		0.21	0.03		0.30	0.44
Father's Education*Linear Cohort Trend		-0.15*	-0.04		-0.06	-0.01		-0.09	-0.12**
Father's Education<Daughter's Educ <sup>d)</sup>		-0.65*	-0.52*		0.36*	0.37*		0.56*	0.67*
Father's Education=Daughter's Educ <sup>d)</sup>		0.11	0.05		0.43**	0.40**		-0.44*	-0.42
Father's Education>Daughter's Educ <sup>d)</sup>		0.54*	0.47*		-0.79**	-0.77**		-0.12	-0.25
Linear Cohort Trend		0.37*			0.10			0.02	
Structural Marriage Opportunities			2.99*			2.22**			2.18
Number of Events	157	157	157	190	190	190	72	72	72
Subepisodes	5508	5508	5508	5508	5508	5508	5508	5508	5508
Likelihood Ratio Test (LR) <sup>e)</sup>	557.70	6131.50	631.50	557.70	631.50	645.76	557.70	631.50	645.76
Degrees of Freedom	6	19	19	6	19	19	6	19	19

a) Reference category: in school. b) Measured in numbers of school years after age 14. c) Dummy variable (reference category: in school). d) Centered Effects.

e) LR = 2 \* (likelihood (model with covariables) - (loglikelihood (model without covariables))). \*\*p &lt; .01; \* &lt; .05

Source: Dutch Family Survey 1993



Appendix 2. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Men (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-77.63**	-69.98**	-75.40**	-69.26*	-83.40*	-81.02*	-156.33**	-150.36*	-150.59*
Log(Current Age-15)	5.37**	5.44**	5.94**	4.57*	3.99*	3.61*	12.75**	11.43**	11.51**
Log(69-Current Age)	17.27**	15.05**	15.54**	14.64*	18.27*	17.84*	32.17*	31.49*	31.41*
Log(Current Age-15)*Education	-0.11	-0.13	-0.18	0.07*	0.16	0.20	-0.60	-0.52	-0.52
Log(69-Current Age)*Education	-0.74	-0.64	-0.69	0.44*	0.47	0.55	-1.27	-1.28	-1.26
Education	2.74	2.55	3.04	-1.82*	-2.11	-2.51	6.39	6.21	6.22
Not in School <sup>a)</sup>	0.12			1.15**			0.65**		
Duration in School <sup>b)</sup>		-0.08	-0.08		0.10*	0.10*		0.01	0.01
1-2 Years After School <sup>c)</sup>		-1.32	-1.35		2.05**	2.12**		0.66	0.63
3-4 Years After School <sup>c)</sup>		-0.32	-0.35		2.12**	2.16**		0.94	0.91
5-6 Years After School <sup>c)</sup>		-0.54	-0.55		2.16**	2.18**		0.54	0.51
7-8 Years After School <sup>c)</sup>		-0.74	-0.57		2.44**	2.42**		0.82	0.79
9-10 Years After School <sup>c)</sup>		-0.45	-0.79		2.40**	2.36**		1.13	1.10
11-12 Years After School <sup>c)</sup>		-0.70	-0.51		2.29**	2.28**		0.18	0.14
More Than 12 Years After School <sup>c)</sup>		-0.94	-0.80		2.07**	2.01**		0.76	0.72
Father's Education		0.06	-0.09		0.50**	0.40*		-0.02	0.09
Father's Education*Linear Cohort Trend		-0.24	-0.12*		-0.07	-0.04		-0.09	-0.15**
Father's Education<Son's Educ <sup>d)</sup>		-0.76*	-0.48		0.47**	0.45*		0.23	0.20
Father's Education=Son's Educ <sup>d)</sup>		0.09	0.07		0.01	0.04		-0.22	-0.23
Father's Education>Son's Educ <sup>d)</sup>		0.67*	0.41		-0.48*	-0.49*		-0.01	0.03
Linear Cohort Trend		0.43*			0.13			-0.11	
Structural Marriage Opportunities			3.14**			1.34*			0.20
Number of Events	106	106	106	152	152	152	105	105	105
Subepisodes	6146	6146	6146	6146	6146	6146	6146	6146	6146
Likelihood Ratio Test (LR) <sup>e)</sup>	642.62	724.00	729.40	642.62	724.00	729.40	642.62	724.00	729.40
Degrees of Freedom	6	19	19	6	19	19	6	19	19

a) Reference category: in school.. b) Measured in numbers of school years after age 14. c) Dummy variable (reference category: in school). d) Centered Effects. e) LR = 2 \* (likelihood (model with covariables) - (likelihood (model without covariables))). \*\*p < .01; \* < .05

Source: Dutch Family Survey 1993

# 6

## WHO MARRIES WHOM IN ITALY?

FABRIZIO BERNARDI

### INTRODUCTION

The issue of occupational and educational homogamy has recently enjoyed a renewal of interest in the field of social stratification research (Mare 1991; Smeenk 1998; Smiths *et al.* 1998). During the 70s and 80s the study of the partner's similarity with regard to education and occupation has been mainly a sub-field within the research on intergenerational social mobility: the aim was to disentangle the mobility that takes place through the marriage market and the mobility that takes place through labor market (Erikson, Goldthorpe 1992). In the last years, however, many scholars have focussed directly on the process of family formation as an autonomous lens to explore the properties of the social structure of different countries. Thus, the process of assortative mating has been investigated as an indicator of the level of closure or openness of a society. The more frequent marriages between persons with different (similar) social resources are, the more open (closed) a society is said to be (Ultee, Luijkx 1990).

Following these recent developments in the literature, the aim of this chapter is to answer the question "who marries whom?" in Italy with regard to the educational resources of each spouse. During the twentieth century the Italian educational system has undergone remarkable changes and the participation at higher levels of education has largely increased across generations. The process of family formation has also changed with a (small) increase in the number of consensual unions and a progressive delay of the age at marriage in the last 20 years. The effect of the increasing participation in education on the likelihood and timing of marriage has already been investigated in other studies (Pinelli, De Rose 1995). Taking a step forward, here I intend to study the effect on the *quality* of marriage or, in other words, to investigate the implication that progressive educational expansion has had on the process of assortative mating: quoting the title of this book, to what extent is the Italian educational system functioning as a marriage market?

Previous research on assortative mating has been conducted in Italy only for occupational homogamy, employing the traditional method of using a "marriage table", where the actual (or last) occupation of the husband is cross-classified with the actual (or last) occupation of the wife (Schadee, Schizzerotto 1990; Cobalti, Schizzerotto 1994). Using log-linear models, these studies have focused on the relationship between the social origin of the subject, his/her occupation and his/her partner's occupation. Thus, they have divided the overall intergenerational social mobility into two components: mobility through the occupation achieved in the labor market and through marriage. The main result of these studies is that marriage increases the movement between social classes and it is a typically female channel of intergenerational social mobility. However, the issue of change in homogamy across cohorts has not been addressed. Moreover, the marriage table approach suffers from some remarkable drawbacks. First, it is based on an *ex-post facto* analysis of married couples. In this way those who have never married are excluded by definition from the analysis. A more comprehensive analysis should consider "being single" as an alternative outcome of a process that might lead to marry a partner with given social resources or not to marry. Second, it offers a static and misleading picture of the process underlying homogamy. By considering the occupation of the subjects at the time of the interview, marriage tables are likely to confound employment trajectories subsequent to marriage. Therefore they mix the process of homogamy with that of a couples' career (Bernasco *et al.* 1998; Bernardi 1999). Finally, as they refer only to a specific point in time (the time of the last occupation or of the interview) they do not allow to study how changes along the individual life course affect the likelihood of marrying a partner with given resources.

This study tries to overcome the limits of previous research by assuming a dynamic perspective and considering being single as an alternative outcome of the marriage process. Moreover, it explicitly analyses changes across cohorts. Thus, the question "who marries whom?" is specified along the individual life course and across cohorts. Two main hypotheses represent the theoretical backbone of this chapter. These two hypotheses have been discussed at length in the introduction of the book by Blossfeld and Timm and are here only briefly recalled. The first hypothesis is drawn from modernization theory and is based on the idea that industrialization has been accompanied by a change in the institution of marriage (Kerckhoff 1972). With the passage from agricultural to industrial societies, the choice of a partner has become increasingly ruled by emotional considerations, while before it was mainly arranged in the socio-economic interests of families. This shift to marriage motivated by romantic-love is complemented by a trend towards more openness and individualization in society that implies more possibilities of contacts between subjects of different social groups (Treiman 1970). Thus this theory predicts a decrease in homogamy across cohorts.

An opponent hypothesis has been developed by Blossfeld and Timm (see chapter 1). According to this interpretation, the educational system segments the marriage market and favors educational homogamy for two reasons. First, by remaining in education for a longer time, such is the case for the younger cohorts, individuals spend a larger part of their life course in a homogeneous environment influenced

significantly by their participation in education. Thus, the structural opportunities to meet a partner with the same level of education increases. It is important to stress that the educational system should be conceived not only as the physical classrooms or libraries where the people actually study, but also in terms of the broader daily activities and life-style related to student life, such as having a coffee in a given bar and going out also on a non-weekend day<sup>1</sup>. In this more general sense participation in the educational system structures the network of actual and potential acquaintances. Second, a longer participation in education implies also a postponement of marriage until school/university is completed. If marriage takes place just after leaving the educational system, it is likely to occur with a partner met at school/university and, thus, with the same level of education. In sum, since the participation in education has increased over cohorts and more people spend a longer part of their life course at school, this theory predicts an increase of educational homogeneity.

The structure of this chapter is the following. In the next section I discuss the features of the Italian educational system and the main changes in educational participation and in the process of family formation. In the third section, data, methods and variables used in the empirical analysis are described. In the fourth section the results of an event history analysis of the transition to different types of marriages differing according to social mobility occurring with marriage (downward, upward, homogamous) are presented. In the last section I summarize the findings and draw some tentative conclusions.

#### THE EDUCATION SYSTEM AND THE FAMILY IN ITALY: CHANGE AND STABILITY OVER THE CENTURY

The expansion of educational system and the increase in educational attainment are processes that characterize industrialized countries throughout this century (Shavit, Blossfeld 1993). Italy is not an exception to this trend. However, if one considers the result of this secular change, despite the generalized growth in educational participation, Italy is one of the countries with the lowest proportion of people with high education (upper secondary/university) when compared with the other OECD countries: in 1994 only 56% of the people aged 25-34 years had completed upper secondary education or university, compared to the OECD countries' mean of 92% (OECD 1996).

Until the wave of reforms of the 60s, the Italian educational system had remained almost unchanged since the reform had been introduced by the Fascist government in 1923 (the so-called *Riforma Gentile*). This reform established 5 years of compulsory education, for children aged from 6 to 10 years (*Scuola elementare*). The subsequent lower secondary education was divided into two tracks: an academic (*Scuola media unica*) and a vocational track (*Scuola complementare* and since 1930 *Scuola di avviamento professionale*), where the last offered very limited opportunities to access higher education. The same division between academic and vocational education was present at the upper secondary level of education that was divided into four segments: a general education school (*Licei*), a technical and vocational school (*Istituti tecnici e professionali*), a 4-year school for teachers (*Magistrali*), and

a three- year vocational school (*Istituti professionali*). Only those who had attended the general education school had the right to enrol at the university; this therefore remained largely an *elite's* domain.

In 1962 compulsory education was raised up to the age of 14 years; the different tracks at the lower levels of secondary education were abolished; and a unified *scuola media inferiore* was created. Some years later, in 1969, access to university was also opened to graduates from technical and vocational schools. The greater openness in the educational system, however, has been balanced by an increase in educational selection, i.e. in the number of drop-outs, particularly at the first year of upper secondary education and of university (Schizzerotto, Cobalti 1998). In order to reduce the number of drop-outs and the incidence of prolonged career at the university, at the beginning of the 90s new types of two-to-three year courses of study (*Lauree brevi*) were created.

Table 6.1 shows the changes in educational achievement for men and women across cohorts. In Italy, the expansion of the upper secondary and university education begins only with the cohorts born after the Second World War. Table 6.1 also documents the reduction in the gender difference in educational attainment that has occurred across cohorts. The male and female distribution were quite similar at the beginning of the twentieth century, with almost everybody with a primary or no education and a strong under-representation of women with university degrees. The educational participation first increased for men, women then followed with almost one-cohort lag and have caught up with the generation that is now aged 30 to 40 years.

In sum, three features seem important to characterize the expansion of the educational participation in Italy and, possibly, to enlighten its specificity in a comparative perspective. First, the participation at the higher level of education started to increase only among post-war cohorts. Second, despite the expansion of participation in the educational system, the level of participation in higher education is still much lower than the average of other western countries. Third, a progressive equalization of the educational achievement of men and women has occurred over cohorts.

The democratization of education in the industrialized countries has also been paralleled by deep changes in the family system: a decrease in fertility and nuptiality, an increase in family instability, non marital co-habitation and births out-of-wedlock are the well-known common trends, to a certain extent, to all western developed societies. However, at least up to now, the impact of the above mentioned changes has been less pronounced in Italy than in other nations. Even though separation and divorce rates have increased in the last years, they are still far from reaching the value of western societies (Maggioni 1997). Moreover, at the beginning of the 90s only 1.6 % of the overall couples were couples that cohabit without being married (Sabbadini 1997).

With respect to fertility that now has reached one of the lowest values in the world, the impressive decrease has occurred through a reduction in the number of third and second children and not through a substantial increase of the number of couples with no children (Santini 1997). Finally, since 1985 the average age at marriage has started to increase but measures of the cohort's completed nuptiality do not

show evidence of a reduction of marriages: among women aged 35-39 years in 1996, 89% were married (de Sandre *et al.* 1996, 40).

*Table 6.1. Educational Achievement for Cohorts and Sex (Never Married Included)*

Cohorts Education	Men	Women
<i>- 1917</i>		
Primary	78.7	84.0
Lower Secondary	12.5	10.3
Upper Secondary	3.8	4.7
Tertiary	5.0	1.0
	100.0	100.0
<i>1918-1927</i>		
Primary	66.3	82.1
Lower Secondary	16.7	9.9
Upper Secondary	11.8	6.4
Tertiary	5.2	1.6
	100.0	100.0
<i>1928-1937</i>		
Primary	58.6	75.0
Lower Secondary	22.3	13.4
Upper Secondary	14.7	9.6
Tertiary	4.4	2.0
	100.0	100.0
<i>1938-1947</i>		
Primary	42.6	52.6
Lower Secondary	25.8	21.1
Upper Secondary	23.6	20.7
Tertiary	8.0	5.6
	100.0	100.0
<i>1948-1957</i>		
Primary	22.6	31.8
Lower Secondary	32.3	26.8
Upper Secondary	34.5	32.7
Tertiary	10.6	8.7
	100.0	100.0
<i>1958-1967</i>		
Primary	7.1	10.3
Lower Secondary	39.4	35.9
Upper Secondary	41.5	42.2
Tertiary	12.0	11.6
	100.0	100.0
<i>1968-1978</i>		
Primary	3.5	3.8
Lower Secondary	38.4	32.8
Upper secondary	55.4	58.2
Tertiary	2.7	5.2
	100.0	100.0

Note: N= 9363 and refers to the valid cases used in the analysis

Source: ILFI (1997)

In sum, the changes have concerned mainly family disruption and reproduction more than the pattern of family formation itself. Without overlooking the potential of changes that are now in process, one could still maintain that in Italy marriage, being more unstable and with fewer children, is still a central and rarely renounced transition in the individual life course. If this is the case, it becomes even more important to understand the mechanism that leads to marry a partner with certain social resources (education). This is the aim of the empirical analysis that follows. Before turning to it, I shall describe the data, the methods and the variables used.

#### DATA, METHOD AND VARIABLES

In my analysis I used data from Indagine Longitudinale sulle Famiglie Italiane (ILFI), the Italian Household Longitudinal Survey, carried out in 1997 by the University of Trento, Istituto Trentino di Cultura (Trentino Institute of Culture) and ISTAT (Italian National Statistical Institute) with a national representative sample of 9878 individuals belonging to 4,458 households throughout Italy. All members of the household older than 18 years were interviewed. Retrospective information was collected on various dimensions of the individual life course: geographical mobility, education, family events, and work and job history. Accordingly, it has been possible to reconstruct the precise timing of educational achievement, exit from the educational system and marriage. The analysis has been performed on 9364 persons never married, actually married or married in the past that have provided valid information for the purpose of the study<sup>2</sup>.

To define homogamous, upward and downward marriages I have employed a four-levels classification scheme: no education or primary education (*scuola elementare*); lower secondary education (*scuola media/avviamento professionale*); upper secondary education (three or five years vocational school, technical school, general education school); tertiary education (two or three years intermediate university degree, university degree, PhD).

This classification reflects the hierarchical ordering of the Italian educational system and takes into account its changes over time, described in the previous section. Thus, the distinction between primary and lower secondary education is relevant because until 1962 compulsory education was fixed at the primary level and only thereafter was extended to lower secondary level. Upper secondary education refers to all types of non-compulsory higher level secondary education, while tertiary education encompasses all university level education. Moreover, this classification distinguishes educational levels that have different implications in terms of individual outcome in the labor market. In fact, the results of previous empirical analysis on the transition from school to work have shown that lower secondary education differs from primary education in terms of the chances of getting a better occupation (Schizzerotto, Cobalti 1998)<sup>3</sup>. The same is true when one compares lower secondary with upper secondary education<sup>4</sup>.

The empirical analysis of the process underlying educational homogamy in Italy follows the one performed by Blossfeld and Timm in the second chapter of this

volume. Thus, the dependent variable of the event history analysis is the transition rate to marriage:

$$r(t) = \lim_{t' \rightarrow t} \frac{P(t \leq T < t' | T \geq t)}{t' - t}$$

that expresses the likelihood that a woman or a man marries at age  $t$ , given that s/he is still single at  $t$  (Blossfeld, Rohwer 1995). The observation of the marriage process begins for each individual at the age of 14 and ends at the event of the first marriage (for those who experienced the event), at the age of 60 (right censored) or at the time of the interview in 1997 (right censored). Three destination states are considered: upward marriage when the level of education of the subject is lower than the partner's, homogamous marriage when it is equal and downward marriage when it is higher. The definition of upward, homogamous and downward marriage is based on the classification of educational attainment in the four hierarchical levels discussed above.

Formally the statistical model used is not a competing risk model since the persons considered (the risk sets) are different for the three types of transition: those with university education have been excluded from the analysis of upward marriage, as this transition is logically impossible for them, while analogously those with primary or no education have been excluded from the analysis of downward marriage. Therefore separate exponential models have been specified for each of the three transitions<sup>5</sup>.

The independent variables used in the event history analysis are :

a) age specified as the combination of two variables:

$$\text{Log}(D_i) = \log(\text{Current Age} - 14)$$

$$\text{Log}(R_i) = \log(60 - \text{Current Age})$$

These two variables allow the study of the non-monotonic dependence of the transition rate on age (Blossfeld, Huinink 1991).

b) individual educational attainment: this is a time-dependent categorical variable and its value changes simultaneously with the achievement of a higher educational level. The same classification used to define homogamous/heterogamous marriage is employed: no education or primary education (reference category); lower secondary education; upper secondary education; and university education. The advantage of defining education as a categorical variable is that it enables the identification of specific effects of various educational levels and thus significant thresholds of mobility between social groups: for instance, homogamy might occur only at the very bottom *or* at the very top of the educational ladder. Moreover, it allows to control for non-monotonic patterns of influence of education on homogamy: for example, homogamy might occur more frequently at the bottom *and* at the top of the educational ladder. Following Blossfeld *et al.* (1998) the effect of this variable has been evaluated as resulting from an interaction with the two age vari-



ables. The reason underlying this interaction is that the pattern of age dependence of the rates might be different for the various educational levels. Thus, it is possible to test whether there is only one general pattern of age dependence and that the effect of different levels of education implies only a shift up or down of the average rate or whether the rate is dependent on age and education. In formal terms, the inclusion of the age-education interaction relationship in a model means estimating a *non-proportional* effect of education, i.e. an effect that can change over the time axis considered, in this case the age of the subject (Blossfeld, Rohwer 1995).

c) not in school: time varying dummy equal to 0 as long as the subject is in the educational system and equal to 1 as soon as s/he leaves it. In previous research this variable has been interpreted as an indicator of an institutional or normative effect: as long as the subjects are at school they are not yet “ready” to marry (Blossfeld, Huinink 1991).

d) duration out of school: this variable allows the testing of the hypothesis that the longer the individuals have been out of school, the less likely they are to marry homogamously (Mare 1991). This might happen for two reasons: first of all, there might be a catch-up process. Couples that have met in school and have delayed marriage until completing education will tend to marry as soon as they are out of the educational system. Moreover, the settings people face at a later stage in the life course, such as the work place, tend to be more a heterogeneous environment and thus the chance of homogamous mating should decrease. In order to evaluate these effects for the different levels of education, an interaction between this variable and each classified level of education has been introduced in the model.

e) father’s education (direct effect): I have employed the same four levels classification used for the respondent’s and his/her spouses’ level of education.

f) comparison between the son or daughter’s and the father’s level of education (indirect effect): this is a three-level categorical variable coded as “less” if the son/daughter’s education is lower than the father’s, “equal” if it is the same and “more” if it is higher. The reference category is “equal”.

g) birth cohorts: 6 cohorts have been considered: those born before 1928, between 1928 and 1937, between 1938 and 1947, between 1948 and 1957, between 1958 and 1967 and between 1968 and 1978. The hypothesis of an increase in the likelihood of homogamous marriage for the most educated subjects of the youngest cohorts (i.e. of an increasing relevance of educational system as a marriage market) has been checked by means of an interaction between the variable cohort and the variable educational achievement.

## RESULTS

The empirical analysis is divided into three parts. First, some macro aggregate indicators of the trends in educational homogamy/heterogamy over cohorts are presented. Second, I investigate how subjects with different levels of education differ in the chances of marrying vs. not marrying and, consequently, in the chances of marrying homogamously vs. heterogamously. Finally, by means of a longitudinal analysis

I address the question who marries whom in Italy across cohorts and over the individual life course.

*Variations of Homogamy Rates Over Cohorts*

Table 6.2 shows the trends of upward, homogamous and downward marriage of wives and husbands of the different cohorts<sup>6</sup>. Two results are especially notable. First, the homogamy rate that was very high for the oldest cohorts declines steadily until the cohort aged 30-40, when an inversion of the trend seems to occur (the data for youngest cohort are not interpreted substantively since a large fraction of this cohort has not married yet). Second, the decline in homogamy has accompanied an increase in the rate of upward marriage for men and an increase of downward marriage for women. While for the oldest cohorts a *traditional* pattern of marriage with much higher rates of upward marriages for women is dominant, for the men and women aged 30-40 years (cohort 1958-1967) almost identical rates of upward, homogamous and downward marriage are observed. Thus, it seems that the educational expansion and the progressive reduction of gender differences in educational achievement have brought about a more *symmetrical* pattern of marriage.

Interpreting the observed trends, one should take into account that the homogamy rates might be affected by variations in men's and women's educational attainment across cohorts. More precisely, the level of educational homogamy is negatively related to the degree of heterogeneity in the educational attainment of the population (Blau, Schwartz 1984)<sup>7</sup>. Thus, even if the process that leads to marriage were purely random, when almost all individuals have the same level of education (as is the case for the cohort born before 1918), the level of homogamy would be higher than in a situation when the individuals are more spread among the different levels of education (as is increasingly the case for the subsequent cohorts). This is reflected by the declining values of the homogamy rates predicted under the condition of independence. Moreover, if fewer women than men have higher education, then some men will be forced to marry women with lower education because there are no potential partners with the same level of education. Therefore the observed reduction in the absolute rate of homogamy might be a result of two structural processes: the progressive expansion of education (the heterogeneity of the educational distribution is increasing) and discrepancies in the male-female educational distribution due to differences in the starting time of the expansion (unbalanced ratio of men and women with the same level of education). In other terms, the trends in the homogamy rates reported in Table 6.2 might reflect structural changes and not a variation in the *chances* to marry homogamously or heterogamously for an individual with a given level of education.

In order to control for the variations in the educational distributions, I have pooled the husbands' and the wives' information, constructed educational marriage tables for the various cohorts and then computed the generalized odds ratios for each table (Kaufman, Shervish 1987)<sup>8</sup>. The (geometric) average on the generalized odds ratios for the cells on the diagonal expresses the average chance to marry homogamously when compared to marry heterogamously for the individuals of a given

cohort, controlling for the variations in the marginal distributions of the tables (Co-balti 1995). The value of this indicator for the different cohorts is plotted in Figure 6.1.

*Table 6.2. Distribution of Upward, Homogamous and Downward Marriages for Birth Cohort; Observed and Expected Percentages Under the Condition of Independence*

Cohorts	Upward		Homogamous		Downward	
	O	P	O	P	O	P
<u>Husbands</u>						
-1917	0.0	7.7	82.7	72.3	17.3	20.0
1918-1927	4.0	15.1	71.2	55.6	24.8	29.4
1928-1937	9.9	22.5	65.6	45.5	24.6	32.0
1938-1947	16.4	30.9	59.7	32.4	23.9	36.7
1948-1957	21.3	33.6	50.5	28.8	28.2	37.6
1958-1967	20.3	32.7	58.2	34.5	21.5	32.8
(1968-1978)	30.7	33.6	50.0	41.0	19.3	25.5
<u>Wives</u>						
-1917	19.1	21.6	75.3	67.1	5.6	11.3
1918-1927	19.3	23.0	76.4	63.5	4.3	13.5
1928-1937	26.3	31.3	67.7	51.7	5.9	17.1
1938-1947	27.2	38.3	61.2	34.4	11.6	27.4
1948-1957	27.2	37.7	52.2	28.5	20.6	33.8
1958-1967	23.5	32.6	55.2	33.2	21.3	31.0
(1968-1978)	25.2	32.1	52.2	37.4	22.6	30.6

O = Empirically observed percentages.

P = Predicted percentages

Source: ILFI (1997)

The picture that one gets is quite different from the one obtained from Table 6.2: once one controls for the structural changes in male and female educational attainment, the chances of marrying homogamously instead of heterogamously have on average increased. Thus, to sum up these first results: the absolute level of homogamy has declined across cohorts even if results suggest that for the younger cohorts (for which the educational distribution of men and women is almost equal) the trend has inverted and homogamy might rise again. On the other hand, relative chances to marry homogamously have increased: controlling for the different availabilities of partners with certain education for the different cohorts, the average chances of marrying a partner with the same level of education are higher now than in the past.

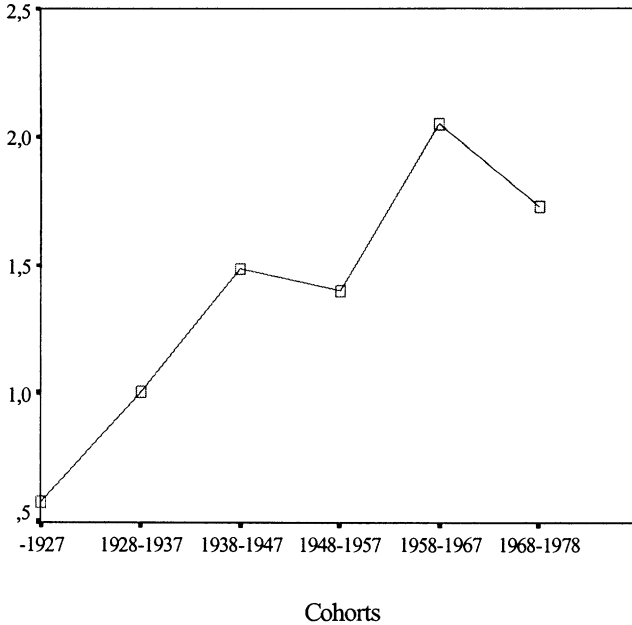


Figure 6.1. Average of the Generalised Odds Ratios of Homogamy

#### *Who Marries and Who Marries Whom*

In order to investigate the mechanism underlying the trends in the homogamy rates among cohorts, the analysis can be further specified for the different levels of educational achievement. In doing so remaining single is also considered an alternative outcome of the marriage process. Thus, Table 6.3 shows to what extent a given level of educational achievement affects the chances to marry and, then, among those married, the chances to marry homogamously/heterogamously.

First of all, more educated people (with a university degree) have a higher likelihood of remaining single. This seems to be true both for men and women, even if more pronouncedly for the latter: for example, if one considers the cohort born between 1948 and 1957 (for which the largest part of the marriage process has already taken place), the odds of being single for subjects with a university degree are higher when compared to those with primary education: 1.7 times for men and 2.5 for women. The largest proportion of never married persons in the youngest cohorts reflects an increasing delay in the age at marriage: it is notable that almost one in two among the subjects (men and women) with university degree aged 30-40 years has not married yet.

Table 6.3. Percentages of Subjects Never Married by Sex, Cohort and Level of Education; Percentages of Downward, Homogamous and Upward Marriages Among the Married Subjects by Sex, Cohort and Level of Education

	Never Married (a)			Upward (b)			Homogamous (b)			Downward (b)				
	Primary	Low	Upper	Tertiary	Primary	Low	Upper	Primary	Low	Upper	Tertiary	Low	Upper	Tertiary
Women														
-17	6.1	20.0	*22.2	*28.6	15.7	*43.8	*43.9	84.3	*25.0	*14.3	*60.0	*31.3	*42.9	*100.0
18-27	8.8	11.4	17.9	*16.7	14.5	48.7	43.5	85.5	23.1	39.1	*60.0	28.2	17.4	*40.0
28-37	7.2	15.9	11.9	17.4	23.2	50.7	25.0	76.8	30.4	44.2	*60.0	18.8	30.8	*40.0
38-47	3.2	6.9	12.4	14.7	27.1	36.6	24.2	72.9	42.9	48.3	60.5	20.5	27.5	39.5
48-57	5.9	4.8	12.1	14.7	40.5	32.0	16.2	59.5	46.1	51.0	48.4	21.9	32.8	51.6
58-67	7.1	14.4	22.9	49.1	56.0	29.5	12.6	44.0	56.2	56.1	63.2	14.4	31.3	36.8
68-78	30.8	68.4	85.9	78.9	66.7	31.4	*8.1	33.3	57.1	54.7	*33.3	11.4	37.2	*66.7
Men														
-17	6.3		*33.3	*22.2	3.3	7.0	5.0	100.0	*20.0	*50.0	*14.3	*80.0	*50.0	*100.0
18-27	6.5	1.7	2.4	12.5	11.2	12.3	3.8	96.7	24.6	20.0	28.6	68.4	75.0	*85.7
28-37	6.2	7.3	2.5	8.3	17.7	25.6	9.6	88.8	29.8	38.0	36.4	57.9	58.2	71.4
38-47	6.6	7.2	6.7	13.2	39.1	29.5	8.2	82.3	40.6	47.6	41.8	33.9	42.8	63.6
48-57	7.7	11.9	9.8	42.5	54.0	31.5	6.6	60.9	45.5	50.6	52.5	25.0	41.2	58.2
58-67	18.0	24.9	32.6	92.3	*77.8	34.0	13.3	46.0	54.6	66.0	13.8	13.8	27.5	47.5
68-78	73.5	87.3	94.6					*22.2	57.4	50.0	8.5	8.5	36.7	*100.0

Note: \* less than 20 cases;

(a) the percentages refer to 100 women or men of a given cohort with a given level of education and express how many of them have never married; the complement to 100 – how many have married – is not given in the table.

(b) The percentages refer to 100 married women or married men of a given cohort with a given level of education and express how many have married upward, homogamously or downward.

Source: ILFI (1997)

With regard to those who have married, Table 6.3 shows that two opposite trends are at play: the rates of homogamy are steadily decreasing for persons with primary or no education, while increasing for all higher levels of education. The exception to this pattern are the homogamy rates for women with university degree that were fairly high already in the oldest cohorts and have not changed over time. In any case, among the respondents aged 30-40 years, the highest propensity to homogamy is observed for those who have upper secondary degrees, among men, and for those who have university degrees, among women. Combining the information from Table 6.3, it becomes clear that those with a high education tend to marry less frequently but increasingly marry someone with the same level of education. But still an important piece of the picture is missing: how does the likelihood of a homogamous marriage change over the individual life course? For instance, has a woman (man) aged 35 with a university degree the same likelihood to marry homogamously as another woman of the same age with compulsory education? In order to answer these questions I now turn to a multivariate dynamic analysis of the transition into marriage.

*The Transition Into an Upward, Homogamous and Downward Marriage.  
A Dynamic Analysis*

The results of the event history analysis of the transitions into first marriage are reported separately for women and men in Table 6.4 and 6.5, respectively. With model 1, I evaluate whether the pattern of homogamous/heterogamous marriage differs for subjects with different levels of educational achievement. Thus, in addition to the variable age and to a time varying dummy that becomes equal to one as soon as the subject leaves school, I have included two sets of interaction: the first one is between age (specified with two variables to get the non monotonic shape of the rate) and the level of education achieved, the second, between the duration since leaving school and the level of education achieved.

First of all, the results of the interaction between the age and the level of education show that the likelihood to marry homogamously changes over the life course for subjects with different qualifications. That means that there is not a simple general age-specific marriage rate but that, as it was also found by (Blossfeld *et al.* 1998), the likelihood and timing of marriage depend on specific age-education patterns. The exception is represented by men with compulsory education: since the interactions with age turned out to be not significant, only a direct (proportional) effect was included in the model. Thus, there is no difference between the men with primary to no education (reference category) and those with compulsory education with regard to the *timing* of the homogamy rate. However, the negative and significant effect found for men with compulsory education implies a proportional downward shift of the rate: they are overall less likely to marry homogamously than those with primary education.

Second, the positive effect found for the time varying dummy “not in school” means that the inclination to marry for men and women increases once the educational system has been left. The same effect is found for the three types of transition and for men and women: in this sense the completion of education should be inter-

puted as a requirement for entry into marriage, regardless of the “quality” of the marriage. However, transition-specific effects are observed if one considers the duration since leaving school. In particular, it seems that the longer a respondent with a higher qualification has left the educational system, the less likely s/he is to marry homogamously. Thus, the results are consistent with the “catching up hypothesis” according to which couples formed during the studies tend to postpone marriage up to the completion of the educational career and marry fast once they leave school (Mare 1991). However, a negative effect of the duration since leaving school is also observed for the transition to upward marriage, with the exception of women with compulsory education. Thus, those who have a chance to make a good match, take it as soon as they are out of school. In addition one has to consider that marrying someone with a higher education probably implies having access to higher economic resources and therefore the possibility to marry fast. On the other hand, a longer time after the completion of school makes a downward marriage (with the exception of women with university degrees) overall more likely.

Using the estimates of Model 1 I have simulated the homogamy rate for single women (Figure 6.2) and men (Figure 6.3) with different levels of educational attainment (primary, lower secondary, upper secondary and tertiary education)<sup>9</sup>.

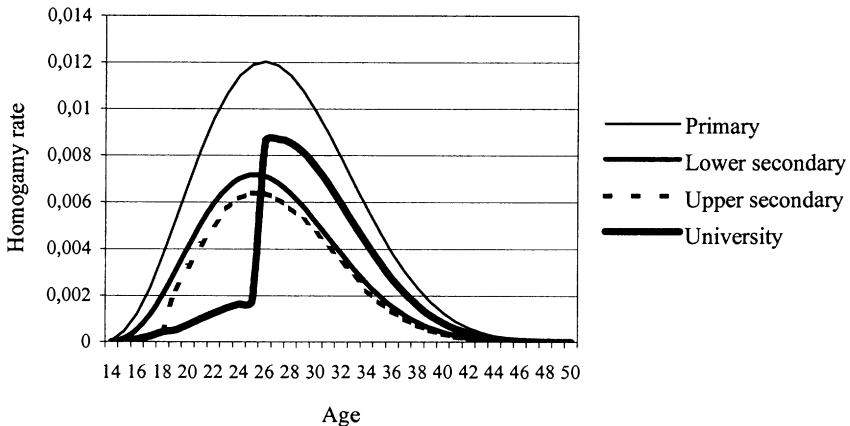


Figure 6.2. Homogamy Rates of Women (all cohorts)

In Figure 6.2 one can see that the highest rates of homogamy are at the two extremes of the ladder of educational levels: for women with primary education and, to a lesser degree, with university education. With regard to the latter, the rate is very low as long they are in school, suddenly rises right after completion of university and afterwards starts declining fast. This pattern is similar to the one found for women with university degree in Germany (Blossfeld *et. al.* 1998). Quite a different picture emerges for men (Figure 6.3). The highest degree of homogamy is still observed for men with primary education but there is no abrupt rise for men with uni-

versity degree. Overall the curves are less steep: there is no tendency to marry right after leaving school or the university and the process of homogamy lasts longer for men than for women (after the age 30-35 years the rates are higher for men).

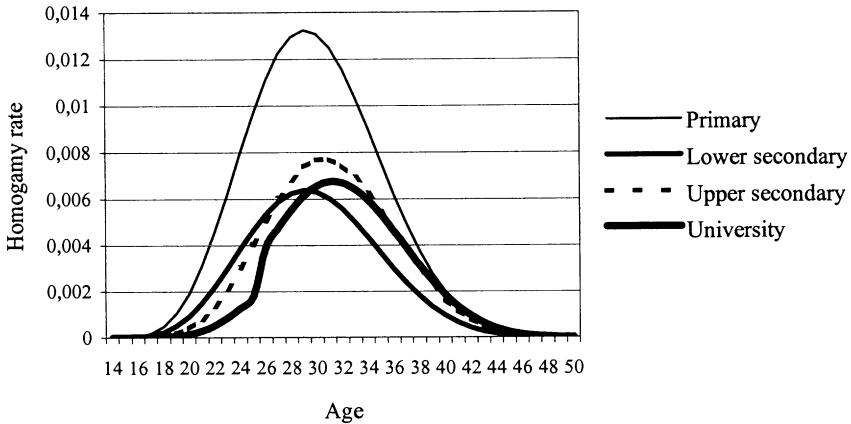


Figure 6.3. Homogamy Rate of Men (all cohorts)

Interpreting Figure 6.2 and 6.3, one should consider that they summarize the experience of different cohorts and therefore might confound different patterns. Particularly for the oldest cohorts the participation at school and university was very limited, reflecting a society engaged mainly in agricultural activities. The educational system was still a marginal institution, affecting and shaping the life course of a restricted minority of persons. On the other hand, the hypothesis of the educational system functioning as marriage market implies the existence of a developed educational system and of a large participation at the higher level of it.

Thus, in order to test the guiding hypothesis of this chapter, one has to focus on the cohorts that have experienced the expansion of the educational system. As it was shown in the second section, that was the case for Italy only for persons born after the Second World War. In Model 2 of Table 6.4 and 6.5 I have included the variables for the various cohorts and an interaction between these variables and the different levels of education. The notable result is that the effects of the interaction between cohorts and the higher levels of education are positive and statistically significant. This means that the likelihood to marry homogamously is steadily increasing for the subjects with the higher levels of education, from one cohort to the next. This is true both for men and women, although no increase in likelihood of homogamy is found for the women with university degree. However the likelihood of homogamy for these women was already high in the past and thus has remained stable over time (see also Table 6.3). Overall the results of Model 2 show that the progressive expansion of the Italian educational system has been paralleled by an increase in the rate of homogamy for those with higher level of education. In other



words, over time the marriage chances have become more and more influenced by the participation in education. The changes that occurred across cohorts can be better depicted focusing on the youngest cohorts that have fully experienced the reforms of the 60s and passed through an already developed mass educational system.

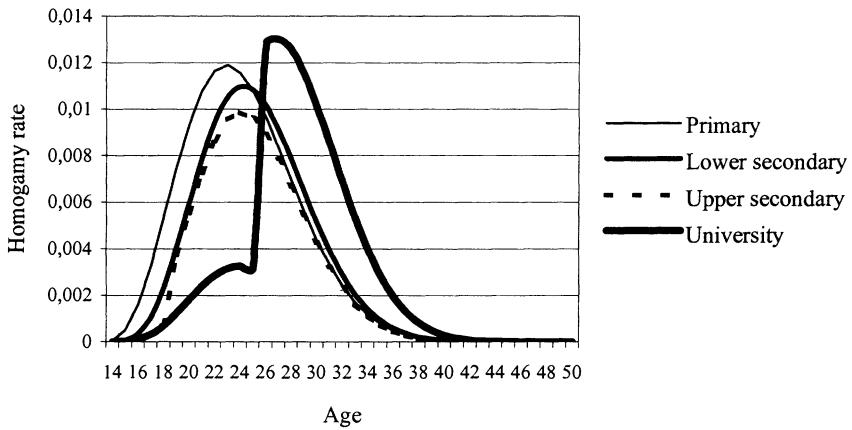


Figure 6.4. Homogamy Rate of Women (cohort 1948-1957)

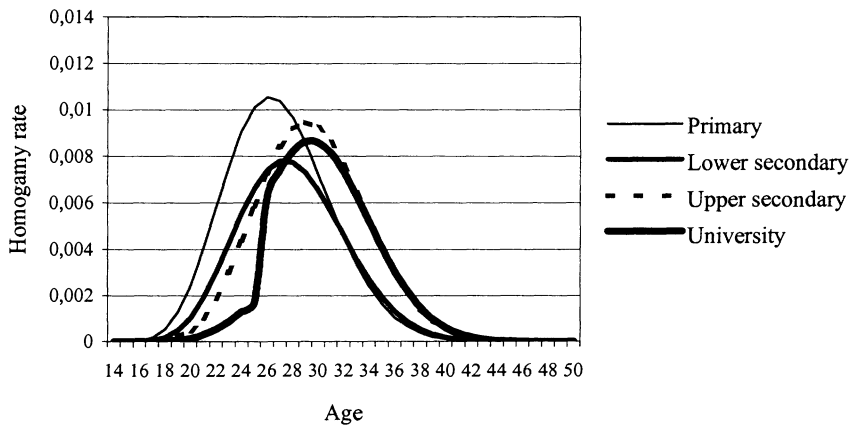


Figure 6.5. Homogamy Rate of Men (cohort 1948-1957)

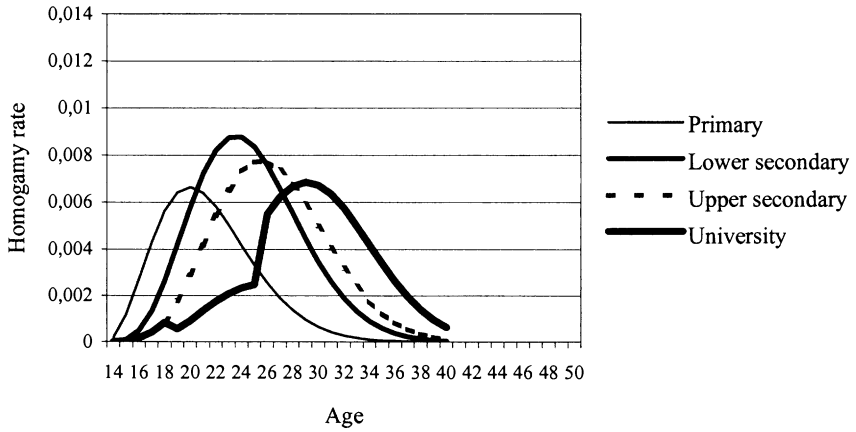


Figure 6.6. Homogamy Rate of Women (cohort 1958-1967)

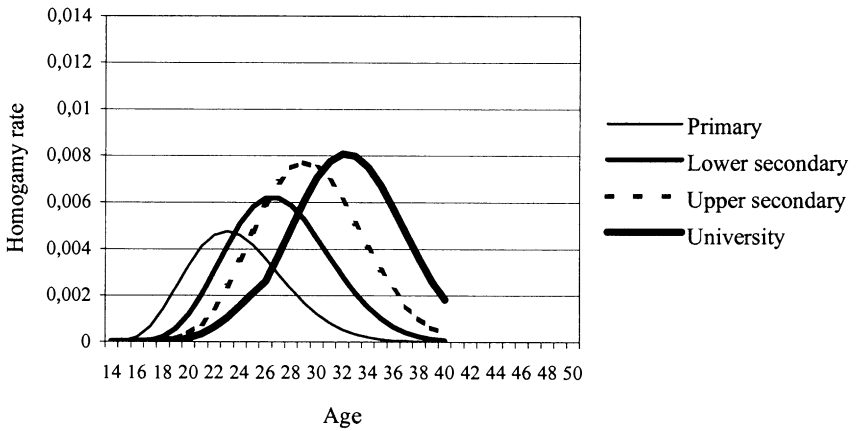


Figure 6.7. Homogamy Rate of Men (cohort 1958-1967)



Continue Table 6.4

Cohort 1928-1937*Lower Secondary	0.29	0.31	0.34	-0.31	-0.32	-0.30
Cohort 1938-1947*Lower Secondary	0.67**	0.65**	0.64**	-0.76**	-0.70**	-0.72**
Cohort 1948-1957*Lower Secondary	1.19**	1.15**	1.13**	-1.00**	-0.90**	-0.92**
Cohort 1958-1967*Lower Secondary	1.33**	1.26**	1.24**	-1.63**	-1.54**	-1.57**
Cohort 1968-1978*Lower Secondary	0.96**	1.08**	1.11**	-2.50**	-2.48**	-2.50**
Cohort 1928-1937*Upper Secondary	0.48	0.47	0.44	-0.59	-0.47	-0.52
Cohort 1938-1947*Upper Secondary	0.27	0.28	0.25	-1.05**	-1.00**	-1.07**
Cohort 1948-1957*Upper Secondary	0.59*	0.57*	0.55*	-1.91**	-1.84**	-1.89**
Cohort 1958-1967*Upper Secondary	0.60*	0.55*	0.51*	-2.72**	-2.62**	-2.68**
Cohort 1968-1978*Upper Secondary	-0.15	-0.01	-0.02	-4.38**	-4.36**	-4.44**
Cohort 1928-1937*University	0.29	0.32	0.30			
Cohort 1938-1947*University	0.52	0.48	0.52			
Cohort 1948-1957*University	0.46	0.37	0.46			
Cohort 1958-1967*University	0.19	0.06	0.12			
Cohort 1968-1978*University	-0.33	-0.21	-0.21			
Father's Edu: Lower Secondary		-0.14**	-0.02		0.28**	0.50**
Father's Edu: Upper Secondary		-0.36**	-0.06		0.46**	0.94**
Father's Edu: University		-0.30**	0.21		0.88**	1.53**
Father's Edu>Daughter's Edu		-0.94**	-0.33**		-0.34	
Father's Edu<Daughter's Edu		1.07**	0.25*		0.30	
Number of Events	510	510	2093	884	884	884
Likelihood Ratio Test	-13977	-13943	-23756	-23020	-22916	-22900

Source: ILFI (1997)

Table 6.5. Transition Rate Models for Downward, Homogamous and Upward Marriage With Regard to Educational Attainment Level of Men

	Downward				Homogamous				Upward			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	-64.01**	-64.75**	-63.76**	-63.78**	-65.01**	-64.71**	-64.37**	-64.29**	-43.60**	-48.91**	-49.12**	-49.08
Log(Current Age-14)	5.83**	5.75	5.73**	5.71**	5.54**	5.51**	5.51**	5.50**	5.79**	5.36	5.36**	5.38
Log(60-Current Age)	11.89**	12.38	12.14**	12.05**	12.53**	12.49**	12.41**	12.40**	6.75**	7.71	7.77**	7.76
Log(Current Age-14)*Lower Secondary (a)					-0.33*	-1.05**	-1.05**	-0.85**	0.13	0.94*	0.94*	0.92
Log(60-Current Age)*Lower Secondary (a)					1.97**	1.72**	1.78**	1.80**	1.16**	2.16**	2.16**	2.04**
Log(Current Age-14)*Upper Secondary	-0.28	-0.30	-0.22	-0.20	1.97**	1.72**	1.78**	1.80**	1.16**	2.16**	2.16**	2.04**
Log(60-Current Age)*Upper Secondary	0.25	0.22	0.19	0.18	-1.29**	-1.37**	-1.39**	-1.34**	-1.50**	-1.42**	-1.43**	-1.49**
Log(Current Age-14)*University	0.47	0.58	0.38	0.40	1.94**	1.69**	1.61**	1.70**				
Log(60-Current Age)*University	-0.02	-0.23	-0.06	-0.13	-1.43**	-1.63**	-1.56**	-1.56**				
Not in School	0.85**	0.86**	0.83**	0.79**	1.11**	1.09**	1.06**	1.05	0.60**	0.49	0.49	0.49
Duration Out of School	0.005**	0.005**	0.004*	0.004*	0.006**	0.006**	0.006**	0.006**	-0.01**	-0.003	-0.003	-0.003
Duration Out of School*Lower Secondary					-0.001	-0.001	-0.001	-0.001	-0.002	-0.005	-0.005	-0.005
Duration Out of School*Upper Secondary	0.003	0.004	0.003	0.002	-0.01**	-0.009**	-0.10**	-0.01*	-0.003	-0.01**	-0.01**	-0.009**
Duration Out of School*University	0.001	0.001	0.002	0.002	-0.007*	-0.006*	-0.006*	-0.007*				
Cohort 1928-1937		-0.24	-0.23	-0.20		-0.08	-0.08	-0.08		1.38**	1.39**	1.38**
Cohort 1938-1947		-0.46**	-0.46**	-0.44**		0.07	0.07	0.07		2.03**	2.03**	2.01**
Cohort 1948-1957		-0.77**	-0.77**	-0.75**		-0.09	-0.09	-0.09		2.93**	2.93**	2.92**
Cohort 1958-1967		-1.57**	-1.57**	-1.55**		-0.41*	-0.41*	-0.41*		3.22**	3.22**	3.23**
Cohort 1968-1978		-2.62**	-2.57**	-2.50**		-1.67**	-1.64**	-1.64**		3.41**	3.40**	3.38**

Continue Table 6.5

Cohort 1928-1937*Lower Secondary	0.29	0.30	0.32	-0.65	-0.65	-0.65
Cohort 1938-1947*Lower Secondary	0.66**	0.66**	0.68**	-0.29	-0.30	-0.29
Cohort 1948-1957*Lower Secondary	0.99**	0.99**	0.99**	-1.01	-1.02	-1.00
Cohort 1958-1967*Lower Secondary	1.28**	1.29**	1.29**	-1.33**	-1.34**	-1.34**
Cohort 1968-1978*Lower Secondary	1.90**	1.89**	1.85**	-2.02**	-2.02**	-1.99**
Cohort 1928-1937*Upper Secondary	0.74*	0.70*	0.71*	-1.87**	-1.84 *	-1.83*
Cohort 1938-1947*Upper Secondary	0.99**	0.97**	0.98**	-1.30	-1.27	-1.27
Cohort 1948-1957*Upper Secondary	1.14**	1.11**	1.13**	-2.37**	-2.36**	-2.35**
Cohort 1958-1967*Upper Secondary	1.42**	1.42**	1.43**	-3.13**	-3.12**	-3.15**
Cohort 1968-1978*Upper Secondary	1.49**	1.48*	1.48*	-3.40	-3.41**	-3.46**
Cohort 1928-1937*University	1.00	1.09	1.10			
Cohort 1938-1947*University	1.48**	1.57**	1.57**			
Cohort 1948-1957*University	1.61**	1.69**	1.69**			
Cohort 1958-1967*University (b)	1.77**	1.86**	1.88**			
Cohort 1968-1978*University (b)						
Father's Edu: Lower Secondary	-0.06	-0.09		0.05	0.31	
Father's Edu: Upper Secondary	-0.25**	-0.40**		0.22	0.83*	
Father's Edu: University	-0.48**	-0.59**		0.04	0.89	
Father's Edu>Son's Edu	-1.18**	-0.24		-0.50		
Father's Edu<Son's Edu	0.51**	-0.25		0.31		
Number of Events	731	731	731	758	484	484
Likelihood Ratio Test	-13894	-13888	-13781	-20686	-19940	-19838

Note: (a) for the transition to homogamous marriage the interactions between the variables „lower education“ and the log-transformations of „age“ are not significant; thus only the proportional effect is included; (b) due to the limited number of events, for the transition to homogamous marriage this variable refers to the interaction between the variables „cohort 1958-1978“ and „university“.

Source: ILFI (1997)

Thus, Figures 6.4, 6.5, 6.6 and 6.7 show the homogamy rates for women and men, of the cohorts born between 1949-1958 and 1959-1968, respectively. What emerges from these simulations is that in the youngest cohorts the men and women with a higher education have greater chances to marry homogamously when compared to those with a low education. Moreover different patterns of age-dependence become clear for the various educational levels: this can be seen by the fact that the curves open fanwise and are more spread over the life course. For instance, for women with primary education born between 1959 and 1968 the maximum tendency to marry homogamously is around age 20, while for women of the same cohort with a university degree the maximum is around age 30<sup>10</sup>. Thus, there is an increasing differentiation in the timing of homogamous marriage according to the level of education achieved: anticipation for those with no or low education, delay for those with university degree. The educational system seems to operate segmenting the chances to meet a suitable partner and the timing of marriage: highly educated persons are more likely to marry homogamously and at an older age.

With the last two models I have controlled for the influence of the family of origin. Thus, in model 3 the effect of the father's educational achievement (direct effect) is included. For women, a negative effect of the father's level of education is found for the tendency to marry downward. Thus, family resources reduce the likelihood of marrying a less educated partner. A negative effect is also observed for homogamous marriage: the higher the father's education, the less likely is a marriage to an equally educated partner. Reversing the interpretation, the highest level of homogamy is found at the bottom of the socio-economic ladder, i.e. for women with a father with no or a primary education. This result is consistent with the effects found for the individual level of education whereby persons with no education show a high tendency to homogamy (especially in the oldest cohorts). In other words there seems to be a reinforcement of social closure at the bottom: having little education makes it very likely to marry a partner with little education and this is accentuated by coming from a non educated family. Finally a positive effect of the father's education is found with regard to the chance of upward marriage: family resources enable an improvement of women's individual achievement through marriage. Similar results are found for men: family resources prevent downward mobility and reduce the chances of a homogamous marriage. However, no effect is found on the likelihood of upward marriage. Thus, the family of origin seems to play a more important role for women than for men in the attempt to climb up the educational ladder through marriage.

In Model 4, the indirect influence of social origin is evaluated by comparing the daughter's /son's level of education to that of the father. A downward counter mobility through marriage occurs both for men and women: those who have achieved a higher level of education than their fathers are more likely to marry downward. However, this effect is more substantial for women, since it increases the rate by 191%, while for men by 64%<sup>11</sup>. With regard to homogamy, women who have lower education than their father are less likely to marry a partner with the same level of education. On the other hand, it is notable that a significant positive effect on the tendency to homogamy is found for women with higher education than their father's. A similar effect was observed for German women by Blossfeld *et al.*

ther's. A similar effect was observed for German women by Blossfeld *et al.* (1998). These women have been referred to as the "winners" of the expansion of the educational system as they managed to improve the starting position of their family of origin and to consolidate their achievement through marriage. The proportion of these women is quite large but fairly stable across cohorts: it was 41% for the women born before 1928 and 46% for those born between 1948 and 1957<sup>12</sup>.

Finally, with regard to upward moves, no significant effects are observed for men, while the direct effect of social origin is still significant for women. One should note that, given the exclusion of subjects with university degree from this model (since for them it is logically impossible to experience an upward move), the effect of a father with university education refers only to sons/daughters with a lower education. This effect is positive for women: in substantive terms, it means that the daughters from highly educated families who have themselves failed to achieve the same family level of education have a chance to climb back up through marriage. This positive counter mobility effect is not observed for men. Combining the results of the last two models, it seems that the family of origin exerts more influence on the outcomes of the daughters' marriage than on that of the sons.

## CONCLUSION

The aim of this chapter was to investigate the effects of educational expansion on marriage patterns in Italy. Three results of the empirical analysis presented in the previous sections appear notable. First, the absolute incidence of homogamous marriage has declined across cohorts but an inversion of this trend with a new rise is observed for the youngest cohort. However, I have argued that the absolute rate of homogamy might reflect the different opportunities that members of the different cohorts have faced in order to meet a partner with the same level of education. These structural opportunities are related to the expansion of educational attainment across cohorts and more precisely to the overall degree of heterogeneity of the educational distribution and to discrepancies between the male-female distribution. Thus, I have controlled for the differences in the male-female educational distribution computing the homogamy generalized odds ratios for the single cohorts (see Figure 6.1). The remarkable result is that on average the relative chances of educational homogamy in Italy have increased across cohorts.

Second, when one deepens the analysis for the various levels of education and includes remaining single as possible outcome of the marriage process, two opposite trends become evident: the rates of homogamy are steadily decreasing for subjects with primary-no education, while they are increasing for subjects with higher education. Moreover, highly educated subjects, especially women, are less likely to marry. Thus, those with high education tend to marry less frequently but increasingly marry someone with the same level of education.

Third, the event history analyzed of transition into different types of marriages (upward, homogamous, downward) confirms that subjects with primary or no education have the highest propensity to homogamy. However, the likelihood of marrying a partner with the same education is on the increase for highly educated subjects of



the youngest cohorts. Thus, if one considers the cohorts born after the Second World War, the highest chances to marry a partner with same level of education are observed for the more qualified subjects. Moreover, a negative effect of the duration since the exit from the educational system on the transition to homogamous and upward marriage is found for the highest level of education. This result, as far as homogamy is regarded, is in accordance with the hypothesis of a catch-up process (Mare 1991): couples that have met in school or at the university and have delayed marriage until completing education tend to marry as soon as they are out of the educational system. However, the fact that upward marriages become also less likely is at odds with the idea that the settings people face at later stage in the life course after leaving school, such as the work place, have a more heterogeneous environment and thus the chance of non-homogamous mating should increase. In this regard one might speculate that marrying someone with a higher education is very likely a means of gaining access to higher economic resources and therefore the possibility to marry fast increases immediately after school completion. In addition to this, an increasing differentiation in the timing of the transition into homogamous marriage becomes evident in the youngest generations (see Figures 6.6 and 6.7). Finally the family of origin matters in the quality of marriage outcome: there is a tendency of countermobility through marriage, i.e. a regression towards the position of the family of origin (father's level of education) that corrects the individual failure or success in the educational system. This process seems stronger for women than for men. Nonetheless there are also women who have managed to improve the starting position of their family of origin and to consolidate their achievement through marriage. However, the proportion of these women has not increased significantly across cohorts.

If one brings together these different results, the empirical evidence speaks against the hypothesis of a decreasing level of homogamy and of more openness in the marriage market drawn by modernization theory. On the other hand, some support is found for the prediction of an increasing segmentation of the marriage opportunities in accordance with the different levels of the educational system (Blossfeld *et al.* 1998). In this regard one has to bear in mind the relatively late and still limited expansion of the educational system at the higher levels. Especially for the old cohorts participation in school was limited to a very small group of persons. Thus, the high degree of homogamy found for low educated subjects in the old cohorts suggests that the deep cleavage ran between those with no education and the few others who had access to education: the oldest cohorts are characterized by a homogamy of a large majority excluded from education. On the other hand, the hypothesis of the educational system functioning as marriage market implies the existence of a developed educational system and of a large participation at the higher level of it. The data of Tables 6.3 and the results of the event history analysis reported in Tables 6.4 and 6.5 show that the increase of the participation at the higher levels of education across cohorts has indeed been paralleled in Italy by an increase of the chances of homogamy for those who spend a longer time at school.

The remarkable implication of the increase of homogamy for the highly educated is that inequalities across households might also increase, since the socio-economic

resources of the two partners are pooled. Moreover, the studies on couples' careers suggest that these inequalities might accentuate along the life course because the socio-economic resources of a person have a positive effect on his/her partner's likelihood of upper occupational mobility (Bernasco *et al.* 1998; Bernardi 1999). Thus, highly educated men (women) are more likely to marry highly educated women (men) and further profit from the partner's resources by being able to improve their position in the labor market.

## NOTES

1. It is not rare in a big-medium size city to find a so called "student area" and "student bars", indicating a neighbourhood and bar where the students use to hang out or where the students are the main customers, respectively. However, the simple and direct effect of school and university as a meeting place should not be underestimated: the (Italian) university libraries often function as places where the students go not only for studying but also for flirting, or at least for doing both at the same time if it is possible.
2. In addition to the missing cases due to the lack of information on date of first marriage or on the education of the partner ( $n=333$ ) among married subjects, one has to consider that the information collected in ILFI refers to the actual partner. Therefore, when the subject has married more than once or is separated but cohabiting with a new partner, there is no information regarding the education of the first husband/wife. However, the number of cases lost for this reason is small ( $n=181$ ), because the rate of divorce in Italy is very low. The 514 subjects that were excluded overall from the analysis (approximately 0.05% of the original sample) are slightly older and less educated. However there is no significant difference between the distribution of the variables age and education in the original sample and the sample of valid cases.
3. The chances measured by an odds ratio for someone with a lower secondary education to achieve a white collar occupation instead of manual work are 13 times higher than for someone with primary education (Cobalti, Schizzerotto 1994, 201).
4. The chances measured by an odds ratio for a man with lower secondary education plus three years vocational education to attain a white collar occupation instead of manual work are 5.6 times higher than for someone with only lower secondary education; the same figure for a woman is 3.9 (Schizzerotto, Cobalti 1998, 272-275).
5. This is why the values of the likelihood ratio test in Tab. 6.4 and Tab. 6.5 are different for the three transitions.
6. The definition of upward, homogamous and downward marriage is made employing the four-level classification discussed in the previous section. However, alternative classifications have also been tested: despite the differences (the more levels of education considered, the lower the rate of homogamy) the same trend across cohorts is found for the various classifications (results not shown here but available from the author on request).
7. Consider this example adapted from Kalmijn (1998). There are two populations each consisting of two groups: low educated (L) and high educated (H) people. The first population is heterogeneous ( $L=100$  and  $H=100$ ) while in the second almost everybody has low education ( $L=180$ ,  $H=20$ ). In both populations the number of men with a given level of education is equal to that of women. Then, the pure random chances that a man marries a woman with the same level of education in the first population are 25% ( $50*50/100$ ) for L and 25% ( $50*50/100$ ) for H. Thus the homogamy rate is equal to 50%. On the other hand, in the second population the corresponding values are 81% ( $90*90/100$ ) for L and 1% ( $10*10/100$ ) for H. Thus, in spite of the same random association ruling the mating, the homogamy rate is equal to 50% in the heterogeneous population and 82% in the less homogeneous one.
8. The educational marriage tables for the different cohorts are  $4*4$  tables, since I considered a 4-level classification for the level of education of the respondent (row) and of the partner (column). For each cell of these tables I computed the  $(4-1)*(4-1)$  odds ratios comparing the given cells with all the alternative levels of education of the respondent and all the alternative levels of education of the partner. The geometric average of the 9 odds ratios for each cell is known as generalised odds ratio (Kaufman, Schervish 1987).

9. In the simulation respondents with lower secondary education leave the educational system at the age of 14, with upper secondary education at the age of 19 and with university education at the age of 25.
10. However, one should bear in mind that the process of marriage is still incomplete, particularly for those with high education almost half has not married by the time of the interview (see Tab. 6.3).
11. The formula to compute the increase in the downward marriage rate for women and men is, respectively:
- $(\exp(1.07) - 1) * 100\% \approx 191\%$  and  $(\exp(0.50) - 1) * 100\% \approx 64\%$  (see Blossfeld, Rohwer 1995, 92).
12. This stability is more remarkable if one considers that the proportion of women who have achieved a higher level of education than their fathers has notably increased across cohorts: from 17% (cohort born before 1928) to 58% (cohort 1948-1957).

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## WHO MARRIES WHOM IN SPAIN?

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### INTRODUCTION

The educational expansion in Spain started in the mid-1950s triggered by a growing level of industrialization. The expansion of higher education, however, only reached the working and middle-classes some time later in the 1970s. This chapter analyses the effect of this educational expansion on the partner selection process. In particular, it focuses on the mechanisms whereby individuals make choices about future partner candidates.

Educational expansion can affect the marriage market in different ways. It can be the case that the educational system functions as a *marriage market* in which different educational groups meet and reproduce intergenerational class differences. However, once a minimum level of education becomes universal, it could also turn out to be a less important individual feature in the selection of partners. In this case, partners would mix together regardless of their individual educational attainment or, in other words, partners would simply pursue the ideal of romantic love despite the future candidate's schooling or earning potentials.

Therefore, the value of studying the *couple's educational homogamy* mainly resides in its capacity to capture degrees of *social openness*. As Smits, Ultee and Lammers put it: "If the boundaries between social groups are weak, the social structure of that society is said to be open; if the boundaries are strong, the social structure is said to be closed" (1998: 264). Thus, a low level of educational homogamy will reflect a high level of social mix between partners, that is, marriages between persons who belong to different educational groups and thus presumably to different social classes.

There are several reasons, however, for predicting an increase in marital educational homogamy, rather than one in educational heterogamy. The first comes from search theory rationality, which presupposes that individuals aim to match themselves with alike individuals in order to reproduce their own status quo. This is a

*social origin mechanism* that operates in the process of spouse selection. According to this assumption, it is irrational for a highly educated person (i.e. an equivalent of high social class) to marry a poorly educated person. It is worth noting, however, that in the traditional action model *men's hypogamy* (husbands having higher educational attainment than wives) has been commonplace, because social class was supposed to be embodied only in the figure of the male provider. The increase in women's labour force participation has, however, clearly challenged this assumption.

The second rational mechanism is *gender related*. In this view, it is predicted that women practice *educational assortive mating* based on the union between two persons with similar social opportunities (as described by Blossfeld, Timm, Dasko 1998). By pursuing assortive mating, women can avoid asymmetrical and oppressive gender relationships (Oppenheimer 1988). Nonetheless, similar human capital investments are not always equivalent to similar comparative advantages in the market place, since a certain level of gender discrimination in the labour force always exists (e.g. segmentation by gender). In the optimal scenario of a gender-egalitarian society, women's rational calculation would not necessarily work in that direction and, again, maybe romantic love would operate as the guiding principle in the selection of spouses.

The third and final mechanism, which may favour a couple's educational homogamy, is simply *space-related*, since the proximity of individuals in their common relational networks facilitates the beginning of an intimate relationship. Couples' educational homogamy may occur in the simple fact that relationships are structurally determined by the *contact opportunities* which emerge first in school and, later on, in the working place (Blau 1994).

This chapter explores whether education really matters in the marriage choices of individuals in Spanish society. The population studied consists of first partnerships formed by cohorts born between the 1920s and the mid-1960s. This contribution also aims at measuring the degree of educational homogamy and intergenerational patterns. The methodological tool used to do this is logistic regression. If this procedure proves to be insufficient to explain partners' selection processes, we can claim that mate selection should be explained either by choices based on the individual's subjectivity or on rational calculations that escape our knowledge.

There are two complementary hypotheses. The first, inspired by industrialist theorists such as Treiman (1970), argues that the importance of family background for an individual's achievement decreases while the importance of individual educational attributes or formal merits increases. Therefore, intergenerational marital homogamy is likely to increase as modernisation occurs. The second is the romantic-love hypothesis, as suggested by authors such as Smit et al. (1998), which argues that marriage choices are fundamentally guided by the attraction of persons from whatever social background. Consequently, educational homogamy would tend to decrease as modernisation occurs. This means that individuals do not look for partners according to their rational calculations, or materials interests, but follow their subjective preferences.

Next, I present a preliminary look at the trends in educational homogamy across several generations in Spain, before proceeding with the statistical analysis in which the above hypotheses are tested.

#### TRENDS IN EDUCATIONAL HOMOLOGY

Educational homogamy has not attracted much attention in sociological studies in Spain. Carabaña conducted a pioneering study in 1981 in which he studied occupational homogamy at two levels: homogamy between fathers-in-law and the homogamy of married couples. The author identified a higher tendency of women to form occupational hypergamic marriages (wives with a lower occupational prestige than their husbands). In contrast, men had a higher tendency to select female partners in whatever social strata. In the 1980s this pattern was not uncommon given the weak position of women in the labor market. He illustrated his findings in the fact that daughters of working class parents had a slightly higher social mobility through marriage than sons: 8 per cent fewer daughters than sons remained in the same social class after marriage.

The occupational homogamy of married couples was also shown in a study conducted by Iglesias (1995). The author highlighted that the marriage market in Spain was to a large extent *occupationally endogamic* since most of the relationships took place from the spatial proximity in the workplace and other daily activities. The findings of both studies suggest that there are two main types of networks, which influence the process of partner selection: the educational system among schoolmates and the workplace among co-workers. If the educational system can be said to be the main relational network in which individuals select their partners, marriage homogamy should tend to increase as educational expansion occurs. If, on the contrary, individuals tend to date - let us say - for marital purposes at a rather late age, marital heterogamy should also increase significantly.

In the 1940s and 1950s it was common for people to marry very late: the mean age at first marriage was almost 29 years for men and 26 for women. The timing of marriage began to rejuvenate later in the 1960s and, already in 1975, men got married on average at 26 years and women at 24 years (Miret 1997). This pattern has reversed since the 1980s with a continued delay of marriage. In 2000 men got married on average at 30 years and women at 28 years (INE; <http://www.ine.es/>).

Table 7.1 summarises trends in educational homogamy in Spain by birth cohorts. If compared with other central and northern European states, the extraordinarily high proportion of homogamous marriages, even in the youngest birth cohorts stands out. Some authors explain this high degree of homogamy by cultural factors such as the traditionalism of family life in Catholic countries as compared with Protestant countries (Smits, Ultee, Lammers 1996). However, I would rather interpret it as the result of both a high degree of *social closeness* and structurally limited opportunities for social mixing.

*Table 7.1. Distribution of Upward, Downward and Homogamous Marriages with regard to Educational Attainment Level for Birth Cohorts (partner's highest educational attainment level): Three Educational Categories*

Cohorts	Upward		Homogamous		Downward		Total %
	O %	P %	O %	P %	O %	P %	
<u>Wives</u>							
1910-1914	(6.0)	(6.5)	(92.9)	(91.4)	(1.1)	(2.0)	100.0
1915-1919	(6.7)	(2.0)	(92.2)	(90.8)	(1.1)	(7.2)	100.0
1920-1924	6.0	1.8	93.2	91.1	0.7	7.2	100.0
1925-1929	7.9	2.4	91.0	88.5	1.2	9.0	100.0
1930-1934	7.4	3.2	91.2	87.6	1.4	9.2	100.0
1935-1939	11.5	5.5	86.4	80.4	2.1	14.1	100.0
1940-1944	13.6	8.9	82.5	73.8	3.9	17.3	100.0
1945-1949	16.7	11.3	78.3	67.5	5.0	21.2	100.0
1950-1954	17.4	16.6	74.3	59.0	8.3	24.3	100.0
1955-1959	19.0	22.7	69.1	48.7	11.9	28.6	100.0
1960-1964	17.0	26.5	66.8	47.3	16.2	26.2	100.0
1965 older	(14.9)	(22.5)	(68.5)	(57.3)	(16.6)	(20.2)	100.0
<u>Husbands</u>							
1910-1914	(1.2)	(2.8)	(92.5)	(89.8)	(6.3)	(7.4)	100.0
1915-1919	(2.1)	(3.9)	(92.5)	(89.4)	(5.4)	(6.7)	100.0
1920-1924	1.7	3.4	93.0	89.8	5.4	6.8	100.0
1925-1929	2.4	4.6	91.1	87.3	6.5	8.0	100.0
1930-1934	3.4	6.2	89.3	84.6	7.3	9.1	100.0
1935-1939	2.0	6.1	87.7	79.9	10.3	14.0	100.0
1940-1944	3.4	9.6	81.4	69.9	15.1	20.5	100.0
1945-1949	6.2	13.1	76.9	64.1	16.9	22.8	100.0
1950-1954	9.8	19.0	71.1	53.8	19.1	27.3	100.0
1955-1959	13.1	22.9	66.9	47.8	20.0	29.3	100.0
1960-1964	18.0	26.3	65.2	47.6	16.8	26.1	100.0
1965 older	(15.7)	(21.2)	(70.9)	(59.2)	(13.4)	(19.6)	100.0

Note: the table includes empirically observed (O) and predicted percentages (P). The latter are based on the assumption that marriage decisions were taken randomly given the distributions of educational attainment levels of women and men for each birth cohort. The classification of educational attainment used to estimate the type of marriage was the following: 1) Low educational level (primary school or less); 2) Secondary studies (high school or technical school); 3) Higher education (college, university or post-graduate studies). Figures in parentheses point to possibly unreliable data. Since the survey asked retrospective questions, there was a common problem among the eldest cohorts of recollection, whereas the youngest cohorts may have often been too young to draw definitive conclusions.

Source: Socio-demographic Survey, 1991.

The limited opportunities of social mixing arise from the generally low educational level of the population, above all in those generations born before the mid-



1940s. In this situation, highly educated individuals generally come from the most privileged social groups which, at the same time, tend to avoid downward social mobility through marriage in order to preserve their social status. In the case that larger sectors of the population access the educational system, this may lose its importance as an individual feature, producing a higher degree of marital heterogamy. Indeed, some authors consider that educational heterogamy is a good proxy for social modernisation. Ultee and Luijkx (1990), for example, found in their comparative study of 23 countries that the degree of educational homogamy was negatively related to the level of economic development. Thereby, as countries modernise educational homogamy should decrease.

In Spain there has been a very rapid change in the educational structure, but this has not had a dramatic effect on the degree of educational homogamy. As Table 7.1 shows, the only result is a progressive and moderate decline of homogamy rates across generations. Heterogamy becomes only slightly significant in the generations born after the mid-1950s. These cohorts benefited from the educational expansion of the 1960s and 1970s.<sup>1</sup> The most outstanding feature in these heterogamic couples is the increase in women's *hopogamic marriages* (i.e. they marry less qualified men). This illustrates the progressive decline of traditional gender roles in marriages, where husbands - as the main economic providers - had the privilege of formal education. Interestingly, in the old generations the type of woman who married downward tended to have low educational attainment (secondary level at most). It should be pointed out that women with university degrees in the older generations figured as odd in statistical terms. In the younger generations, on the contrary, women in downward marriages had a high level of education.

There is also an increase in *women's hypergamy* (they marry men with a higher educational attainment) across generations, contradicting our initial hypothesis predicting that women would tend to avoid traditional gender partnerships. This pattern may be partly related to the general improvement in the population's educational attainment, whereby there is more room for mobility through either *upward or downward marriages*. In any case, the apparent continued decrease in homogamous marriages defines a clear sign of social change that deserves to be examined.

In contrast, Table 7.1 also shows a significant increase in men's upward marriages (i.e. non-traditional marriages) involving as many as 18 per cent of partnerships formed in the 1960-1964 birth cohort. In the older generations the men had mainly low educational attainment which might have been related to their early entrance into paid work. In the younger generations upward marriages mainly involved men with a post-compulsory education. Similarly, among the more highly educated, younger generations, men show less traditional (downward) marital behavior and enter more homogamous marriages.

The observed percentages shown in Table 7.1 can, however, be affected by the changing distributions of women's and men's educational attainment across birth cohorts. Therefore, I have estimated the expected patterns of partnership formation according to the couples' educational match under conditions of statistical independence (see Table 7.1). Expected values indicate, for instance, the tendency of individuals to form assortative partnerships, given a random selection of partners and

the distribution of the educational attainment level of men and women respectively, in each birth cohort.

Given the recent educational expansion, the probability of forming a partnership with a higher educated person should have continuously increased for each younger cohort. This is clearly seen if one compares the observed distribution with the expected random distribution of the couples' match according to the educational attainment. The observed values of the homogamous partnerships, for instance, have always been "above the chance" especially in the youngest cohorts (those born since the 1945 onwards). This means that, given the gender-specific distribution of the educational attainment, there has been a structural need for both women and men to form assortative mating.

Thus, in the oldest birth cohorts the distribution of partnerships according to the couples' educational match is fundamentally explained by the educational structure of these specific birth cohorts, given that the differences between observed and expected values are very low. In the 1920-1924 female cohort, for instance, as many as 92 per cent of low educated women married low educated men, only 1 per cent above the percentage which would have been expected had they married randomly.

In the younger 1955-1959-birth cohort the situation is rather different because there is a lower degree in the couples' educational homogamy (69%) than in the 1920-1924 cohort (93%). However, the homogamy in this young cohort could have been even lower given the gender-specific distribution of educational attainments. In the 1955-1956 cohort 69 per cent of women formed assortative partnerships (first entry into a partnership), though around 20 per cent could have married men with a different educational attainment (difference between the observed and the expected values).

Therefore, despite the higher possibilities of couples' educational mix among young cohorts, a large proportion of women have chosen to form assortative partnerships. In 1955-1956 cohort, women with a higher educational attainment could have formed downward partnerships to a higher degree, had they chosen partners among lesser-educated men. This means that there is still more room for the couples' educational mix.

The high degree of educational homogamy should however be cautiously interpreted from a comparative perspective, since a small change in the classification of educational categories can easily modify the resulting distribution by marriage types (homogamous, upward and downward). Country differences in the proportion of marriage types may thus reflect differences in the marginal distributions using different educational classification rather than real existing differences. The degree of marital mobility in terms of education is estimated in Table 7.1 from large categories and, therefore, there are few chances for mobility than in a highly differentiated classification. Moreover such a classification may over-estimate educational homogamy.

Other classifications were explored before the one based on three categories as described above was chosen. At first, there was the option of dividing the top of the educational structure into a further set of categories. However, the expansion of higher education took place only very recently, which means that very few cases

would have fallen within these top categories. Thus, it seemed more sensible to divide the bottom of the educational structure into smaller groups, given that a larger proportion of the population in this sample is concentrated there (see Figure 7.1). This second option was taken; and the result was a much larger proportion of women's downward marriages. This would give the impression that Spanish female behavior has always reflected modern attitudes, in the sense that they have chosen husbands with lower educational attainment. This is not exactly the case.

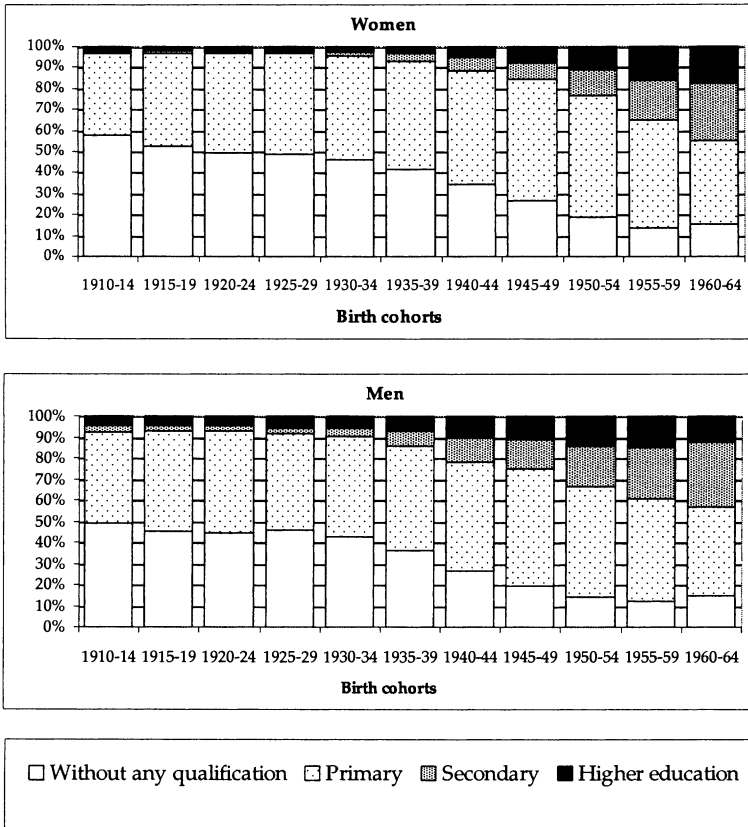


Figure 7.1: Women's and Men's Educational Attainment by Birth Cohort

Downward marriages have traditionally involved less-well educated women instead of women with a high educational attainment marrying downward, as originally expected. In the cohorts born before the mid-1950s, for instance, downward marriages were mainly "chosen" by women who had completed their basic education, and who married men with an even lower educational attainment. For example, as many as 77 per cent of all women who had completed their primary education in the birth cohort 1945-1949 married downwards. These downward marriages of

lower educated women came about in a traditional gender environment in which men, typically in agrarian regions, would have entered paid employment very young with the result that they interrupted their formal education. Women, instead, completed their elementary education and entered in - formal or informal (e.g. family care) - work some time later. In the younger 1960-1964-birth cohort the distribution shifted: 30 per cent of women with a primary schooling and 70 per cent of women with a post-compulsory education married downwards. This simply reflects the fact that in modern times downward marriages tend to involve women with higher levels of education.

Which classification of educational categories more accurately captures the reality of educational homogamy across generations? The main difference between both of them is that while the former over-emphasises the homogamy rates, the latter over-emphasises the downward rates. There are, however, several reasons whereby Table 7.1 appears to be a fair approximation of educational homogamy: the distribution by marriage types captures substantial movements across large educational categories. In this table it is not so important that a woman with a low educational level marries someone with even less education; indeed, they are all in the same category of individuals with a "low educational level" (exempted from formal education or with a primary education). After all, they belong to the bottom of the educational social structure and their mobility through marriage in terms of differences in the partner's human capital is not so significant. Despite the proportion of individuals who fall into the category of a "low educational level" being very large, above all in the older generations, it is theoretically sensible to maintain it as a single group.

There is yet another reason for dismissing a more detailed classification of educational categories. This has to do with "memory failure" on the part of both men or women of the older cohorts. It would seem that many women with primary studies declared that they married men with lower educational attainment, whereas very few men proportionally in the same or relatively close birth cohorts reported that they had married women with a higher level of education, indicating that they did not want to recognise these marriage dissimilarities in which they have a lower position. It is impossible to know who - among the women or men - was remembering less clearly with regard to their partner's education. In an effort to overcome this problem both categories were clustered (exempted from formal education and completed primary education) into a single one of individuals with a "low educational level". Therefore, logistic regression models will be based on the distribution of upward, downward and homogamous marriages derived from Table 7.1. All individuals (either single or married upwards, downwards or homogamously) are pooled into a single sample in order to explore which variables determined the decision to select the partner for their first marriage.

In the next section, the process of educational expansion in Spain is further described. This is a necessary step to understand major changes on the marriage market.

## CONSEQUENCES OF EDUCATIONAL EXPANSION ON MARRIAGE CHOICE

The change of the Spanish educational system over the period 1940-1990 defines the transformation from very selective schooling (limited to upper classes) to a more democratic system. It is in this second stage that we expect lower rates of couple homogamy, at least if the romantic-love hypothesis can be said to be true. The state becomes responsible for public education only very late in Spain as compared with other western European countries. Prior to this, education was the result of private initiatives. During the dictatorship (1939-1975), for instance, the State took on a *subsidiarity role* in the provision of education. This subsidiarity meant delegating a great deal of responsibility to institutions such as the Catholic church, whose role was most active in post-compulsory education. The result was that educational provision targeted only certain social groups in the wealthy communities.

In this same period (1939-75), the university was run by the State with its curricula organised by the Ministry of Education, although the influence of the catholic church was strong here too. University studies functioned primarily to channel the children of the elite into the elite professions (Boyd-Barrett 1995). There can be no doubt that social closeness will have been extremely high among individuals who reached higher education. Nonetheless, it is difficult to speculate about marriage choices at that time, since the high Catholic conservatism, which characterised that period, assumed that which was really important was the male-breadwinner's education, as shown by the aforementioned study of Carabaña (1981). Thus, men could marry women with a lower or higher educational attainment as long as they were potential "good mothers".

During, and immediately after, the Francoist period, the educational attainment was overall very poor (see Figure 7.1) and there were high levels of illiteracy. A survey conducted among the working population in 1965 (cross-sectional data) showed that 5% had had no education; 90% had been to primary school, 3% had been to secondary school; and 2% had been to university. A turning point in the educational system came about in 1970 with the introduction of a new educational law (*Ley General de Educación, LGE*). This was regarded as the beginning of a transition from one model of education to a qualitatively different one (Boyd-Barret 1995\*). It aimed at modernising the educational system to form qualified workers for the skills required in the market place. The main achievement of the reform was the introduction of a single, united period of free, compulsory education from age 6 to 14. Its main deficiency was its inability to solve the problem of a very high failure rate of school completion at the compulsory educational level, which involved almost 30 per cent of the pupils (Boyd-Barret 1995\*).

Generally, the growth in the provision of compulsory education was achieved in a comparatively brief period and it managed to effectively enforce the universalisation of primary education. It also meant the wane of the church's influence and elitism in education. Nonetheless, social class differentials were then reproduced according to whether pupils attended state schools or grant-aided private schools. This distinction, however, started to disappear during the 1980s.

As far as post-compulsory education is concerned, the improvement among the younger cohorts is outstanding. Only 12 per cent of women born in the post-civil war period (1940-1944) had access to post-compulsory education, while as many as 45 per cent of women born in 1960-1964 (daughters of the previous generation) attained post-compulsory education (see Figure 7.1). Another important change is the reverse trend in the gender gap in higher education. Following the same cohorts as before, in the 1940-1944 birth cohort the proportion of men who attained a university degree was (10%) double that of women (5%), while in the 1960-1964 birth cohort the proportion of men with a university degree was (12%) lower than that of women (18%). This is a clear shift in the structure of opportunities for upward and downward marriages between women and men, as well.

Despite the recent significant expansion of higher education among the middle classes, authors such as Cabrera, Dávila and González (1999) argue that the access is still far from democratic. The economic improvement of middle-class families, the unfavourable situation for youth employment (with very high unemployment rates)<sup>2</sup>, highly subsidised state universities and great expectations from university degrees are some of the reasons whereby this growth came about initially and has continued to grow for the youngest generations. However, many young students take up higher education opportunities as if they were in a "parking space", waiting for better occupational prospects (Garrido 1992). Furthermore, the proportion of students from modest family backgrounds (i.e. their parents have low educational level) is proportionately underrepresented compared to their real volume in the population structure. Students with this background moreover tend to apply for degrees with the lowest social prestige. Children whose parents are highly educated, instead, tend to apply for degrees with higher social prestige and which also require longer periods of study (e.g. medicine or engineering) (Cabrera, Dávila, González 1999).

The impressive increase in women's educational attainment should be interpreted as the result of both restricted youth employment prospects, and women's higher aspirations for individual autonomy and self-realisation. The expansion of the higher education system eventually had a polarisation effect, with an increasingly larger sector of educated women who tended to delay marriage as much as possible, and the still significant proportion of the low educated women who enter partnerships at an early ages. Consensual unions are still uncommon in Spain: only 1.2 women cohabited in 1980, 1.3 in 1990 and 3.3 in 1993 (Delgado, Castro 1998). Therefore, partnership formation is virtually equivalent to marriage, at least up to the 1990s.

The delay in forming a first partnership is illustrated by the fact that around 50 per cent of women with *primary schooling* married at the age of 22, while 50 per cent women with *university degrees* married only at the age of 26 (Spanish Socio-demographic Survey 1991). Of those members of both groups who reached the age of 31, only 10 per cent of those with primary schooling and as many as 30 per cent with a university degree were still single. For men, the main polarisation process occurs between university and non-university groups, but by the age of 30 these educational differences tend to disappear. This suggests that education is a good indicator for marriage choice, above all for women.

As postulated by Oppenheimer (1988), better-educated women are more motivated to secure *good matching* (marrying a man with a positive attitude towards gender equality) in order not to expose themselves to the high opportunity costs of having to leave paid employment after high investments in human capital. The question now is whether women with a higher education are more likely to marry homogamously than less educated women, or whether in the new educational context men are more likely to marry downwards irrespective of their social class. Some of these questions will be answered in the next empirical analysis.

#### DATA, METHOD AND VARIABLES

This research is based on the Spanish Socio-demographic Survey (*Encuesta Sociodemográfica*) which was conducted in 1991 by the Spanish Central Statistical Bureau (*Instituto Nacional de Estadística*, INE). The survey consists of 160,000 individuals representative of the Spanish population resident in private households aged 10 and over. This is a retrospective survey where individuals were asked to report information on specific life course events such as their marital history, children, parents' socio-demographic profile, labor-force career and so forth.

The methodology used is event history analysis with discrete time. The database has been transformed into *person-years* observations. Thus, for each year that a person is known to be at risk, a separate observational record has been created. In this analysis a person is considered to be at risk as long as he or she is not living in either consensual or marital partnerships. Three dependent variables have been estimated separately in logistic regression models. The first model estimates the probability that a man or a woman marries (or lives with) a partner with the same educational level (*homogamous marriages*), the second, that he/she marries a partner with lower educational level (*downward marriages*), and, the third, that he/she marries a partner with a higher educational level (*upward marriages*). The observation begins when the individual is aged 15, and ends with the event of the first marriage or union. In case they remain single as time goes by, the observation ends at the age of 50 (right censored) or at the time of the interview in 1991 (right censored).

The analysis is based on multistate models, or models with competing risks, in which there is a single origin state "being single and aged 15-50" and three possible destination states: marrying homogamously, marrying upwards or marrying downwards. For example, if our dependent variable is the probability of marrying homogamously and at some point the individual marries upwards or downwards, this person would be right censored from the risks set since he or she is no longer at risk of entering a homogamous marriage. In the models for upwards marriage, the highest educational group has been dropped out of the risk set since they have a nil probability of marrying someone above their level; accordingly, the lowest educational group has been dropped out in the analysis of downward marriages.

Table 7.2. Variables used in the Analysis

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<i>Individual Variables:</i>	
Log (Current Age-14) Log (51-Current Age)	Age measured in years.
Birth Cohorts	Categorical variable, ten-year birth cohorts (last cohort with only five years). Reference category: 1920-1929.
Not in School	Time varying dummy variable. Not in school=1; In school=0.
Education	Time varying categorical variable: primary education at most, secondary and higher education (Reference category varies according to the model).
Duration in School	Time varying measured in number of years.
Duration Since Leaving School	Time varying measured according to the number of years after school: 1-2, 3-4, 5-6, 7-8, 9-10, 11-12, >12. (Ref. category: in school).
<i>Family Background:</i>	
Father's Education	Time varying (fathers' education when respondent was 16 years old): primary, secondary, and higher education. Reference category: no formal qualification.
Change in Social Origin	Time varying. Relationship between father's and child's education (father's education when respondent was 16 years old): father's education lower than daughter's/son's; father's education higher than daughter's/son's; Reference category: Father's Education equal to daughter's/son's.
<i>Contextual Variables:</i>	
Regions	<i>North</i> (Galicia, Asturias, Cantabria, País Vasco, Navarra, la Rioja and Aragón), <i>Eastern</i> (Cataluña, Comunidad Valenciana and Baleares), <i>Southern</i> (Andalucía, Murcia, Ceuta, Melilla and Canarias). Reference category: <i>Madrid and centre</i> (Castilla-León, Castilla La Mancha and Extremadura).
Size of the Place of Residence	Small towns (less than 100,000 inhabitants). Reference category: large towns (more than 100,000 inhabitants).

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In the sample, selection was partly constrained by the characteristics of the survey. To start with, only individuals who ever enter a first partnership, which lasted until the time of the interview in 1991, have been included in our study. Thus, individuals who experienced a partnership breakdown due to death of the partner, separation or divorce have not been included. The reason for this is that questions about



partners were posed only to those individuals who were living in a partnership at the time of the interview, and only the current partner was described. This entails several problems. Firstly, if a person has had many partners only the last one is known and, secondly, there is an under-representation of eldest cohorts which suffer from a higher incidence of mortality. Nonetheless, the restriction of the analysis to first partnerships does not imply a great deal of sample bias given the low level of separation and divorce in Spain. Divorce was only legalised in 1981. The proportion of marriages that ended in divorce in the 1960 marriage cohort was 0.02 per cent, 0.05 per cent in the 1970 marriage cohort and 0.09 in the 1980 cohort (Eurostat 1997).

Concerns about under-representation in retrospective surveys justify the limiting of the sample to births cohorts born between 1920 (aged 70 in 1991) to 1960-1964 from which reliable data can be drawn. The historical period of observation goes from 1940 to 1990. The years prior to the dictatorship (the civil war lasted from 1936-39) were not considered, although its disruptive effects on marriage behaviour may be reflected among the older generations.

There is another data shortcoming owing to the fact that the partners' questionnaire provides only cross-sectional information, which is unable to give any specific elements of his or her educational history, such as educational attainment at the time of marriage. Therefore, the educational match reported at the time of the interview is supposed to be similar to the educational match at the time of marriage. Indeed, this might be very close to reality as less than 4 per cent of individuals continued within the educational system once they married. Table 7.2 briefly describes the explicative variables included in the logistic models.

The first variables introduced into the logistic models were age (a combination of two independent variables to fit the base line of the probability of marriage, see Table 7.2) followed an interaction term of education and age, and birth cohorts. Overall, five nested models for the marriage formation were estimated.

## RESULTS

The previous sections have described the trend in homogamous marriages and the peculiarities of educational expansion. Now we turn to the event history analysis. This section has been divided into three parts according to the type of partnership: *union between equals* (both partners have the same educational attainment), *traditional unions* (men have a higher educational attainment than women) and *new unions* (women have a higher educational attainment than men).

### *Unions Between Equals*

The trend in homogamy rates over the life course has been illustrated in Figures 7.2 and 7.3 for the 1950-1959 birth cohort (individuals aged 32-41 in 1991). The curves obtained are a simulation based on the coefficients of model 2 and summarize the main trends in marital homogamy with regard to educational attainment (Tables 7.3 and 7.4). In this simulation individuals had finished school. The likelihood of forming a partnership during the completion of formal education is very

low, above all in the youngest cohorts, which tend to delay marriage for as long as possible. Therefore, work place must constitute an important relational network for partner selection, since most people are only “ready-for-marriage” some years after school completion.

For women, homogamy rates are higher derived from lower education (primary schooling at most) and from the higher education categories, while the lowest homogamy rates are practiced by women with secondary schooling. Therefore, the bottom and the top of the educational social structure experience the highest homogamy rates over the life course. It is striking, however, that low educated women are far more homogamous than the highly educated. This polarisation resulting from educational attainment indicates that women with a low investment in human capital find it difficult to move out of their sociological category. Equally, this indicates a very high degree of *social closeness*. It is as if the least attractive candidates for marriage were essentially “stuck” with one another, whereas women with secondary schooling attained higher mobility through either upward or downward marriages.

The results for men are fundamentally the same as those of women. Again, those at the top and bottom of the educational structure experience the highest homogamy rates over the life course. What they do experience as different, however, is the timing differences at entering homogamous marriages. The higher the men’s educational level, the later they enter into homogamous partnerships. The reason why women do not seem to have these timing differences might be that men’s decision to marry is mostly conditional upon school completion or economic independence. Women’s decision to marry might be, instead, conditional upon the other factors. Indeed, economic dependence on their companions is still assumed by some women for the short as well as the long term. Therefore, these differences may reflect the existence of a traditional gender model of family formation that still persists in this 1950-1959 birth cohort. This traditional model of family formation is to a large extent reinforced by the worsening situation for women in the labour force compared with men. Women are, for instance, over represented among the unemployed and atypical workers (i.e. part-time and temporary workers, homeworkers and the self-employed) (Moltó 1995).

In model 3, in contrast to model 2, shows no changes in the sign of the effect for women with high educational attainment but a change in the shape of the curve with respect to age changes. In other words, the interaction effect of education and age is a change in the timing at which women would form assortative mating. In an inter-generational perspective, it emerges that education acquires a more significant and positive effect on the women’s decision to marry a “similar partner” in the younger generations (see interaction effects between cohorts and education in models 4 and 5). Therefore, a university degree in the youngest cohort increases the likelihood of choosing a homogamous partner. In the case of men in all generations, high educational attainment has always had an important effect on the decision to choose homogamous marriages; and this effect seems also to be higher in the youngest cohorts.

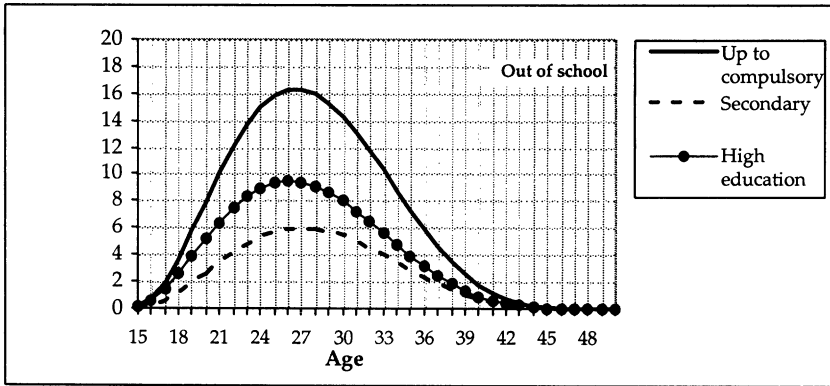


Figure 7.2. Women's Transition Rates of Homogamous Marriages According to Educational Attainment (1950-1959 Birth Cohort)

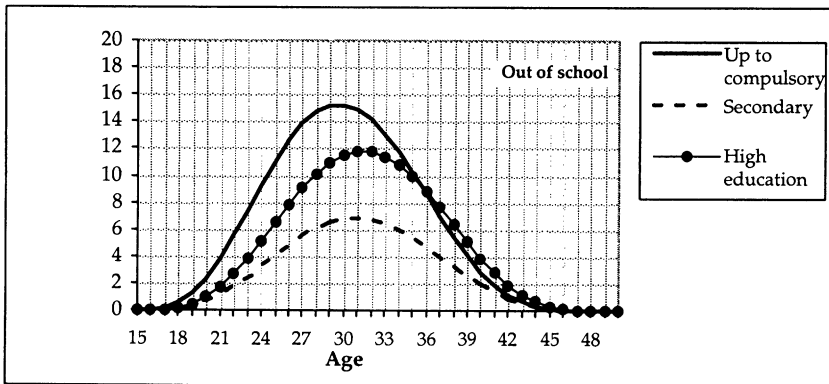


Figure 7.3. Men's Transition Rates of Homogamous Marriages According to Educational Attainment (1950-1959 Birth Cohort)

The duration of time since they left school has a positive and significant effect. Particularly, the temporal effect of leaving school on the transition to marry homogamously has a u-shape, so that in the first four years after leaving the educational system the likelihood of marrying someone with the same educational attainment decreases, and it increases significantly after the 7-8 year period. Presumably, then, the longer the period men and women remain outside the educational system, the higher the likelihood to marry homogamously. There is a threshold, however, at which this probability decreases. Thus, if they wait for more than 12 years after leaving school (coefficients in model 4) the chance would decrease.

Table 7.3. Transition Rate Models for Homogamous Marriages: Women

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-28.53***	-28.60***	-69.89***	-57.22***	-57.52***
Log(Current Age-14)	6.99***	6.73***	0.70***	0.58***	0.58***
Log(51-Current Age)	13.49***	13.03***	35.42***	28.50***	28.54***
Cohort 1930-1939 <sup>1)</sup>	0.22***	0.21***	0.21***	0.20***	0.20***
Cohort 1940-1949 <sup>1)</sup>	0.34***	0.35***	0.35***	0.33***	0.33***
Cohort 1950-1959 <sup>1)</sup>	0.50***	0.48***	0.48***	0.47***	0.46***
Cohort 1960-1964 <sup>1)</sup>	0.65***	0.68***	0.69***	0.66***	0.65***
Education*Log(Current Age-14) <sup>2)</sup>					
Secondary	0.33***	-0.16	-0.23	-0.17	-0.15
High Education	-0.02	-0.62***	-1.35***	-2.11***	-2.06***
Education*Log(51-Current Age) <sup>2)</sup>					
Secondary	-1.22***	-0.89***	-0.23	-0.16	-0.17
High Education	-0.66***	-0.48**	0.57***	1.33***	1.32***
Not in School <sup>3)</sup>		0.99***	-1.13***		
Cohort 1930-39*Secondary <sup>4)</sup>		0.11	0.00	-0.09	-0.06
Cohort 1930-39*High Education <sup>4)</sup>		0.33	0.33	0.29	0.27
Cohort 1940-49*Secondary <sup>4)</sup>		-0.21	-0.33	-0.42	-0.40
Cohort 1940-49*High Education <sup>4)</sup>		0.47**	0.51**	0.49**	0.50**
Cohort 1950-59*Secondary <sup>4)</sup>		0.29	0.20	0.13	0.15
Cohort 1950-59*High Education <sup>4)</sup>		0.73***	0.78***	0.85***	0.85***
Cohort 1960-64*Secondary <sup>4)</sup>		0.28	0.22	0.22	0.23
Cohort 1960-64*High Education <sup>4)</sup>		0.43**	0.52***	0.76***	0.75***
Duration in School				-0.10***	-0.10***
Duration Since Leaving School			0.01**		
1-2 Years After School <sup>5)</sup>				-0.86***	-0.84***
3-4 Years After School <sup>5)</sup>				-0.39***	-0.38***
5-6 Years After School <sup>5)</sup>				0.01	0.03
7-8 Years After School <sup>5)</sup>				0.29***	0.31***
9-10 Years After School <sup>5)</sup>				0.51***	0.52***
11-12 Years After School <sup>5)</sup>				0.53***	0.54***
>12 Years After School <sup>5)</sup>				0.11***	0.11***
Father's Education (Primary) <sup>6)</sup>			-0.30***	-0.33***	-0.27***
Father's Education (Secondary) <sup>6)</sup>			-0.22**	-0.25***	-0.20**
Father's Education (High Education) <sup>6)</sup>			-0.38***	-0.40***	-0.34**
Father's Education<Daughter's <sup>7)</sup>			-0.61***	-0.63***	-0.62***
Father's Education>Daughter's <sup>7)</sup>			-0.85***	-0.91***	-0.90***
Last Region of Residence					
North <sup>8)</sup>					0.02
Eastern <sup>8)</sup>					0.17***
Southern <sup>8)</sup>					0.12***
Less than 100,000 inhabitants <sup>9)</sup>					0.19***
Number of Events	28589	28589	28245	28245	28245
Subepisodes	527507	527507	521187	521187	521187
-2 Log Likelihood	197511	196700	199191	198059	197727
Degrees of Freedom	10	19	25	31	35

Baseline:

<sup>1)</sup> Cohort 1920-1929; <sup>2)</sup> Up to Compulsory; <sup>3)</sup> In School; <sup>4)</sup> Cohort 1920-1929\*Up to Compulsory;<sup>5)</sup> In School; <sup>6)</sup> Father's Education (Exempted Qualification); <sup>7)</sup> Father's Education=Daughter's; <sup>8)</sup> Madrid and Centre;<sup>9)</sup> More than 100,000 Inhabitants.

\* significant at 0.05;

\*\* significant at 0.01;

\*\*\* significant at 0.001.

Table 7.4. Transition Rate Models for Homogamous Marriages: Men

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-33.70***	-33.82***	-71.04***	-62.82***	-62.66***
Log(Current Age-14)	10.56***	10.40***	0.77***	0.68***	0.68***
Log(51-Current Age)	14.43***	14.26***	34.82***	30.46***	30.38***
Cohort 1930-1939 <sup>1)</sup>	0.00	0.00	-0.01	-0.01	-0.02
Cohort 1940-1949 <sup>1)</sup>	0.02	0.00	-0.02	-0.03	-0.04**
Cohort 1950-1959 <sup>1)</sup>	0.23***	0.16***	0.14***	0.14***	0.12***
Cohort 1960-1964 <sup>1)</sup>	0.38***	0.32***	0.34***	0.33***	0.31***
Education*Log(Current Age-14) <sup>2)</sup>					
Secondary	0.30**	0.13	0.27**	0.16	0.12
High Education	0.93***	0.61***	0.00	-0.53***	-0.62***
Education*Log(51-Current Age) <sup>2)</sup>					
Secondary	-1.15***	-1.71***	-1.42***	-1.15***	-1.14***
High Education	-1.33***	-1.79***	-0.99***	-0.31**	-0.28
Not in School <sup>3)</sup>		0.56***	-0.77***		
Cohort 1930-1939*Secondary <sup>4)</sup>		0.11	-0.07	-0.21	-0.20
Cohort 1930-1939*High Education <sup>4)</sup>		0.60***	0.61***	0.60***	0.60***
Cohort 1940-1949*Secondary <sup>4)</sup>		0.68**	0.51**	0.37	0.38
Cohort 1940-1949*High Education <sup>4)</sup>		1.18***	1.22***	1.21***	1.22***
Cohort 1950-1959*Secondary <sup>4)</sup>		1.20***	1.05***	0.90***	0.92***
Cohort 1950-1959*High Education <sup>4)</sup>		1.31***	1.32***	1.36***	1.37***
Cohort 1960-1964*Secondary <sup>4)</sup>		1.27***	1.16***	1.07***	1.11***
Cohort 1960-1964*High Education <sup>4)</sup>		1.09***	1.12***	1.23***	1.26***
Duration in School				-0.05***	-0.05***
Duration Since Leaving School			0.01***		
1-2 Years After School <sup>5)</sup>				-0.68***	-0.65***
3-4 Years After School <sup>5)</sup>				-0.40***	-0.36***
5-6 Years After School <sup>5)</sup>				-0.22***	-0.18***
7-8 Years After School <sup>5)</sup>				0.04	0.08**
9-10 Years After School <sup>5)</sup>				0.39***	0.42***
11-12 Years After School <sup>5)</sup>				0.58***	0.61***
>12 Years After School <sup>5)</sup>				0.28***	0.31***
Father's Education (Primary) <sup>6)</sup>			-0.14***	-0.15***	-0.13***
Father's Education (Secondary) <sup>6)</sup>			0.00	0.00	-0.01
Father's Education (High Education) <sup>6)</sup>			-0.13	-0.13	-0.14
Father's Education<Son's <sup>7)</sup>			-0.30***	-0.30***	-0.30***
Father's Education>Son's <sup>7)</sup>			-0.33***	-0.38***	-0.41***
Last Region of Residence					
North <sup>8)</sup>					-0.13***
Eastern <sup>8)</sup>					0.08***
Southern <sup>8)</sup>					0.14***
Less than 100,000 inhabitants <sup>9)</sup>					-0.14***
Number of Events	29404	29404	29008	29008	29008
Subepisodes	656966	656966	648342	648342	648342
-2 Log Likelihood	205203	204715	207994	207044	206635
Degrees of Freedom	10	19	25	31	35

Baseline:

<sup>1)</sup> Cohort 1920-1929; <sup>2)</sup> Up to Compulsory; <sup>3)</sup> In School;<sup>4)</sup> Cohort 1920-1929\*Up to Compulsory; <sup>5)</sup> In School; <sup>6)</sup> Father's Education (Exempted Qualification);<sup>7)</sup> Father's Education=Daughter's; <sup>8)</sup> Madrid and Center; <sup>9)</sup> More than 100,000 Inhabitants.

\* significant at 0.05;

\*\* significant at 0.01;

\*\*\* significant at 0.001.

Table 7.5. Transition Rate Models for Upward Marriages: Women

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-38.61***	-38.58***	-94.77***	-84.64***	-84.29***
Log(Current Age-14)	9.28***	9.08***	0.92***	0.87***	0.87***
Log(51-Current Age)	17.10***	16.57***	46.99***	40.08***	40.02***
Cohort 1930-1939 <sup>1)</sup>	0.52***	0.48***	0.48***	0.45***	0.44***
Cohort 1940-1949 <sup>1)</sup>	1.31***	1.25***	1.22***	1.14***	1.11***
Cohort 1950-1959 <sup>1)</sup>	1.83***	1.89***	1.84***	1.72***	1.72***
Cohort 1960-1964 <sup>1)</sup>	1.88***	2.08***	2.06***	1.86***	1.87***
Education*Log(Current Age-14) <sup>2)</sup>					
Secondary	1.01***	0.29	-0.07	-1.19***	-1.21***
High Education					
Education*Log(51-Current Age) <sup>2)</sup>					
Secondary	-0.92***	0.49**	0.53**	1.15***	1.11***
High Education					
Not in School <sup>3)</sup>		0.92***	-1.32***		
Cohort 1930-1939*Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1930-1939* Secondary <sup>4)</sup>		0.25	0.12	0.12	0.16
Cohort 1940-1949* Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1940-1949* Secondary <sup>4)</sup>		-0.38	-0.50	-0.41	-0.32
Cohort 1950-1959* Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1950-1959* Secondary <sup>4)</sup>		-1.17***	-1.18***	-1.07***	-1.00***
Cohort 1960-1964* Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1960-1964* Secondary <sup>4)</sup>		-1.55***	-1.51***	-1.36***	-1.28***
Duration in School				0.00	0.00
Duration Since Leaving School			0.01**		
1-2 Years After School <sup>5)</sup>				0.94***	0.93***
3-4 Years After School <sup>5)</sup>				1.26***	1.25***
5-6 Years After School <sup>5)</sup>				1.52***	1.52***
7-8 Years After School <sup>5)</sup>				1.66***	1.67***
9-10 Years After School <sup>5)</sup>				1.54***	1.55***
11-12 Years After School <sup>5)</sup>				1.39***	1.41***
>12 Years After School <sup>5)</sup>				0.49***	0.51***
Father's Education (Primary) <sup>6)</sup>			0.54***	0.48***	0.42***
Father's Education (Secondary) <sup>6)</sup>			0.97***	0.91***	0.79***
Father's Education (High Education) <sup>6)</sup>			0.98***	0.93***	0.79***
Father's Education<Daughter's <sup>7)</sup>			0.27**	0.23**	0.17
Father's Education>Daughter's <sup>7)</sup>			0.27	0.21	0.22
Last Region of Residence					
North <sup>8)</sup>					0.06
Eastern <sup>8)</sup>					0.16***
Southern <sup>8)</sup>					0.06
Less than 100,000 inhabitants <sup>9)</sup>					-0.41***
Number of Events	4728	4728	4688	4688	4688
Subepisodes	474678	474678	468766	468766	468766
-2 Log Likelihood	46080	45746	45941	45284	45094
Degrees of Freedom	8	13	19	25	29

Baseline:

<sup>1)</sup> Cohort 1920-1929; <sup>2)</sup> Up to Compulsory; <sup>3)</sup> In School;<sup>4)</sup> Cohort 1920-1929\*Up to Compulsory; <sup>5)</sup> In School; <sup>6)</sup> Father's Education (Exempted Qualification);<sup>7)</sup> Father's Education=Daughter's; <sup>8)</sup> Madrid and Center; <sup>9)</sup> More than 100,000 Inhabitants.

\* significant at 0.05;

\*\* significant at 0.01;

\*\*\* significant at 0.001.

Table 7.6. Transition Rate Models for Upward Marriages: Men

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-36.46***	-36.56***	-75.19***	-78.00***	-77.38***
Log(Current Age-14)	10.98***	10.94***	0.81***	0.87***	0.86***
Log(51-Current Age)	13.22***	12.78***	34.03***	34.24***	34.02***
Cohort 1930-1939 <sup>1)</sup>	0.39***	0.40***	0.39***	0.38**	0.37***
Cohort 1940-1949 <sup>1)</sup>	1.17***	1.10***	1.06***	0.98***	0.98***
Cohort 1950-1959 <sup>1)</sup>	2.35***	2.43***	2.40***	2.29***	2.30***
Cohort 1960-1964 <sup>1)</sup>	2.95***	3.23***	3.23***	3.01***	3.03***
Education*Log(Current Age-14) <sup>2)</sup>					
Secondary	2.05***	1.46***	0.90***	0.16	0.11
High Education					
Education*Log(51-Current Age) <sup>2)</sup>					
Secondary	-1.63***	0.03	-0.08	0.20	0.20
High Education					
Not in School <sup>3)</sup>		0.66***	-1.13***		
Cohort 1930-1939*Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1930-1939* Secondary <sup>4)</sup>		-0.64	-0.69**	-0.60	-0.58
Cohort 1940-1949* Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1940-1949* Secondary <sup>4)</sup>		-0.72**	-0.74**	-0.56	-0.55
Cohort 1950-1959* Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1950-1959* Secondary <sup>4)</sup>		-1.47***	-1.48***	-1.33***	-1.30***
Cohort 1960-1964* Low Educated		Baseline	Baseline	Baseline	Baseline
Cohort 1960-1964* Secondary <sup>4)</sup>		-2.15***	-2.15***	-1.94***	-1.89***
Duration in School				0.05***	0.05***
Duration Since Leaving School			-0.01 **		
1-2 Years After School <sup>5)</sup>				1.44***	1.44***
3-4 Years After School <sup>5)</sup>				1.43***	1.43***
5-6 Years After School <sup>5)</sup>				1.63***	1.64***
7-8 Years After School <sup>5)</sup>				1.63***	1.64***
9-10 Years After School <sup>5)</sup>				1.70***	1.72***
11-12 Years After School <sup>5)</sup>				1.43***	1.45***
>12 Years After School <sup>5)</sup>				0.77***	0.80***
Father's Education (Primary) <sup>6)</sup>			0.49***	0.44***	0.40***
Father's Education (Secondary) <sup>6)</sup>			1.39***	1.39***	1.29***
Father's Education (High Education) <sup>6)</sup>			1.30***	1.33***	1.26***
Father's Education<Son's <sup>7)</sup>			0.67***	0.69***	0.67***
Father's Education>Son's <sup>7)</sup>			-0.10	-0.15	-0.17
Last Region of Residence					
North <sup>8)</sup>					-0.02
Eastern <sup>8)</sup>					0.12**
Southern <sup>8)</sup>					-0.04
Less than 100,000 inhabitants <sup>9)</sup>					-0.37***
Number of Events	2784	2784	2758	2758	2758
Subepisodes	600898	600898	592884	592884	592884
-2 Log Likelihood	29312	29143	29170	28879	28780
Degrees of Freedom	8	13	19	25	29

Baseline:

<sup>1)</sup> Cohort 1920-1929; <sup>2)</sup> Up to Compulsory; <sup>3)</sup> In School;<sup>4)</sup> Cohort 1920-1929\*Up to Compulsory; <sup>5)</sup> In School; <sup>6)</sup> Father's Education (Exempted Qualification);<sup>7)</sup> Father's Education=Daughter's; <sup>8)</sup> Madrid and Center; <sup>9)</sup> More than 100,000 Inhabitants.

\* significant at 0.05;

\*\* significant at 0.01;

\*\*\* significant at 0.001.

Table 7.7. Transition Rate Models for Downward Marriages: Women

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-29.37***	-25.58***	-45.09***	-26.74***	-28.26***
Log(Current Age-14)	7.13***	5.30***	0.38***	0.22***	0.24***
Log(51-Current Age)	12.85***	10.77***	22.10***	11.28***	11.79***
Cohort 1930-1939 <sup>1)</sup>	0.41***	0.28	0.41	0.32	0.36
Cohort 1940-1949 <sup>1)</sup>	0.46**	0.34	0.54**	0.46	0.47
Cohort 1950-1959 <sup>1)</sup>	0.80***	0.82***	1.00***	0.91***	0.92***
Cohort 1960-1964 <sup>1)</sup>	0.99***	0.99***	1.20***	1.08***	1.06***
Education*Log(Current Age-14) <sup>2)</sup>					
Secondary	Baseline	Baseline	Baseline	Baseline	Baseline
High Education	-0.12	-0.30	-0.59**	-1.37***	-1.36***
Education*Log(51-Current Age) <sup>2)</sup>					
Secondary	Baseline	Baseline	Baseline	Baseline	Baseline
High Education	0.04	0.07	0.58**	1.06***	1.07***
Not in School <sup>3)</sup>		1.25***	1.07***		
Cohort 1930-1939*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1930-1939*High Education <sup>4)</sup>		0.19	0.03	0.13	0.05
Cohort 1940-1949*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1940-1949*High Education <sup>4)</sup>		0.24	0.02	0.11	0.12
Cohort 1950-1959*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1950-1959*High Education <sup>4)</sup>		0.09	-0.02	0.06	0.03
Cohort 1960-1964*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1960-1964*High Education <sup>4)</sup>		0.25	0.17	0.31	0.28
Duration in School				0.00	0.00
Duration Since Leaving School			0.07***		
1-2 Years After School <sup>5)</sup>				0.79***	0.75***
3-4 Years After School <sup>5)</sup>				1.30***	1.26***
5-6 Years After School <sup>5)</sup>				1.61***	1.56***
7-8 Years After School <sup>5)</sup>				1.54***	1.47***
9-10 Years After School <sup>5)</sup>				1.52***	1.45***
11-12 Years After School <sup>5)</sup>				1.43***	1.36***
>12 Years After School <sup>5)</sup>				0.87***	0.79***
Father's Education (Primary) <sup>6)</sup>			-0.26***	-0.26***	-0.22***
Father's Education (Secondary) <sup>6)</sup>			-0.47***	-0.46***	-0.40***
Father's Education (High Education) <sup>6)</sup>			-0.50**	-0.50**	-0.42**
Father's Education<Daughter's <sup>7)</sup>			0.27	0.27	0.26
Father's Education>Daughter's <sup>7)</sup>			-0.62***	-0.66***	-0.64***
Last Region of Residence					
North <sup>8)</sup>					0.25***
Eastern <sup>8)</sup>					0.38***
Southern <sup>8)</sup>					0.18**
Less than 100,000 inhabitants <sup>9)</sup>					0.39***
Number of Events	2391	2391	2373	2373	2373
Subepisodes	85565	85565	85034	19872	85034
-2 Log Likelihood	20704	20240	19963	85034	19737
Degrees of Freedom	8	13	19	25	29

Baseline:

<sup>1)</sup> Cohort 1920-1929; <sup>2)</sup> Secondary; <sup>3)</sup> In School;<sup>4)</sup> Cohort 1920-1929\*Secondary; <sup>5)</sup> In School; <sup>6)</sup> Father's Education (Exempted Qualification);<sup>7)</sup> Father's Education=Daughter's; <sup>8)</sup> Madrid and Center; <sup>9)</sup> More than 100,000 Inhabitants.

\* significant at 0.05;

\*\* significant at 0.01;

\*\*\* significant at 0.001.



Table 7.8. Transition Rate Models for Downward Marriages: Men

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-40.50***	-37.93***	-71.06***	-53.77***	-54.22***
Log(Current Age-14)	12.49***	11.12***	0.73***	0.58***	0.58***
Log(51-Current Age)	17.71***	16.32***	35.31***	25.16***	25.33***
Cohort 1930-1939 <sup>1)</sup>	-0.04	-0.19	-0.21**	-0.19	-0.19
Cohort 1940-1949 <sup>1)</sup>	-0.03	-0.06	-0.09	-0.05	-0.05
Cohort 1950-1959 <sup>1)</sup>	-0.14**	-0.23**	-0.26**	-0.23**	-0.23**
Cohort 1960-1964 <sup>1)</sup>	-0.42***	-0.50***	-0.48***	-0.49***	-0.51***
Education*Log(Current Age-14) <sup>2)</sup>					
Secondary	Baseline	Baseline	Baseline	Baseline	Baseline
High Education	0.78***	0.61 **	0.11	-1.01***	-1.01***
Education*Log(51-Current Age) <sup>2)</sup>					
Secondary	Baseline	Baseline	Baseline	Baseline	Baseline
High Education	-0.86***	-0.82***	-0.28	0.61***	0.59***
Not in School <sup>3)</sup>		1.03***	-0.94***		
Cohort 1930-1939*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1930-1939*High Education <sup>4)</sup>		0.30**	0.32**	0.28	0.29**
Cohort 1940-1949*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1940-1949*High Education <sup>4)</sup>		0.05	0.09	0.05	0.06
Cohort 1950-1959*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1950-1959*High Education <sup>4)</sup>		0.23	0.29**	0.25**	0.26**
Cohort 1960-1964*Secondary <sup>4)</sup>		Baseline	Baseline	Baseline	Baseline
Cohort 1960-1964*High Education <sup>4)</sup>		0.27	0.31**	0.35**	0.38**
Duration in School				0.00	0.00
Duration Since Leaving School			0.05***		
1-2 Years After School <sup>5)</sup>				0.37***	0.36***
3-4 Years After School <sup>5)</sup>				0.96***	0.95***
5-6 Years After School <sup>5)</sup>				1.26***	1.24***
7-8 Years After School <sup>5)</sup>				1.32***	1.30***
9-10 Years After School <sup>5)</sup>				1.25***	1.23***
11-12 Years After School <sup>5)</sup>				0.93***	0.91***
>12 Years After School <sup>5)</sup>				0.62***	0.60***
Father's Education (Primary) <sup>6)</sup>			-0.22***	-0.22***	-0.19***
Father's Education (Secondary) <sup>6)</sup>			-0.14	-0.12	-0.10
Father's Education (High Education) <sup>6)</sup>			0.10	0.15	0.19
Father's Education<Son's <sup>7)</sup>			0.39**	0.42**	0.43**
Father's Education>Son's <sup>7)</sup>			-0.47***	-0.53***	-0.55***
Last Region of Residence					
North <sup>8)</sup>					-0.03
Eastern <sup>8)</sup>					0.13**
Southern <sup>8)</sup>					0.18***
Less than 100,000 inhabitants <sup>9)</sup>					0.08**
Number of Events	4609	4609	4568	4568	4568
Subepisodes	118643	118643	117675	117675	117675
-2 Log Likelihood	35165	34726	34826	34619	34583
Degrees of Freedom	8	13	19	25	29

Baseline:

<sup>1)</sup> Cohort 1920-1929; <sup>2)</sup> Secondary; <sup>3)</sup> In School;<sup>4)</sup> Cohort 1920-1929\*Secondary; <sup>5)</sup> In School; <sup>6)</sup> Father's Education (Exempted Qualification);<sup>7)</sup> Father's Education=Daughter's; <sup>8)</sup> Madrid and Center; <sup>9)</sup> More than 100,000 Inhabitants.

\* significant at 0.05;

\*\* significant at 0.01;

\*\*\* significant at 0.001.

The temporal effect of leaving school on the probability of marrying homogamously has the same u-shape for men and women. The only difference is that the increase in the probability that men would marry homogamously occurs some years later than for women. This might just reflect the age-gap differences on marriage by sex.

I now turn to examine the effect of *exogenous variables* on the decision to marry homogamously. Interestingly enough, the fathers' education has a significant effect on women, while it seems to exert a lesser effect on men. Hence, the likelihood that a woman marries homogamously decreases when the father has an elementary education as compared with illiterate fathers or with uncompleted primary school. This pattern reinforced the notion of social closeness, because the lower the father's education was, the higher the probability of their daughters to marry homogamously and, thus, to remain "stuck" in the social class of origin.

The fact that men are less influenced by their father's education may reflect, again, a gendered model of social stratification. Hence, men may manage to surpass their social origins thanks to their occupational achievement, whereas women's choices may be more determined by their family status and their own educational achievements. Therefore, we shall next look at the effect of women's education if they attain a higher educational level than their father's. Do they still have the same chances of marrying homogamously? It turns out that they have a lower probability of marrying homogamously than daughters whose fathers had the same educational attainment. This means that even in the case that they individually overcome their social class origins (in terms of their father's education), it is unlikely that they will choose assortive matings. These results contrast with findings in other countries, such as Germany (Blossfeld et al. 1998), where a small proportion of individuals managed to move up intergenerationally as a result of their individual educational attainments.

Finally, daughters with lower educational attainment than their fathers have an even lower likelihood of marrying homogamously. In this case, they might feel attracted to the idea of marrying upwards to procure the same family status through marriage. In short, rather than permeating breaking through rigid social class boundaries, the educational system seems to reproduce the same class structure or even class inequalities. This is so at least for the cohorts analysed here.

In the last model, two contextual variables have been incorporated: regions and the size of the place of residence. It might be difficult, in principle, to grasp the influence of these contextual variables on longitudinal observations. Nonetheless, by the time people decide to marry they may have achieved a certain territorial stability which, at the same time, determines their marriage choices. Spain has large regional differences in terms of cultural identities and economic structures; it therefore also seemed reasonable to test whether territorial differences affect the main effects of other explicative variables. In general, their inclusion in the last model does not seem to fundamentally change the main effects of other variables, although contextual variables turned out to have a significant effect.

*Traditional Unions*

The first, and clearest, feature in women's traditional unions is the across cohorts increase in the likelihood that a woman would marry a man with higher education. This seems to go against original expectations. However, a different pattern emerges from the interaction term between birth cohorts and educational attainment (see Table 7.6). When younger cohorts (born after the 1950s) have attained more than an elementary education, the likelihood of forming traditional unions decreases. Therefore, women's preferences for spouses with higher educational attainment and higher earning potential among younger generations tend to disappear as soon as they themselves attain higher education. Thus, the effect of education on marriage decisions has only recently been significant for highly qualified women in the younger cohorts.

The pattern of marrying upwards over the life course is different than in homogamous marriages. The sooner women marry after leaving school, the higher their chances of marrying someone with a higher education. As time goes by these chances decrease, in particular eight years after leaving school. In reality, an early marriage would be more typical of traditional marriages. If women marry soon after completing their education, they will not have had much time to consolidate their professional career and may soon face family responsibilities. The absence of state support for working parents (i.e. the scarcity of public child care) and the additional inequalities in the female labour force makes *negative assortive matings* (i.e. men have higher earning potential) in Spain highly contraindicated for a career-oriented women. The main reason is that women with lower (potential) occupational status compared with their male partners may be compelled to drop out of the labour force.

The father's education also has a significant and positive effect on women's upward marriages. A father with a post-compulsory education increases the log odds that his daughter will marry upwards as compared with fathers without any qualifications. This might reflect the fact that the traditional gender rational is transferred from better-off families to the daughters.<sup>3</sup> Furthermore, changes in the daughters' social class origins do not seem to have a significant effect on the log odds of marrying upwards after controlling for contextual variables in model 5.

The trend of men's downward marriages also seems to significantly increase among the younger generations. However, contrary to women, highly educated men in the younger cohorts (born after the 1950s) have a stronger likelihood of forming a traditional marriage than those with only secondary schooling. After all, following the same status competition logic, they do not incur the same risk of being compelled to drop out of the labour force as their wives often do. Instead, women to some extent often facilitate their partner's combining of career and family.

Duration since leaving school has a significant and positive effect, so that the longer men wait to marry, the higher their chances of finding a partner with a lower education (the log odds of duration since leaving school=0.05 at the  $p < 0.001$  level). After 9-10 years of leaving school, this likelihood decreases (see Table 7.8).

A father's education does not have a significant effect, although changes in social class origin do. If a son surpass his father's education, the likelihood of forming

a traditional marriage is higher than if both the father and son have the same educational level. However, if fathers have a higher education sons do not usually form traditional marriages. Maybe the fact that sons experience the family-dissimilarity in terms of their fathers' education favours a more open attitude towards accepting non-traditional unions. Finally, living in small towns seems to make it more likely that men will make traditional marriages than if they live in large towns.

### *New Unions*

As mentioned in the description of trends in educational homogamy, downward marriages were not so rare in the recent past. Women with primary schooling in the older generations tended to marry men with even lower educational attainment. Both women and men were at the bottom of the educational structure and presumably shared a similar (potential) status. Therefore, they do not fit within this notion of new unions in which we expect a substantial "gender imbalance" in favor of women, that is, couples in which women have relatively higher educational attainment than men. This is captured in the model where women's downward mobility, for example, can take place only for those with secondary or higher educational attainment (women with "low educational level" are removed from the sample as they cannot marry someone below their level). New unions among these two educational groups of women only emerged in Spain in the youngest birth cohorts.

In general, the likelihood that an individual forms a new union is very low, assortive matings being far more common, but it tends to increase progressively across the younger generations. This trend is partly facilitated by the recent expansion of education beyond compulsory education. Indeed, highly educated women are more prone to marry downwards than those with only secondary education. Furthermore, the duration since leaving school has a significant and positive effect: the more time they are outside the educational system, the higher their chances are of marrying downwards.

In the decision of marrying downwards family background also has a significant effect. Fathers with post-compulsory education have a negative effect on their daughters likelihood to form *new unions*, as compared with fathers exempted from qualifications (reference category in the model, see Table 7.7). These fathers might be less open to accepting their daughters' "modern partnerships". This same negative influence emerges if the father's education is higher than the daughter's education. On the contrary, if fathers are exempted from education or daughters complete a higher education than their fathers did, downward mobility tends to occur.

The results for men also show an increase in these new unions across cohorts. However, these unions are more typical of the low educated. Thus a man with secondary educational level (high or training school) will marry homogamously or form a traditional marriage rather than assume a so-called new union. This trend is reinforced in the youngest cohort where reaching secondary education has a significant negative effect on the probability of forming new unions. This is the main difference between women and men concerning education: attaining a certain level of education (above elementary school) has a negative effect on men's probability to form

*new unions*, whereas attaining an equally high educational level has a positive effect on women's probability to form *new unions*. This is not a coincidence as women, more often than men, have more to lose from "imbalanced relationships" in which male partners have a higher educational attainment or, similarly, a higher earning potential.

The effect of the father's educational level is also different than in the case of women. Thus the higher the educational level of the father, the higher the likelihood that he will marry upwards. This means that a highly educated father has a positive effect on the probability that his sons will marry upwards. Moreover, the fact that sons go beyond their father's education also has a positive and significant effect on their likelihood of marrying upward. This means that they first overcome their social class origins via their educational attainment and, in a second stage, via their union. These cases may correspond, however, to a minority of men.

#### SUMMARY AND CONCLUSIONS

I began this chapter by proposing two hypotheses with regard to educational homogamy. The *industrialist hypothesis* stated that individual achievements in terms of education become more important than family background in partner selection. This pattern produces by the end an increase in homogamy rates by educational groups. On the contrary, the *romantic-love hypothesis* stated that educational attainment becomes less important in marriage decisions that, in the end, produce a decrease in educational homogamy.

The Spanish case partly supports the industrialist hypothesis, which predicted an increase in educational homogamy by educational groups. I say "partly" because, contrary to the expectations of this theory, family background and social origins still have an important effect on marriage decisions. I would, then, say that the Spanish marriage market is characterised by a high degree of *social closeness*. The evidence is the extremely high level of educational homogamy in the lowest and the highest educational categories. The high degree of educational homogamy does not arise because educational attainment is more valuable, as the hypothesis implies, but because high investment in human capital still represents a "social mark". This is further reinforced by the persistent importance of family background and social origins on partner selection, above all for women.

These results may simply reflect the fact that educational expansion came about only recently (in the 1970s for higher education) and affected only partially the youngest generations included in the study. It would be interesting to apply the same analysis to a sample with younger cohorts. Generally, there is the impression that the expansion of higher education has been exceptional. However, this is partly inflated by the fact that many students have had access to high education but proportionally very few have completed the courses and obtained a degree. Indeed, by the end of the 1980s the drop out rate of students from universities fluctuated, on average, between 30 and 50 per cent (Latesa 1992).

Faith in the industrialist hypothesis, which predicts an increase in the value of individual achievements in terms of education, also implies the existence of a meri-

tocratic society. This might be one of the reasons why it can only partially explain the processes of partner selection in the Spanish context. The expansion of higher education from the 1970s coexisted with high rates of unemployment, above all for young people and women. This situation meant that a large number of jobs were, and continue to be, given on a clientelistic basis. Moreover, working parents can hardly count on state support to combine family responsibilities and paid work, which reinforces the traditional one-earner family model or the typical pattern of women's interrupted careers.

In the situation described above, social class (those well-connected in the labour force also get better jobs regardless of their education) and gender (men always have better chances of promotion regardless of education) are very important factors of social stratification. In turn, both class and gender conceal the potential effects of educational achievement on partner selection processes, because rewards from education are not so directly or easily achieved in the labour market. Earning potential is also related to the social position (family background) and/or the barriers encountered in the labour market as women or lone-parents.

Despite the high degree of educational homogamy, there are signs of change in the emergence of the so-called *new unions* (inverted gender roles with regard to educational attainment) in the younger generations. A foreseeable trend given the larger proportion of women in high education as compared with men. This study has also revealed that the nature of women's downward marriages has changed across generations. In the older cohorts (born before the 1950s), and probably in rural areas, women with only an elementary education married downwards. In contrast, in the youngest generations (born after the 1950s) highly educated women are the most likely to choose this type of union. If it is true that in both generational groups (old and young cohorts) women's education was higher than men's, only in the young cohorts do new unions imply a real challenge to the patriarchal family. These educated women would most probably secure their role as workers and mothers in equal terms with their partners contrary to the role of complementarity assumed by low-educated women.

This research has focused on individuals who decide to marry and has overlooked those who decide to remain single or to delay marriage. These are important aspects of the current marriage market; not only has the mean age at first union increased (marriage delay) but so too has the sociological profile of single people. In the past, these were mainly the low educated who did not find "marriageable candidates". Now, instead, they are rather individuals with secondary education or university degrees. This is also a new female strategy, as women seem to be more determined to put their economic security first rather than to invest in their relationships in, more or less, stable marriages. The positive aspect of delaying marriage (to a certain extent) for women might be that they have higher probabilities of constituting *assortive matings*. If it is true that couples with equally high investment human capital are more prone to form dual-earner families (González 2001), *assortive matings* must be a way to guarantee women's reconciliation between their professional careers and motherhood.

If assortive mating seems reasonable women's life course strategy, the increase in women's traditional marriages, or *negative assortive mating* on gender educational attainment, seems rather the opposite. Nevertheless, the type of woman who would most likely choose a partner with a higher education is the lowest educated. This pattern describes the continuity of a certain kind of family traditionalism, insofar as many women still choose to form marriages with dissimilarity in socio-economic status between partners.

To conclude, a characterizing feature of the Spanish marriage market is the high degree of educational homogamy. In the 1960-1964 women's birth cohort alone, 67 per cent of all constituted partnerships and 65 per cent in the same men's cohort show this trend. Highly educated women in the youngest generations, however, seem to be at the forefront of most changes. They are, for instance, less prone to form traditional marriages in which men have higher educational attainment than they do and, therefore, higher earning potentials. They might indeed have started to realise however the potential conflicts which arise in *negative assortive matings* in the Spanish context.

#### APPENDIX: THE SPANISH CURRICULUM

A standard classification of the educational system has been elaborated to reconstruct the individual's education. This is not exempted from a great deal of difficulties given the wide period under study during which various educational systems have coexisted as many reforms were being introduced. The measurement of homogenisation of the educational system has been operationalized according to the following classification (does not consider reforms undertaken after the 1990s):

- (1) *Exempted from formal qualifications*: illiterate or literate individuals who may have attended school but never completed or simply failed the courses.
- (2) *Primary education* (normally includes pupils aged 6-12): the student obtains a degree in elementary education (*certificado de escolaridad*) or equivalent if older educational systems are applied (e.g. *certificado de estudios primarios*).
- (3) *Secondary education* (normally includes pupils aged 13-17): this level can be attained either through high school for those who passed their primary schooling (*bachillerato* route) or through technical school for those who did not pass (*formación profesional* route). Technical schools were for some time the main destination of students who failed to achieve their certificate in elementary education, but as these schools have modernized including new branches, their reputations have changed and more pupils have opted for a technical education. Students who have completed high school can also jump to the second grade of technical schools.
- (4) Higher education: *College Degree (diplomatura)* programmed to last three years (short track) or studies towards a *University Degree (licenciatura)* which last five years. Although, a university degree is above a college degree in terms of time needed to complete the grade and educational system, many technical colleges, such as those of engineering, may have more occupational prestige

and economic rewards than some university degrees. In this category students with *post-graduate studies* (Masters or Ph.D) have also been included.

A new educational reform was introduced in 1990 (*ESO: Educación Secundaria Obligatoria*) which, among other things, prolonged compulsory education to the age of 16 (legal working age). This reform, however, does not affect the cohorts studied here.

## NOTES

1. Hereafter the distinction between younger and older birth cohorts will refer to those born after and before the 1950s, respectively.
2. Youth unemployment rates (age group 20-24) in 1981 were 33% for women and 27% for men; in 1991 were 36% for women and 24% for men; and in 1996 45% for women and 34% for men (MTSS 1984; INE 1981, 1996).
3. Here a father's education is taken as a proxy for social class. In Spain the expansion of public education came forth only recently which means that highly educated fathers in the older generations must generally coincide with privileged or well-off families. This assumption may not work for fathers in the younger birth cohorts.

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## WHO MARRIES WHOM IN GREAT BRITAIN?

TAK WING CHAN AND BRENDAN HALPIN

## INTRODUCTION

Does the UK differ in its patterns of educational intermarriage? Popularly Britain is perceived to be, on the one hand, more flexible in both economy and society than mainland countries, but also hidebound by class and having an economy in long-term relative decline. There may be only fragments of truth in these popular conceptions, but it is interesting to consider why, and whether, educational intermarriage has different characteristics in the UK.

The education system has had a role in the symbolic articulation of 'class' (more properly status differentiation) in British society through the years, especially with respect to accent. It has provided as much a means of, as a barrier to, social mobility. On the other hand, it has also tended to produce relatively high numbers of poorly-qualified young men who moved into semi-skilled work in the one-time large manufacturing sector. However, this has changed in more recent years: as in most western countries, educational participation is growing strongly, such that acquisition of intermediate levels of education is becoming less socially discriminating in absolute terms. The manufacturing sector has all but disappeared with the consequence that leaving school with low or no qualifications is no longer an economically sensible thing to do. As in other European societies, female educational achievement has increased, overtaking male in many respects. Female labor force participation is relatively high in European terms, though much of it is part-time, suggesting that women's external contribution to the family economy is increasingly important, and thus also their level of education.

In this chapter, we use data from the British Household Panel Study (BHPS) and event history models to study the process of educational homogamy from a dynamic life course perspective. The key questions we address are the following: First, has the level and the pattern of educational homogamy in Britain changed between cohorts? Instead of tracing how a single summary homogamy index has evolved over

time, we will show how the hazard of homogamy varies over the life course and changes across cohort. Our second objective is to investigate the social forces which regulate the observed marriage pattern. Here we have found Mare's (1991) work particularly helpful.

#### PREVIOUS RESEARCH - TWO SOCIAL FORCES

Mare is primarily concerned with the trends of homogamy in the United States. He points to two social forces which may affect this trend - demographic trends, and the role of women in society.

##### *Demographic Trends*

Mare argues that the probability of marrying someone with the same level of education should decrease with time since school departure. This is because if a person gets married soon after leaving school, his/her spouse is likely to be an old classmate, and school class is by definition homogeneous in educational attainment.

Also, because at successive levels of schooling, the ultimate educational status of students still in school is increasingly homogeneous' (Mare 1991, p. 16), homogamy should be more prevalent among the better educated. Moreover, Mare argues that the effect of the time gap between school departure and marriage should be stronger among the better educated.

Given these, Mare argues that there are good reasons to believe that the level of homogamy in the U.S. has changed over time. This is due to historical trends of the timing of first marriage and school departure. As is well known, the average age of first marriage in the U.S. (and in other industrial countries) follows a U-shaped pattern: a substantial decline between the 1930s and the 1970s was followed by a rebound. At the same time, the average level of educational attainment has increased throughout the century, which means that young people leave school at progressively later ages. The combined effect of these trends is that the time gap between school departure and marriage has shortened between the 1930s and the 1970s, which should lead to a higher level of homogamy. Since the mean age of first marriage has risen since the 1970s, while the school-leaving age has also increased, the time gap between school departure and marriage may have lengthened. Nevertheless, Mare (1991, p. 17) argues 'that marriages are now occurring at much later ages suggests that, in the absence of other causes of change, the trend toward greater educational homogamy may have weakened.'

##### *Changing Role of Women in Society*

Furthermore, Mare argues that increased labor market participation of women affects what men and women expect from marriage. Specifically, quite apart from the roles of mother and homemaker, women are also expected to be breadwinners. This may lead to stronger competition for better educated women because they have higher earning power. This in turn may increase the level of educational homogamy.

By and large, Mare has found confirming evidence for his arguments. Using log-linear models, he analyses a set of mobility tables of recent marriages. He shows that the level of educational homogamy has increased between the 1930s and the 1970s. Thereafter the association between a husband's and wife's educational attainment declined or remained stable during the 1980s. He also shows that the time gap between school departure and marriage is partly related to the level of homogamy. It is worth noting that Mare's interest is in trends over time, rather than, say, explicating the process generating the trends, and therefore loglinear models are particularly appropriate, having *inter alia* the strong advantage of controlling for changing marginal distributions.

SOCIAL CHANGES RELEVANT TO HOMOGAMY IN BRITAIN

Are the demographic trends and the trends related to women's role in society in Britain similar to those in the United States?

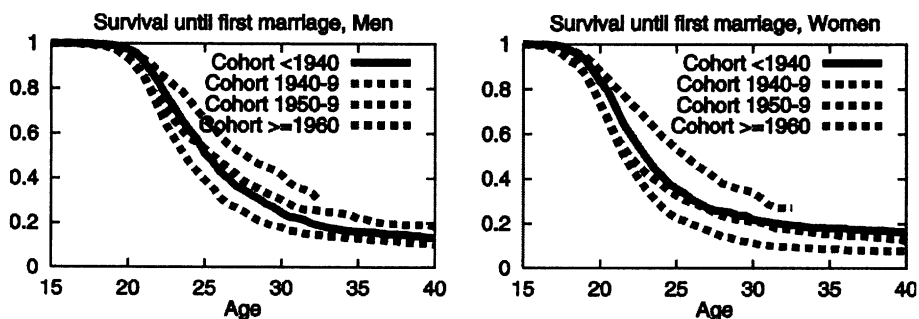


Figure 8.1. Survival to First Marriage by Cohort and Sex

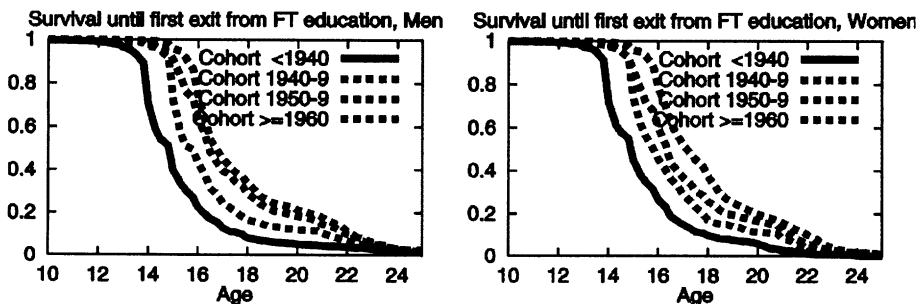


Figure 8.2. Survival in Full-Time Education by Cohort and Sex

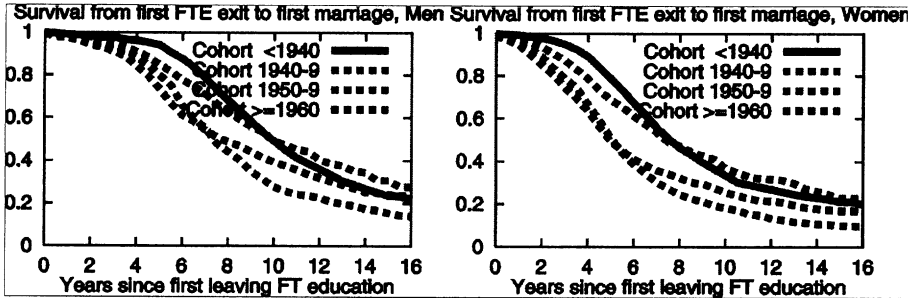


Figure 8.3. *Time-Gap Between Leaving Education and First Marriage, by Cohort and Sex*

### *Timing of First Marriage*

In Britain, the timing of first marriage followed the well-known U-shaped pattern. Between 1910 and the late 1930s, the mean age of marriage was about 27 for men, and 25 for women. Then there was a trend towards early marriage such that by the late 1960s, the mean ages dropped to about 24.5 and 22 for men and women, respectively. Since the 1970s this trend has been reversed. In 1990 the mean age of marriage was 26 for men and about 24 for women (see Coleman, Salt 1992, p. 181). This curvilinear pattern can also be found among the BHPS respondents. In Figure 8.1, we plot the percentage of the never-married by age for four birth cohorts. Readers can see that for both men and women the curves for the oldest and the youngest cohorts lie mostly above those of the middle cohorts.

As in other industrial countries, younger cohorts in Britain stayed in school longer and received progressively higher level of education (Kiernan, Lelièvre 1995, p. 136). At the time when our oldest respondents went to school, the minimum school leaving age was 14. This was raised to 15 in 1947, and then to 16 in 1974. This trend can also be found among the BHPS respondents. Figure 8.2 shows a steady cohort-wise progression in numbers remaining in school.

There is also a hint in Figure 8.2 that this progression may be slowing down for men and speeding up for women. This reflects the narrowing of the gender gap in educational attainment, which is evident from Table 8.1. Among those born before 1924, 60 percent of the women and 50 percent of the men had no qualifications. However, for the 1964-73 birth cohort, there are fewer unqualified women (16 percent) than men (21 percent). Indeed, women of recent cohorts have surpassed men at O-level, and caught up with men at A-level, though there is still a gender gap at the degree level.<sup>1</sup>

*Table 8.1. Educational Achievement by 1992, by Cohort and Sex, Percentages*

Cohorts	University	A-Level, Other Sub- Univers.	O-level, Commercia l	Sub-O- level, None	Total
<u>Men</u>					
Before 1924	4.1	24.5	21.7	49.7	290
1924-1933	4.6	20.2	25.1	50.1	351
1934-1943	7.3	33.9	21.8	37.0	422
1944-1953	13.1	39.4	21.2	26.3	579
1954-1963	17.5	38.9	21.5	22.1	741
1964-1973	13.1	41.9	24.4	20.6	807
Total	11.6	35.7	22.6	30.0	3190
<u>Women</u>					
Before 1924	1.3	19.9	18.6	60.2	236
1924-1933	3.5	15.0	24.0	57.2	346
1934-1943	3.8	21.8	26.2	48.2	390
1944-1953	9.1	25.5	34.0	31.4	561
1954-1963	14.8	28.2	34.6	22.4	709
1964-1973	10.0	41.5	33.0	15.6	873
Total	8.8	28.5	30.6	32.1	3115

Source: BHPS

#### *Time Gap Between School Departure and First Marriage*

The combined effect of the above trends can be seen in Figure 8.3, in which we plot the proportion of men and women who had stayed single since leaving school. Similar to Figure 8.1, the survival function of the oldest and the youngest cohorts are above those of the middle cohorts, though in this case the youngest cohort is closer to the middle ones for low duration (which, because of the greater mean school-leaving age, are mostly at higher ages than for those cohorts).

#### *Female Labor Force Participation and Gender Wage Gap*

In the late 1960s, just over half (55 percent) of all women were in the labor force. This has risen to over two thirds (69 percent) in the 1990s. The increase was most impressive among women with pre-school children (from 22 percent to 42 percent). However, the increase is concentrated in the part-time work force. Accompanying this trend is a slow closing of the gender wage gap. In 1968, women's hourly wage rate was 60 percent of men's, rising to about 67 percent in 1990 (Davis, Joshi 1998).

*The Growth in Cohabitation*

Alongside the decline in marriage rates in recent decades there has been a dramatic rise in the incidence of cohabitation. Between 1980 and 1995 the proportion of women aged 20-24 in co-residential partnerships who were not in legal marriages rose from 11 percent to 55 percent (General Household Survey data quoted by Ermisch and Francesconi 1998). As Table 8.2 shows, this process is accelerating, to the extent that the rise in cohabitation more or less offsets the fall in marriage, such that the numbers in co-residential partnerships remain more or less stable.

*Table 8.2. Proportions (per 1,000) Ever in Partnership by Age 24*

Cohort	Men			Women		
	Marriage	Cohabitation	Total	Marriage	Cohabitation	Total
1930-49	473	29	502	700	33	733
1950-62	327	163	490	544	207	751
1963-76	110	387	497	210	448	658

Source: Extracted from Ermisch and Francesconi (1998)

Ermisch and Francesconi (1998) show that this new cohabitation phenomenon is predominantly serving as a precursor to legal marriage: first partnerships which begin as cohabitations tend to be relatively short (median duration about 2 years) and about two thirds end in marriage.

This has a number of implications for marriage patterns. First, the nature of marriage has now changed, representing a more formal option for partnership rather than the only acceptable form. Thus some couples who would have married will now cohabit instead, but also some couples who would not have married will now cohabit. Second, the processes by which couples arrive at first marriage have changed, in that the practice of cohabitation prior to marriage can be seen as a matching process that may have fundamental differences to that operating where marriage occurs without prior co-residence. This could mean that marriages are now more likely to be good matches, if cohabitation filters out bad matches, but it could also mean the opposite, if couples form more casually (and then persist) when the initial commitment is less.

It is hard to predict the net effect on educational marriage patterns: the 'good' matches which endure may have more to do with personal characteristics that affect compatibility than with educational credentials, allowing the subsequent marriages to be less educationally homogamous than they would otherwise be. On the other hand, cohabitation may mean that the social networks relevant to a subsequent marriage are those the individuals were in at the commencement of the cohabitation rather than at the time of marriage. This will 'preserve' the effect of the homogeneity of the school-based social world for several years after it has been left, and thereby increase homogamy arising from Mare-style factors.

## THE BHPS DATA AND ITS LIMITATIONS

Researchers studying homogamy are interested in the process of family formation. However, estimates based on prevailing marriages would be biased if homogamous and heterogamous marriages dissolve at different rates. The typical solution to this long recognized problem is to analyze recent rather than prevailing marriages (Kalmijn 1991).

Since the BHPS is a longitudinal study, we should in principle be able to focus on the marriage formation process alone, and thus avoid the above bias. Indeed, the BHPS collects data on the timing of all marriages of the respondents. However, there is no information on the spouse except for current marriages (as of 1992) or marriages formed during the panel period. Since we need to know the spouse's qualification in order to determine whether a marriage is homogamous, this means that we cannot consider marriages dissolved before 1992. In effect, our data pertain to prevailing marriages and suffer from the bias discussed above.

## MODELLING STRATEGY

*The Event History Data Set*

The event of interest is getting married for the first time. Since cohabitation as a prelude to marriage is becoming a 'majority practice' (Kiernan, Lelièvre 1995, p. 130; Ermisch and Francesconi 1998) a case could be made for treating the beginning of cohabitation as the event of interest. At very least, the date of marriage will on average be later than the true start of partnership. However, this may lead to two problems. First, cohabitation is itself a diverse phenomenon. Some cohabitation spells are very short, suggesting that, even from the point of view of the respondent, they may be quite different from those which lead to eventual legal marriage. It is of course very difficult to differentiate the various forms of cohabitation. Some transient cohabitations will also be unreported, thus biasing our sample. The second problem is that the meaning of cohabitation has changed across cohort. Given these problems, we have decided to persist with using legal marriage as the event of interest, though it is clear that our results have to be read in the knowledge of this striking change in behavior.

We follow the life history of the respondents from the age of 15 until their first marriage, or for those who had remained single, age 60 or the interview year, whichever came first. We update the following time-varying covariates each year: age, whether the respondent was in full-time education, time since leaving full-time education, time spent in school since age 15, qualification achieved, and the opportunity structure of marriage. We also have a set of time-constant covariates - year of birth, sex, and spouse's qualification.

We describe these covariates and our classification scheme for educational attainment in Table 8.3, which should be fairly self-explanatory. Here we wish to highlight three points. First, we distinguish four levels of educational attainment.



The highest level is university degree. This is followed by 'A-level', which includes post-secondary qualifications such as nursing, teaching and other higher qualifications.<sup>2</sup> The third level includes O-levels, certain commercial qualifications and apprenticeship. The fourth level is no or sub-O-level qualification.

The second point is that the qualification history of each respondent is imputed from three sources: his/her educational participation history, educational attainment in 1992, and typical age of acquisition of antecedent qualifications.

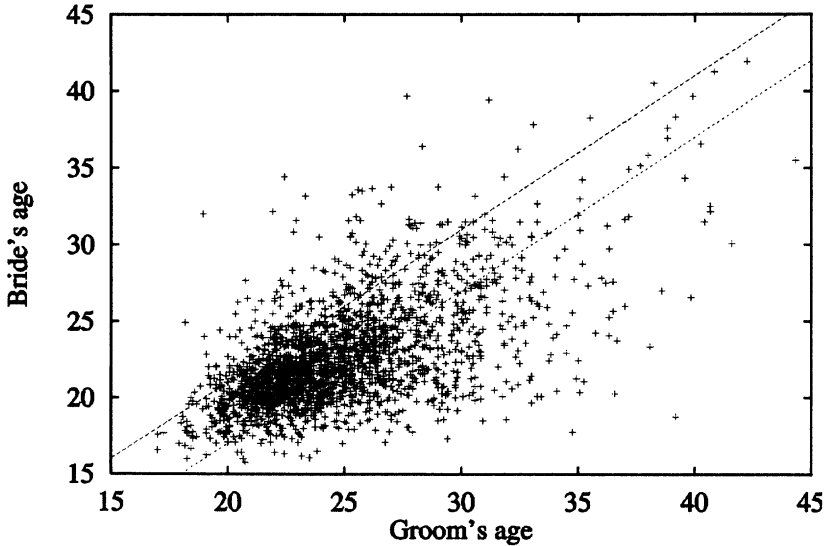
*Table 8.3. Covariates Used in the Analysis*

Variable	Description
Log(Current Age – 15)	Age measured in months
Log(60 – Current Age)	Age measured in months
Not in school	Not-in-School = 1 In-School = 0
Time Since Leaving School	Length measured in years
Duration in School	Duration measured in years since age 15, reverts to zero on leaving education
Year of Birth	1900=0, 1901=1, and so on
Education	1 = Degree level: Higher degree, First degree 2 = A-level: Teaching qualification, Other higher qualification, Nursing qualification, GCE A-level GCE O-level or equivalent, Commercial qualification, Apprenticeship 4 = Sub-O-level: CSE grade 2-5, Scot G, Other qualification, No qualification

Thirdly, as we have seen in Table 8.1, the distribution of educational attainment by sex varies substantially across cohort. This directly affects the pattern of homogamy and heterogamy that is possible. If 90 percent of both men and women have no qualification (as in Spain around 1900, see González, this volume), there will be far more homogamy than in a society where educational attainment is more evenly distributed. This effect of the 'margins' is controlled for in a loglinear analysis of marriage pattern. But in a hazard modeling approach such as the present, cohort difference in the educational distribution by sex may be confounded with other secular changes. In an attempt to control for this, we introduce a measure of the opportunity structure, which is based on the proportion of single persons of the opposite sex, in a defined age-range, in each of the four qualification levels, for each calendar year.<sup>3</sup>

This measure is also based on the BHPS data. For each male respondent, we consider the number of single women who were between three years younger and one year older than him, for each calendar year.<sup>3</sup> For women, we consider the reverse age range of one year younger to three years older. This approximates the joint distribution of age at marriage. In our data, husbands were on average 2.15 years

older than their wives, and the band we use accounts for almost 64 percent of the cases (see Figure 8.4).



*Figure 8.4. Age Differences in Marriage*

Figure 8.5 represents the opportunity structure visually. Looking vertically down the years we can see the enormous growth in the proportions holding higher qualifications. We can also see some cohort effects, in the form of bulges which shift five units to the right for each unit down (which may be due to sampling variation).

### *Defining the Transitions*

The dependent variable of our analysis is time until first marriage. But what are the origin and destination states which define the transition? We approach this question in two ways. First, we follow Blossfeld et al. (this volume): All respondents started as being single. If they got married, we distinguish three destinations: upwards (if spouse has a higher level of education than respondent), homogamy (spouse has the same level of education), and downwards (spouse has a lower level of education). Because people at the top educational category are not at risk of marrying up, and those at the bottom category cannot marry down, the risk set is different for the three transitions. We estimate our model for the three transitions separately, with the risk set suitably adjusted. We shall refer to this as the BTM model.

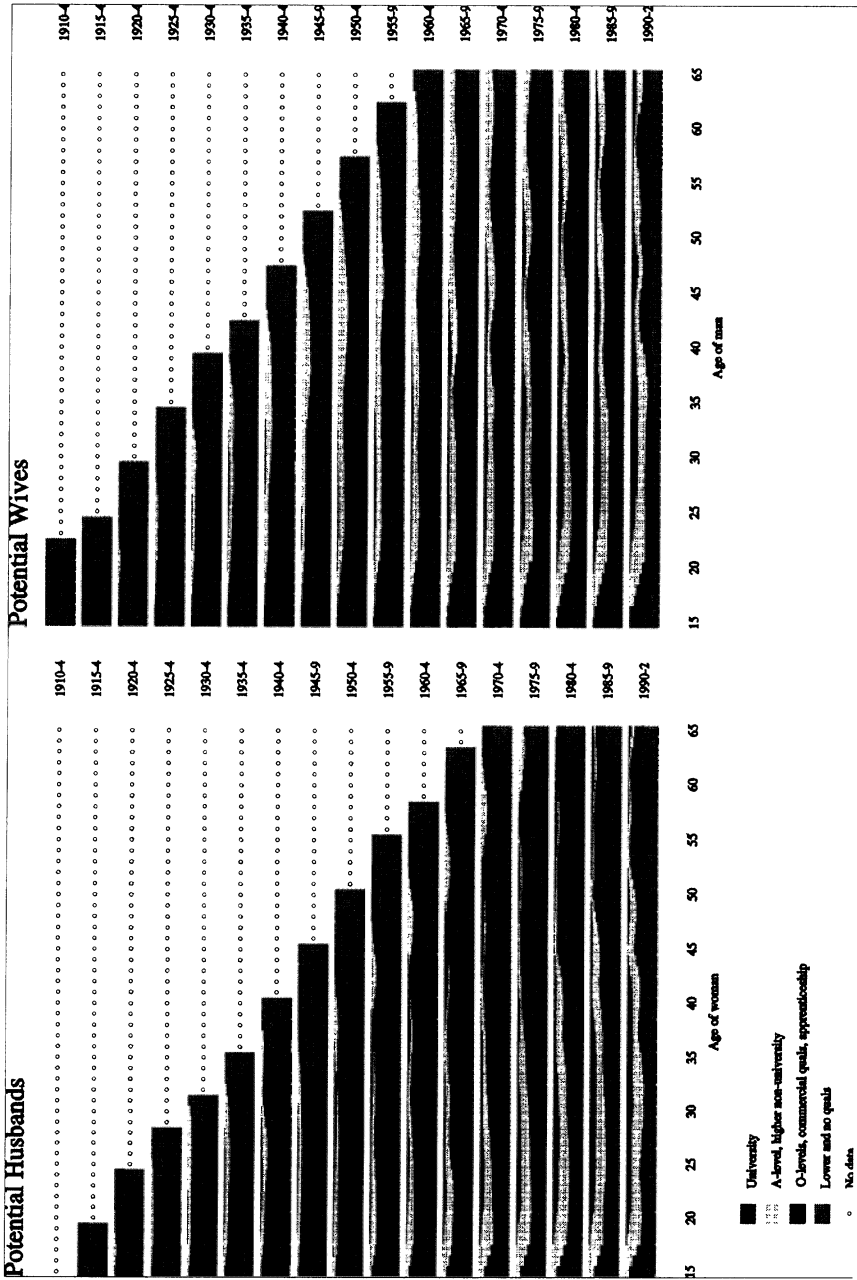


Figure 8.5. The Qualification Distribution of Single People, by Year of Age and Five-Year Calendar Band

*Table 8.4. Educational Marriage Patterns by Sex and Cohort, Observed and Expected Rates Under Independence*

Cohort	Upward		Homogamous		Downward	
	O	E	O	E	O	E
<u>Men</u>						
Born						
Before 1924	13.67	20.78	47.66	39.29	38.67	39.93
1924-1933	20.77	25.32	45.05	38.21	34.19	36.47
1934-1943	19.44	26.03	37.12	31.01	43.43	42.95
1944-1953	19.13	27.56	39.64	27.43	41.22	45.01
1954-1963	24.71	32.05	38.02	26.97	37.26	40.99
1964-1973	31.72	35.16	36.56	28.54	31.72	36.30
<u>Women</u>						
Before 1924	39.89	41.12	45.36	37.44	14.75	21.44
1924-1933	36.84	38.59	43.75	37.47	19.41	23.94
1934-1943	42.19	42.07	38.36	31.88	19.45	26.05
1944-1953	36.96	42.32	42.02	27.78	21.01	29.90
1954-1963	39.40	42.40	37.28	27.13	23.32	30.47
1964-1973	30.77	37.83	42.69	28.48	26.54	33.69

O = Observed

E = Expected

However, upward, homogamous and downward marriages, as defined above, are all very diverse and heterogeneous categories. Consider two graduates, one marrying an unqualified person, and the other marrying someone with A-level. Under the BTM model, both instances would be considered as downward marriages. We believe this may obscure meaningful differences. Also, the BTM model assumes that all homogamous marriages are in some sense similar. However, the social forces which regulate the marriage of two graduates may be quite different from those for two unqualified persons. To model these transitions more flexibly, we have carried out a second set of analyses. We refer to this as the qualification-specific model, using spouse's qualification to define destination, and respondent's qualification as a predictor (see below). We use the piecewise exponential model in our analysis. Because there are multiple destinations in both set of analyses, ours are competing risk models.

## RESULTS

*Observed Trends*

We report the observed trends of homogamy and heterogamy in Table 8.4. As readers can see, for men there is an upward trend for upward marriage and a downward trend for downward marriage. For example, for men born before 1924, 14 percent married up, 39 percent married down. These changed to 32 percent for both upward and downward marriage for the 1964-73 birth cohort. The trend for women is just the opposite - more women are marrying down, and fewer of them are marrying up. This corresponds to the closing of the gender gap in educational attainment. We also observe an uneven decline in the proportion of homogamous marriage for men across cohort. To analyze the social forces, such as age, cohort, qualification, and opportunity structure, which produce this observed pattern, we now turn to a multivariate analysis of the hazard of marriage.

*The BTD Model*

As noted above, we have carried out two sets of analyses. In the first set, we follow Blossfeld et al. and define the transitions as from the origin state of never married to one of three destination states - upward, homogamous, or downward marriage. The results are reported in Table 8.5.

The two parameters,  $\log(\text{age} - 15)$  and  $\log(60 - \text{age})$ , are used to approximate the non-monotonic pattern of age dependence. For all three transitions, and for both sexes, the second parameter is much stronger than the first. This implies that the distributions of the hazard rates by age are skewed to the right - most of our respondents got married when they were relatively young. We have also included two interaction terms (age-dependence by qualification). But they are significant for homogamous marriage only. The sign of the interaction terms suggests that the skewness in age dependence is more pronounced for the less qualified.

The covariate 'not-in-school' is positive and significant for all but one transition. Its effect is also very strong. For example, other things being equal, being out of school increases the homogamy hazard by a factor of five ( $e^{1.6569}$ ) for men and a factor of sixty-six ( $e^{4.1950}$ ) for women.

The variable 'duration in school' is significant for women's homogamous and downward marriage only. For each additional year a woman stays in school since age 15, homogamous hazard increases by 49 percent ( $e^{0.4008} - 1$ ) and downward hazard increases by 33 percent ( $e^{0.2815} - 1$ ). We would stress that this is a very specific effect, as the variable measures duration since age 15 for those currently in education (who, as we have just seen, have a substantially lower hazard of marrying), and this covariate reverts to zero on leaving education. Thus, given that a woman is in education, over time she becomes more likely to marry homogamously or downward. This is an attenuation of the strong opposite effect of being in school.

Table 8.5. Modeling Homogamy: Parameter Estimates

Parameter Estimates	Upward	Homoga- mous	Downward
<u>Men</u>			
Constant	-71.4496*	-66.1893*	-86.3718*
Age Effects			
Log(Age-15)	2.6401*	2.6978*	2.2431*
Log(60-Age)	7.4536*	6.9288*	10.8242*
Log(Age-15) by Qual	-0.1310	-0.2043*	-0.1628
Log(60-Age) by Qual	0.1583	0.1871*	0.0650
Not in School	3.3923	1.6569*	1.8956*
Months in Current Educational Spell	0.1017	0.0679	0.0708
Time Since Leaving Education			
Linear Months	-0.0099*	-0.0048†	0.0109*
Quadratic <sup>a</sup>	0.0200*	0.0089†	-0.0208*
Cubic <sup>a</sup>	-0.0003†	-0.0001‡	0.0003*
Cohort Effect			
Linear Year of Birth	0.0592†	0.0769*	0.0924*
Quadratic <sup>a</sup>	-0.0759*	-0.0955*	-0.1339*
Opportunity Structure	2.0233†	2.0502*	-0.0080
<u>Women</u>			
Constant	-58.9621*	-60.7200*	-79.9888*
Age Effects			
Log(Age-15)	1.6645*	1.8598*	0.3568
Log(60-Age)	6.5375*	6.2570*	10.3977*
Log(Age-15) by Qual	-0.1509‡	-0.3373*	0.0664
Log(60-age) by Qual	0.0987	0.2682*	-0.0563
Not in School	1.9102*	4.1950*	3.1870*
Months in Current Educational Spell	0.0095	0.4008*	0.2815†
Time Since Leaving Education			
Linear Months	-0.0070*	-0.0036	0.0144*
Quadratic <sup>a</sup>	0.0117†	0.0084‡	-0.0265*
Cubic <sup>a</sup>	-0.0002‡	-0.0002†	0.0004
Cohort Effect			
Linear Year of Birth	0.1240*	0.1012*	0.1328*
Quadratic <sup>a</sup>	-0.1641*	-0.1168*	-0.1447*
Opportunity Structure	2.6822*	1.4631	1.4111

Notes: \*Significant at 1%; †significant at 5%; ‡significant at 10%; (a)Squared time gap in months divided by 100; cubic in months divided by 100,000; squared year of birth divided by 100.

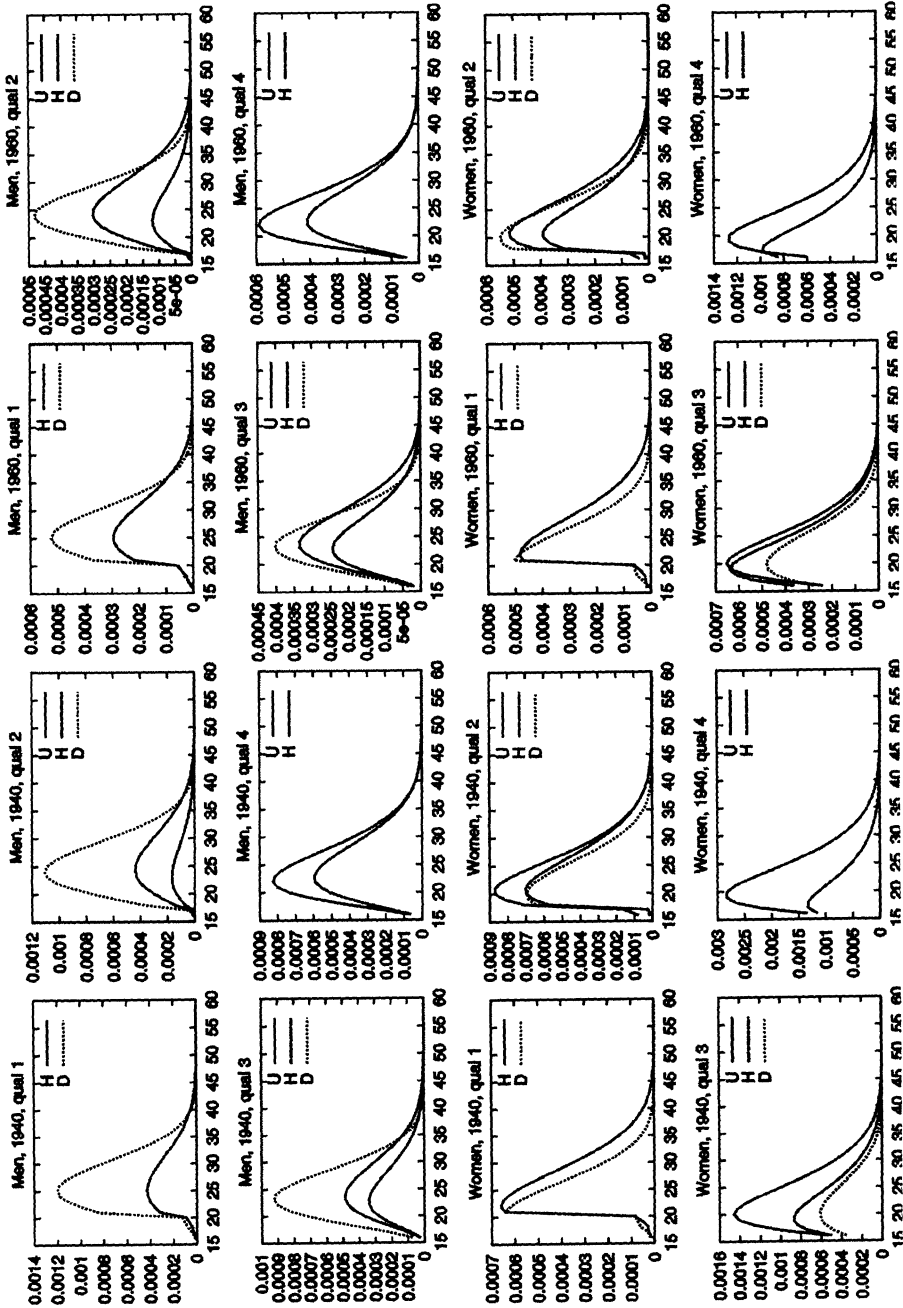


Figure 8.6. Predicted Hazard Rates from the BTD Model

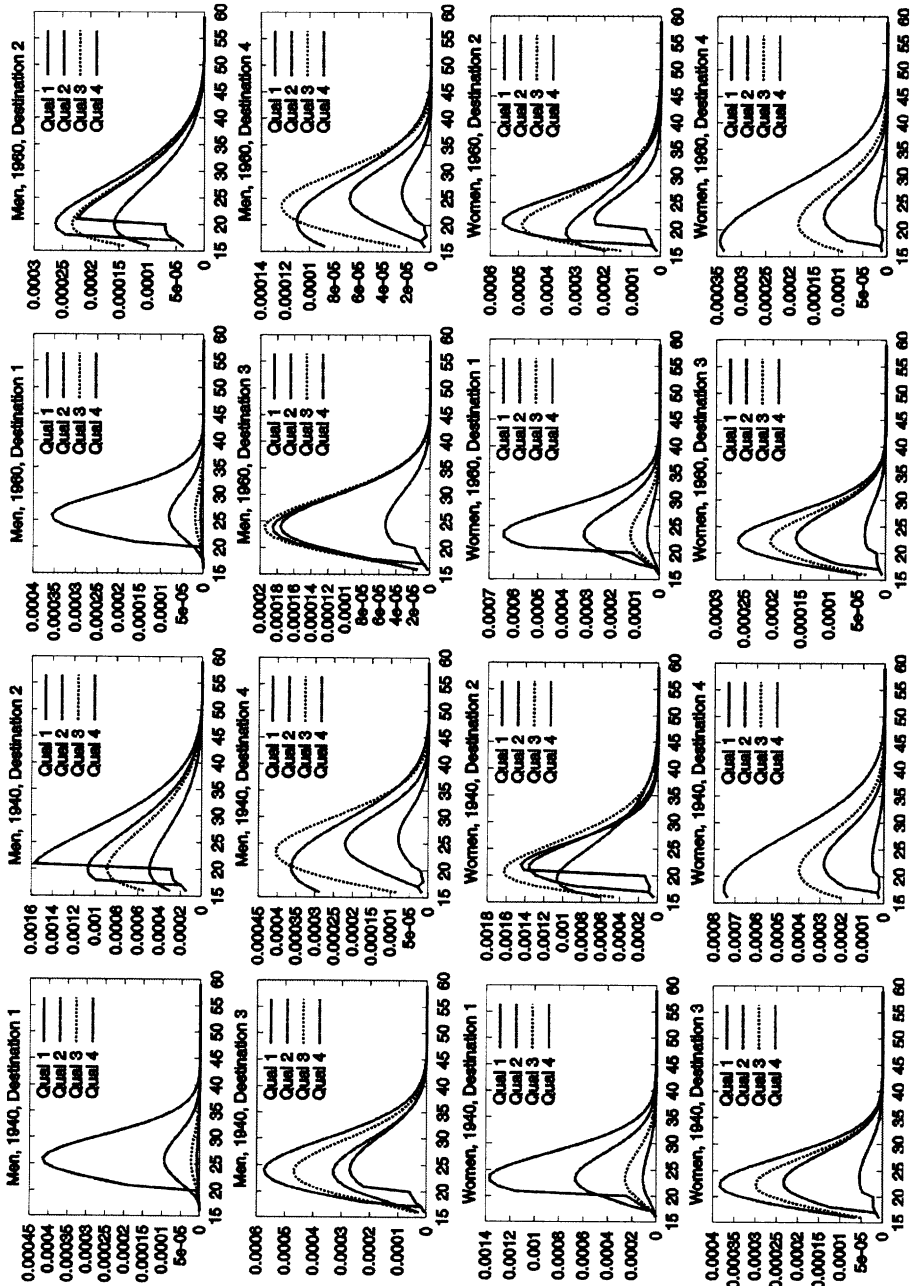


Figure 8.7. Predicted Hazard Rates from the Qualification-Specific Model, Grouped by Destination



We use a set of linear, quadratic and cubic terms to capture the effects of the time gap between school departure and first marriage. For men, time since leaving school depresses the upward and homogamy hazards, but raises the downward hazard. The quadratic terms are of the opposite sign to the linear terms, suggesting that these trends level off (or bottom out) as time gap increases. Recall Mare's argument that the longer the time gap, the lower the probability of homogamy. Our results confirm his argument in part. For men, time gap does reduce the homogamy hazard, and raises the hazard of marrying downward. But staying single also reduces upward hazard. The pattern for women is similar to that for men, with the exception that the linear time gap parameter is not significant for homogamy.

Cohort difference in marriage timing is represented by a pair of linear and quadratic 'year of birth' variables. For all destinations and for both sexes, the linear term is positive while the quadratic term is negative. This leads to a curvilinear pattern of the hazard of marriage which peaks for those born between 1930 and 1945, and declines thereafter. The magnitude of the cohort effect is generally greater for women than for men; but within gender, the estimates are quite similar across destinations. In general, the cohort effects are quite substantial, and depending on the values of other variables, particularly age and qualification, they change the rank order of the hazards, as we will see later.

As noted above, the opportunity structure variable is a simple measure of the proportion of single people of the opposite sex in the defined age-range who have the appropriate qualifications.<sup>4</sup> It is positive and significant for upward and homogamous marriage, and the effects are very strong. To illustrate, for men as the proportion of single women with better qualifications increases by 1 percent, the hazard for upward marriage increases by 2 percent ( $e^{2.0233/100} - 1$ ). However, this variable is not significant for downward marriage. Dropping this variable from the model affects mainly the estimates of the cohort trend, but also the age effects, particularly for upward marriage.

To help visualize the combined effect of the covariates, we use the estimates reported in Table 8.5 to generate a set of predicted hazard rates for men and women of two birth cohorts, 1940 and 1960 (see Figure 8.6).<sup>5</sup> Several things are notable. First, for both men and women, the hazards of marriage are generally lower for the 1960 cohort than for the 1940 cohort.

Secondly, for men, over the prime marriage years of the life course, downward hazard is greater than the hazard of homogamy, which in turn is greater than upward hazard. This is true for all except the unqualified (for whom upward hazard dominates). This pattern holds for men of both cohorts. Within the stable rank order, we also observe a relative rise for upward and homogamous hazards. For women, the rank order of the hazards is not so clear cut, and it changes between cohorts. Specifically, relative to homogamous or downward hazard, upward hazard declines for women with A-levels or O-levels. Upward hazard also declines in comparison with homogamous hazard for unqualified women, but not to an extent which changes their rank order.

Thirdly, the age profile of male and female graduates provides an interesting contrast. In the case of female graduates, downward and homogamous hazards shoot

up very sharply as they leave university, followed by a steep decline. For male graduates, hazard rates also rise as they finish university, but the rise is not quite as sharp. In fact, there is a gradual climb before the hazards peak, suggesting that most male graduates work for several years before they get married. Similarly, the subsequent decline in hazard rates is somewhat less abrupt for male than for female graduates. Also, downward hazard of male graduates clearly dominates over their homogamous hazard. In contrast, the two hazards are very similar in the case of female graduates.

### *The Qualification-Specific Model*

While the results of the BTD model are informative, we believe they are limited for reasons explained above. We now report the results of a second set of analyses which uses spouse's qualification to define the destination state. The respondent's own qualification enters into the model as a covariate. This allows us to estimate the hazard of moving from any origin state to any destination state.<sup>6</sup> We have tested for interaction between respondent's own qualification and many predictors in the model. Most turned out to be non-significant and are dropped. The model reported in Table 8.6 is our preferred model.

There are similarities between the BTD model and the qualification-specific model. For example, 'not-in-school' is again found to be positive and significant for all transitions and for both sexes. Its effect is also very strong. We have tested for interactions between this predictor and respondent's own qualification, but none are significant.

The general shape of age dependence is the same across destinations, and similar to what we saw under the BTD model, the second term is stronger than the first. However, the qualification-specific model reveals considerable variation in the magnitude of these terms by destination. As we shall see (Figure 8.9), this leads to substantial and important differences in the overall life course pattern of hazard rates for the various origin and destination combinations. There is significant interaction between the age dependence terms and respondent's qualification for three destinations, namely for men marrying unqualified women, and for women marrying A-level or unqualified men. The signs of these interaction terms suggest that the age-dependence pattern is generally flatter for the less qualified.<sup>7</sup>

The general pattern of the cohort effects is also similar to what we saw earlier - a positive linear term moderated by a negative quadratic term, leading to a curvilinear pattern. But here we see considerable variation between destination in the magnitude of the linear term. As a result, unlike the BTD model there is within gender much variation by destination in the magnitude of the net effect of cohort, and in when it peaks. For example, for men marrying graduates, the curvilinear pattern is most pronounced, and peaks for those born in the mid-1940s. In contrast, for men marrying women with A-levels or no qualification, the net cohort effect is weaker and peaks for the 1920 birth cohort. For women there is also variation by destination in the net cohort effect, the magnitude of which is greatest for marriage to graduates and O-level men.

Table 8.6. Modeling Selective Marriage: Parameter Estimates, Men and Women

	Qualification of Bride				Qualification of Groom			
	University	A-Level Plus	O-Level etc.	Low/no Quals	University	A-Level Plus	O-Level etc.	Low/no Quals
Constant	-122.5978*	-36.7802*	-74.6716*	-101.8597*	-94.6412*	-94.1400*	-96.7797*	-92.0637*
Age Effects								
Log(Current Age-15)	4.6276*	0.5813	1.7308*	3.4690*	2.8281*	3.0323*	1.2535*	2.1955*
Log(60-Current Age)	14.6898*	4.6702*	9.1087*	14.1906*	12.2680*	14.2679*	11.8878*	13.2536*
Log(Current Age-15) by Qual								
Log(60-Current Age) by Qual								
Not in School	1.1629*	1.3288***	1.7990*	1.1618*	0.6373†	2.3783*	1.7658*	2.2067*
Time Since Leaving School								
Linear Months			0.0068*	0.0128*		-0.0042‡	0.0174*	0.0098*
Quadratic <sup>a</sup>			-0.0014†	-0.0030*		0.0011†	-0.0037*	-0.0022*
Cubic <sup>a</sup>			0.0008†	0.0017*		-0.0007†	0.0020*	0.0012*
Cohort Effect								
Linear Year of Birth	0.1195‡	0.0053	0.0207	0.0634*	0.1395*	0.0722*	0.1153*	0.0668*
Quadratic <sup>a</sup>	-0.1271‡	-0.1027*	-0.1025*	-0.1228*	-0.1774*	-0.1634*	-0.1346*	-0.1061*
Interaction. Qual 2		0.0272*	0.0227			0.0465*		
Interaction. Qual 3		0.0307*	0.0378*			0.0310†		
Interaction. Qual 4		0.0414*	0.0530*			0.0331†		
Opportunity Structure								
A-Level Plus		3.8825*	4.9974*	9.5820*	-4.5322	2.8473‡	6.9795*	5.6588*
O-Level etc.		-2.0523	3.4396†	4.9765*	-1.9148	0.2768	5.9208*	5.5503*
Low/no Quals		-4.9360†	-0.9914	4.2001†	-5.6487‡	-2.8431†	3.6703†	1.4961
Qualification Effect								
A-Level Plus	-1.4844*	-1.4829*	-0.3470	18.0659*	-0.7243*	14.0711†	0.9466†	16.5404*
O-Level etc.	-2.8857*	-1.8115*	-1.2636‡	35.8129*	-1.6817*	30.7863†	0.8926†	31.8509†
Low/no Quals	-3.9971*	-2.8361*	-2.2259*	52.9557*	-2.5472*	46.0731†	1.1410*	47.5453†

Notes: \*\*\* Significant at 1%; † Significant at 5%; ‡ Significant at 10%; <sup>a</sup> Squared time gap in months divided by 100; Cubic in months divided by 1000000; Squared year of birth divided by 100.

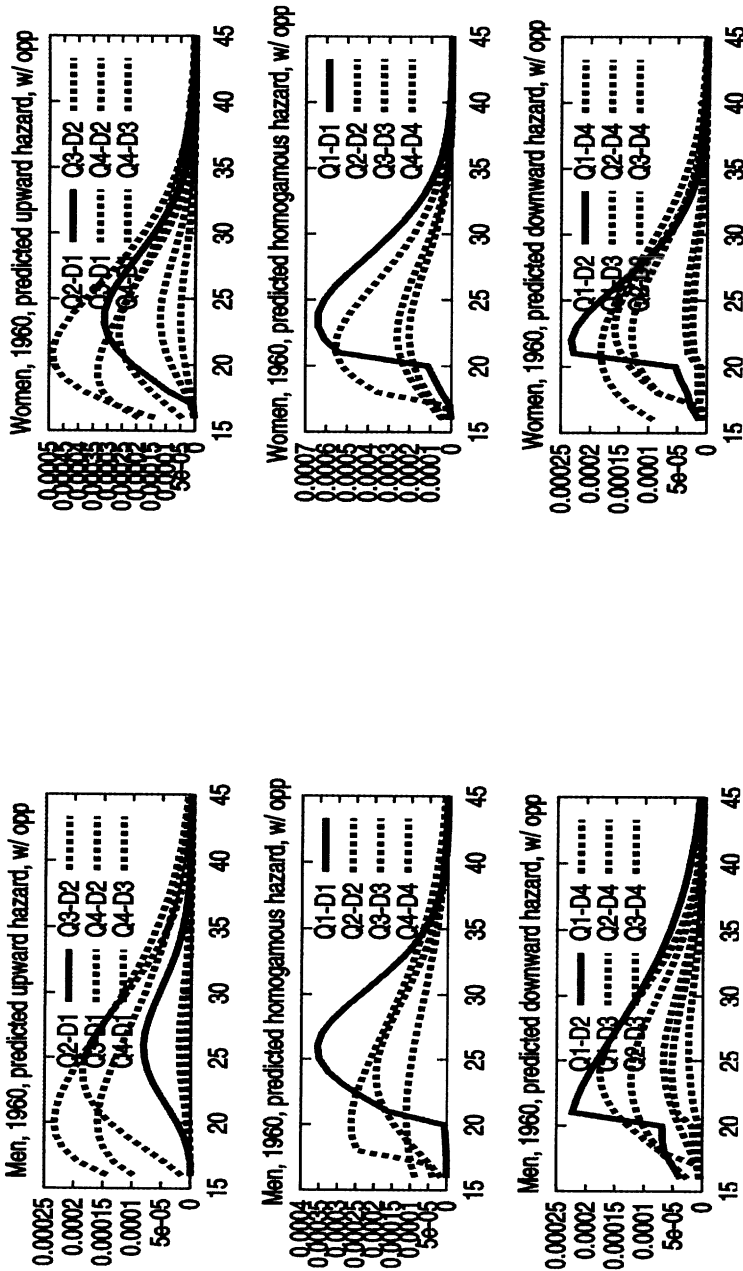


Figure 8.8. Hazards of Upward, Homogamous and Downward Marriage, Qualification-Specific Model, Men and Women, 1960 Cohort

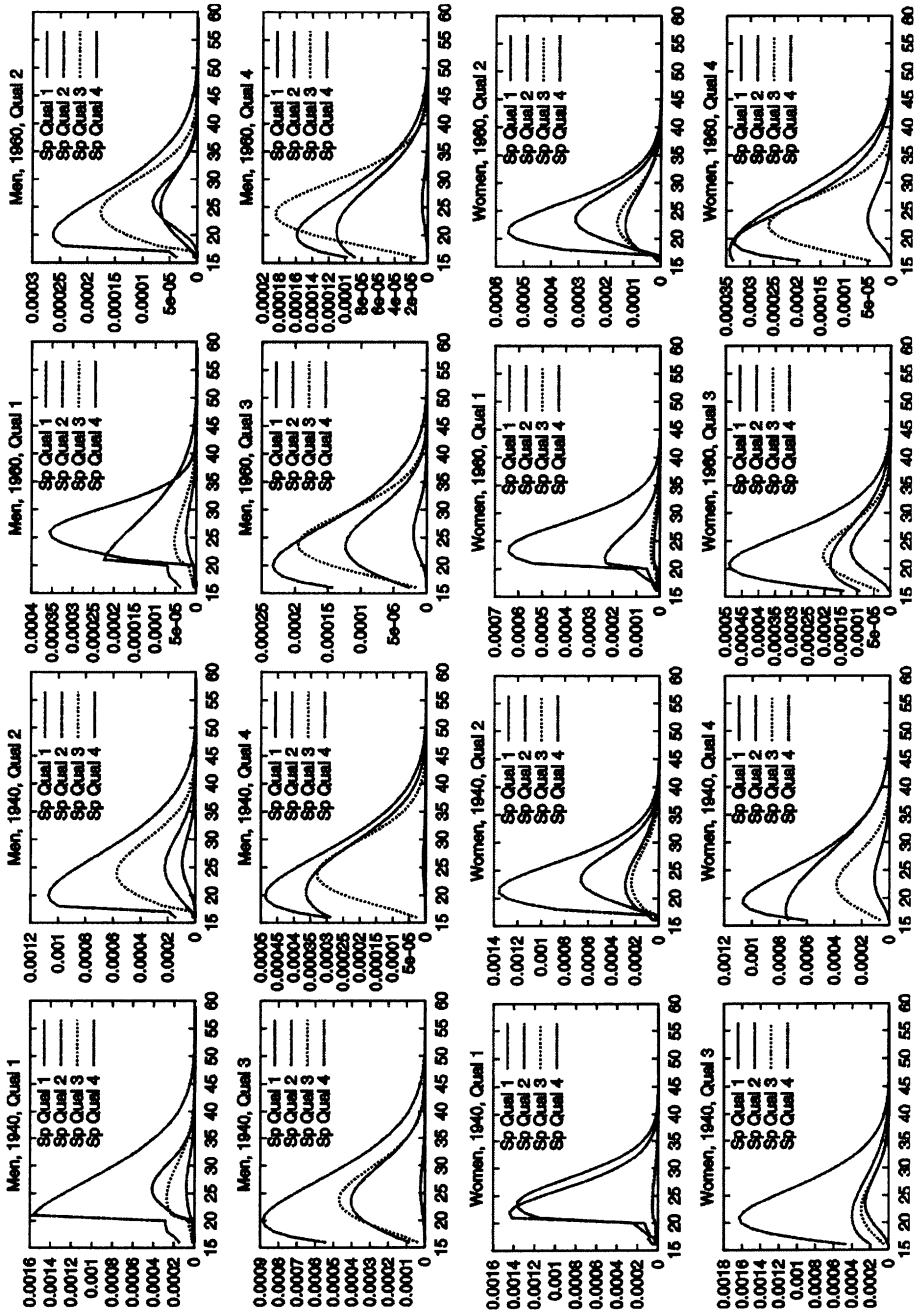


Figure 8.9. Predicted Hazard Rates from the Qualification-Specific Model

The interaction terms between respondent's qualification and the linear cohort trend are significant for three destinations. Thus, there is variation by 'origin' as well as by destination.

We use three predictors to capture the effect of the opportunity structure, each measures the relative size of a potential spouse pool. Transition to a particular destination is affected not only by the size of that destination, but also by the size of other destinations. For example, if A-level people and O-level people are substitutes in the marriage market, then the parameter for the A-level spouse pool will be negative for the O-level destination. This is the main reason why we have included three predictors instead of just one.

Having said that, we hasten to add that because the relative size of qualification groups covaries with each other, the effects picked up by our opportunity structure terms may partly reflect such incidental covariation, rather than the substitution effects that we are interested in. This is an identification problem, for which we have no satisfactory solution. As readers will see, this means that in practice we find it difficult to interpret some parameter estimates.<sup>8</sup> Nonetheless, we would expect the term for the corresponding destination to be the strongest. Our findings are as follows.

First, for both men and women, in relation to the three destinations of A-level, O-level, and no qualification, the size of the destination category has the expected positive effect. Thus, for example, the higher the proportion of single women with A-level, the greater the hazard of men marrying an A-level woman. Secondly, again for both sexes, opportunity structure has no effect on the hazard of marrying graduates. The exception here is that the more unqualified men there are, the lower the hazard of women marrying a graduate. We believe this simply reflects the negative correlation between the relative size of the two destinations.

Thirdly, in relation to the destinations of O-level and no qualification, the proportion of people with more qualifications has a positive effect on the hazard rates. This may have to do with positive covariation in the relative size of the categories concerned.

Fourthly, the hazard of men marrying A-level or O-level women is negatively affected by the proportion of women with less qualifications. For example, as the proportion of unqualified single women increases by 1 percent, the hazard of men marrying A-level women dropped by 5 percent ( $e^{-4.936/100} - 1$ ). Thus, it seems that unqualified women are substitutes for A-level and O-level women in the marriage market.

We observe an interesting pattern for the main effect of qualification, which can be described as a positive qualification gradient - the better qualified you are, the higher your hazard.<sup>9</sup> For men, this applies to the hazard of marrying women with a degree, A-level or O-level. For women, this applies only to the hazard of marrying graduates.

However, as we note in footnote 7 above, because qualification interacts with cohort and/or age for five of the eight destinations, the net effect of qualification varies with age and cohort. To illustrate the complex interaction pattern, we have used the parameter estimates of Table 8.6 to generate a set of predicted hazards (see

Figure 8.7). Each panel in this figure corresponds to a particular destination (i.e., a column in Table 8.6). These figures reveal a slightly modified picture of the effect of respondent's qualification.

Let us first consider the 1940 birth cohort: The positive qualification gradient applies to men marrying women with degrees or A-levels, and to women marrying graduates. For these transitions, education improves a person's position in the marriage market. In contrast, a negative qualification gradient applies to women marrying O-level or unqualified men. For these transitions, the higher the qualification, the lower the hazard. For the remaining transitions, there is no simple clear-cut pattern.<sup>10</sup>

What is notable is the asymmetry between men and women in where the positive qualification gradient applies. Qualification is a good predictor for future earnings, and is probably considered partly in such terms in spouse selection. Our result is, therefore, consistent with the view that in the marriage market grooms, far more often than brides, are valued for their earning prospects: competition among women is mostly for the highest educated men, while competition among men extends further down the scale.

We also observe some interesting cross-cohort changes, which is most noticeable for the marriage market for A-level men and women. Specifically, the hazard of male graduates marrying A-level women has declined relative to the hazard of men with less qualifications. There is a relative decline across cohort in the hazard of female graduates marrying A-level men.

How do we interpret these changes? We note earlier the argument that women's changing role in society may have affected the dynamic of spouse selection and hence the pattern of educational homogamy. In particular, with the closing of the gender gap in educational attainment, and the gradual (and slow) narrowing of the gender wage gap, brides may increasingly be valued for their contribution to the family income. If this is true, we would expect those women whose wage rate has increased the most to have become more attractive in the labor market. This may lead to a higher level of homogamy among graduates (which is indeed evident in our data, see the relative rise in homogamy hazard for graduates reported in the middle panel of Figure 8.8.) As a result, there could be a downward trend for male and female graduates to marry a spouse with A-levels. Hence the pattern reported in the last paragraph. We hasten to add that this is a speculative account, and the cross-cohort change described above may have other causes. We will leave this issue for future investigation.

Figure 8.9 shows the predicted hazards under the qualification-specific model again, but here the hazards are re-grouped by respondent's qualification. We present these figures because of two reasons. First, they are comparable to Figure 8.6 for the BTM model, and thus facilitate a direct comparison between the two models. Secondly, grouping the hazards by respondent's qualification allows us to think from the point of view of the respondent: given the qualification of a person, what are competing hazards facing him/her. The following are notable.

Like the BTM model, readers can see that the predicted hazards are uniformly lower for the 1960 cohort than for the 1940 cohort. However, unlike the BTM

model, we see in these figures as much change in the rank order of men's hazard rates as there is for women. In the case of women, one noticeable change is at the top end of the education hierarchy. Specifically, women graduates of the 1940 cohort had about the same hazard of marrying a male graduate or a A-level man. For women graduates of the 1960 cohort, the hazard of marrying a graduate clearly dominates the hazard of marrying down. We observe a similar if greater change for male graduates. The hazard of marrying A-level women was by far the most dominant hazard for the 1940 cohort. This has declined over time such that for the 1960 cohort, the hazard of homogamy had overtaken that of marrying A-level women. These are consistent with the cross-cohort change discussed above.

### SUMMARY

In this chapter, we use two hazard models to analyze the life course dynamics of educational homogamy. The results of these two models are quite similar in some respects, but they also differ from each other in significant ways.

For example, both models show that being in education reduces the hazard of marriage of all types, for both sexes. Similarly, both models reveal a curvilinear pattern in the cohort trend in the hazards, and that all hazards of marriage are lower for the 1960 cohort than for the 1940 cohort. The general shape of age dependence is also found to be roughly comparable across models.

However, the qualification-specific model reveals much more variation in hazard by destination than does the BTM model. Under the qualification-specific model, for example, we see as much cross-cohort change in the rank order of the competing hazards facing male graduates as those for female graduates. Also, the qualification-specific model shows that by far the largest increase in the level of homogamy is found among the graduates.

Under the qualification-specific model, we see a positive qualification gradient for several destinations. We have noted the asymmetry of where this gradient applies for male and female respondents. We also noted some interesting cross-cohort change in this regard for marrying A-level men or women. Our interpretation is that this is related to the dynamic of spouse-selection, which in turn is rooted in the changing role of women in society.

The changing educational distribution by sex presents us with a problem of opportunity structure. We try to control for this with a set of simple opportunity structure variables. We think our effort is a partial success, but further work is needed here.

### NOTES

1. We do not have systematic long term time series data on the extent of gender segregation by school in the U.K. But in the 1990s, less than 10 percent of all schools are single-sex schools, which tend to be concentrated in urban areas (Ofsted; 1998). West and Hunter (1993) claim that 'almost all children are educated together until the age of 11', but the pattern changes a lot afterwards, with much local variation. They claim that in London in 1985, 50 percent of the girls and 46 percent of the boys attended single-sex schools, and that 38 percent of secondary school students in Kent attended single-sex schools.



2. For older cohorts, teaching qualifications would not necessarily have involved university education, and therefore we have included them in this category. At least some respondents from younger cohorts with degree-level teaching qualifications are coded as having degrees.
- 3 In practice, in order to smooth the data, the calculations were done on five-calendar-year bands, with subsequent interpolation.
4. Appropriate, that is, as defined by the transition concerned. For example, under the BTM model, the opportunity structure for upward mobility for a man with O-levels is the sum of the proportion of single women in the defined age-range for that particular calendar year who have a degree or A-level qualification.
5. In generating the predicted hazards, we make three assumptions: (a) that O-level, A-level, and university-type qualifications were obtained at age 16, 18 and 21, respectively; (b) that our respondents left school when they acquired their highest qualification, or at age 16 if they have no qualification; and (c) that people are uniformly distributed across the four educational groups. Thus, for instance, a respondent with no qualification will have an opportunity structure of upward marriage of 75 percent, and all respondents have an opportunity structure of homogamy of 25 percent.
6. Ideally speaking, we would also like to use respondent's qualification to define the origin state. This would imply modelling 16 distinct transitions separately. In practice, this leads to numerical problems in estimation.
7. A cautionary note is in order: because the model contains interaction terms between qualification and age, and between qualification and cohort, the main effects of these predictors cannot be interpreted in isolation from their interactions. We will illustrate the complex interaction pattern graphically below.
8. We also have interpretation problems with the model with the opportunity structure parameter for the relevant destination only. In that model, the opportunity structure terms for marriage to unqualified people are large and negative, implying that the more unqualified people there are, the lower the hazard of marrying them.
9. Given the way we order the four qualification categories (the highest level being 1, and the lowest level being 4), the positive gradient is indicated by negative parameter estimates, and vice versa.
10. If one accepts the argument that male graduates generally do not compete in the marriage market for women with O-levels or no qualifications, and that A-level men do not compete for women with no qualification, then a positive qualification gradient can be said to apply for these transition, as well, for men with the remaining qualifications.

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# 9

## WHO MARRIES WHOM IN THE UNITED STATES?

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TERESA LANKUTTIS

### INTRODUCTION

In this chapter, we study the long-term development of educational homogamy and the process of spouse selection in the life courses of single men and women in the United States of America. We first describe briefly the specific characteristics of the American educational system and its expansion, then we depict the changes of marriage patterns for successive birth cohorts in the last 50 years. Finally, we study the process of spouse selection in the life course of single American men and women with longitudinal data. For this purpose, we are using retrospectively gathered life history data from the Panel Study of Income Dynamics (PSID).

### CHARACTERISTICS OF THE EDUCATIONAL SYSTEM IN THE UNITED STATES OF AMERICA

The organizational structure of the educational system plays an important role for educational homogamy since schools and universities are places where young people meet and form couples (Mare 1991). There are, however, great differences among nations in the way they differentiate the maximum number of school years attended by all and tracking (stratification), value certificates or ability-based learning (qualificational versus organizational), standardize the quality of education (standardization), and link education with entry into the labor market (see Allmendinger 1989; Blossfeld 1992, Shavit, Müller 1998; Blossfeld, Stockmann 1989-99). In this chapter, we concentrate on the role of educational stratification or tracking since it determines the degree of selection within the educational system and indirectly

structures the opportunities to meet partners with the same educational attainment level.

At the beginning of the 20th century, secondary education in the United States of America could still be described as “a system for a small elite” (Throw 1970). But this changed during the second half of the last century when the American educational system was fundamentally transformed. The expansion of education was so great that the gross association between social class origins and educational outcomes decreased drastically (Hout, Raftery, Bell 1993). As shown by Michael Hout and Daniel P. Dohan (1996), class-based selection is irrelevant today because so few students are mustered out until the end of secondary education. The United States of America can therefore be characterized as a country with a relatively open and unstratified educational system. In 1990, the percentage of high school graduates was 86.7%. Thus, in the United States almost all children have therefore the opportunity to attend school until the age of 18.

Another special feature of the American educational system is its gender composition. Based on the distribution of educational attainment levels of American women and men across generations, it appears that there have been far less gender-specific differences at the secondary educational level than in other societies studied in this book. Gender-specific educational differences only come to the fore at the college level. In 1940, the percentages of 25-29 year old men and women with four or more years of college education was small and not much different (6.9% vs. 4.9%). Then, they rose significantly for both sexes between 1940 and 1970; however, more for males than females (20% vs. 12.9%). From 1970 to 1993, the gender gap gradually declined again and disappeared (23.4% vs. 23.9%) (see Hout, Raftery, Bell 1993).

In sum, in comparison to other countries studied in this book, the American educational system is more open and more gender-equal. Of course, this should have consequences for the process of educational assortative mating.

## EDUCATIONAL EXPANSION IN THE UNITED STATES

In this section, we describe the expansion of educational attainment across cohorts in more detail. Table 9.1 shows the expansion of education using four basic educational attainment levels. For the birth cohort 1921-25, the percentage of young people with the lowest level of education (ELEMHS) still was 29%.<sup>1</sup> This percentage decreased continuously to 12.6% in the 1966-70 birth cohort. The percentage of high school graduates (HSG) also decreased slightly from 38% (birth cohort 1921-25) to 32% (birth cohort 1966-70). On the other hand, there has been an increase of men and women with higher educational attainment levels across cohorts. The percentage of men and women with SCDAD qualification increased from 19.1% (birth cohort 1921-25) to 29.4% (birth cohort 1966-70), and the percentage of people with BAMPD qualification increased from 13.9% (birth cohort 1921-25) to 26% (birth cohort 1966-70). Thus, there has been a quite impressive educational expansion in the United States of America across birth cohorts.

Table 9.1. Educational Attainment Levels for Birth Cohorts

Educational attainment level	Cohort											
	1900 until 1920	1921 until 1925	1926 until 1930	1931 until 1935	1936 until 1940	1941 until 1945	1946 until 1950	1951 until 1955	1956 until 1960	1961 until 1965	1966 until 1970	1971 until 1975
ELEMHS <sup>1)</sup>	40.4	29.0	27.5	23.1	18.3	14.3	10.2	10.1	11.0	11.8	12.6	13.6
HSG <sup>2)</sup>	31.5	38.0	37.5	37.7	37.8	34.5	30.7	32.2	33.9	34.5	32.0	31.6
SCDAD <sup>3)</sup>	16.3	19.1	19.1	20.4	22.7	25.2	27.2	28.9	28.3	27.0	29.4	43.1
BAMPD <sup>4)</sup>	11.8	13.9	15.9	18.9	21.3	26.0	31.9	29.0	26.8	26.8	26.0	11.8

<sup>1)</sup> Less than High school (Elementary, and no additional schooling, High school). <sup>2)</sup> High school graduate. <sup>3)</sup> Some college, no degree, Associate degree (occupational and academic). <sup>4)</sup> Bachelor's degree, Master's degree, Professional degree, and Doctorate degree.

Source: U.S. Bureau of the Census 1992

Table 9.2: Educational Attainment Levels for Birth Cohorts and Gender

Educational attainment level	Cohort											
	1900 until 1920	1921 until 1925	1926 until 1930	1931 until 1935	1936 until 1940	1941 until 1945	1946 until 1950	1951 until 1955	1956 until 1960	1961 until 1965	1966 until 1970	1971 until 1975
<b>Women</b>												
ELEMHS <sup>1)</sup>	40,3	27,5	26,8	23,7	18,0	14,5	9,9	9,2	10,2	10,0	11,8	12,2
HSG <sup>2)</sup>	33,8	42,9	42,1	43,2	42,8	37,6	34,5	34,3	33,5	34,0	30,4	29,4
SCDAD <sup>3)</sup>	15,8	20,3	19,6	20,7	22,9	26,4	28,7	29,4	30,6	29,4	31,2	44,6
BAMPD <sup>4)</sup>	10,1	9,4	11,5	12,4	16,2	21,5	26,9	27,0	25,7	26,5	26,6	13,7
<b>Men</b>												
ELEMHS <sup>1)</sup>	40,6	30,9	28,4	22,4	18,4	14,0	10,5	10,8	11,8	13,5	13,4	15,0
HSG <sup>2)</sup>	27,5	31,7	32,1	31,8	32,5	31,2	26,7	29,9	34,4	35,0	33,6	33,7
SCDAD <sup>3)</sup>	17,1	17,7	18,5	20,1	22,4	24,0	25,8	28,2	26,0	24,5	27,7	41,6
BAMPD <sup>4)</sup>	14,8	19,6	21,1	25,7	26,8	30,8	37,0	31,0	27,8	27,0	25,4	9,7

<sup>1)</sup> Less than High school (Elementary, and no additional schooling, High school). <sup>2)</sup> High school graduate. <sup>3)</sup> Some college, no degree, Associate degree (occupational and academic). <sup>4)</sup> Bachelor's degree, Master's degree, Professional degree, and Doctorate degree.

Source: U.S. Bureau of the Census 1992

In Table 9.2, we differentiate the four educational attainment levels by birth cohort and gender. This table shows that the gap between men and women with ELEMHS qualification was already small in the birth cohort 1921-25 (3.4 percentage points). It further decreased until birth cohort 1966-70 to 1.6 percentage points. We also find only small and quite stable differences between men and women with SCDAD qualification. The gender gap at this level slightly decreased from 2.6 percentage points (birth cohort 1921-25) to 2.5 percentage points (birth cohort 1966-

70). The percentage of women with HSG qualification, however, dropped steeply from 42.9% (1921-25 birth cohort) to 30.4% (birth cohort 1966-70) whereas the percentage for men with the same educational attainment level increased slightly from 31.7% to 33.6%. In other words, the gender gap in favor of men (+11.2 percentage points in the birth cohort 1921-25) reversed into a gender gap in favor of women (-3.2 percentage points in the birth cohort 1966-70). Finally, at the highest educational attainment level (BAMPD), the difference in favor of men (+10.2 percentage points for birth cohort 1921-1925) turned into a gender gap in favor of women (-1.2 percentage points for birth cohort 1966-70), too.

This shift towards more equal educational distributions for men and women in the United States is also shown in Figure 9.1. In this figure, we computed the logarithm of the ratio of men's and women's educational attainment levels, using the classification shown in Table 9.2. Figure 9.1 shows only small gender-specific differences in educational attainment levels. Across cohorts, the greatest differences appear at the college level (i.e. University degree).

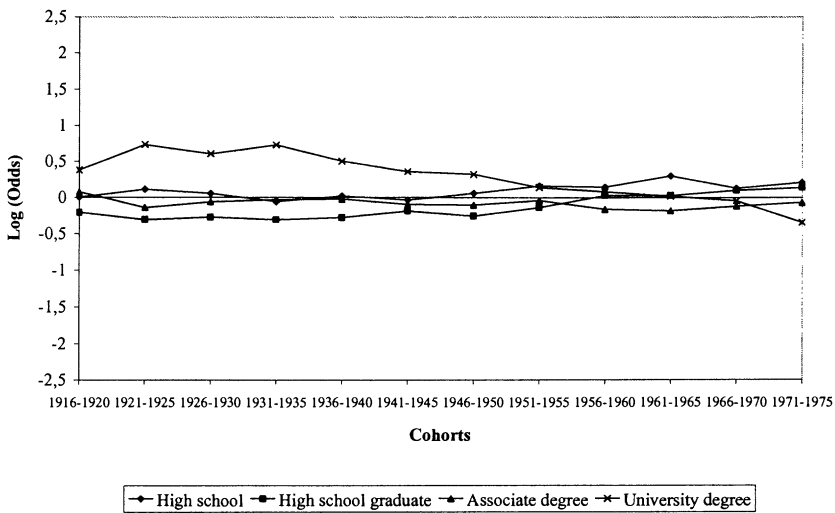


Figure 9.1. Logarithm of the Ratio of Men's and Women's Educational Attainment Levels

DEVELOPMENT OF EDUCATIONAL HOMOGAMY ACROSS COHORTS

Before we begin our longitudinal analysis of the process of spouse selection in the life course, we first describe the changes in educational homogamy across birth cohorts. For this analysis we also used the classification of Tables 9.2. This classification corresponds roughly to the one used by Mare (1991)<sup>2</sup>.

*Table 9.3. Changes in Upward, Downward, and Homogamous Marriages (Partners' Highest Educational Attainment Level at Time of Marriage Compared)*

	Upward Marriage		Homogamous Marriage		Downward Marriage	
	O	P	O	P	O	P
	%	%	%	%	%	%
<u>Wives</u>						
(Before 1920)	26.7	37.1	48.6	29.9	24.7	33.0
1921-1925	26.5	39.0	60.8	27.5	12.8	33.4
1926-1930	30.3	40.0	50.7	27.2	19.0	32.9
1931-1935	41.1	43.4	46.8	26.4	12.1	30.1
1936-1940	40.7	41.9	44.7	26.7	14.6	31.4
1941-1945	38.0	41.2	47.2	26.7	14.7	32.1
1946-1950	40.1	41.2	47.6	27.6	12.2	31.3
1951-1955	35.6	37.6	52.5	27.9	11.9	34.3
1956-1960	31.3	35.6	48.5	27.8	20.3	36.6
1961-1965	27.4	34.2	51.4	27.6	21.2	38.1
1966-1970	33.8	34.3	50.4	27.2	15.8	38.6
(1971-1975)	31.0	29.8	58.2	31.7	11.0	38.5
<u>Husbands</u>						
(Before 1920)	20.3	33.0	51.3	29.9	28.4	37.1
1921-1925	14.0	33.4	54.4	27.5	31.6	39.0
1926-1930	18.8	32.9	47.5	27.2	33.8	40.0
1931-1935	12.7	30.1	44.7	26.4	42.7	43.4
1936-1940	15.0	31.4	40.8	26.7	44.2	41.9
1941-1945	12.9	32.1	46.0	26.7	41.1	41.2
1946-1950	10.1	31.3	50.2	27.6	39.7	41.2
1951-1955	15.2	34.3	51.1	27.9	33.8	37.6
1956-1960	20.7	36.6	49.3	27.8	30.0	35.6
1961-1965	19.9	38.1	51.0	27.6	29.1	34.2
1966-1970	20.5	38.6	54.5	27.2	25.0	34.3
(1971-1975)	12.5	38.5	62.5	31.7	25.0	29.8

O = Empirically observed percentages. P = Predicted percentages, based on the assumption that marriage decisions were taken randomly (given the distributions of educational attainment levels of women and men for each birth cohort).

Source: Panel Study of Income Dynamics, Waves 1968-92

Based on this educational classification, upward, downward and homogamous marriage rates of women and men for successive birth cohorts are shown in Table 9.3. In addition, Table 9.3 contains predicted proportions of marriages, estimated under the assumption that people marry randomly. This means that the predicted values reflect the probability to marry downwardly, upwardly and assortatively, given the marginal distributions of educational attainment levels of women and men in each of the birth cohorts<sup>3</sup>.

Three results are notable in Table 9.3. At first, if we exclude the cohorts at the opposite ends (born between 1900-20 and 1971-75), as they are subject to specific selection processes, we observe a relatively moderate and stable rate of educational homogamy across birth cohorts.<sup>4</sup> About 50-60% of men and women marry homogamously in the United States. The relatively open and unstratified educational system of United States seems to keep educational homogamy at a relatively low level. Educational expansion did not change much in this respect.

Secondly, the rate of upwardly marrying women (and the rate of downwardly marrying men) first increases and then decreases across the birth cohorts. However, among the younger birth cohorts, the percentage of women who marry according to this traditional upward pattern is still remarkably high (about one-third).

Thirdly, there has always been a relatively high percentage of women and men (15-20%) who have deviated from the traditional marriage patterns. These women have married less educated men, or conversely, these men have married better educated women. A comparison of the empirically observed with the theoretically predicted marriage rates in Table 9.3 shows that, compared to the theoretical model of a random marriage, women empirically marry less downwardly. The differences between the observed and expected rates, however, remain quite trendless across cohorts. This is a surprising finding because women have gained more than men in the process of educational expansion (see Table 9.2 and Figure 9.1).

If we further compare the observed and expected marriage rates across birth cohorts, two additional observations are important (Table 9.3): At first, across the birth cohorts, American men and women marry much more homogamously than the random model would predict. So, we have to explain why this is the case. Secondly, women across all birth cohorts did not marry upwardly more than random. Thus women's upward marriage is to a large extent only the result of structural differences in the educational attainment levels of men and women.

#### DATA, METHODS AND VARIABLES

This study was carried out on the basis of the Panel Study of Income Dynamics (PSID). The PSID data allow us to reconstruct step by step the educational careers of single men and women and their process of entry into first marriage. For simplicity, the analysis has been limited to the white population.

In our analysis, the transition rate of marriage is the dependent variable,

$$r(t) = \lim_{t' \rightarrow t} \frac{P(t \leq T < t' | T \geq t)}{t' - t}$$

whereby  $P(\cdot)$  is the probability that a man or a woman marries in the time interval  $[t, t')$ , given that he/she is still single at age  $t$  (see Blossfeld, Rohwer 2002). The observation of the marriage process begins for each individual at the age 15 and ends either at first marriage, at the age 60 (right censored), or at the time of the last panel interview in 1992 (right censored).

To model the marriage rate, we used an exponential model with various time-constant ( $X_1$ ) and time-dependent ( $X_2(t)$ ) covariates and three destination states (competing risks model; see Blossfeld, Rohwer 2002):

$$r_{jk}(t | X_1, X_2(t)) = \exp(\beta_{jk0} + \beta_{jk1} X_1 + \beta_{jk2} X_2(t))$$

This means that we analyze single men and women (origin state) who are at risk of marrying and enter into one of three destination states at the time of marriage: (1) *upward marriage*: husband's (wife's) educational attainment level is higher than that of the wife's (husband's) at the time of marriage ( $k = 1$ ); (2) *homogamous marriage*: husband's (wife's) educational attainment level is equal to that of the wife's (husband's) at the time of marriage ( $k = 2$ ); and (3) *downward marriage*: husband's (wife's) educational attainment level is lower than that of the wife's (husband's) at the time of marriage ( $k = 3$ ). The comparisons between husbands and their wives are based on the four educational attainment levels which were introduced above in Table 9.1.

We included the following covariables in our longitudinal analyses:

(1) *Non-monotonic age dependence of the marriage rate*: The non-monotonic age dependence of the marriage rate is controlled by a combination of two variables (see Blossfeld, Huinink (1989) or Blossfeld, Jaenichen (1990)) (where  $i$  is the index of the  $i$ -th year since the age of 15):

$$\text{Log}(D_i) = \log(\text{Current Age} - 15)$$

$$\text{Log}(R_i) = \log(60 - \text{Current Age})$$

As a result, the exponential model contains the following terms:

$$\exp(\log(D_i) * \beta' + \log(R_i) * \beta'') = D_i^{\beta'} * R_i^{\beta''}$$

(2) *Educational attainment level*: To model the changing educational attainment level in the life course of single women and men in the United States, we used the average number of years, that are normally necessary to attain a certain educational attainment level. Thus, *educational attainment level* is a time-dependent covariable. Depending on the educational career, this variable contains the educational qualification level at each point in the life course.

(3) *Interaction of educational attainment with age*: Two interaction variables take into account that the marriage rate simultaneously depends on the level of education and age:  $\text{Log}(\text{Current age} - 15) * \text{Education}$  and  $\text{Log}(60 - \text{Current age}) * \text{Education}$ .



(4) *Marriage market opportunity*: Due to the expansion of higher education in the past four decades, the level of educational attainment has changed considerably across cohorts. To control for this structural change in the distributions of educational attainment of men and women,<sup>1</sup> we include two measures: (1) *Linear cohort trend* which is a variable assigning to each five-year birth cohort a value from 1 (earliest born cohort) to 11 (latest born cohort) and (2) *Structural marriage opportunities* which is a variable that measures the structural chance to marry upwardly, downwardly or homogeneously for the various educational attainment levels within each birth cohort (the values of this time-dependent variables were updated every time a higher educational level was attained).

(5) *Duration in school*: In the educational system, pupils and students undergo a stepwise process of selection. The longer they stay in the educational system, the more homogeneous their surrounding population will be with respect to educational attainment level. This process is modelled by the time dependent variable *Duration in school*. At the age of 15, the value of this variable starts with 0 and increases continuously for each year spent in the educational system by 1, until leaving the educational system. After exiting school, the value of this variable is set to 0 because the individuals are no longer exposed to the educationally homogeneous environment of the educational system.

(6) *Not in school*: Youth and young adults are normally “not ready” to marry as long as they are in school and economically dependent on parents or stipends. They therefore normally postpone marriage until they have left school and then catch up with their contemporaries. This postponement/catching-up-process is modelled by two different time-dependent covariables: (1) the variable *Not in school* changes to “1”, when a man or a woman leaves the educational system, otherwise “0”; and (2) a set of seven time-dependent dummy variables (1/0-coding) indicate small time intervals after people have left the educational system (reference category: *In School*): *1-2 Years after school*, *3-4 Years after school*, ... , *11-12 Years after school*, *More than 12 Years after school*. With these time-dependent variables, it is possible to model without distribution assumptions any shape of the marriage rate after the individuals have left school (e.g. during the periods where men and women are catching up).

(7) *Main effect of social origin: Father's educational attainment level*: For the main effect of social origin, *Father's education* was used. This variable corresponds to the classification of son's and daughter's education as described in Table 9.2.

(8) *Change in the main effect of social origin*: To consider possible changes in the effect of social origin on spouse selection in the process of educational expansion, we also included the following interaction variable: *Father's education \* Linear cohort trend*.

(9) *Indirect effects of social origin*: An important aspect of spouse selection is the indirect effect of social origin. These effects refer to the relation between father's and son's (or daughter's) educational attainment levels. We used a set of three dummy variables: (1) father's educational level is lower than daughter's/son's: *Father's education < Daughter's/Son's education*; (2) father's educational level is equal to daughter's/son's: *Father's education = Daughter's/Son's education*; and (3) fa-

ther's educational level is higher than daughter's/son's: *Father's Education > Daughter's/Son's Education*. For these three variables, we used centered effects (+1/-1). Thus, the effects reflect the differences toward a grand mean (i.e., the sum of all three effects is set to zero).

## RESULTS

### *Changes in rate of homogamous marriage over the life course*

We begin our longitudinal analysis with a description of the rate of homogamous marriage over the life course for women and men (Figures 9.2 and 9.3). Based on the coefficients of model 1 in Tables 9.4 and 9.5, we estimated the rates for single women and men with three different educational attainment levels: (1) less than High school; (2) High school graduate, and (3) University degree. The curves in these two figures show that the rate of homogamous marriage is strongly dependent on the level of educational attainment and on age. These education- and age-specific homogamy rates across the life course take into account (1) whether an individual is still in school; (2) when he/she has left school; and (3) with which qualification level he/she has left school.

The estimated rates for women are shown in Figure 9.2. It is clear that the process of homogamy starts very early in the life course for women with (less than) High school qualification. These women leave the educational system at a comparatively younger age and are therefore earlier ready to marry. This rate is in sharp contrast to the marriage rate for women at the same age who are staying in the educational system. Women in education have a far lower propensity to marry at all and to marry homogamously in particular (see Figure 9.2). The marriage rate rises steeply after these women have left the educational system. The homogamous marriage rate rises more steeply for better qualified women because these women have delayed marriage longer and are then catching up in a shorter time interval. Postponing marriage decisions until leaving school and then catching up is therefore an important feature in the United States of America - as is the case in most other modern societies studied in this volume.

A similar basic picture emerges for men (Figure 9.3). Their rates of educational homogamy also clearly increase with the level of educational attainment after finishing school. However, in contrast to women, men's rates of homogamous marriage increase less steeply immediately after school. The steeper rise of educational homogamy for women with university degree can be explained by gender-specific role expectations (see the discussion in Chapter 1 in this volume). For male university graduates it is very important that they first establish themselves in a job career before they marry. They are still considered to be the breadwinners in modern societies (see Blossfeld, Drobnič 2001). This is not so much the case for women. Female university graduates may marry right after leaving the university because they have an "alternative role" as mother and housewife in the family.

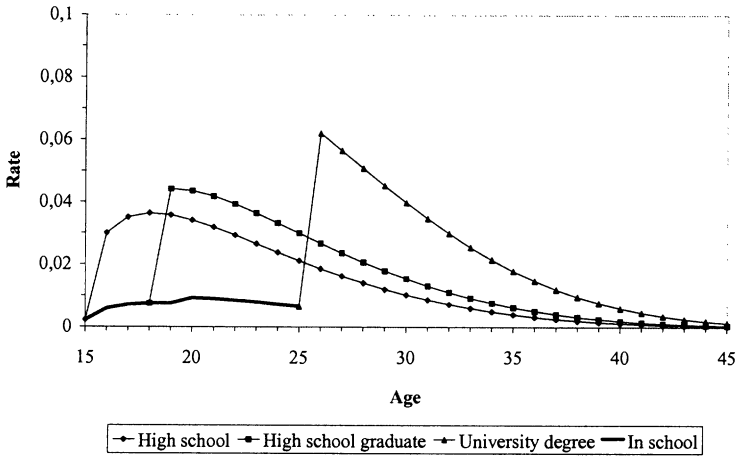


Figure 9.2. Educational Homogamy Rates of Women

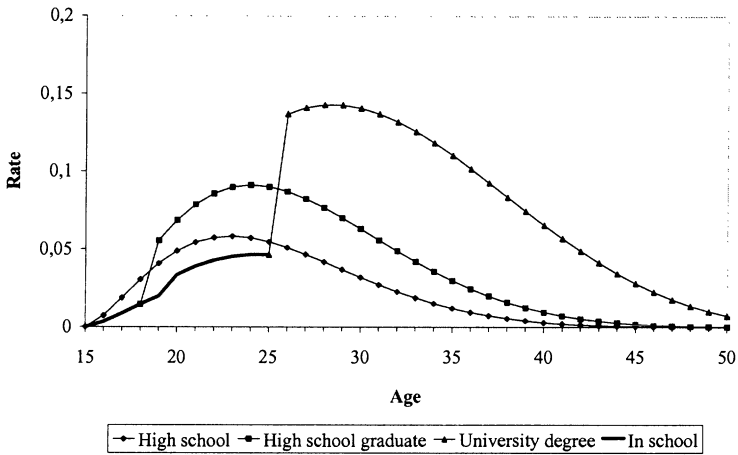


Figure 9.3. Educational Homogamy Rates of Men

The homogamy rates for young men and women with different levels of educational attainment in Figures 9.2 and 9.3 clearly reflect the impact of institutional structures. A strong time dependence of the marriage rate emerges as a result of the organizational structure of educational institutions and the related interplay of different, partially opposing, time-dependent forces. In the next step we analyze these complex time-related relationships with a longitudinal model.

*Time-Dependent Effects of the Educational System*

For a more detailed, time-related analysis of marriage over the life course, we now turn to the longitudinal models in Tables 9.4 and 9.5.

*The effect of stepwise selection in the educational system.* In the first chapter of this book, it was argued that increasingly homogeneous populations are created from one educational attainment level to the next. Within each generation, the less qualified leave school earlier. Therefore, those young women and men who stay together longer have a higher likelihood to meet a partner who attains a similar (or later higher) level of education. The structural opportunities of relationships with a similar qualified partner should therefore increase with duration in school. This process has been modelled by using the time-dependent covariate *Duration in school* in models 2 and 3 of Tables 9.4 and 9.5. These models show that the variable *Duration in school* has only a moderately positive effect on the homogamy rate for men and no significant effect on the rate for women. This means that our hypothesis is only partially confirmed. It seems that the relatively open and unstratified educational system of United States, which keeps heterogeneous populations together up to the end of secondary education, does not structure the marriage market very much. Only few students are mustered out until the end of secondary education, so that almost the whole population stays together for a long time.

*Participation in the educational system and postponement of marriage.* A second hypothesis formulated in Chapter 1 was that attending school or university is connected with a high degree of economic dependence upon parents or the state. Students normally therefore consider themselves as “not ready” to raise a family. The completion of education thus represents an important step in the status passage into adulthood and can in this sense be interpreted as a requirement for entry into marriage. Model 1 in Tables 9.4 and 9.5 shows that the covariate *Not in school* has the expected effect in our multivariate model. It confirms the results of our descriptive analysis above. After leaving school, women’s and men’s rates to marry upwardly, downwardly or homogamously rise significantly.

*Educational participation and catching up effects.* Since postponement of marriage increases with higher educational attainment levels, it was expected that students will then “catch up” with their age cohort after school even faster. In other words, right after leaving the educational system, we expected to observe a steep increase in the rate to marry homogamously because relationships already formed at school often are turned into marriages at that time. With increasing time after school the rate to marry homogamously should then decrease again because these men and women are increasingly exposed to more heterogeneous marriage markets. In Model 2 and 3 of Tables 9.4 and 9.5, this process was modelled by including a sequence of time-dependent dummy variables into the model. The coefficients of the seven time-related dummy variables *1-2 Years after school, ... , More than 12 years after school* in Model 2 and 3 support our hypothesis. For women and men the rate to marry homogamously increases strongly after leaving school, and then decreases afterwards (see also Tables 9.4 and 9.5). This non-monotonic pattern also influences the rate of upward and downward marriage.

Table 9.4. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Women (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-19.75*	-63.01**	-6.53	-27.52**	-32.46**	-33.16**	-136.72**	-147.58**	-142.94**
Log(Current Age-15)	1.72**	5.61**	2.14*	-0.11	-0.36	-0.35	10.03**	10.74**	9.67**
Log(69-Current Age)	3.50	11.79**	-3.38	5.90**	7.33*	7.31*	29.93**	31.93**	31.83**
Log(Current Age-15)*Education	-0.13*	-0.62**	-0.22*	0.05*	0.09**	0.08*	-0.72**	-0.84**	-0.76**
Log(69-Current Age)*Education	0.06	-0.63*	0.89*	0.03	0.15	0.13	-1.77**	-1.86**	-1.83**
Education	0.03	3.75**	-2.22	-0.06	-0.55	-0.43	8.09**	8.79**	8.31**
Not in School <sup>a)</sup>	0.57**			1.63**			1.47**		
Duration in School <sup>b)</sup>		1.25**	0.80**		-0.12	-0.14		-0.61*	-0.39
1-2 Years After School <sup>c)</sup>		1.34**	1.19**		1.02**	1.01**		0.72**	0.77**
3-4 Years After School <sup>c)</sup>		2.16**	1.72**		1.03**	1.02**		1.31**	1.40**
5-6 Years After School <sup>c)</sup>		2.99**	2.41**		1.09**	1.10**		1.66**	1.77**
7-8 Years After School <sup>c)</sup>		2.69**	2.62**		1.11**	1.12**		1.42**	1.56**
9-10 Years After School <sup>c)</sup>		2.39**	2.53**		1.03**	1.11**		1.90**	1.44**
11-12 Years After School <sup>c)</sup>		2.03**	2.33**		1.01**	1.07**		1.77**	1.12*
More Than 12 Years After School <sup>c)</sup>		1.98**	1.99**		0.98**	0.98**		1.72*	0.94*
Father's Education		0.11	0.11		0.03	0.01		0.04	0.00
Father's Education*Linear Cohort Trend		-0.01	-0.01		0.00	0.00		0.00	0.00
Father's Education<Daughter's Education <sup>d)</sup>		-0.04	-0.23**		0.28**	0.25**		0.74**	0.69**
Father's Education=Daughter's Education <sup>d)</sup>		0.12*	0.09		0.23**	0.20**		0.00	0.03
Father's Education>Daughter's Education <sup>d)</sup>		-0.07	0.32**		-0.51**	-0.45**		-0.74**	-0.72**
Linear Cohort Trend		0.12**			0.01			0.01	
Structural Marriage Opportunities			4.21**			2.12**			2.17**
Number of Events	798	798	798	1198	1198	1198	388	388	388
Subepisodes	32635	32635	32635	32635	32635	32635	32635	32635	32635
Likelihood Ratio Test (LR) <sup>e)</sup>	1746.78	1782.44	1961.54	1746.78	1782.44	1961.54	1746.78	1782.44	1961.54
Degrees of Freedom	6	19	19	6	19	19	6	19	19

a) Reference category: in school. b) Measured in numbers of school years after age 14. c) Dummy variable (reference category: in school). d) Centered Effects.

e) LR = 2 \* (likelihood (model with covariables) - (loglikelihood (model without covariables))). \*\*p = .01; \* = .05

Source: Panel Study of Income Dynamics, Waves 1968-92

Table 9.5. Transition Rate Models for Upward, Downward, and Homogamous Marriages for Men (with Regard to Educational Attainment Level)

	Upward Marriage			Homogamous Marriage			Downward Marriage		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-38.38**	-41.70**	-40.11**	-50.82**	-41.07**	-42.92**	-132.53**	-138.41**	-136.39**
Log(Current Age-15)	2.97**	4.63**	4.33**	1.74**	1.98**	2.09**	8.93**	10.09**	9.75**
Log(69-Current Age)	7.82**	6.04**	5.11**	11.68**	8.50**	8.99**	28.98**	28.86**	28.85**
Log(Current Age-15)*Education	-0.14*	-0.47**	-0.35**	-0.02	-0.09*	-0.12**	-0.63**	-0.83**	-0.81**
Log(69-Current Age)*Education	-0.36	-0.42**	-0.33**	-0.40*	-0.36*	-0.43**	-1.71**	-1.73**	-1.73**
Education	1.50	2.66**	2.28**	1.59*	1.62*	1.94**	7.85**	8.54**	8.42**
Not in School <sup>a)</sup>	0.57**			0.83**			0.97**		
Duration in School <sup>b)</sup>		1.51**	1.37**		0.74**	0.75**		-0.26	-0.21
1-2 Years After School <sup>c)</sup>		1.53**	1.22**		0.95**	1.00**		0.86**	0.89**
3-4 Years After School <sup>c)</sup>		2.89**	2.09**		1.19**	1.32**		1.23**	1.27**
5-6 Years After School <sup>c)</sup>		3.65**	2.50**		1.20**	1.37**		1.68**	1.72**
7-8 Years After School <sup>c)</sup>		3.97**	2.58**		1.09**	1.29**		1.99**	2.05**
9-10 Years After School <sup>c)</sup>		3.78**	2.51**		0.84**	1.07**		2.01**	2.08**
11-12 Years After School <sup>c)</sup>		3.55**	2.34**		0.51	1.01*		1.89**	1.99**
More Than 12 Years After School <sup>c)</sup>		3.00**	2.02**		0.77	0.75*		1.30**	1.38**
Father's Education		0.02	0.00		0.04	0.05		0.05	-0.02
Father's Education*Linear Cohort Trend		-0.02	0.00		-0.01	-0.01		-0.01	0.00
Father's Education<Son's Education <sup>d)</sup>		-0.60**	0.07		0.05*	0.12*		0.39**	0.48**
Father's Education=Son's Education <sup>d)</sup>		0.16*	0.06		0.21**	0.20**		0.08	0.08
Father's Education>Son's Education <sup>d)</sup>		0.44**	-0.13		-0.26**	-0.32**		-0.47**	-0.56**
Linear Cohort Trend		0.34**			0.18**			0.15**	
Structural Marriage Opportunities		4.44**			0.88*				0.49*
Number of Events	410	410	410	1246	1246	1246	843	843	843
Subisodds	51406	51406	51406	51406	51406	51406	51406	51406	51406
Likelihood Ratio Test (LR) <sup>e)</sup>	2457.04	2962.14	2976.36	2457.04	2962.14	2976.36	2457.04	2962.14	2976.36
Degrees of Freedom	6	19	19	6	19	19	6	19	19

a) Reference category: in school. b) Measured in numbers of school years after age 14. c) Dummy variable (reference category: in school). d) Centered Effects. e) LR = 2 \* (likelihood (model with covariables) - (loglikelihood (model without covariables))). \*\*p = .01. \* = .05

Source: Panel Study of Income Dynamics, Waves 1968-92

*Educational homogamy across generations.* In the process of educational expansion, the chance to marry homogamously should have increased structurally for men and for women with higher educational attainment levels. To control this structural shift, we have added the covariate *Structural marriage opportunities* (for men and women) in Model 3 of Tables 9.4 and 9.5. It is clear that the coefficients of this covariate are positive and highly significant for homogamous marriages for both men and women (Tables 9.4 and 9.5). This means that a more gender-equal distribution in school leads to an increase in the rate of homogamy. Thus, educational homogamy is partly produced by a change in structural opportunities to marry a partner of the opposite sex with the same educational level.

#### *Direct Effect of Social Origin*

*Direct effect of social origin and its change.* In the theoretical chapter of this book, we have formulated the hypothesis that the direct effect of social origin on educational homogamy increases with father's educational attainment level. This should be the case because social origin is a conglomerate of various highly correlated individual characteristics such as family's wealth, income, prestige, education etc., which are positively correlated with the educational attainment level of children. These correlates make differences between educational groups not only socially more relevant, but also reinforce the contact barriers between social groups. This hypotheses clearly is not supported for the United States as none of the coefficients of father's education is significant (see models 2 and 3 in Tables 9.4 and 9.5). The relatively open and comparatively unstratified educational system in the United States seems to decrease drastically direct effects of social origin on marriage.

*Indirect effects of social origin.* As a last step in our longitudinal analysis, we study the indirect effects of social origin resulting from son's or daughter's educational attainment levels relative to the one of his/her father's. These indirect influences are modelled by the inclusion of three time-dependent dummy variables into our model: *Father's education < Son's/Daughter's education*; *Father's education = Son's/Daughter's education*; *Father's education > Son's/Daughter's education*. To make interpretation easier, centred effects were used for these dummy variables, which means that the effects represent differences to a grand mean (i.e., the sum of the effects for the three variables is equal to zero).

In Chapter 1 of this book, we have claimed that the rate of a son/daughter to marry an equally qualified partner is especially high if the daughter/son has the same educational attainment level as the father. In this case the social networks of the family of origin and the networks mediated through the educational system overlap to a large extent and strengthen each other. Models 2 and 3 in Tables 9.4 and 9.5 show that there is the expected effect for homogamous marriages. The coefficients of the dummy variables *Father's Education = Daughter's/Son's Education* are positive and highly significant.

In addition, those sons and daughters who are upwardly mobile with regard to their father's educational attainment level enter into new social networks through school. Because these individuals not only prefer finding a partner at their own edu-

cational attainment level but also seek to secure their improved social status, we expected in Chapter 1 a strongly positive effect on the rate of homogamous marriage. Models 2 and 3 in Tables 9.4 and 9.5 clearly support this hypothesis. The coefficients of the dummy variables *Father's education*<*Daughter's/Son's education* with respect to homogamous marriage of women and men are positive and highly significant.

We also expected that the educationally downwardly mobile sons and daughters, who do not attain the educational attainment level of their fathers, are less likely to marry homogamously because they are able to utilize social networks via their social origin (friends, acquaintances, relatives, etc.). We therefore expect that these men and women have a higher rate to marry upwardly. Model 2 and 3 in Tables 9.4 and 9.5 support this hypothesis for upward marriage. The coefficients of the dummy variables *Father's Education*>*Daughter's/Son's Education* have a significantly negative effect on homogamous marriage and a significantly positive effect on upward marriage.

Finally, in Chapter 1 we formulated the hypothesis that it is quite unlikely that upwardly (downwardly) mobile men and women will marry upwardly (downwardly) even further. Neither do these young men and women have the networks via their social origin nor via school. Models 2 and 3 in Tables 9.4 and 9.5 show that there is support for this hypothesis for both, women and men. The coefficients of the dummy variables *Father's education*<*Daughter's/Son's education (Father's education*> *Daughter's/Son's education)* have a significant negative effect on further upward (and further downward) marriage.

At the end of this analysis, we should like to stress two important findings: Firstly, sons and daughters who have exceeded (or where not able to attain) the educational level of their family of origin show a *counter mobility* through marriage and, so to speak, correct their individual educational successes (or failures) through marriage. This means that the networks of the family of origin is very important for the reproduction of social inequality in the life course. However, there is also a small proportion of daughters and sons who have profited from educational expansion in the sense that they were able to attain higher educational levels than their father's and in addition could consolidate their new position by marrying an educationally homogamous partner. We should like to call these young men and women the "winners of educational expansion."

## SUMMARY AND CONCLUSIONS

The aim of this chapter was to investigate the role of the American educational system as a marriage market and its change in the course of educational expansion. We first compared the marriage patterns of successive birth cohorts over the past 50 years. Using longitudinal data from the PSID, we then reconstructed and analysed the marriage process of single men and women over the life course.

In the United States, the level of educational homogamy has been surprisingly stable in the process of educational expansion. Thus, it seems that the relatively open and unstratified educational system of United States did not structure the mar-



riage market so much as in other countries studied in this book. Only few students are mustered out until the end of secondary education, so that the heterogeneity of the population stays high until the end of secondary school.

Our micro-macro longitudinal analysis of partner choice in the life course shows therefore that the educational system in the United States has only partially become an increasingly important marriage market, mainly for those who are highly qualified. Educational homogamy increases with the duration that a man stays in school, but seems not to be affected by women's duration of educational participation. The rate to marry a partner with the same level of education is especially pronounced right after leaving school and increases with one's educational level. This is especially the case because higher qualified men and women stay longer in an educationally more homogeneous environment and postpone marriage until they have finished school. The longer they are out of the educational system, the less likely it is then that they enter into an educationally homogamous marriage because they are exposed to a more heterogeneous environment.

In the United States of America we also did not find a direct effect of social origin on marriage. Again, this seems to be an effect of the relatively open educational system. However, those sons and daughters who exceeded their father's educational level (or failed to attain this level) showed a counter mobility through marriage, which in part corrects an individual's educational success or failure. Finally, there is also a small proportion of daughters and sons who managed to move up intergenerationally in the educational hierarchy and could then consolidate their higher level by marrying an equally educated partner.

In sum, in the open and unstratified educational system of the United States of America, we find a surprisingly constant level of homogamy across generations. Although there has been an expansion of higher education, patterns of spouse selection have not changed much because there has always been a relatively high level of gender equality and social openness in the educational system of the United States.

## NOTES

1. The birth cohorts 1900-20 and 1971-75 are subject to specific selection processes and are therefore excluded from our interpretation.
2. Mare (1991) additionally used "Less than 10 years of educational attainment" and "10-11 years of educational attainment."
3. For the estimation of the theoretical distribution of marriage patterns across birth cohorts, we assumed that men and women select their spouses from the same birth cohort. In other words, we assumed that the two partners are roughly of the same age at time of marriage. However, it is well-known from the literature that wives are on average two to three years younger than their husbands. This age gap is also quite stable across generations (see e.g. Klein 1996). We therefore estimated several models with various age ranges of the spouses. All these estimations, however, produced very similar results as shown in Table 9.3.
4. Differences in percentages of husbands and wives in each birth cohort can be explained by the age distribution of the spouses at time of marriage. Men and women partly belong to different birth cohorts (see Klein 1996).

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# 10

## WHO MOVES TOGETHER WITH WHOM IN DENMARK?

SØREN LETH-SØRENSEN

### PREFACE

It has been argued that ascribed status has lesser importance in modern society. Belonging to a certain family does not guarantee that one will succeed. Instead the social status of a person is the result of merit. This is also in accordance with features of the post-modern society, where norms and roles are no longer so important and for this reason lessens the influence upbringing has on social status as well.

At the same time, we observe that the class structure is still a mirror of the old social structure. Persons coming from higher social classes also end up in the same social positions as their parents. This does not derive from ascription but from the functioning of the educational system. It has also been argued that the institution and function of marriage in today's society still supports this tendency: a person from higher social classes will marry a partner from the same class.

Based on official data for Denmark we examine homogamy: the phenomenon of men and women who are alike in forms of social standing who tend to marry each other. Moreover, we will try to evaluate the importance of the educational system for homogamy. More precisely, we will investigate not only the formation of first marriage but also the first entry into cohabitation without being married (i.e. formation of consensual unions).

### MARRIAGES AND DIVORCES: HISTORICAL TRENDS

Taking a long historical perspective the rate of marriages per 1000 population has remained rather stable since 1815. During the Second World War the propensity to marry was high (see Figure 10.1). But afterwards the propensity declined. The rate of marriages was lowest in 1982 and has since then increased slightly. But still it looks as if the rate of marriages has fallen to a level lower than its nadir in the

nineteenth century. The rate of divorce per 1000 population exhibits two jumps: one after the Second World and another around 1970. Since 1970 it has remained at the same level.

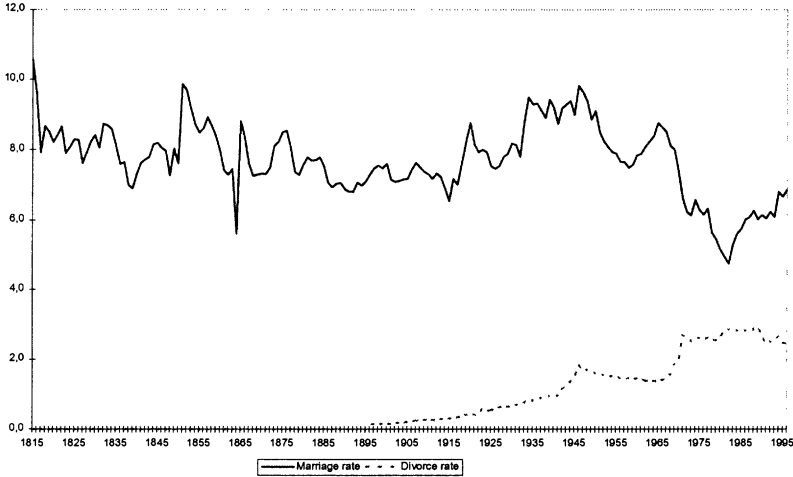


Figure 10.1. Marriage and Divorce Rates. Number per 1000 of the Danish Population

#### AGE-SPECIFIC MARRIAGE RATES SINCE 1960

The change in the rate of marriages per 1000 in the population can be analyzed more closely by looking at the age-specific marriage rates (Figure 10.2). For men the age specific marriage rate defined as persons marrying per 1,000 of the Danish unmarried adult population (18 years and older) fell dramatically from 1960 up to around 1980 (Danmarks Statistic 1989). An example is the rate for men 25-29 years old, which fell to 1/3 its former level. After 1980 the rate continued to fall for men up to the age of 30. At the same time, it rose somewhat for men over 50. For women a corresponding tendency can be seen between 1960 and 1980. Since then the rate for women under 25 years old has fallen to under half of the level in 1980. For women 25-29 years the level has remained more or less the same while it has risen slightly for women over 30 years.

This also means that developments for various cohorts have differed considerably. For the generation of women born 1940-41 almost  $\frac{3}{4}$  had married before the age of 25. The corresponding figure for the 1972-73 generation is  $\frac{1}{10}$  (Danmarks Statistic 1998). Since the rates of marriage have risen for the group of older women, this has been interpreted as a kind of catching-up. But from a cohort perspective, it still does not seem likely that the total proportion of ever married women among the younger generations will be as high as it formerly had been.

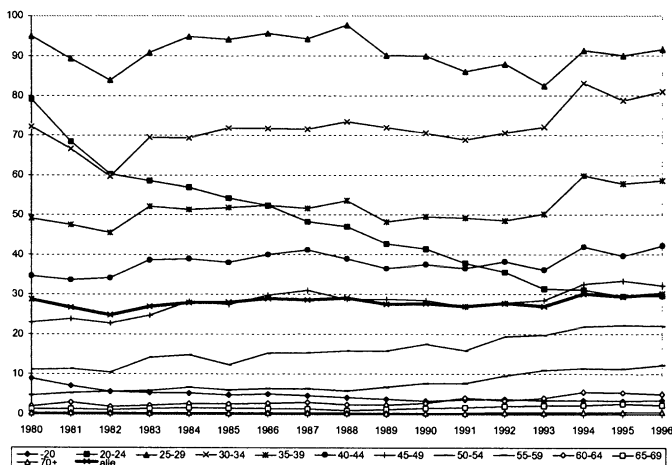


Figure 10.2. Age-specific Marriage Rates for Women, 1980-1996

The growing tendency to enter a consensual union instead of marriage has meant that information on a person's legal marital status no longer suffices in monitoring a person's family situation. Instead, the actual way in which the person has arranged his/her family situation should also be taken into account.

Concurrently with the changes in the propensity to marry there has been an increase in the proportion of people living in consensual union. Looking at 30-year-old women and comparing their family situation in 1980 and 1994, it appears that the proportion living in consensual unions or in marriages has declined from 83 percent to 74 percent. At the same time the proportion living in consensual unions among those living in couples has increased from 12 percent to 35 percent (Danmarks Statistic 1995).

From surveys it is known that the proportion of cohabiting couples has increased. But the proportion of cohabiting couples is considerably lower if the couple has children (Christoffersen 1993). This seems to indicate that if women have children they will not continue to cohabit but will subsequently marry.

Young people (18 to 25 year olds) in Denmark leave their parental home rather early compared with other European countries. But nevertheless, the development during the last decade has tended towards prolonged youth (Christoffersen 1993).

## DIVORCES

A considerable proportion of marriages end in divorce. 1/3 of the marriages that took place in 1980 were dissolved by 1995. Although this divorce rate is double the rate for marriages between 1960-75, it seems that this trend has now come to an end. One might have expected that the rates of the younger age groups fall but since 1980 the age-specific divorce rates have more or less been at the same level for both men

and women. But the risk of marriages ending in divorce has not changed since 1980 (Danmarks Statistic 1998).

### FERTILITY

Since the beginning of the 1960s the net reproduction rate has been declining in Denmark. After 1969 the rate fell below 1,000 daughters born per 1000 women at childbearing age, sufficient to keep the population from declining in the long run. The net reproduction rate was at its lowest in 1983 (662) and afterwards it rose. In 1996 the number was 838, which was still far too low to reproduce the population (Danmarks Statistic 1998). For the age groups under 25 the age-specific fertility rates had been declining since 1980 (see Figure 10.3). Women between 30-34 years on the other hand showed an increase in the level of fertility.

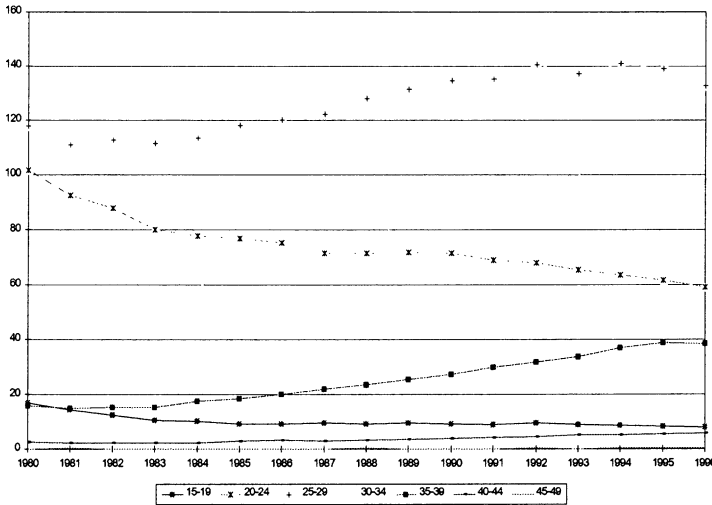


Figure 10.3. Age-Specific Fertility Rates. 1980-1996. Per 100 Women.

Due to the fact that the proportion of married couples among the younger generations declined non-married women now account for almost half of all births (Danmarks Statistic 1995).

The mean age of women at first birth has been increasing since 1960: it has risen from around 22 years to 27 years. Also the corresponding figure for men fathering their first child has gone up from 27 years to 29 years (Christoffersen 1997).

The low rate of fertility in Denmark has been accompanied by a rising proportion of women in the labor force. This points to a related problem of women combining a career in the labor market with child care responsibilities. It has been shown that women in higher-level occupations account for the highest proportion of women aged 44 who have never had a child (Knudsen 1993). It is interesting to note that for men the proportion that has not become a father increase as one goes down the so-

cial ladder. For men on early retirement pension as many as 50 percent have not ever become fathers.

### START OF COHABITATION TO SUPPLEMENT MARRIAGES

The year before their marriage more than 3/4 had lived in consensual union. This is more pronounced among the older couples. Looking at the women just before their first marriage, one gets the impression that it is very common for women to live in a situation comparatively similar to that of a married couple; a majority of the women lived in consensual unions and more than 1/4 had a child before their marriage. At the same time, almost all women have had some kind of attachment to the labor market for several years, except for the youngest women. This gives us a picture of a group of women who are economically independent at the time of and prior to marriage.

As we are interested in the relationship between the two persons who become a new couple it seems natural to include in the analysis new unmarried couples together with married couples.

In Figure 10.4 is given the mean values for 1993/94 and 1994/95 of persons shifting from living alone to cohabiting as a percentage of persons living alone at the beginning of the year<sup>1</sup>. The figure shows that women start cohabiting at a younger age than men and that this, as expected, occurs just before marriage.

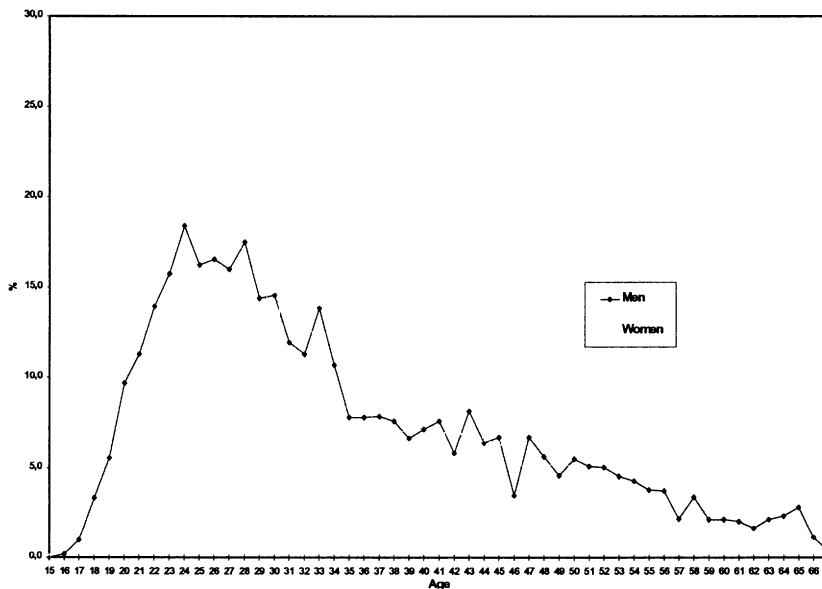


Figure 10.4. Percentage Cohabiting (1993/94 and 1994/95). (Source: Random sample from IDA-database (Leth Sørensen 1997))

FAMILY STATUS IN 1980 AND 1995 BY GENDER AND AGE

The results of rates of transitions into and out of marriage and consensual unions among respondents show a distribution of the population by selected groups according to family status for 1980 and 1995.

Here the following categories are considered: (1) Living without a partner (but possibly with a child in the family household); (2) Cohabiting (not married to partner); (3) Married, living with spouse; (4) Formerly married, experienced transition out of marriage

Figure 10.5 clearly shows the change from living in marriage to living in consensual union. This is most pronounced among younger generations. Furthermore, it should be noted that the proportion living alone has increased slightly. A characteristic difference between men and women is that the proportion of formerly married persons is much higher for women than for men. This means that men have a higher propensity to re marry.

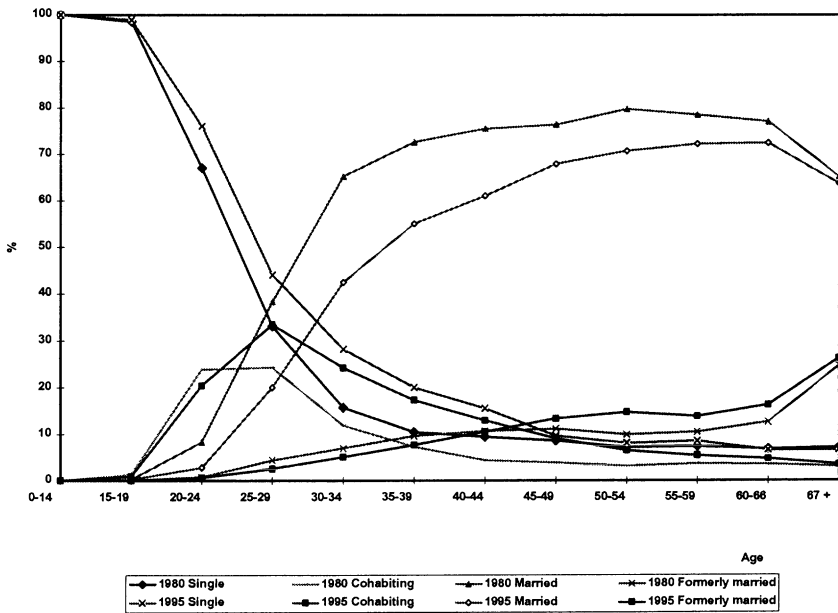


Figure 10.5. Distribution by Family Status, 1980 and 1995. Percentage of Male Respondents

Based on all the persons who are living alone in relation to those who begin cohabiting results for 1993/94 and 1994/95 show that the number of persons experiencing this change is 121,000. This corresponds to almost 1.75 times the number of persons that will be married.



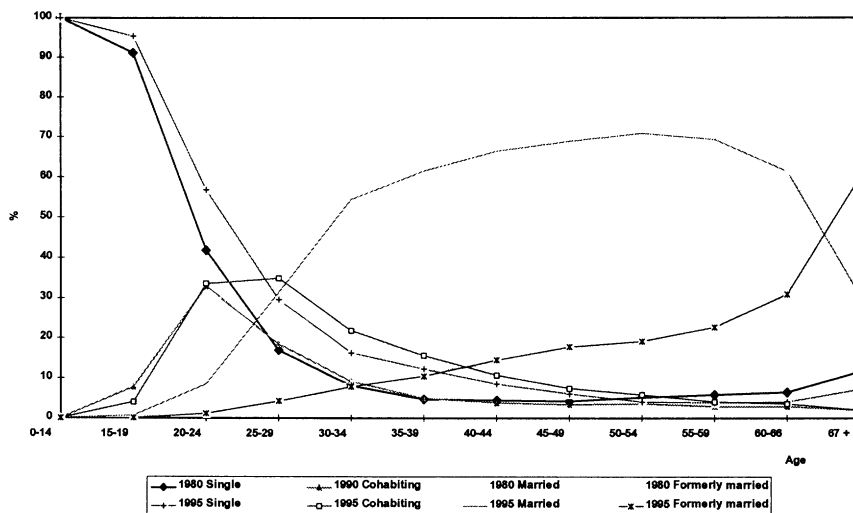


Figure 10.5a. Distribution by Family Status, 1980 and 1995. Percentage of Female Respondents

## EDUCATION

### *In the Educational System*

A considerable proportion of men and women are still in the educational system when they start cohabiting. 1/5 of the men are still in the educational system compared to 1/3 of the women. Of those in consensual union and still in the educational system the largest share are in vocational training or the long cycle of higher education.

### *Educational Attainment*

As a relatively high proportion of the persons who start to cohabit are still in the educational system we have used a combination of data on completed vocational training and on ongoing education as a measure of educational attainment. For persons without any completed vocational training but who are in the educational system we have used information on ongoing education as a measure of educational attainment. If a person is still in education and has also completed vocational training the highest level of education was chosen. For those who have left the educational system and have completed vocational training the highest level of education was again chosen.

In Denmark we have official data covering almost all types of education. This allows for a detailed distribution of educational careers/attainment in the population at large. Here an in Denmark commonly used classification of education will be used in our analysis. First, we have divided vocational training into those who have only completed their first introductory year (thus not completed the vocational training programme) and those who have completed their vocational training (3 to 4 years). Furthermore, higher education in Denmark can be divided into 3 categories based on the number of years required to complete the cycle: (1) the short cycle of higher education (1 to 3 years till completion); (2) the intermediate cycle of higher education (3 to 4 years till completion); (3) the long cycle of higher education (5 to 6 years till completion)

A corresponding classification is used in Hansen (1995). This longitudinal study conducted by the National Institute of Social Research was set up to undertake a life course study of one generation. It is based on the survey of a random sample of a generation born in 1954, which at the time of the first survey in 1968 were 14 years old. The respondents were interviewed at a second time at the age of 22 and the third and last time in 1992 at the age of 38.

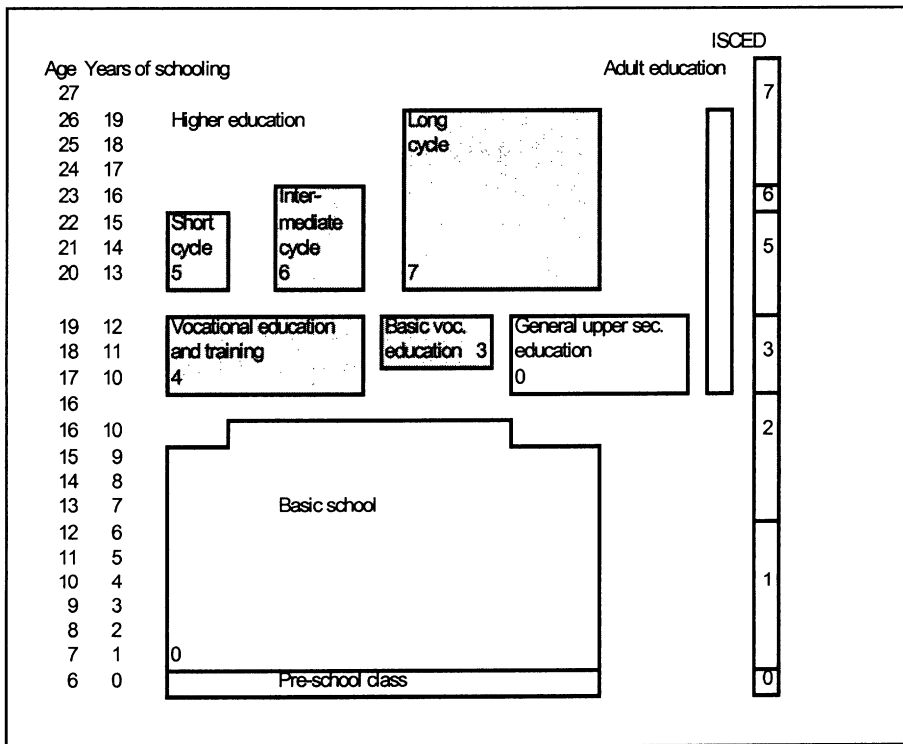


Figure 10.6. The Danish Educational System

*Table 10.1. Distribution of Educational Attainment Among the population at Large by Age Group, 1995*

Age	Educational Level						
	0	3	4	5	6	7	
<u>Men</u>							
0-14	100.0	.	.	.	.	.	100.0
15-19	65.2	13.4	20.6	0.2	0.2	0.4	100.0
20-24	29.9	17.9	32.9	2.6	6.1	10.6	100.0
25-29	26.9	9.2	40.6	5.2	8.8	9.4	100.0
30-34	30.7	6.2	41.0	5.7	9.0	7.5	100.0
35-39	34.6	4.7	38.4	6.2	8.2	7.9	100.0
40-44	30.6	2.2	43.2	6.8	8.3	8.9	100.0
45-49	32.4	0.5	42.9	6.4	10.2	7.7	100.0
50-54	37.2	0.2	41.4	5.1	9.6	6.5	100.0
55-59	43.0	0.3	38.2	4.4	8.6	5.4	100.0
60-66	47.3	0.4	37.8	3.5	6.3	4.7	100.0
67>	75.7	0.2	16.9	1.6	2.8	2.8	100.0
All	52.4	4.0	29.0	3.5	5.8	5.4	100.0
<u>Women</u>							
0-14	100.0	.	.	.	.	.	100.0
15-19	76.1	9.7	13.8	0.1	0.1	0.3	100.0
20-24	34.9	15.5	25.6	2.8	11.5	9.7	100.0
25-29	28.2	9.3	33.6	6.1	13.7	9.0	100.0
30-34	30.5	7.7	36.2	8.0	11.9	5.7	100.0
35-39	36.1	7.1	29.4	10.1	12.5	4.8	100.0
40-44	36.9	5.3	30.0	10.6	13.0	4.3	100.0
45-49	39.1	1.0	37.3	8.0	10.9	3.7	100.0
50-54	46.8	0.7	34.6	5.2	9.8	2.9	100.0
55-59	55.3	0.6	30.4	4.5	8.1	1.2	100.0
60-66	64.2	0.6	24.9	2.8	6.3	1.2	100.0
67>	86.8	0.2	9.3	0.9	2.4	0.4	100.0
All	59.9	4.0	21.8	4.2	7.2	3.1	100.0

Source: Random sample from IDA data-base

Table 10.1 shows the level of educational attainment of the total population by gender and age group in 1995. In 1995 more than half of the population did not complete and were not participating in vocational training or education. The category with the highest proportion is vocational education and training: 29 percent of all men and 22 percent of all women. Such a difference between men and women

with respect to achieved education is illustrative of the general gender-specific distribution of educational attainment in Denmark.

*Table 10.2. Married Persons by Age and Educational Level, 1995 (in Percent)*

Age	Educational Level					
	0	4	5	6	7	
<u>Men</u>						All
20-24	4.7	2.3	2.2	1.9	0.7	2.8
25-29	23.3	20.4	17.5	17.9	11.6	20.0
30-34	38.8	44.0	47.3	43.3	43.3	42.5
35-39	47.8	56.9	65.1	59.3	65.3	55.1
40-44	49.5	65.2	66.9	70.1	67.2	61.1
45-49	60.0	72.0	70.2	74.8	68.0	68.0
50-54	64.4	74.5	77.1	74.3	72.8	70.8
55-59	67.5	74.8	78.4	80.8	74.6	72.3
60-66	68.8	75.4	74.4	77.1	78.4	72.5
All	48.8	50.8	57.3	55.9	47.5	50.6
<u>Women</u>						All
20-24	13.7	7.5	1.4	4.1	1.4	8.5
25-29	34.8	33.3	31.7	28.1	15.9	31.3
30-34	52.0	56.9	52.7	56.0	46.9	54.4
35-39	57.1	64.4	63.4	67.4	55.9	61.6
40-44	63.9	70.1	61.5	69.9	61.6	66.5
45-49	66.9	73.8	65.4	66.6	56.2	69.0
50-54	70.4	74.6	66.4	68.7	54.7	71.0
55-59	68.2	71.3	73.3	70.2	56.5	69.4
60-66	60.9	65.0	57.4	57.8	39.3	61.4
All	56.1	55.4	55.9	52.6	33.8	54.4

Note: The educational level corresponds to the numbers used in Figure 6. Category 3 is placed under category 4, since only a minor group has this type of education among the older cohorts.

Source: Random sample from IDA data-base.

A high correlation is obtained when looking at the relation between educational attainment of respondent and vocational education of the father. The prospects for a person achieving a long cycle of higher education if the father completed an education at this level are 4 to 5 times higher than expected. Parallel to these results, the number of persons with a long cycle of higher education is almost 3 times the ex-

pected number of persons whose fathers belong to the groups of top managers/salaried employees<sup>2</sup>.

*Table 10.3. Educational Homogamy at Time of Moving in Together, 1980-94*

Year	Male	Female	All
1980	42.2	41.7	42.0
1981	39.0	38.2	38.6
1982	39.0	40.2	39.6
1983	39.1	38.9	39.0
1984	39.5	39.6	39.6
1985	39.7	39.4	39.6
1986	37.9	40.8	39.4
1987	37.8	39.4	38.6
1988	40.1	39.4	39.7
1989	42.0	38.9	40.4
1990	38.7	40.3	39.6
1991	40.1	41.7	41.0
1992	38.2	38.4	38.3
1993	36.9	38.3	37.6
1994	35.7	36.3	36.0
All	39.1	39.4	39.3

Note: Start of new relationship: Multiple events. Homogamy defined as partners having the same educational level based on all categories in Figure 6.

Source: Random sample of persons 15-40 years of age (2.5 percent) taken from the IDA data-base

These results can be compared to the findings of the longitudinal study of the life course conducted by the National Institute of Social Research. One of the results is that there exists a clear relation between the class of origin and the educational attainment of the respondents. The prospects for a person who comes from the highest social classes will end up by having a long-cycle higher education are 3-4 times higher than expected (Hansen 1995).

A hypothesis often put forward is that women are reluctant to marry downwards despite the fact that they have almost educationally caught up with men. If this were true, the proportion of married persons should be low for 2 groups: highly educated women and unskilled men. The 1995 data in Table 10.2 show the percentage of married persons by gender, age and educational attainment.

As the table shows we find that this hypothesis is clearly supported by Danish data. Men without a completed vocational education represent the lowest proportion of married men, while women with a long cycle of higher education - regardless of

age - are married the least often. Looking at data for 1980 similar tendencies are evident, although the proportion of married persons declined in general.

#### HOMOGAMY BETWEEN 1980 TO 1995

We have not observed any particular change in the proportion of couples that have the same level of education in the period that we examined (see Table 10.3).

This contrasts with the results for Germany. This may partially be attributable to the shorter time period under examination.

#### DATA

##### *Sample from the IDA Database*

The data used here are based on a random sample of persons from the IDA database, which has been established by Statistics Denmark (Danmarks Statistic 1991, Leth-Sørensen 1997). The IDA database contains longitudinal data derived from multiple (annual) cross-sectional data sets. It covers the whole population as well as all establishments with at least one employee. The data used for this database was collected between 1980 and 1997. The database was constructed by using data from public registers and linking these data. In this way it has been possible to give information on the status of the total population in relation to the labor market at the end of November each year. The basic sample used here is a 2.5 percent random sample of the total population.

#### SELECTION OF CASES

##### *Information from Population Registers*

The operational definitions for Danish statistics on families are also adapted for register data. Data have been available since 1980 on an annual basis. The definition of a family unit is not only based on the legal relationship between the persons. Persons have to live at the same address if they are to belong to the same family unit. This implies that if a married couple for some reason is not living in the same dwelling together they will be considered two families. Cohabiting couples are also identified by using the population registers. The number of children in a family is indicated by the number of children living at the same address as their parents. Each person's family status is stated at the end of each year.

##### *Selection of Sample*

Since we have data starting in 1980 and we want to avoid left censoring we selected a random sample of persons between 15 and 17 years old in 1980 from the

IDA database. Selection is based on the person number, which means that each year we will observe the same group of persons as long as they are in our observation window. We followed the selected group until 1995 by which time the majority of cases of first cohabitation/marriages took place. The few cases of persons already cohabiting in 1980 were excluded from the sample. The number of selected persons in 1980 is 6746.

### *Selection of Partners*

A partner is defined as that person who is either cohabiting or married to the respondent. Information on the person number of the respondent's partner was also extracted from the population registers. Here, we do not take the age of the partner into account. Using the person number as a key we afterwards derive information for this group of partners for all years between 1980 and 1995 provided they remained present in the population. Since we used information for the partner the year before cohabitation started, there were some cases for which the partner is not present in the population that year. These cases (n=122) were excluded.

### *Selection of Fathers*

The population registers contain information on the person number of the father (and the mother) for the cohorts born after 1960. We have therefore been able to find information on most of the fathers. But it should be noted that a small proportion of the sample does not provide information on the identity of the father. At the same time, it was not certain whether the fathers would be present in the population at the time of entry into first cohabitation or marriage. For this analysis only those cases were selected which provided information on the person's father for all relevant years. As a result 1119 cases were excluded.

### *Age Difference Between Partners*

The most common age difference between the two partners in our sample is for the man to be up to one year older than the woman. This applies to 14 percent of all cases. For almost 80 percent of the cases the difference in age is under 5 years<sup>3</sup>.

Information on parents of newly born children shows that the distribution by difference in age between the parents is similar to the above mentioned distribution between couples in general (Christoffersen 1997).

## STRUCTURE OF DATA FOR RUNNING TDA

We are interested in the first event when a couple starts cohabiting, i.e. the first time entering either consensual union or marriage. Data or information is taken into account only until the first event takes place, until 1995 (the end of the time period under observation) or until the respondent is no longer present in the data (has left the population). The two last situations are right-censored cases.

*Final Sample*

After having gone through the data we end up with a net sample of 5505 persons in 1980 with an almost equal distribution according to gender. The number of records or person years is 40,764. Out of this number 84 percent will experience a shift from living alone to cohabiting or becoming married. Only 7 percent of the total number of events is cases where a person shifts from living alone to becoming married. The majority (89 percent) are cases where a couple starts cohabiting (and without having common child).

## METHOD

The data we are used for this analysis are based on yearly observations at the end of the year. Therefore we chose a discrete time logistic transition-rate model. To model the rate of cohabitation we have used a model which resembles a logistic model with three destination states (competing risk model). There is one origin state living alone and three possible destinations: (1) upward cohabitation (partner has a higher level of education); (2) homogamous cohabitation (partner has the same level of education); (3) downward cohabitation (partner has a lower level of education). Of course, also the possibility of no transition exists.

To define the three types of transition we have used the following classification of educational levels. Since the educational system in Denmark differs from the systems in other countries we have created a classification, which makes the Danish system more comparable to others. Inspired by the German classification (Blossfeld et al. 1996) six main levels of acquired education in Figure 10.6 are used as the basis:

We will use the following groups: (1) incomplete or only basic vocational education (0-3); (2) completed vocational education and training; (3) short cycle of higher education and intermediate cycle of higher education (5-6); (4) long cycle of higher education (7).

This classification reflects both the type of education and duration required to complete the educational programme.

We constructed three separate models for each type of transition. A normal competing risk model was not used since a person with the highest educational level cannot make an upward move. In modeling upward moves we have excluded this group of persons with the highest level of education from the analysis. Similarly, a person with the lowest level of educational attainment cannot make a downward move. Hence they are excluded from the analysis of this downward mobility.

Let  $T$  be the duration of the episode (measured since 1980). Let  $O$  and  $D$  denote the origin and destinations states, respectively. The model can then be written as

$$\Pr(t = T, D = k \mid O = k_0, T \geq t) = \frac{\exp(\beta_0 + X\beta)}{1 + \exp(\beta_0 + X\beta)}$$



On the left-hand side there is discrete-time transition rate, to be interpreted as the conditional probability of a transition from origin state  $k_0$  to destination state  $k$  at time  $t$ , provided that the origin state has not been left before  $t$ .  $X$  is a (row) vector of covariates.  $\beta$  is the set associated coefficients to be estimated;  $\beta_0$  is the constant to provide a baseline transition rate.

## VARIABLES

We have information on the respondent, his/her partner and the respondent's father. The independent variables used in the event history analysis are listed below. All variables are based on register data.

1. *Non-monotonic age dependence.* We have defined the following variables concerning age:

$$\text{Log}(D_i) = \log(\text{Current Age} - 15)$$

$$\text{Log}(R_i) = \log(60 - \text{Current Age})$$

2. *Educational attainment level.* For modeling the interaction effect of age and education measures of educational attainment are used corresponding to levels indicating by numbers 0 through 7 in Figure 10.6. Thus this variable takes on values between 0 (no vocationally qualifying education) to 7 (university degree).

3. *Not in school.* This variable is 1 if the person has left the educational system. In one other model we use dummy variables for the time since leaving school. But it turned out that there was no major difference in the coefficients for the different time since leaving school.

4. *Duration in educational system.* This variable is based on information on ongoing education. It counts the years in the educational system after the age of 15. If a person has interrupted periods in the educational system, which is rather common in Denmark all years in the educational system are cumulated. When a person is not in education this variable is set to 0. Since almost all persons go to school until the age of 16 we are assuming that persons who are 17 in 1980 were in educational system in 1979.

5. *Duration since leaving school.* For each year since leaving the educational system this variable is increased by 1. For each spell in the educational system the variable is given the value of 1 each time the person has left the educational system.

6. *Main effect of father's educational attainment.* For modeling this effect we have used the following dummy variables: Father's education\_4: Vocational education and training; Short cycle of higher education and intermediate cycle of higher education; Long cycle of higher education. Fathers without any vocationally qualifying education is the reference category.

7. *Indirect effect of social origin.* To evaluate the effect of the relation of the father's educational level to the daughter's/son's level of education we have defined two dummy variables: If the Father's education is lower than son's/daughter's education then this variable is set to 1. If father's education is higher than

son's/daughter's education then this variable is also set to 1. Father's educational level is equal to son's/daughter's is used as the reference category.

## RESULTS

### *Simulation Gender, Age and Homogamy*

To present the results of the analysis of homogamy we start by showing the relationship between gender, age, educational attainment and homogamy. In Figure 10.7 and 10.8 we show the curves based on the estimated coefficients in Model 1 of Table 10.4 for three selected groups, based on educational attainment. In the calculation of the probability for persons with vocational education we assume that this group will leave the educational system at the age of 21. For persons with a university degree we assume that they are 26 at the time they finish their education.

Figure 10.7 shows women's tendency to find a partner at the same educational level the higher their educational attainment. This supports the hypothesis of the educational system being conducted to homogamy. We also observe the expected effect of leaving the educational system to increase the probability of moving in together for the first time. But compared with the results from Germany, in Denmark this seems less time for women: those who are still in the educational system do not have a lower chance of moving in together compared with those who have already left the system. The effect of still being in the education system to delay cohabitation can also be seen for men (see Figure 10.8). Up until the age of 23 those without any vocational education and who have left the education system have the highest probability of entering cohabitation for the first time. After the age of 26 men show a tendency toward homogamy if they have been in the educational system for a longer period.

### *Time-Dependent Effects*

We have included the other time-dependent variables in the estimations. The results are given in Table 10.4. Besides the two models for which the results are given in the table we have also looked at a model, which takes into account the number of years since leaving the educational system by including dummy variables for different numbers of years. But we do not see any effect on cohabitation by the number of years since leaving the educational system. What seems to matter is whether one has left school and not the time since leaving.

1. *Stepwise selection in the educational system.* Based on the hypothesis of the educational system as generating upward mobility or homogamy we do find that duration in the educational system has a significant positive effect on these two transitions. The result is found for women as well as for men. For downward moves we find a significant negative effect for women meaning that the probability of a downward move is lower for those who have been in the educational system for a longer period. For men we find, as in the German case, no effect on downward moves.

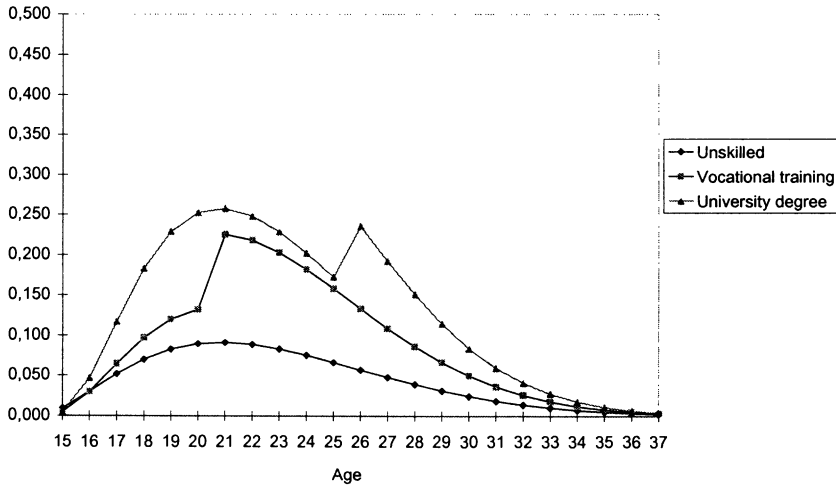


Figure 10.7. Educational Homogamy Rates for Women

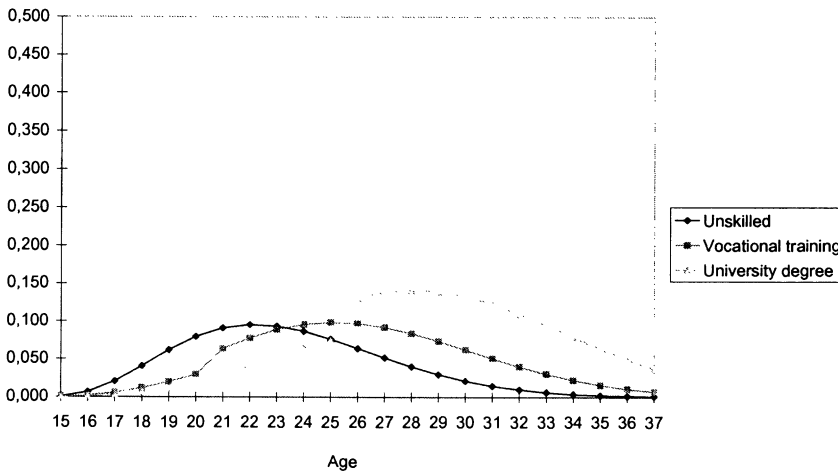


Figure 10.8. Educational Homogamy Rates for Men

2. *Participation in the educational system.* In Denmark we too find that persons who have left the educational system have a higher propensity to cohabit and form either a partnership, which is homogamous or provides for upward mobility. Since a high proportion of young Danes are working while they are still in the educational system this is probably not to be explained by a person becoming more independent in an economic sense. Another hypothesis could be that the period after having left the educational system is just normatively considered a point appropriate for moving together.

3. *Leaving the educational system and entering into more heterogeneous environments.* The hypothesis that educational homogamy should decline and heterogamy should increase the longer a person has been out of school, turned out not to be supported by our sample.

4. *Educational participation and catching up effects in cohabitation/marriage decisions.* The hypothesis here is provided that a decision to cohabit is postponed while still in the educational system, after having left the educational system the tendency to enter a homogamous partnership should first increase and later start to decrease. In the Danish sample we do not observe this pattern if we introduce time dependent dummy variables for years since leaving the educational system. We do not bring the results but the coefficients for the different dummy variables are almost the same, regardless of the kind of transition and time since leaving the educational system. An explanation might be that there is no catching up effect because cohabitation is not postponed in Denmark to the same degree as in other European countries.

In Denmark it is difficult to make a clear distinction between those who are in the educational system and those who are wage earners. Based on data from the IDA-database (Leth-Sørensen 1997) we have found that more than  $\frac{3}{4}$  of men aged 20-29 who are in the educational system are also participating in the labour market. For women the proportion is slightly lower. This indicates that most students also have a job. Therefore we observe different degrees of attachment to the labour market. But as a considerable proportion of the students are in the labour market, they are not prevented from entering cohabitation.

### *Effects of Social Origin*

1. *Direct effect of social origin on educational homogamy.* It might be expected that we would observe a positive correlation between homogamy and the father's level of education. This would mean that a person coming from the higher social classes would to higher degree than others marry homogamously. Using dummy variables for the educational attainment of the father we do not find this relationship in the Danish case. What we observe is that father's education is negatively correlated with upward mobility: The higher the education of the father the lower the tendency to marry upwards. This seems to indicate a rather open relationship between different social classes in Denmark.

2. *Indirect effects of social origin.* The current education level of the son/daughter is compared to the educational attainment level of the father. This

effect is modelled by two time-dependent dummy variables: (1) Father's education lower than his son's/daughter's education; (2) Father's education higher than his son's/daughter's education; while we are using a father's education is equal to his son's/daughter's education as a reference category.

If the level of education were the same for father and child we would expect that this would have a positive effect on homogamy. This turns out to be true in the sense that a person who has been downwardly mobile compared to their father has a significant lower coefficient for homogamy. We find no significant difference between the coefficients for upwardly mobile and those with the same educational level as the father.

Looking at persons who have been educational upwardly mobile, one could expect that they would to a higher degree find a person with the same educational level as themselves. This seems not to be the case in Denmark.

For respondent's whose father's educational attainment was lower than their own they were expected to have a higher chance of meeting a partner with a lower level education. We find that there is a positive effect of *Father's education < daughter's/son's education* on downward cohabitation, but only for women.

Persons who are downwardly mobile in the sense that they have not achieved the same educational level as their father were expected not to move in together with a partner with the same level of education. The variable *Father's education > daughter's/son's education* has a significant negative effect on homogamy for women and men. For this group we would also expect a positive effect on upward mobility through cohabitation. Since they should have a better chance of meeting persons who attained higher educations through the social contacts of their social milieu provided through the family this expected tendency was confirmed for both men and women.

Finally, we look at cases where a respondents were upwardly/downwardly mobile compared with their father. For this group, they were not expected to continue their mobility upwards or downwards, respectively, through partner selection. We find this to be true for upward mobility (compared with father) for both men and women: i.e. these respondents will not find a partner with a higher education than themselves. For those who are downwardly mobile we find no significant effect on downward moves through partner selection.

Another source for studying the relationship between characteristics of husband and wife are the results from a survey conducted by the Danish National Institute of Social Research on social conditions for newly born children. The survey is based on interviews with 6,000 new mothers. The fathers were also asked to fill out a questionnaire, which was posted to the Institute. One result from this survey is that the occupational position of the grandfathers, more frequently than expected, is the same as that of the parents of the newly born (Christoffersen 1997).

Table 10.4: Models for Upward, Downward and Homogamous Cohabitation/Marriage With Regard to Educational Attainment

	Women						Men					
	Upward		Homogamous		Downward		Upward		Homogamous		Downward	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Constant	-50.61*	-48.88*	-50.83*	-40.94*	-41.17*	-42.99*	-82.28*	-73.60*	-77.71*	-75.50*	-60.57*	-59.73*
Log(Current Age-15)	2.32*	2.27*	2.09*	1.69*	0.98	1.21	5.22*	4.80*	3.95*	3.74*	1.64*	1.74*
Log(60-Current Age)	11.83*	11.31*	11.96*	9.40*	10.05*	10.54*	18.74*	16.30*	18.33*	17.75*	14.93*	14.69*
Log(Current Age-15)*Education	-0.11*	0.02	-0.06	-0.14*	0.24	0.28	0.07	0.06	0.15*	0.12*	0.34*	0.33*
Log(60-Current Age)*Education	0.02	0.01	0.07*	0.09*	-0.12	-0.16	-0.08*	-0.03	-0.09*	-0.09*	-0.18*	-0.17*
Not in School <sup>1)</sup>	0.77*	1.23*	0.62*	1.17*	-0.11	-0.53	0.35*	1.54*	0.50*	0.88*	0.33*	0.26
Duration in School <sup>2)</sup>		0.16*		0.13*		-0.11*		0.25*		0.08*		-0.01
Duration Since Leaving School <sup>3)</sup>		-0.02		-0.02		-0.06		-0.02		0.01		-0.01
Father's Education<Daughter's/Son's <sup>4)</sup>		-1.54*		0.15		0.51*		-0.89*		0.11		-0.02
Father's Education>Daughter's/Son's <sup>4)</sup>		1.38*		-0.42*		-0.25		1.01*		-0.23*		-0.30
Father's Education_4: Voc. Training <sup>5)</sup>		-1.37*		-0.02		0.29		-0.97*		0.04		-0.08
Father's Education_5: Middle <sup>5)</sup>		-2.12*		0.23		0.26		-1.31*		0.27		-0.15
Father's Education_7: High <sup>5)</sup>		-2.07*		-0.08		0.41		-1.60*		-0.02		0.07
Number of Events	801	801	1156	1156	439	439	422	422	1069	1069	750	750
Subsides	16174	16174	16977	16977	5976	5976	22446	22446	23787	23787	11421	11421
Likelihood Ratio Test (LR) <sup>6)</sup>	399.77	533.69	450.93	500.02	26.34	47.44	382.58	429.55	606.94	621.16	119.73	126.29
Degrees of Freedom	5	12	5	12	5	12	5	12	5	12	5	12

<sup>1)</sup> Reference category: in school; <sup>2)</sup> Measured in number of years since the age of 15; <sup>3)</sup> Measured in number of years since leaving school;

<sup>4)</sup> Dummy variables (reference: father's education = son's/daughter's education); <sup>5)</sup> Dummy variables (Reference: father no education);

<sup>6)</sup> LR=2\*(loglikelihood(model with covariables) - (loglikelihood(model without covariables)))

## CONCLUSION

In Denmark cohabiting couples are playing an important role as a form of family life. This development has been accompanied by a decline in the proportion of married couples.

Dealing with the question of influence of the educational system we do find this to be of some importance. Especially for women, those who have been for a longer period in the educational system tend to find a homogamous partner. We also observe that for both woman and men the longer they have been in the educational system the higher the propensity to marry upwards or homogomously. That men tend to have a lower chance of finding a homogamous partner could partly be explained by the fact that they tend to be older at the time of starting the first relationship.

When we take the father's educational attainment into consideration we observe that this has no effect on the rate of homogamy. This seems to indicate a rather open marriage market - at least concerning the first partner. This is also supported by the fact that those who have a father with some vocational education have a lower probability of moving upward through partner selection than those who have a father with no vocational education. This should also indicate that the group with the lowest social background has the highest chance of moving upwards.

At the same time by looking at the relation between the educational level of the respondent and his/her father we do observe a kind of counter mobility. Persons with a lower education than their father will not find a partner at the same or (lower) level. Instead they tend to marry upwards, meaning that they will find a partner who corresponds more to their own social background.

It should be noted that for Danish women with a higher education we might observe the tendency to homogamy and a high degree of self-reliance and independence. This might lead to a situation where the social status of the selected husband is not as important as it is in other countries, provided that the women are more independent of the income and social status of the husband.

## NOTES

1. This is a simplistic way of having an expression of the relation between gender, age and start of cohabiting.
2. Results based on random sample from IDA data-base.
3. It is difficult to make a direct comparison with the published official statistics. These statistics are only for marriages and they use 5-year age intervals for women as well as men. But it appears that for marriages, where both partners are never married, about 2/3 of the women aged 25 to 29 are married to a man who is also classified to this age group (Danmarks Statistik 1997).

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## WHO MARRIES WHOM IN SWEDEN?

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## INTRODUCTION

A popular song in Sweden is entitled „Love is not blind, but fairly short-sighted“. That is half way to a concession to a regular finding in studies of marriage patterns, namely that factors of little romantic flavor are important for partner selection. People on the whole tend not to „marry out“ of their social group, whether it be ethnic, religious, socioeconomic, or based on educational qualifications (for a review, see Kalmijn 1998). One explanation for such homogamy is that individuals, far from being blind for love, have clear preferences about their future marriage partner’s social and cultural characteristics. Such preferences may be about similarities, e.g., sharing cultural, life-style, or political interests (which all are signaled by educational qualifications). But also if everybody in the marriage market follows a queue principle in their preference order – such as preferring a well-educated spouse with high earnings potential – the combination of preferences and resources will lead to educational assortative mating (cf. Mare 1991).

Another explanation to educational homogamy is that even those who have no preferences about their spouse’s educational attainment are circumscribed in their choice of partner by the opportunity structure. They may choose freely, but out of the selected sample who appear in the „relevant marriage market“; or they may be influenced in their choice by others, primarily the parents or the family of origin. Yet another explanation would hold that love is in fact just a reformulation of a similarity based on (or correlated with) group belonging.

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Educational homogamy may depend on any or a combination of these potential causes, and they are difficult to distinguish in empirical tests. Models that have important descriptive qualities but also aim at addressing the question of micro-level mechanisms behind educational homogamy have recently been applied to data (e.g., Mare 1991; Kalmijn 1994; Blossfeld, Timm 1997; Klein 1998; Smeenk 1998), and serve as one inroad into the sociological enterprise of understanding partner selection.

The empirical study of assortative mating can also help answering questions of macro-character. One such question concerns the social closure of modern societies, changes therein, and causes to such changes. Another is about intergenerational transmission of resources: if highly educated men marry highly educated women to an increasing extent, cultural resources and aspirations crystallize, which is beneficial for their children's educational attainment both in an absolute and a relative sense. With the increasing labor market participation and earnings potential of women, the income distribution may also become more unequal. The trend in educational homogamy is therefore a macro-level indicator of social openness as well as of inequality of living conditions.

It is the aim of this chapter to address the question of mechanisms behind and trends in educational homogamy in Sweden. After a description of the national context, particularly the educational system which is in focus here, we derive our hypotheses. These are subsequently tested using loglinear and hazard models on retrospective life-history data on first cohabitations. Finally, the findings are discussed.

## THE SWEDISH CONTEXT

Individual choices and opportunities, including whom to marry, are shaped by national institutions. Educational homogamy is obviously dependent on the character of the educational system, and also of the labour market, the family, and the degree of inequality and segregation in society. In addition, demographic factors are important for determining the opportunity structure. In our study we will mostly deal with cohorts born from 1915 to 1973, who became „under risk“ for cohabitation/marriage from around 1933 to 1991 (when our data were collected). This is a sufficiently long time period to allow for a lot of contextual variation in institutional and demographic conditions, and some of these are described below.

### *The Educational System*

At the beginning of our period, the Swedish school system had four layers and was organizationally quite similar to the German system. The compulsory education (*Folkskola*) was then six years and the lower secondary school (*Realskola*) around six, the transition being made at grade 4 or 6 in the *Folkskola*. While some pupils left school with a lower secondary school diploma, others pursued their educational career up to age 19, approximately, in the *Gymnasium* (often, the *Realskola* and the *Gymnasium* were physically in the same building). The few students who passed the

maturity examination at this highly selective secondary level in the educational system could enrol in university studies.

In the 1950s up to the mid-1960s, approximately, obligatory schooling was prolonged from seven to nine years and the new comprehensive school with (mainly) mixed ability classes was introduced. The abolishment of early selection points increased the number of potential applicants to (upper) secondary school. Therefore, a new *Gymnasium* (now secondary level) was created, following school reforms in 1966 and 1971. A number of semi-vocational and vocational schools were organizationally united, both internally and with the former „academic“ study programs in the upper secondary school. Although most of the old demarcation lines between high and low status types of education were also built into the reformed secondary school, there were obvious improvements in the vocational branches of study and they now became two years long, meaning that pupils left these tracks at age 18.

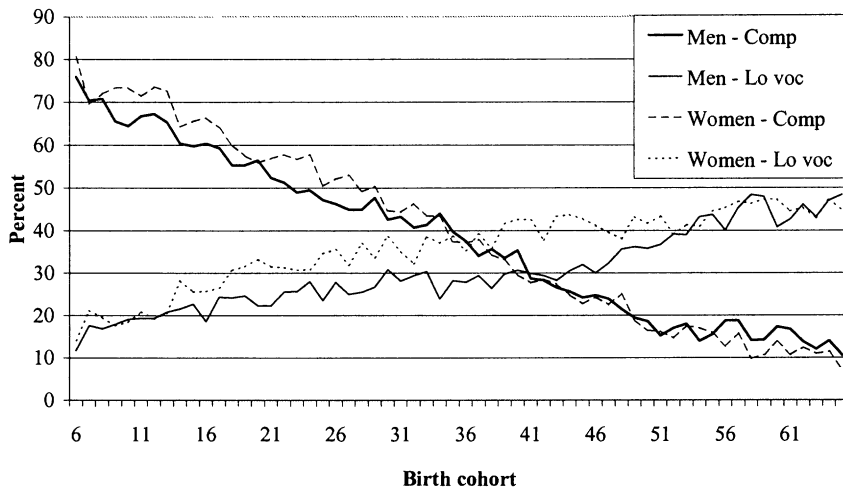


Figure 11.1. Change in Compulsory and Lower Vocational Schooling Among Men and Women

Parallel to the secondary school reform, adult education (or recurrent education) was substantially expanded, beginning in the late 1960s. Many followed shorter courses, but *Komvux* became an important path to higher education for those who had left school early. It attracted people in various birth cohorts, creating a period effect from the late 1960s and onwards. In our data, 20% of all men and 24% of all women began a new stay in education after first union formation. These numbers indicate that the educational levels at first union formation can differ considerably from final educational levels in Sweden.

The third step in the Swedish school reform program was the reformation in 1977 of tertiary education, after which the school system has only three levels: compulsory schooling, *Gymnasium* and the tertiary level. Also at the tertiary level, a

clear hierarchy remains, and traditional university studies and short-cycle tertiary (mostly vocational) courses are typically given in physically separate locations.

As a consequence of the aforementioned changes, the school changed also as a marriage market. Less stratification has meant more connection between students at different educational programs (e.g., the vocational and academic), suggesting a lowered level of homogamy throughout our period, particularly for our youngest cohort in which everyone experienced the reformed school system. While the school in Sweden has become less hierarchically stratified, it has remained remarkably sex-segregated at secondary and tertiary levels during the period we consider (Jonsson 1999).<sup>1</sup> This should attenuate homogamy since boys and girls at similar educational levels do not meet on a daily basis (though they may go to the same pubs, clubs, and dances).

More and more people stay on longer in school, however, meaning that homogamy should increase because those who meet each other at higher levels of education are more likely than others to end up at similar levels (Mare 1991). Figures 11.1 and 11.2 underline the dramatic change in educational attainment during the 20th century. The main ingredient is the continuous fall in the percentage having only compulsory schooling (not considering that this has also been prolonged from six to nine years), and an increase in all other levels of education, mostly for lower vocational studies.

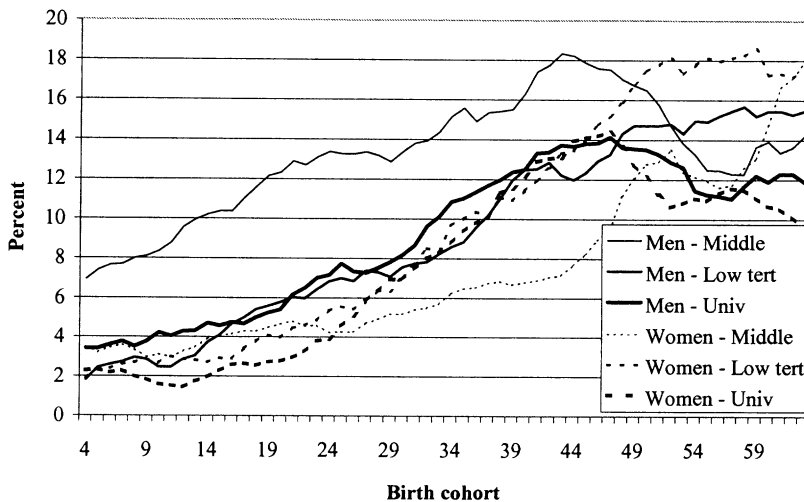


Figure 11.2. Change in Middle and Higher Education Among Men and Women

After an expansion in the 1950s and 1960s due to more liberal admission rules and greater number of eligible candidates, the demand for higher education dropped in the early 1970s, which is unusual in an international perspective, causing a temporary downturn for both men and women (cf. Jonsson and Mills 1993a). A system of *numerus clausus* was introduced soon after. This set a limit to how many students

the system would accommodate *in toto* and has kept the tertiary sector, in particular degree level, in Sweden relatively small in a comparative perspective (OECD 1995).

All in all, the trends in Figures 11.1 and 11.2 are fairly similar for men and women, though men dominated the middle level qualifications until cohorts born in the 1950s and the university level for cohorts born up until the 1940s. Lower tertiary schooling was sex-equal until cohorts born in the mid-1940s; for younger cohorts women have dominated this level of education. As is the case also in several other countries (Shavit and Blossfeld 1993), women now constitute a majority of those who attain higher education in Sweden.

### *The Labor Market*

Changes in the labour market are naturally intertwined with educational expansion, in a way that has a bearing on educational homogamy. Oppenheimer (1988) hypothesizes that the increasing labour market participation of women (related to their increasing educational attainment), and the concomitant increase in female earnings, have led men to consider prospective partners' earning potential when „ranking“ them. Supposedly, men had previously not stressed such characteristics in women but looked, e.g., for comparative advantages such as housework skills (Becker 1981). This has been interpreted as a change towards marriage competition in which both men and women rank each other with regard to education and those with most educational resources „win“; and the growing importance of such a matching process will lead to increasing homogamy (Mare 1991).

The conditions for a development of this kind are certainly present in Sweden. During the period we consider, women's employment has risen dramatically, from around 15% of married women in 1950 to 54% of all women aged 20-64 in 1963, and further to figures around 80-85% during the 1990s (AKU 1963-98; SOU 1998:6, pp. 25). In addition, women no longer leave the labor market after marriage or childbirth (Jonung, Persson 1994; Jonsson, Mills 2001a), making for long earning careers. The increased female labor market participation has been followed by a substantial drop in women's hours of household work – between 1974 and 1991 from 32 to 19 hours/week (Nermo 1994). Though it may be that men and women due to these changes have come to share the preference of marrying someone with a high earning potential, this does not mean that men and women are indistinguishable in the division of labor. During the last 30 years roughly 40% of all employed women worked part-time (Sundström 1997), while almost all men work full time; and though women spend less time with household work, men's contribution has increased very slowly, and was in 1991 only 5 hours/week (Nermo 1994).

A corollary of the increased female employment is that the labor market has become a more important marriage market. This is counterbalanced to some extent by the fact that the sex segregation in Sweden is relatively strong (Charles 1992), women being concentrated in the public sector with health care, care for the elderly, for children, and in education (SOU 1998:6). At any rate, it would seem likely that rational actors in Sweden nowadays will not bind themselves to a partner while still in education, but rather extend their search period to include some years in the labor

market. Particularly for women, information on potential spouses' earning potentials would be improved if they waited for men's career development.<sup>2</sup> This assumption is in line with results showing that rates of union formation are low among students in Sweden (J. Hoem 1986; Bracher, Santow 1998). Of those who ever cohabited in our data, only 9% of all men and 8% of all women were enrolled in education at union formation.

### *Family Formation and Demographic Trends*

In an international perspective Sweden is a forerunner in the rise of non-marital cohabitation. Already in cohorts born in the late 1930s, every third woman reported that her first union was consensual (Hoem, Rennermalm 1985). Only ten years later, in cohorts born at the end of the 1940s, 90% of all women cohabited before marrying (Bracher, Santow 1998). Analyses on family formation in Sweden must therefore take consensual unions into account, and both marital and non-marital cohabitation will be called „marriages“ or „cohabitation“ interchangeably below.

Since educational assortative mating is dependent on the opportunity structure, changes in the number of people of the opposite sex and of the right age who are „available“ is of importance. If we further consider the matching as an outcome of a competition it is not only the absolute number of suitable spouses, but this in relation to the number of people of the same sex (the „competitors“) that is relevant. Since Sweden has not suffered from war casualties during this century, the „relative supply“ of potential marriage partners *in toto* does not vary much over time. Absolute cohort sizes may have some impact on the degree of competition for jobs (East-erlin 1981), and therefore on the timing of first marriage. Empirical evidence for Europe (reviewed by Smeenk 1998) does not seem to give much support to this hypothesis, however.

The timing of first (legal) marriage in Sweden has changed over time (B. Hoem 1996). At age 19, about 30% of women born at the end of the 1940s had entered a union. The share rose to around 40% among women born at the end of the 1950s. In later cohorts a postponement has taken place and only 30% of the women born at the end of the 1960s had entered cohabitation before they turned 19. These changes in timing probably reflect growing general acceptance of nonmarital cohabitations, increased educational attainment, as well as changes in the housing and labor markets.

Not all individuals start cohabiting. At age 40 and older, around 10% of men and 6% of women have never cohabited (SCB 1994, Table 6.6). Among men, this is true mostly for those with low education (around 15% as compared to 4% of those with tertiary education). Among women, however, the opposite is true – around 12% of those at the higher level remain unmarried compared to only 5% among those at the lowest educational level.

*Inequality of Opportunity and Inequality of Condition*

To the extent that educational homogamy is associated with inequality of opportunity and of condition, Sweden should be prototypical of a society with a low degree of educational homogamy, which appears to receive empirical support in comparative studies (Smits et al. 1998). In an international perspective social mobility is fairly high (Erikson, Goldthorpe 1992); educational inequalities are less than in several comparable nations (Erikson, Jonsson 1996a); and income inequality is low (Atkinson, Rainwater, Smeeding 1995; Smeeding et al 1993). Insofar as educational homogamy is driven by individuals' strategies of maximizing market resources, then Sweden, with its relatively „decommodified“ welfare state arrangements (Esping-Andersen 1990), would show low levels of such homogamy.

It is important to note that the relatively low levels of inequality in Sweden are the results of trends towards equality. Social mobility has been increasing (slowly) during the post-war period (Erikson 1983; Jonsson, Mills 1993b; Jonsson, Erikson 1997); the association between social origin and educational attainment has decreased (Erikson, Jonsson 1996b); and income and earnings inequality has diminished (Fritzell 1991; le Grand 1994).

## HYPOTHESES ON EDUCATIONAL HOMOLOGY

*Trends in Homogamy*

It is difficult to predict whether the changes in Swedish society described above have led to increased or decreased educational homogamy. The lowering of barriers both in education and in the distribution of income and life chances suggest that educational homogamy has decreased. The development towards longer educational careers should, on the other hand, have led to increased homogamy. The outcome of the greater female involvement in the labour market is unclear. If this has led to a more competitive marriage market in which both men and women prefer a spouse with high education, we would expect increasing homogamy. At the same time, however, the labour market, which is characterized by greater educational heterogeneity than the school system, has become more important as a marriage market suggesting that homogamy should decrease.

On balance, we think it is reasonable to expect decreasing educational assortative mating in Sweden. This is mainly because we are persuaded that this phenomenon is part of a general trend towards equality in Swedish society, whereas we are less convinced that the educational attainment of women used to be of less importance than presently for men's partner selection. It may be that men nowadays are more concerned about their future spouse's economic contribution to the household than was the case, say, fifty years ago, but at that time education was an important status attribute in a more rigidly stratified society. In addition, we think that some scholars tend to overstate the role of the educational system as a marriage market: the average age difference between spouses in Sweden is around 2,5 years (SCB 1994)

which suggests that there is a limit to the role higher education can play, for instance.

### *The Homogamy Process*

Recent attempts to model the educational homogamy process have used event history data (Blossfeld, Timm 1997; Klein 1998; Smeenk 1998). This has several advantages compared to models based on cross-sectional data: it is possible to focus on the first marriage (including singles in the risk group and avoiding problems of selective divorce patterns), and the homogamy process can be modeled *qua* process, i.e., dynamically.

A model of the homogamy process can usefully take as a point of departure the two major marriage markets – the school and the labor market.<sup>3</sup> There are good reasons to believe that the school is an efficient marriage market (Scott 1965; Kalmijn 1991) despite the prevailing sex segregation at secondary and tertiary levels. Thus, we should expect simple exposure to the school environment to make homogamous cohabitation more likely. Particularly the *Gymnasium* and the university are characterized by a pronounced social life at ages when dating becomes an essential part of life; by frequent and long-term interaction on a daily basis; and by self-selection on vocational and cultural interests as well as on abilities. Experiences in school also create a common frame of reference in terms of skills, cultural habits, knowledge, and shared memories. This, together with the common social network, also facilitates social interaction after having left school. Thus, assuming that most people prefer similarity in the characteristics mentioned above (cf. DiMaggio and Mohr 1985), we would expect cohabitation initiated immediately after school to show a strong tendency towards educational homogamy, particularly among people with higher education.<sup>4</sup>

However important the common cultural habits and common frames of reference achieved in education, once a student leaves the school for the labor market it is almost inevitable that social circles become educationally more heterogeneous. Work-mates and colleagues will replace some of the old „school ties“, and slowly dilute the similarity in educational attainment among those who start cohabiting. This change in the opportunity structure will have such an effect even though preferences for similarity prevail. We therefore expect decreasing homogamy with duration since leaving school.

The overall degree of homogamy will, if the above mentioned assumptions hold, depend on the timing of first cohabitation (cf. Smeenk 1998 and Chapter 5 by de Graaf et al. in this volume), which in turn can be assumed to depend on factors that are endogenous as well as exogenous to individual decisions on whom to marry.<sup>5</sup> As mentioned above we can expect economically rational actors in the marriage market to extend the „partner search“ period to reduce uncertainty, particularly when it is possible to have an own apartment and sexual relationships also without cohabiting. The increasing average age of the first cohabitation for the youngest cohorts in our sample bears indirect evidence on this.



When discussing the school as a marriage market we are focussing on the opportunity structure. It is not easy, especially in our data, to test for alternative interpretations of educational homogamy, viz. preferences and resources. It seems likely, however, that preferences for homogamy should result in fairly similar homogamy propensities across educational levels, while the opportunity structure explanation predicts that homogamy should be stronger the higher the educational level.

Finally, taking the resource perspective should alert us to the simple fact that a person brings more resources than his/her formal qualifications into the marriage market. Most of these resources (such as looks and personality) are probably only weakly correlated with educational attainment and therefore not important in a study of educational homogamy. One important resource is however clearly related to a person's level of education, namely social origin. What makes this factor important here is that as an alternative, or additional resource social origin may *weaken* the association between spouses' level of education. Coming from a wealthy family, for example, would make it possible also for someone with less education to successfully compete for a well-educated partner. This is partly because wealth is an attractive attribute in the marriage market, partly because higher social background enables one to socialize in corresponding social circles with their excessive supply of well-educated potential partners. The upshot of this is that social origin will „rectify“ any dissimilarity between the parents' education and the child's (Blossfeld et al 1998) – one can draw the parallel to the discussion of „return mobility“ within the social mobility literature.

#### DATA AND VARIABLES

The data set is based on life history data collected in the 1991 Swedish level of living survey (LNU) on respondents born between 1915 and 1973 (Jonsson, Mills 2001b). The LNU91 sample is representative of the adult population in Sweden, aged 18-75 in 1991, the sample fraction being around 1/1000 and the response rate 78.3% (Vuksanovic 1994). All respondents answered questions on family history, including cohabitation spells of six months or more, and on their educational career, though dates are less exact here.<sup>6</sup>

One drawback with the data set for the purposes of this paper is that spouse's education is collected via the respondent, and that our basic information is the *current* education for the *current* spouse. As a consequence, reconstructing the educational homogamy or heterogamy at the time of first cohabitation is not possible for all respondents. Fortunately, LNU has some properties that make it possible to reduce the problem. It is a prospective longitudinal survey which has been conducted in five waves of which we use the four first, namely 1968, 1974, 1981, and 1991 (each including information on spouse's education). This means that we can trace a substantial number of our 1991 respondents back in time, and for quite a few we can construct the homogamy measure of their first cohabitation. In addition, in 1968 and 1974 the question about the spouse's education was posed also to those who were single but *had been* married/cohabiting, in which cases we consequently know their previous (first) spouse's education.<sup>7</sup> By using all surveys the percentage

of missing cases (due to either internal non-response – on dates, for example – or pre-interview dissolution of the first cohabitation) could be brought down from 30% to 14%.

Nevertheless, missing information on the first spouse (most often because they started their first cohabitation after the 1981 interview and split up before 1991) and missing data on spouse's education adds up to 707 persons. After having taken out those who had their first cohabitation before immigrating to Sweden (112) the number of respondents in our analyses is 4,382. In some analyses the 919 persons who had never cohabited in 1991 are also excluded.

We construct the homogamy measure by comparing the spouses' levels of education at a cross-sectional time point (using the respondent's education at the start of the cohabitation would probably have led to biased estimates). In choosing the time-point we first noted the month of first cohabitation (T1) and the dissolution of this (T2) from the 1991 family history. Second, we noted the months of the interviews of the respondent ( $T_{INT68/74/81/91}$ , denoting the first interview  $T_{INT1}$ ). Third, we chose to compare the respondent's and the (first) spouse's education in 1981 whenever possible, because the comparability of educational codings is greatest this year. We used the 1991 survey for those cases where  $T1 > T_{INT81}$  and the 1974 or 1968 surveys when  $T2 < T_{INT81}$ , provided that we had information on the first spouse on these occasions.<sup>8</sup>

#### *How Do We Define Educational Homogamy?*

*Educational homogamy* prevails when both spouses have the same level of education. However, the more educational levels one defines the less homogamy and *vice versa*. What is a reasonable number of levels? We have opted for two different definitions of this variable. The first distinguishes five levels: compulsory education, lower vocational schooling, middle-level education, upper secondary, and tertiary education (cf. Figures 11.1 and 11.2). This variable is defined according to the institutional structure of the educational system and of typical labor market opportunities following from different qualifications. The second homogamy variable distinguishes four levels, and is used for studying trends. We have merged the two highest levels in order to make older and younger birth cohorts comparable.

*Parents' education* is also used to measure homogamy. We use a four-level scale: compulsory, lower vocational, middle (lower secondary) level, and upper secondary or higher.

### CHANGES IN EDUCATIONAL HOMOGAMY OVER TIME

Like social mobility, homogamy can be calculated in an absolute as well as in a relative way. An absolute measure would be simply the number in, or percent of a relevant population who is married to someone with a similar characteristic. The drawback with this measure is that it is strongly dependent on how many men/women have the same characteristic. Trends in absolute rates of educational homogamy will typically reflect changes in the educational structure, not least the

increasing educational attainment of women. As an indicator of openness in society, educational homogamy is best studied using odds ratios and related log-linear models (see Mare 1991; Kalmijn 1991; cf. Featherman, Hauser 1978). This „controls for“ structural changes and gives us a measure of the association between the spouses' education. The method is also appropriate for analysing spouse selection as an outcome of a „competition“ in the marriage market for the men and women with the most demanded characteristics.

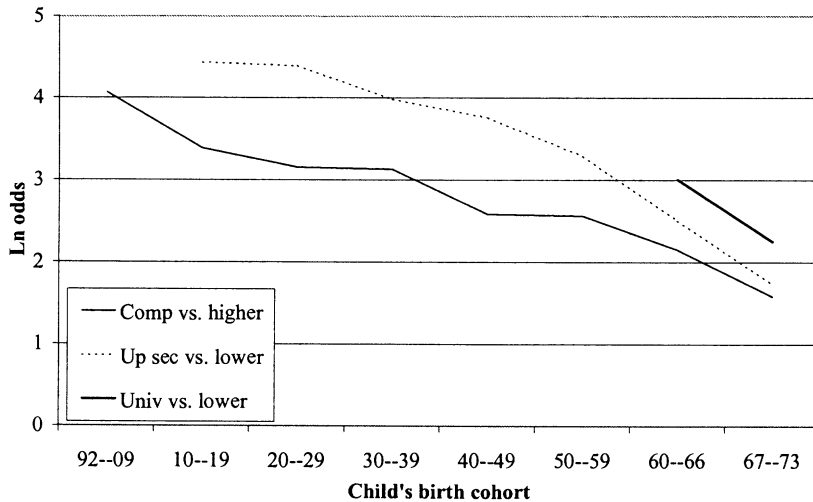


Figure 11.3. Trends in Educational Homogamy Among Parents

We hypothesized above that educational homogamy would decrease over time, at least as measured by relative rates. We begin with addressing this question in the long-term perspective. It is difficult to gather data on married couple's qualifications in a historical perspective, but we can make a short cut by studying the association between parents' educational level. Identical questions on mother's and father's education were posed to respondents born 1892-1973 in the Swedish level of living surveys (the oldest captured in the 1968 wave and the youngest in 1991). From this information we calculated odds ratios for eight cohort groups, using two different division lines in the four-category schema. It is well known that it is not possible to reproduce cohort figures on the basis of a sample of children (Duncan 1966) – among other things, married couples without children are excluded, and we do not know the precise birth year of the parents. Nevertheless, Figure 11.3 shows such a clear pattern of decreasing educational homogamy that we find it hard to believe that having ideal cohort data would change the picture substantially.<sup>9</sup>

If we use the distinction between those with at least upper secondary education and those with less, we see that the log odds ratios come down from around 4.5 among cohorts born in the 1910-1930 period (i.e., with parents born approximately 1880-1900) to 1.7 for those born at the beginning of the 1970s (parents typically

being born in the 1940s).<sup>10</sup> The same trend, albeit at a lower level, appears if we draw the line between lower secondary (or higher) education and lower vocational or compulsory schooling. Finally, in the 1991 survey the code schema distinguished parents with a university degree, making it possible to define homogamy at the split between degree level and any lower education for respondents born 1960-73.<sup>11</sup> Also with this definition the results show a decrease in homogamy for the youngest cohort.

We now turn to our event history sample, respondents born 1915-73. Table 11.1 (absolute rates) and Figure 11.4 (relative rates) show the results of analyses of change in educational homogamy in Sweden. The basis for this comparison is the retrospective life history data of the LNU, and changes are estimated by cohort differences.

*Table 11.1. Distribution of Educationally Homogamous, Downward and Upward First Partnerships by Cohort and Sex (Row Percentages Sum to 100). (Never Cohabiting Respondents Excluded.)*

Birth Cohort	Downward	Homogamy	Upward	N
<u>Men</u>				
15-39	25.6	53.7	20.7	671
40-54	24.8	40.9	34.2	596
55-73	25.1	42.0	32.9	386
<u>Women</u>				
15-39	16.0	55.5	28.5	717
40-54	27.9	41.3	30.8	634
55-73	23.3	44.7	32.0	459

Homogamous marriages as measured in absolute terms were more prevalent in cohorts born before WWII, as compared to younger cohorts. This can easily be understood when looking at Figure 11.1 above: in the older cohorts around 60% of both men and women had only compulsory schooling and hence dissimilarities in education between spouses could not be great. This result differs from the sharp increase in homogamy in Germany, for example, due to the substantial sex differences in educational attainment there in the older cohorts.

Men and women are educationally upwardly mobile more often than downwardly. For women, this partly reflects the fact that highly educated women marry to a lesser extent than other women, and that men who stay single have lower education (which supports the hypothesis that women use educational credentials when „ranking“ potential partners). Men's tendency to be more often upwardly mobile (in cohorts 40-54 and 55-73) is instead partly explained by the fact that there are more women than men with higher education in younger cohorts (and in addition by the fact that men are on average older than their spouse is). To some extent, however,

the dominance of upward mobility seems to stem from the fact that respondents overstate their spouse's level of education.

It is illuminating to take a closer look at the homogamous cohabitations by level of education (Table 11.2). In the oldest cohorts a vast majority of those with compulsory schooling ended up with a partner with the same education, and nearly eight out of ten women at the highest level also entered homogamous partnerships, suggesting that well-educated men for a long time have preferred wives with higher education. In the youngest cohorts only one out of four men and one out of three women with compulsory education had a cohabitant with the same education while this was true for nearly two out of three with upper secondary or higher education. Homogamous partnerships became more common for men with such qualifications and for men and women with lower vocational schooling, but dropped for people in the middle of the educational hierarchy.

*Table 11.2. Percentage of Educationally Homogamous First Partnerships by Level of Education, Cohort and Sex (Percentages of Respondent's Level of Education). (Never Cohabiting Respondents Excluded.)*

Birth Cohort	Compulsory	Lower Vocational	Middle Level	Upper Secondary
<u>Men</u>				
15-39	74.6	14.0	42.6	44.7
40-54	34.0	12.7	55.6	53.1
55-73	25.0	33.1	27.7	62.6
<u>Women</u>				
15-39	68.0	29.1	32.2	78.6
40-54	38.9	26.2	36.8	62.6
55-73	32.4	42.9	23.9	66.7

The patterns of change evident from Tables 11.1 and 11.2 generally came about because of changes in the educational structure. This does not, then, tell us anything about the association between the spouses' education, i.e., the tendency to marry partners with similar qualifications given the „supply“ of such people. To do this, we again, just like in Figure 11.3 for the parents, calculate homogamy log odds ratios using sequential splits in the educational distribution for different birth cohorts (here, we use four cohorts).

According to Figure 11.4, there was a decrease in educational homogamy between birth cohorts 1915-29 and 1945-59.<sup>12</sup> After this, however, there is no systematic tendency towards change. Given that we do not have perfectly comparable educational coding for the spouses, the results should be interpreted with some caution. Nevertheless, when comparing the results in Figures 11.3 (parents) and 11.4, a reasonable conclusion is that relative educational homogamy has decreased for individuals who started their first cohabitation from around the turn of the century and

up till the 1960s–1970s, but that only minor changes, if any, have occurred thereafter.

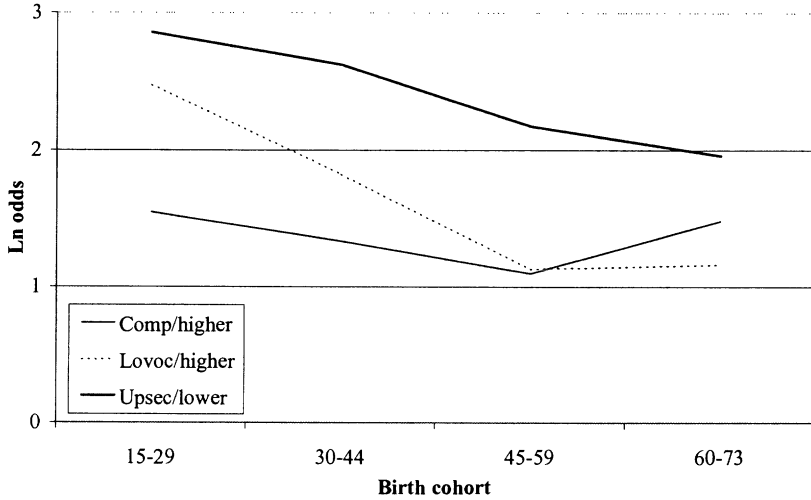


Figure 11.4. Trends in Educational Homogamy

### MODELLING EDUCATIONAL HOMOLOGY

In order to model the process of the timing of the first union dynamically, we apply hazard models to our data. The dependent variable is the hazard rate

$$r(t | X(t)) = \lim_{t' \rightarrow t} \frac{P(t \leq T < t' | T \geq t, X(t))}{t' - t}$$

which gives the instantaneous probability for a union formation after time  $t$ , given that it has not already occurred earlier and the covariate values  $X(t)$  at time  $t$ . The propensity to form a first union is typically low in the early teens, rather high in the ten years that follow, and decreases thereafter. This variation is taken up by specifying an exponential model with two time-varying indicators of age, namely  $\log(\text{age}-15)$  and  $\log(60-\text{age})$  (Blossfeld, Huinink 1989). From this specification the union formation rate takes a unimodal but non-symmetrical shape over age. Since the shape also varies by own education, interactions of the age variables with the (current) educational level are included in the model.

In our first model the processes leading to upward marriages, downward marriages and homogamous marriages are analyzed separately. The durations are the times until first union formation of the specified kind since age 15, measured in months. The observations are censored at first union formation or at the 1991 inter-

view. Those at the highest educational level are not included in the risk set for the analysis of upward mobility, and the corresponding is true for those at the lowest educational level and downward mobility.

In our second model, union formation rates are derived for all combinations of respondents' and spouses' educational levels. This is done by estimating a competing risk model for first union formation with the different types of event being defined by the spouse's educational level. The modeling of the effects of respondent's age and the durations are the same as above. Observations of never married persons are censored at the 1991 interview.

### *Variables*

*Respondents' educational qualifications* are measured in two ways, creating one continuous and one categorical variable. The former takes a 15 level schema as a point of departure, and assigns numerical values (between 7 and 20) for these according to the average years of schooling. This is the basis for a time-varying covariate that has been constructed by pinpointing the month when an increase in the highest level attained occurs. The categorical variable is defined according to the five-level schema mentioned earlier (cf. Figures 11.1 and 11.2).

*Respondent's age* is measured in years since age 15. To allow the age-specific marriage rates to vary by educational level, interactions between educational level and  $\log(\text{current age}-15)$  and  $\log(60 - \text{current age})$  are included.

*Duration in school since age 15* adds up all observed time in education prior to the current spell. It is measured in years.

*Not in school* takes the value 0 if the respondent is currently enrolled in a course of education and 1 otherwise.

*Duration since latest exit from school* is measured in years. The variable takes the value 0 while a person is in education. Each time an individual leaves the educational system the variable starts counting the time since the latest exit, starting from 0 again. We alternate between using a continuous measure and a set of dummy variables for duration intervals. Some models include interactions between these dummy variables and dummies for respondents' educational level.

*Cohort* takes values from 1 to 12, each number indicating a five-year birth cohort, starting with the 1915-19 cohort.

*Opportunity structure.* The marriage market opportunity structure is indicated by the availability („supply“) of members of the opposite sex with roughly the same education. We divided the educational hierarchy into one category with upper secondary and/or tertiary education and one with less schooling than that. To adjust for random fluctuation and take into account that several cohorts are included in the „risk set“ of partnership, we divided the sample into five-year birth cohorts. To account for the fact that husbands are on average older than their wives, these cohorts were defined with two years displacement. Finally, we substituted the cohort value for each respondent with our measures of opportunity structure.<sup>13</sup>

*Parents' education* takes the higher of the levels of the respondent's father and mother (or the educational level of the lone parent). It is measured in years of

schooling typically necessary for each of the previously identified levels (taking the values 8, 11, 10, and 13). In addition, we construct a combined variable relating parents' education to respondent's current level of education, both being measured on a four-level scale. Differences between the levels are indicated by dummy variables (which take on the values of 1 or 0) for the parents having a higher or a lower education compared to the respondent.

*Housing market.* To model the propensity to start cohabiting, the availability of housing is essential. Therefore we add as a control variable an indicator of the housing market for young people. It is defined as the number of 20 to 24 year olds in a given year divided by the number of newly built apartments that year (net increase when possible to identify). The information is taken from the Swedish Yearbook of Statistics 1915-1998.

All variables are time-dependent apart from the measures of parents' education and of the opportunity structure.

## RESULTS FROM DYNAMIC ANALYSES

Tables 11.3 and 11.4 show results from the models for entry into educationally homogamous, upward and downward unions. All models allow for an education and age specific variation of the union formation rates. The first model for each type of union (columns 1, 4, 8) additionally tests for variations by school enrolment and duration since the latest exit from school. We expected school leaving to increase union formation because budget restrictions made it difficult to start cohabiting while still in school. This is supported by the positive effects of the „not in school“ variable for all types of unions and for both sexes.

According to Blossfeld et al (1998), we would expect homogamous cohabitation to be common soon after leaving school, but to decrease steadily after an (undefined but fairly short) initial period. Such a pattern, they argue, would support the idea that homogamy depends on the educational system being an important marriage market. Our data, however, do not support this hypothesis. Model 4 shows that homogamous cohabitation in fact increases with the duration since the latest exit from school. When the linear representation of duration is relaxed by using dummy variables, as in Model 6, we see that there seems to be a fairly systematic increase for men – counter-intuitively they tend to find more educationally similar spouses the longer the time since they have left school. For women homogamous cohabitation increases markedly upon school leaving but remain more or less constant after this. Furthermore, the shift towards a higher propensity of marrying homogamously for women is found also for educationally upward and downward moves, suggesting that what we see is simply a basic tendency to initiate a cohabitation after leaving school. Such a threshold effect is also evident for upward moves among men. Women thus start cohabiting soon after leaving school no matter what the educational status of their partner, while men start only if they find a woman with a higher education.

One possibility we should entertain is that homogamy does not only depend on the opportunity structure; while the educational system may be an important marriage market, explanations in terms of competition and resources may also have



some force. To address this question Model 7 estimates the impact of time since the latest school exit separately for the two lower and the three higher educational levels.<sup>14</sup> As it turns out, the results are intriguing: for men, increasing homogamy with time after leaving school is due to the fate of those with low education, while there is no such pattern among those with higher education. We can then speculate that men with the lowest qualifications who for some reason have not found a partner upon leaving school, or shortly after, find it increasingly difficult to compete for any other spouse than one with a similarly low level of education (and around 15% of these men will end up with no cohabitation experience at all). For men with higher education there is only a weak tendency towards an increased homogamy rate after leaving school and possibly a decline after 11-12 years (though no single parameter is significant at the 5% level).

The results from Model 7 are somewhat different for women. The threshold effect in Model 6 is in the main mirrored in the pattern for those with lower education. The pattern for those with higher education, however, appears to give support for the initial hypothesis – here, the propensity for starting homogamous partnerships soon after leaving school is high and subsequently decreases (and around 12% will end up with no experience of cohabitation). While it is possible that this is because the educational system is a marriage market for women, the result could also be interpreted as a support for the competition hypothesis: those women who did not find a husband with a high education early on have characteristics that make it increasingly difficult to do so.

Turning to Models 2 (columns 2, 5, 9), they include the variable „duration in school (since age 15)“. Arguably, this tests for the assumption that homogamy increases as individuals proceed through the educational system simply because it works as a marriage market and those who spend more time in that market have a greater likelihood of finding a spouse there. Therefore, we expect a positive effect on homogamous cohabitation. This is not what we find, however. The only significant effects are for upward (positive) and downward (negative) mobility for women.<sup>15</sup> Staying on in school thus seems to be a wise strategy for women who want to find a man with a higher education than they have themselves.

In the latter models indicators of parents' education are also included. The estimated parameters support the hypothesis that parental education indicates the presence or absence of additional resources that can be traded in the marriage market. But it is not so much the absolute level of parents' education that is relevant but the relation to the education of the respondent. The estimates of the former are significant only for upward marriages of men and women, and even these effects are only significant when the other covariates that are related to parents' education – the cohort interaction for women and the relative measures for men – are included in the model.<sup>16</sup> Especially daughters of highly educated parents had a high chance of marrying upwards in the older cohorts and a lower chance to do so in the younger. Both men and women have higher rates of upward marriages if at least one of their parents has a higher education than the respondent at the time of union formation. If both parents have a lower education than their daughter she is less likely to marry upward and more likely to marry downward compared to a woman with the same

education and parents with the same level of education as herself.<sup>17</sup> For men the estimated effects show the same pattern but they are weaker and not statistically significant.

A perhaps more straightforward way to test for a high homogamy rate after leaving school is to compare the propensity for marrying spouses of different educational levels. Soon after leaving school the propensity to marry a person with the same educational level should be higher than for marrying someone with other qualifications once the education specific age pattern of marriage and the supply of spouses of respective educational levels are taken into account. Though we still expect a general tendency towards homogamy, even for longer durations, homogamous cohabitation should be most preponderant for the first, and probably the second, time interval since leaving school.

To test this hypothesis we estimate a competing risk model for marrying a spouse at a certain educational level (Tables 11.5 and 11.6). The model allows for five different baselines according to the five possible own educational levels (upper panel). Spouse specific effects for duration since school exit can modify these baselines (lower panel). The intercepts refer to marriage rates while enrolled in education.<sup>18</sup> We include as a control variable our indicator of the housing market, which has the expected negative effect on cohabitation propensities. Similarly, the effect estimates of our second control, the number of „available“ partners with high education, support the general idea that the chance of marrying highly educated increases with the supply. In this analysis, we leave out parents' education since it had little impact on the „not in school“ variable in the previous analysis.

The second row in the lower panel of Table 11.5 shows the estimated parameters for a woman at the lowest educational level (Educ1) to start cohabiting with a man (at educational level 1, 2, 3, or 4) within the first two years after leaving school. The effects are very similar for spouses at the three lower educational levels and much lower for highly educated spouses.<sup>19</sup> The corresponding comparison of the parameters for years three and four after leaving school (lower panel, third row) shows a strong tendency to marry a spouse at the lowest educational level, followed by spouses with educational level 3, 2 and 4. These results lend some support for the hypothesis. However, homogamous marriages become even more pronounced at longer time periods since leaving school which is contrary to our expectations. In fact, when scrutinizing the pattern in Table 11.5, it is only for highly educated women who marry homogamously that the hypothesis receives support.

Turning to men (Table 11.6), we find more convincing, though still ambiguous, evidence for the „education-as-a-marriage-market“ assumption. With the exception of men with only compulsory education the likelihood of homogamous cohabitations initiated 1-2 and 3-4 years after leaving the educational system is higher than for non-hogamous. However, fairly few persons start cohabiting in these early ages, and the difference between parameters is hardly significant. For men at educational levels 2 and 3 there is also a strong tendency to marry women with low education. At longer time periods out of the school, men at the three highest levels of education decrease their propensity to marry a woman with the same education.

To gain some information about the quantitative relevance of the observed differences, Figures 11.5 and 11.6 present the estimated marriage rates by own and by partner's educational level. The figures show evaluations for typical ages of leaving school. For the lower educational groups the differences in marriage rates soon after leaving school are hardly visible because marriage rates are very low at these ages. Thus the observed differences in the effect parameters refer to quite small groups. For longer duration since leaving school the homogamy rate in the lowest educational group stands out both for men and for women because there are many potential spouses in this group and because the closure of the marriage market coincides with ages of high marriage propensity. For the two middle educational categories the four marriage rates are rather close to each other. Only for men at educational level 3 the estimated homogamy rate is consistently higher than the other marriage rates. Homogamy „humps“ after leaving school are present, as we saw in Table 11.5-11.6 above, for highly educated men and for women. Especially for women the differences observed between the estimated model parameters are inflated by the high marriage intensity in the twenties.

## CONCLUSION AND DISCUSSION

In Sweden, as in other societies, people with the same educational qualifications tend to marry each other. In a previous study, Björklund (1992) found a correlation of 0.68 between spouses' education.<sup>20</sup> Educational homogamy has however decreased markedly over time. In absolute rates around 60% of those born between 1915-39 cohabited with someone at the same educational level (out of the four we distinguish). The corresponding figure for those born between 1955-73 is around 35%. This trend over time depends to a large extent on the opportunity structure: among older cohorts a large majority of both men and women had only compulsory schooling and homogamous marriages were thus by necessity very common.

But also when we calculate *relative* homogamy estimates, focussing on the association between spouses' education („controlling for“ the opportunity structure), we find decreasing assortative mating. When we estimated this from information on parents' education, we found a substantial and systematic downward trend from the mid- to late 19th century and onwards. The results from the same analysis for the respondents support the interpretation of decreasing homogamy, but suggest that this trend was broken around the 1960s-1970s. For neither of these analyses have we got ideal data and particularly the question of change during the last three decades must remain open (though the change, if any, was hardly great). However, the trend suggested by our data towards more equal opportunities in the marriage market matches rather well the (also broken) trend towards a lessening association between social origin and educational attainment (Erikson, Jonsson 1996b). One interpretation is that these phenomena are two expressions of an underlying trend towards equalization in Swedish society. It may also be that the reformation and the expansion of the educational system broke down traditional barriers between students at different levels of education and lessened the social and cultural distance between them.

Table 11.3. Exponential Transition Rate Models for the Duration Until Upward, Homogamous and Downward Marriages: Men

	Upward					Homogamous					Downward				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)					
Constant	-31.58***	-34.30***	-31.18***	-38.19***	-37.29***	-34.16***	-32.83***	-40.92***	-39.86***	-38.62***					
Log(Current Age-15)	2.30***	2.36***	2.38***	2.82***	2.88***	2.94***	2.53***	4.06***	4.14***	4.18***					
Log(60-Current Age)	5.54***	6.15***	5.35***	7.23***	6.93***	6.03***	5.75***	6.99***	6.76***	6.23***					
Log(Current Age-15)*Education	-0.002	0.01	-0.002	-0.01	-0.03	-0.05*	-0.02	-0.07	-0.09	-0.11*					
Log(60-Current Age)*Education	0.003	-0.008	0.002	0.02	0.03*	0.05**	0.03	0.07*	0.08*	0.09**					
Not in School	0.95***	0.94***		0.24*	0.25*			0.36*							
Duration in School Since Age 15		0.04	0.04		0.03	0.03			0.07	0.07					
Duration Since Leaving School	-0.006	0.02		0.04***	0.03**		Low edu	-0.02							
1-2 Years After School			0.94***			0.20	High edu			0.29					
3-4 Years After School			1.07***			0.40**	0.18			0.42**					
5-6 Years After School			0.92***			0.40**	0.29			0.25					
7-8 Years After School			1.07***			0.39**	0.35*			0.36					
9-10 Years after School			1.34***			0.64***	0.44			0.17					
11-12 Years After School			1.14***			0.60***	0.44			0.50					
More Than 12 Years After School			1.12***			0.60***	-0.24			-0.13					
Cohort		0.22**	0.17***		-0.02	-0.02	-0.02		-0.12	-0.03					
Parent's Education		-0.12	-0.16**		0.004	-0.005	0.04		-0.13	-0.08					
Parent's Education*Cohort		-0.006	-0.005		-0.007	-0.006	-0.005		0.01	0.008					
Parent's Education<-Respondent's		-0.24	-0.28		-0.14	-0.18	0.06		0.32	0.34					
Parent's Education>-Respondent's		0.75***	0.75***		-0.16	-0.15	-0.25*		0.33	0.32					
Number of Events	415			776				279							
Df	7	13	18	7	13	18	25	7	13	18					
-LL <sub>0</sub>	3095.4			5319.5				1923.0							
-LL	2919.4	2857.4	2855.7	4959.9	4955.7	4954.5	4942.4	1837.4	1830.2	1829.1					



*Table 11.5. Union Formation Rates for Women. Estimations from a Competing Risk Model*

Log(Current Age - 15)			1.85 ***	
Educ2 * Log(Current Age - 15)			-0.06	
Educ3 * Log(Current Age - 15)			0.23	
Educ4 * Log(Current Age - 15)			0.63 **	
Educ5 * Log(Current Age - 15)			0.22	
Log(60-Current Age)			6.63 ***	
Educ2 * Log(60 - Current Age)			0.28 ***	
Educ3 * Log(60 - Current Age)			-0.01	
Educ4 * Log(60 - Current Age)			-0.24 *	
Educ5 * Log(60 - Current Age)			0.10	
	Spouse Educ1	Spouse Educ2	Spouse Educ3	Spouse Educ4-5
Intercept	-35.21 ***	-34.62 ***	-34.48 ***	-34.10 ***
Educ1 * 1-2 Years After School	1.96 ***	1.82 ***	1.88 ***	-1.44
Educ1 * 3-4 Years After School	2.42 ***	1.33 ***	1.75 ***	-1.00 *
Educ1 * 5-8 Years After School	2.72 ***	1.31 ***	1.10 ***	-0.71 **
Educ1 * More than 8 Years	2.83 ***	1.24 ***	0.71 **	-1.26 ***
Educ2 * 1-2 Years After School	1.24 ***	0.66 *	0.39	-0.34
Educ2 * 3-4 Years After School	1.05 **	0.87 **	0.37	-0.81 *
Educ2 * 5-8 Years After School	1.43 ***	0.62 *	-0.03	-0.64
Educ2 * More than 8 Years	1.46 ***	0.91 **	-0.06	-1.50 **
Educ3 * 1-2 Years After School	1.62 ***	0.30	0.83 ***	-0.30
Educ3 * 3-4 Years After School	1.60 ***	0.66 *	0.88 ***	0.16
Educ3 * 5-8 Years After School	1.80 ***	0.84 ***	0.99 ***	0.25
Educ3 * More than 8 Years	1.32 ***	0.12	0.67 *	-0.28
Educ4-5 * 1-2 Years After School	0.44	0.14	0.24	1.06 ***
Educ4-5 * 3-4 Years After School	0.43	-0.45	0.46	1.24 ***
Educ4-5 * 5-8 Years After School	-1.07	-0.68	0.56 *	0.75 ***
Educ4-5 * More than 8 Years	0.52	0.47	-0.55	-0.80
Housing Shortage	-0.02 *	-0.003	-0.05 **	-0.10 ***
Highly Educated Men in Cohort	0.0004	0.03 ***	0.05 ***	0.01
Number of Events	560	351	418	347
Number of Parameters	86			
-LL <sub>0</sub>	12108.7			
-LL	11069.7			

Note: „Educj“ stands for „Respondent/spouse has educational level j“.

*Table 11.6. Union Formation Rates for Men. Estimations from a Competing Risk Model*

Log(Current Age - 15)					2.79 ***
Educ2 * Log(Current Age - 15)					-0.30
Educ3 * Log(Current Age - 15)					-0.09
Educ4 * Log(Current Age - 15)					0.39 **
Educ5 * Log(Current Age - 15)					-0.09
Log(60-Current Age)					6.92 ***
Educ2 * Log(60 - Current Age)					0.28 **
Educ3 * Log(60 - Current Age)					0.04
Educ4 * Log(60 - Current Age)					-0.12
Educ5 * Log(60 - Current Age)					0.22
	Spouse	Spouse	Spouse	Spouse	
	Educ1	Educ2	Educ3	Educ4-5	
Intercept	-37.92 ***	-38.33 ***	-37.37 ***	-37.07	***
Educ1 * 1-2 Years After School	0.87	1.38 ***	1.42 ***	-0.62	
Educ1 * 3-4 Years After School	1.41 ***	1.46 ***	1.21 ***	-1.39	**
Educ1 * 5-8 Years After School	1.26 ***	1.16 ***	0.63 ***	-0.68	**
Educ1 * More than 8 Years	1.63 ***	1.02 ***	0.34	-1.74	***
Educ2 * 1-2 Years After School	0.99 **	1.17 **	0.60	-0.96	*
Educ2 * 3-4 Years After School	0.65	0.56	0.88 **	-0.18	
Educ2 * 5-8 Years After School	0.85 *	0.70	0.84 **	-1.24	**
Educ2 * More than 8 Years	1.21 **	0.82	0.67	0.07	
Educ3 * 1-2 Years After School	1.09 ***	0.87 *	1.24 ***	-0.05	
Educ3 * 3-4 Years After School	0.94 **	1.28 ***	1.25 ***	-0.32	
Educ3 * 5-8 Years After School	1.26 ***	0.74	1.29 ***	-0.29	
Educ3 * More than 8 Years	0.91 **	1.09 **	0.93 ***	0.19	
Educ4-5 * 1-2 Years After School	-0.33	-0.93 *	0.22	0.38	*
Educ4-5 * 3-4 Years After School	-1.35 *	0.26	0.25	0.56	***
Educ4-5 * 5-8 Years After School	-0.98	0.18	0.24	0.23	
Educ4-5 * More than 8 Years	-1.33	0.03	0.28	-0.11	
Housing Shortage	-0.02 **	-0.03	-0.14 ***	-0.10	**
Highly Educated Men in Cohort	-0.03 ***	0.03 **	0.004	0.03	***
Number of Events	467	210	523	329	
Number of Parameters	86				
-LL <sub>0</sub>	11481.3				
-LL	10381.9				

Note: „Educj“ stands for „Respondent/spouse has educational level j“.

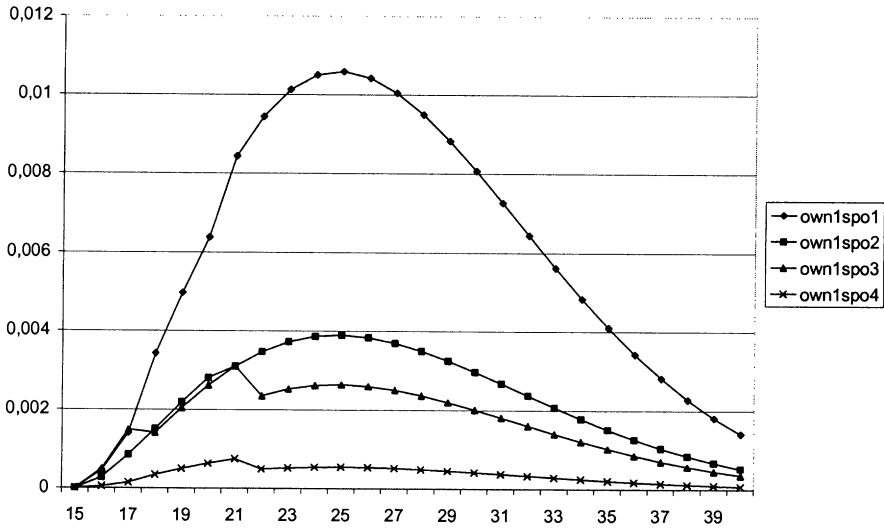


Figure 11.5a. Estimated Union Formation Rates for Women with Educational Level 1, Evaluated for School Exit at Age 14

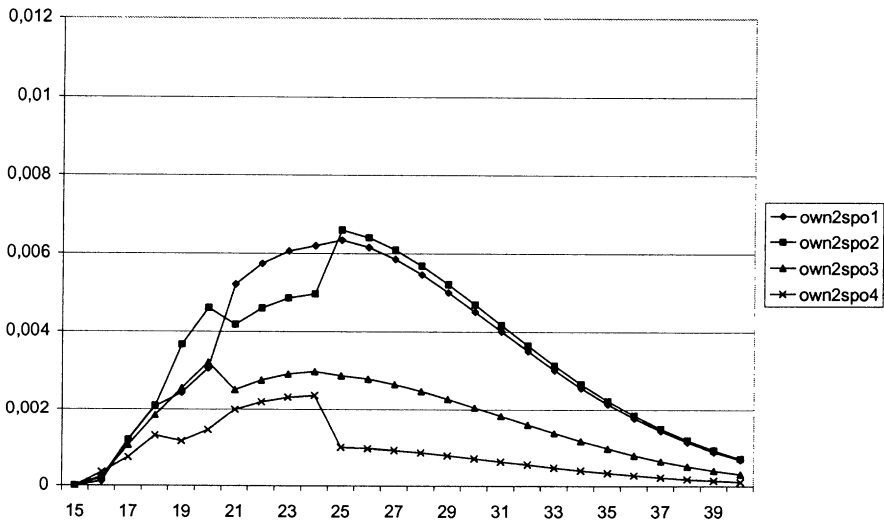


Figure 11.5b. Estimated Union Formation Rates for Women with Educational Level 2, Evaluated for School Exit at Age 17



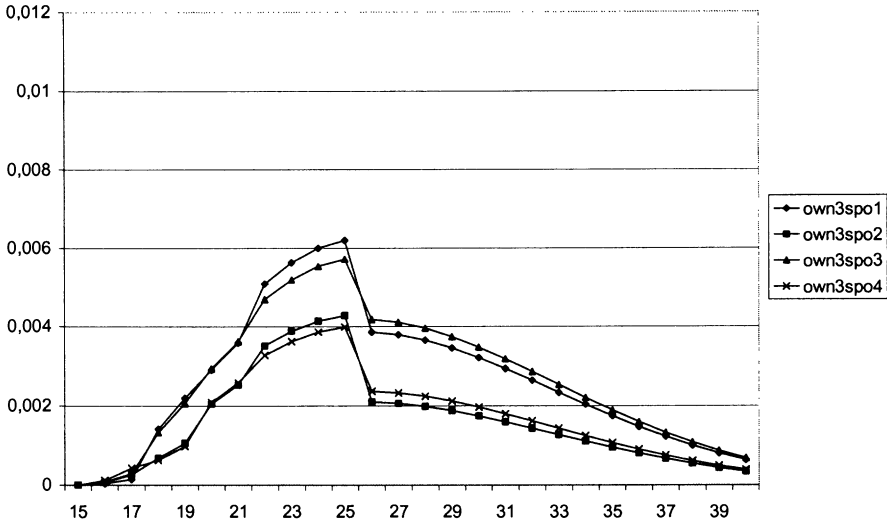


Figure 11.5c. Estimated Union Formation Rates for Women with Educational Level 3, Evaluated for School Exit at Age 18



Figure 11.5d. Estimated Union Formation Rates for Women with Educational Level 4, Evaluated for School Exit at Age 22

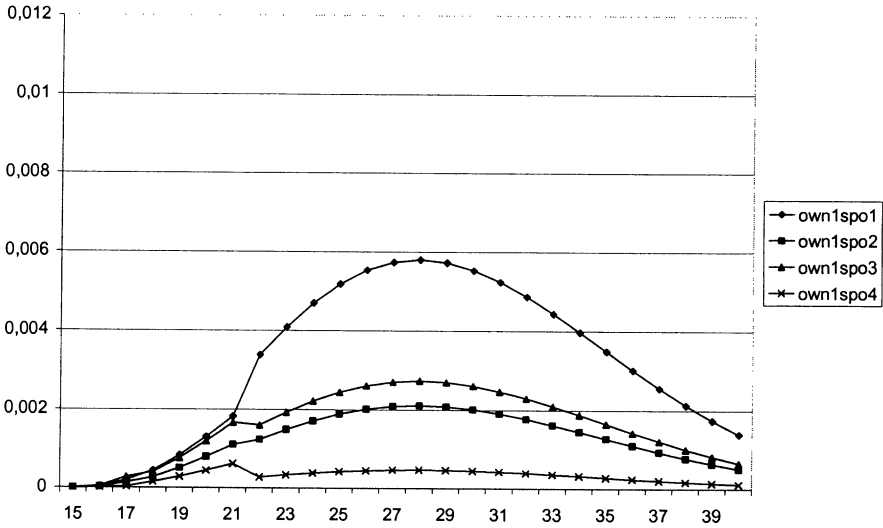


Figure 11.6a. Estimated Union Formation Rates for Men with Educational Level 1, Evaluated for School Exit at Age 14

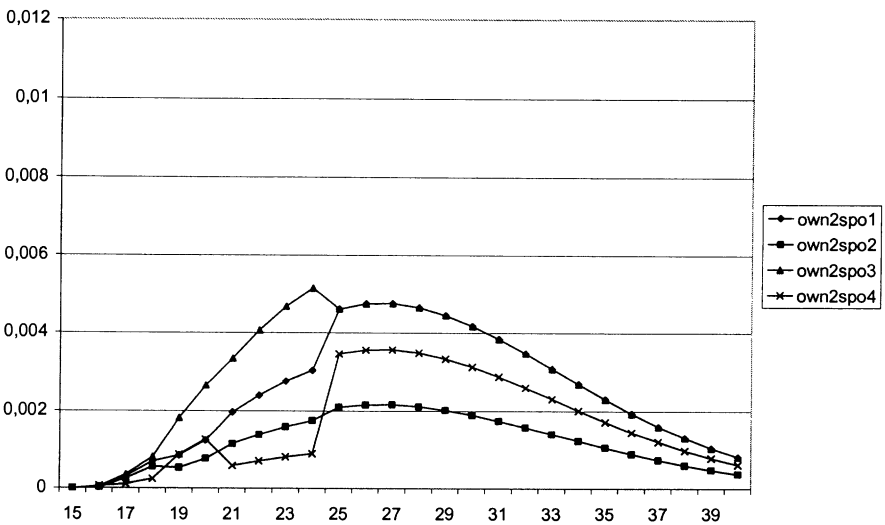


Figure 11.6b. Estimated Union Formation Rates for Men with Educational Level 2, Evaluated for School Exit at Age 17

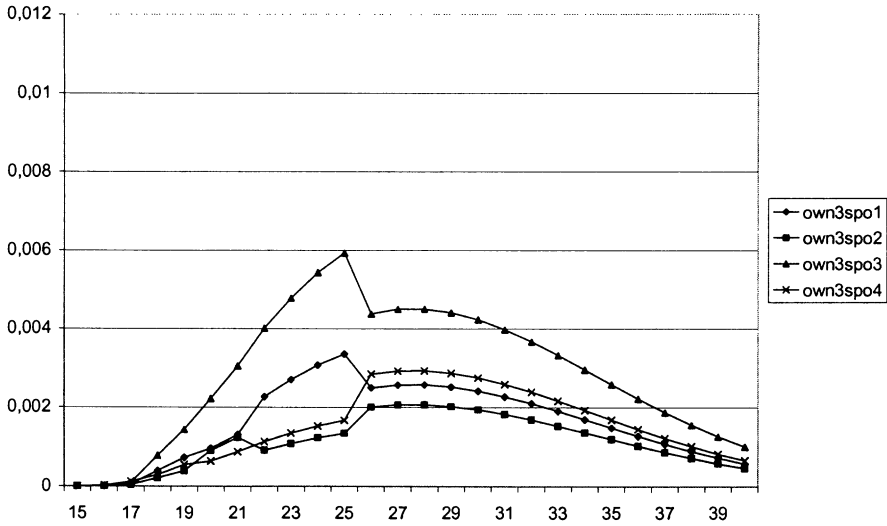


Figure 11.6c. Estimated Union Formation Rates for Men with Educational Level 3, Evaluated for School Exit at Age 18

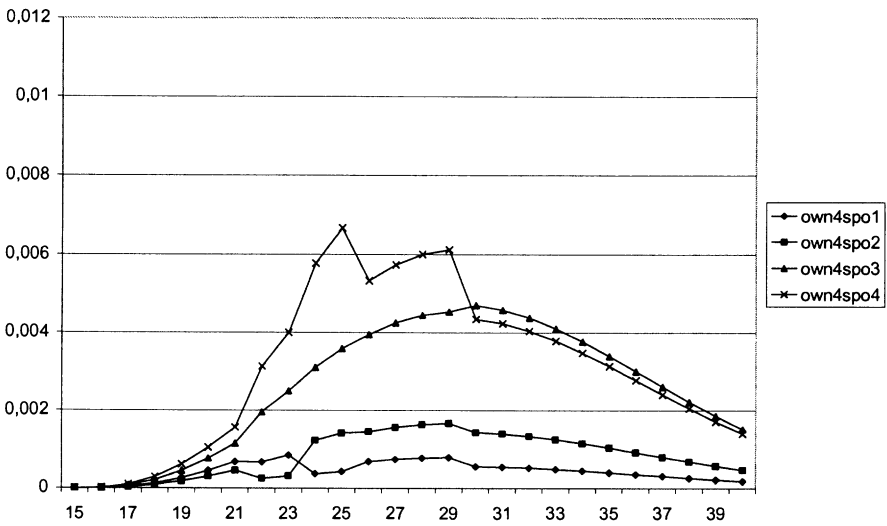


Figure 11.6d. Estimated Union Formation Rates for Men with Educational Level 4, Evaluated for School Exit at Age 22

The hypothesis that the school operates as a marriage market was addressed in our second empirical part. We fitted event history models with time varying covariates to capture the process of first cohabitation and homogamy. Though we could not test the hypothesis in a clear-cut way, two indicators bring to bear on the issue.

First, we expected that people, once they have left school and can afford to form a household, tend to marry homogamously, while such homogamy decreases with the years passed since leaving school. The results do only partly support this expectation. Homogamy is most accentuated at the lowest and highest level of education but the patterns behind it are different. Both for men and women with compulsory education there is increasing homogamy with time since leaving school, while homogamy among those with tertiary education decreases. Whereas the former result is contrary to our expectations, the latter is in accordance with it.

However, from another theoretical viewpoint, the pattern is in fact similar: the possibility of competing for a spouse with high educational qualification decreases with the time passed since school leaving. This points to a selection effect on some unmeasured characteristics, in combination with a view on the process as a competition for those with the highest education. Individuals with high preferences of early cohabiting, and/or with attractive personal qualities (who often find a partner with high education), marry rather quickly. Thus, those under risk for initiating their first cohabitation become a more select group with less resources for competing for highly educated spouses (for women, most of those men are also already taken; and for men, those women may have less preferences for cohabiting). Instead of identifying the opportunity structure in terms of social networks, as in the discussion about the school versus the labor market as marriage markets, this interpretation emphasizes the opportunity structure in terms of characteristics of men and women currently in the market. And while the former explanation tends towards assuming that people in general have preferences for homogamy, the latter assumes that people rather have preferences for marrying those with the highest education (perhaps earnings potential), and that homogamy results from a matching process.

Secondly, we expected duration in school to have a positive impact on homogamy. This was not borne out in our life event models, but found some support in the loglinear models which showed the interaction parameter for the homogamously highly educated to be the strongest of all (cf. also Figures 11.3 and 11.4). Here, the results do not support the alternative „preference-for-homogamy“-interpretation either, since this assumes that homogamy should be prevalent at all levels of education.

While it is possible, though hardly proven in our analysis, that the school system functions as a marriage market, it appears to be more safe to conclude that parental educational (social) resources are of importance for partner selection. As expected, these resources help people who have themselves „fallen behind“ intergenerationally to find a spouse with higher education – the result is upward mobility from the one-generation viewpoint, and status maintenance in a two-generation perspective. The opposite is true for those who themselves have achieved higher educational qualifications than their parents.

We have mentioned some limitations in the data that make the results from the present study inconclusive in some instances. In addressing the hypothesis that the school operates as a marriage market it is also worth noting that we have analyzed first cohabitation; and it is more likely to receive support in an analysis of these as compared to second or higher-order cohabitation. In many countries this is a smaller problem, but in present-day Sweden dissolution of marriages and consensual unions are common – in our data 20% of those who ever cohabited have experienced two or more spells of cohabitation. Future studies on assortative mating would need to take this into account, and address the question whether the labor market plays a more important role for second and third cohabitation. It is unlikely, however, that census data, or general individual level data sets such as ours – even when containing event history information – can shed much light upon the theoretically challenging question whether preferences, resources, or the opportunity structure is most important for educational homogamy.

#### NOTES

1. Single-sex schools have been of little or no significance since the 1940s, however, and institutionalized sex segregation has only affected the oldest cohorts in our sample.
2. Earnings at younger ages are only weakly related to life-time earnings (Björklund 1993). The optimal time of judging a man's earnings potential, and still keep the doors open, seems to be to wait for him to become 30, when men's job careers tend to level out (Jonsson, Erikson 1997). For men, there is no corresponding strategy since women's careers are fairly even and relatively insignificant.
3. Another important marriage market is the local one, the neighbourhood etc., on which there is no information in our data set.
4. The reason why we do not expect these homogamous cohabitations to occur while in school is because few students could afford to have a joint home. In Sweden this means having to use the regular housing market rather than the much cheaper student housing market, since there are mostly small apartments available in the latter. In the older cohorts, student housing was rare, and the typical arrangement for a student was to be a lodger. But during this period (before the late 1960s), the regular housing market was very tight and unless equipped with inherited wealth it was very difficult for students to find their own apartment.
5. The problem with the analyses in Smeenk (1998) is that the when and whom questions are treated as independent of each other, while search theory (e.g. Oppenheimer 1988) would seem to suggest that they are intimately related (you marry when you find the „right“ partner, which often means someone with matching social and educational characteristics).
6. This is a problem for studies at higher levels of education. For those respondents who have a degree from schools of tertiary education, we know the examination date and have reconstructed the start date by assuming a normal study time. For those, however, who finished their higher studies without an exam, we know neither the starting date, nor the finishing date, unless it is recorded in the biography of economic activities.
7. While this adds more cases to our data set, we also introduce some systematic error as well – for instance, those who were less prone to remarry are overrepresented in the last „recovery group“.
8. In principle it would have been better to minimize  $T_{INT1}-T1$ , i.e. to take the first possible time point where we can construct a homogamy measure. However, the information on spouse's education is of lower quality, and less comparable, in the 1968 and 1974 waves.
9. We calculated the log odds ratios in Figure 11.3 also by weighting the data by  $(1/\text{number of siblings})$ . This takes into account the fact that the probability of parents being represented in the sample depends on the number of children in the sample frame. The associations were overall somewhat lower when using this weighting procedure, but the trends were almost identical. We also fitted loglinear models to the 4\*4\*8 table crossclassifying father's and mother's level of education by birth cohort of the respondent (see Figure 11.3). Fitting a model that controls for changes in marginal distributions across cohorts (C)

and for the association between mother's education (MED) and father's education (FED) – a model that could be written (MED\*C + FED\*C + MED\*FED) – returns a  $G^2$  of 196 for 54 degrees of freedom (df), and misclassifies 3.7% of all cases. A uniform difference model (Erikson and Goldthorpe 1992), which fits change across cohorts assuming that the same MED\*FED interaction pattern prevails in all cohorts, returns a  $G^2$  of 84 for 48 df and 1.9% misclassified. This improvement in fit is clearly significant at the 1% level. Setting the log odds in the oldest cohort (parents to respondents born 1892-1909) to 0, the parameter estimate for the following cohorts are 0.05, -0.16, -0.21, -0.34, -0.55, and -0.88 with standard errors between 0.15 and 0.20. While the three first estimates are not statistically significant at the 5% level, the three latter are, and the change is convincingly systematic.

10. When drawing the line as high up in the educational hierarchy as upper secondary level, we lose the oldest cohorts since there were so few respondents who had so qualified parents.

11. The reason why the older cohorts did not get this question is that LNU is a panel survey, and retrospective questions about childhood conditions and parental characteristics are only asked the first time the respondent is interviewed.

12. Log-linear models confirm the change in the association between respondent's (RED) and the spouse's (SED) level of education across the three cohorts (C) in Table 11.2. The model (RED\*C + SED\*C + RED\*SED) returns a  $G^2$  of 96 for 18 degrees of freedom (df), and misclassifies 5.5% of all cases. A uniform difference model (see note 9 above) returns a  $G^2$  of 75 for 16 df, with 4.8% misclassified, clearly an improvement in fit. Setting the log odds in the oldest cohort (1915-39) to 0, the parameter estimate for the 1940-54 cohort is -0.36 with a standard error of 0.09, and for the youngest (born 1955-73) it is -0.41 (se=0.10). Separate models for men and women yield very similar parameter estimates.

13. In addition, we also constructed a „competition“ (or a relative) measure of supply where also the numbers of people of the same sex (the „competitors“) were taken into account. This measure was based on the odds of men in a certain five-year cohort having higher rather than lower education divided with the corresponding odds of women in the „same“ cohort (i.e., two years younger). However, as it correlated very strongly with the absolute measure it was dropped in the statistical analyses.

14. The estimation is done separately by education and not by age at school-leave because it would otherwise interfere too strongly with other model specifications.

15. Note, however, that this effect is net of the effect of the age\*education baseline, and that the education variable included there is fairly highly correlated with duration in school ( $r=0.79$ ).

16. The effect of parents' education is negative for downward and homogamous marriages if the other three variables related to parents' education are not included in the model. It is then significant for homogamous union formation for women and downward union formation of women and men.

17. Notice that the exact size of these differences depends on both the effect of the absolute and the relative measures of parents' education.

18. As we want to compare the effects of duration since leaving school for different choices of spouse, differences in the intercepts may affect the comparison. The estimated effects for duration since leaving school give the extra risk of marrying compared to marrying while in education. But marrying while in school is a rather rare event for all types of spouses. If we restrict the intercepts to be equal across the four types of spouses the duration effects do not change much and our main conclusions are unaffected.

19. The statistical comparison of the four effects depends on the different numbers of marriages for the four types of spouses (Blossfeld, Rohwer 1995, p. 99-100). Some parameters that are statistically different in the current sample may not be significant any more if we observed only 347 events – the lowest number in our sample - for each type of marriages. If we compare the effects for spouses with educational levels 2 and 4 (for whom we observe about the same number of events) the difference is still highly significant (Wald Test 9.54, chi-square distributed with 1df).

20. The related topic of earnings homogamy for couples has been studied by Cancian, Schoeni (1996) who show that Sweden had the highest earnings correlations of all countries included in their study with a correlation of 0.15 in 1981 and 0.21 in 1987 for couples in which both partners were gainfully employed. Henz, Sundström (2001) also report positive earnings correlations for partners with their first child born between 1968 and 1992.

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## WHO MARRIES WHOM IN HUNGARY?

LIFE-COURSE AND HISTORICAL VARIATION IN EDUCATIONAL  
HOMOLOGY

ERZSÉBET BUKODI AND PÉTER RÓBERT

## INTRODUCTION

Marriage between members of different social groups has long been viewed as a crucial indicator of the strength of the boundaries to group membership. According to Duncan, assortative mating is a “special instance of different association” (1968, p. 683-85) which makes the intergenerational transmission of status symbols possible. If the choice of marriage partner occurred at random, social boundaries would become irrelevant, and family status would be transmitted less to the next generation. Thus, marriage homogamy can be viewed as an integral part of the stratification processes. The theoretical concern of a large body of stratification literature lies in the way of how status boundaries in a society are formed. Scholars in this field argue that association between social position of spouses can be interpreted much in the same way as with the correlation between a father's and son's social traits (Sorokin, 1927, Lipset and Bendix, 1959, Hout, 1982). In his work on social mobility Berent (1954, p. 321) claims: “One of the tests for the 'openness' of social structure is the extent of marriage between persons of different social origins.”

Other scholars emphasize the multidimensional character of marital homogamy/heterogamy (Kalmijn 1991). If marriage partners have a high degree of similarity in their social origin, it indicates that the society is more oriented to ascription rather than to achievement. If spouses are similar in their education, it can be regarded as evidence for the prevalence of achievement mechanisms. Empirical findings show that - for different indicators of social status - there is a clear tendency for people to marry homogamously, but education appears to be a more important at-

tribute compared to social origin (Blau, Duncan, 1967, Kalmijn 1991). It means that the increasing importance of education in modern societies has crucial impact on marriage choices. Individuals try to achieve higher socioeconomic status, and try to select the spouse who offers the best prospects in this respect. If education becomes the best predictor for future socioeconomic status, individuals prefer a partner with a high educational level, and - because few people will accept a spouse with less education - it indicates a higher educational homogamy rate. From this viewpoint it is straightforward that investigating educational homogamy as the indicator of social openness should receive more and more emphasis.

One of the most important socioeconomic trends in Hungary during the second half of the 20th century was the increase in the female labor force participation. This increase has been accompanied by simultaneous changes in other aspects of women's life course, such as declines and delays of first marriage and first birth. In fact, the marriage rate has been decreasing since the beginning of the 1970s (Csernák 1992). The age at entry into first marriage is traditionally lower in Hungary compared to Western countries, but in the last decades there has been a tendency to postpone marriages until a later age. This is partly due to the increase of women's educational attainment and, consequently, the longer time females spend in education. The same holds for the age at entry into motherhood which is also relatively low in Hungary; and the timing of marriage and childbirth is close to each other. In addition to the rate, the pattern of women's participation in the labor force has also changed. Females tend to return to the labor force after interruptions (due to child-bearing) at a higher rate than before. Now more than 60 per cent of Hungarian wives return to work either before their last childbirth or after it. The "conventional" type of employment pattern (when a woman leaves the labor force at the time of her first childbirth and does not reenter into market work after that) constitutes only 12 per cent of married women (Róbert et al., 2001). This means that females have become more career-oriented and tend to invest more time in building their own work career. Increasing educational attainment, changing industrial structure, expansion of job opportunities could be considered as the facilitating factors for the increased participation of women in the labor market. Rising educational attainment in younger cohorts of women may increase the "economic costs" of not participating in market work. Furthermore, historical changes in the institution of the family (increase of marital disruptions, growing proportion of mother-headed families) might also have led young females to become aware of the importance of their own work career as an alternative to the traditional family roles. In the light of these socioeconomic trends it is important to investigate females' propensity to marriage and their marital choices.

According to some arguments, women's incentive to marry is weakened by increased economic independence which enables them to live on their own resources rather than on those of their husband's (Becker 1981). According to others, men and women value different attributes of future spouses, men value physical and cultural attractiveness in women, and women value men's earning power (England, Farkas 1986). Either view suggests that women's involvement in the labor force is an alternative to marriage, rather than a facilitator of it. Somewhat more attention has been

directed to the relationship between women's educational attainment and their likelihood of marrying. In this respect, education represents human capital investment that may enhance women's career opportunities and thus reduce their incentive to marry. Many studies have demonstrated that marriage rates are depressed while individuals participate in education. There are several interpretations for it, ranging from the incompatibility of the role of being a student with that of spouse, to the completion of education's signaling progression to adult status (Marini 1978, Goldscheider, Waite 1986, Cooney 1991).

In this chapter we will examine the educational homogamy in Hungary and will extend the earlier investigation of marital selection by utilizing a dynamic analysis of this process. It means that we try to determine the influencing factors of the likelihood of different types of marriage, e. g. educational homogamous marriage, upward and downward marriage. The main difference between traditional and this research strategy can be summarized as follows: While in the former cases the analysis has been restricted to persons currently living in couples, in the latter case the „unit” of investigation is the individual regardless of his/her family status. More precisely, in our dynamic analysis we include all males and females who are at risk for marriage (who are 15 or older), and we outline the effect of different personal characteristics on the incentive to marry regarding the educational attainment of a potential partner. Following this research strategy several questions are addressed here. Are there any life cycle and historical variations in educational homogamy? What is the role of education in the mating process: does it measure individuals' economic or cultural capital? Are there any differences in the effect of predictors on the likelihood of different types of marriage? We will extend our analysis on educational homogamy by considering parental educational attainment as a secondary feature which persons trade on the marriage market. We try to determine the extent to which the level of parental education enhances one's chance to make a good match, or whether parental education can facilitate educational upward marriage or not.

To seek an explanation for the marital selection process, we turn to several competing economic and sociological theories. These provide the background for interpreting our findings from the dynamic analysis of males' and females' incentives to educational intermarriage. The paper is organized as follows. The first section presents the theoretical framework for understanding how different factors influence the likelihood of homogamous marriage. Next, the data and methods are described, followed by the results of the empirical analysis. The final section closes with a summary and conclusions.

## THEORETICAL FRAMEWORK

Mate selection is commonly viewed as to be determined by *individuals' preferences* for similarity in social traits as well as *constraints of the marriage market* people face in realizing these preferences. A discussion of these mechanisms will be outlined further. As for the preferences, our analysis is built on the so-called “resource” hypothesis. Its central argument is that the rewards of marriage stem from

the division of paid and domestic labor within the household, and marriage most likely occurs between an individual who has a comparative advantage in the labor force and a person who has a comparative advantage in domestic work (Parsons, 1942; Becker 1981). In the next step we pose the question whether this traditional view of marriage is appropriate for today's couples. As women's position in the labor force has shifted in recent decades, it has become more important to outline what implication females' and males' changing economic roles may have for the future of marriage. Finally, we try to determine the role of paternal education in the marital selection process.

### *Preferences for Marriage Partner*

#### *Traditional "resource" perspective on marriage formation*

The consideration of "resource" in marital selection can be traced back to the seminal work of Parsons (1942), who claimed that sex-role specialization is crucial for the survival of the family. He argued that the success of marriage depends on the complementary role of husbands and wives. The family with a breadwinner husband and a homemaker wife was viewed by Parsons as a norm, which performs two important functions of the family at most: reproduction of society's members and providing environment for socialization of youth. Hence, marriage works best when family roles are specialized by sex, men perform instrumental functions and women perform expressive functions for the family. According to this perspective, a husband's "job" is to link the family to the larger socioeconomic system while the wife maintains emotional harmony and ensures the appropriate cultural background. In Parsons's words "... the most fundamental basis of the family's status is the occupational status of the husband ..." and the wife has "... a set of utilitarian functions in the management of the household, which may be, considered a kind of 'pseudo-occupation.'" (1942, p. 609.). Any deviation from this pattern may destabilize the family. The situation when a wife works outside the home in a job of equal or higher status compared to that of her husband was regarded to be particularly detrimental, because it can lead to status competition between spouses. Thus, Parsons's perspective on marriage implies a *negative* assortative mating in the case of labor force characteristics (e.g. earning power, occupational achievement). As far as education, in an implicit way, Parsons's notion of "formal education" means different things for men and women: well-educated men have economic prospects, while well-educated women have cultural prospects. In this view, partners exchange an equivalent amount of education which means *positive* assortative mating although these "skills" are qualitatively different.

The economic perspective of marriage selection process is generally based on similar arguments. Becker (1974, 1981) formulated a theory concerning the household decision problems. The crucial question of his approach is the allocation of time and effort within the household. In this model the decision problem of the household does not only include the way scarce time is allocated over different ac-

tivities, but also whose time is allocated and to what activities. He argues that households derive utility from commodities which are produced by combining the time spent at home by the family members with goods obtained from the market. Thus, the household's level of utility is a function of a set of commodities. These commodities are produced by combining time spent at home with market goods and services. The aim of the household is to maximize the utility function, and to implement it; households act efficiently like firms. Efficiency is obtained by a division of labor within the household. Namely, households allocate the time of each member to the activities in which they are most productive, relative to the other members of the family and relative to other activities. Considering activities, a household performs, a distinction can be made between work for pay in the labor market and household activities. According to Becker (1981), males expect to spend more time in the labor market after marriage than females. Women, on the other hand, generally invest time and effort in human capital, which can be used more efficiently in household activities.

This kind of division of labor in the household provides a particular marital selection process in which certain attributes are sorted positively, others negatively. Becker argues that *positive* assortative mating exists for so-called *complementary* traits, such as education, whereas *negative* assortative mating occurs for *substitutable* attributes, such as wage rate or occupational attainment. Hence, to maximize the marital output, persons with similar amount of education will marry one another. However, in this economic perspective on marriage, the interpretation of the concept of education is unclear to some extent. On the one hand, marriage between highly educated individuals is regarded to result in much higher gains because potential spouses have a high level of market and nonmarket capabilities. On the other hand, these partnerships may result in a lower level of marital output, because well-educated women are likely to participate in labor force disrupting the traditional domestic division of labor and the exchange of specialized resources, which is a fundamental element of the economic view on marriage. Following these arguments, it is possible that highly educated males prefer to marry females with less schooling, which results in *an increasing trend of educational intermarriage*.

*Are there any changes in the nature of marital bargain?*

These above-mentioned contradictions pose the crucial problem of economic theory of marriage: namely, it does not have any mechanism which takes into consideration the social change over time. Researchers have argued that the meaning of education for females has been changing in consequence of the increase in women's labor force participation (Oppenheimer 1988, 1994; Kalmijn 1991; Mare 1991; Blackwell 1998), and this change results in an alteration in traditional marital bargain.

In consequence of this process, women are increasingly being evaluated as spouses on the basis of their own (potential) socioeconomic status, rather than of more traditional characteristics such as their cultural capital. Since the best predictor of future socioeconomic achievement is education, we would expect that women's

schooling functions not only as cultural but also as economic capacity similarly to males' education. If it is true, we predict a trend toward more educational homogamy over time. It is straightforward that individuals do not bring to the labor market their time only, but also a stock of achieved knowledge, skills that can be used in work. According to the *human capital* theory (Mincer 1974) the individual's labor market productivity is a function of formal education, of investments into on-the-job training, and labor force experience. However, it is well recognized that other factors also contribute to a person's effective stock of human capital. These factors are childhood environment, parents' attitudes and behavior as well as interactions with other individuals (Benham 1974). This means that an individual's stock of acquired resources is not a function of his/her own skills only but also of associates' human capital. In the background of this argument is the concept of *social capital* (Coleman 1990). Possessing social capital means that individuals are embedded in certain relations. While the term human capital refers to knowledge, abilities, skills, experiences which the individual possess, social capital refers to potential opportunities derived from the individual's social network. More precisely, social capital can be defined as all resources the individual has access to through his/her network. One type of association where this transmission of benefits can occur is obviously the marriage. In previous research strong evidence was found for the positive effects of a spouse's resources both on husband's and wife's socioeconomic success (Róbert, Bukodi 2002). Other things being equal, the more resources a spouse possesses, the more likely it is that the person move up the occupational ladder. Hence, it is in an individual's interest to select a spouse with a high level of (potential) human capital, because this partner will promote the individual's labor market success after marriage. Considering these arguments, we hypothesize *an increasing tendency in educational homogamy for highly educated persons* for whom the partner's schooling level may become more and more beneficial, for each partner can enhance his/her own long-run career outlook in this way. For less educated individuals the best solution is upward marriage, because in this way they can "compensate" for the lack of their own human capital. On this ground, an increasing upward marriage trend follows for people with moderate schooling level. However, a poorly educated individual is not an attractive marriage candidate, because he/she is unable to offer any signal of his/her future socioeconomic success. Thus, *persons without any "marketable" education* are forced to choose one another which results in *increasing marriage homogamy* in these lower social groups, as well.

#### *The role of paternal education in marital selection*

In the case when education is the best proxy for long-run labor market success for both sexes, paternal education has a particular role in mate selection. It may represent - on a daily basis - the individual's *cultural capital* stock (Blackwell 1998). It is commonly recognized that the social characteristics of parents play a significant role in evoking opportunities for children. More advantaged families set a higher value on education and are better equipped to encourage and promote school success than parents from less advantaged social groups. Moreover, paternal education may

be a signal of a certain “cultural climate” in where the individual was brought up. It is obvious that one's ability to use cultural codes determines the social network one can access. Interactions between persons with similar “inherited” cultural codes are facilitated by the understanding of shared cultural symbols. Possessing educational credentials through two or more generations means to be more familiar with different forms of cultural capital and better able to use and understand these codes (Collins 1979). Hence, - in addition to *attained* schooling level - *inherited* educational capital may serve as a “second-order” signal in marriage market. It may be expected that *paternal education enhances the trend in educational homogamy, especially for highly educated individuals*. As Mare argues (1980, 1981), children from less advantaged status groups meet severe selection standards at earlier school transitions, and, consequently, only the excellent students are able to continue their educational career on the higher school levels. On these higher educational levels there is greater homogeneity in the motivations, inherited cultural symbols, values, codes that are important signals in marital selection process. Thus, it is reasonable to assume that paternal education makes acquired qualifications more marketable for all individuals, but it is particularly true for people who have completed a tertiary education. At the same time, we can also predict to find some evidence of educational homogamy on the another extreme of schooling hierarchy, for poorly educated people. These persons more likely possess only moderate amount of inherited cultural capital stock which decreases their attractiveness as marriage partners. Considering paternal education, in the absence of homogamy, we can expect that persons possessing less education but more inherited cultural capital are likely to marry up to spouses with more schooling. The reason for this pattern is that for these individuals' paternal education is expected to compensate for the lack of their own educational credentials. Finally, according to our prediction paternal education is equally beneficial to both sexes.

### *Constraints in the Marriage Market*

Individuals realize their preferences for partners in the marriage market, thus the success of this realization largely depends on the structure of this market. By its nature, marriage involves persons from both sexes, and its analysis poses the so-called “two-sex problem” which means that males' and females' age-specific marriage rates are largely depend on the age-sex composition of the population. The effect of an imbalance between men and women who are eligible for partnership, may have a salient impact on marriage behavior (Schoen 1983, 1986). Moreover, marriage rates are largely influenced by the group composition of the population. When one group is small compared to another, “members of the smaller group face a restricted market for in-group marriage but an extensive one for out-group marriage, and thus, other things being equal, members of the smaller group are more likely to intermarry.” (Schoen, 1986, p. 50). For instance, it was shown that the availability of potential partners has significantly affected the declining marriage rates in the United States (Schoen, Weinick 1993).

Other scholars emphasize the importance of the composition of local areas, such as neighborhoods (Morgan, 1981). When people search for partners, the marriage market they face can be a largely segregated residential area. This has the consequence that it is likely that individuals encounter potential partners who are similar to them in their social characteristics. However, industrialization increases the urbanization and geographical mobility which is accompanied by the breakdown of the rigidity of class structure. The greater geographical mobility increases the opportunities to meet persons from other social groups which implies a trend toward less homogamy in marriage (Smith, Ultee, Lammers 1998). However, extending educational careers work in the opposite direction. Colleges and universities constitute the most efficient, low-cost places of marriage market in the sense that they “collect” people with narrow age distribution and similar outlook for future socioeconomic achievement. This suggests that individuals enrolling in higher educational institutions are more likely to marry one another than people with a lower education. It is also straightforward that increasing participation in higher education will increase individual's chances to meet someone with their own schooling level which results in a trend toward higher educational homogamy.

## CONCEPTUALIZATION AND MEASUREMENTS

### *Data and Research Design*

In the subsequent analysis we assess the effects of different social characteristics of individuals on the propensity to marry taking into account the joint educational distribution of spouses. Only *first marriages* are considered because mate selection differs according to marriage order (Jacobs, Furstenberg 1986)<sup>1</sup>. Since we investigate the likelihood of educational homogeneity over the life course, our analysis requires a special data set - the *life history data* - which map the complete educational career and marital history for both sexes. In addition, an *appropriate statistical method* is necessary which is suited to the analysis of such data. The analysis is based on the Hungarian Social Mobility and Life History Survey from 1992 which was conducted by the Central Statistical Office. This large-scale data set contains a detailed educational history of each individual in the sample starting with entry into educational system and including all changes in the type of school as well as changes in the marital status during the life course. For this analysis we select persons between 15 and 60 years old (N=20354). The appropriate statistical technique to handle this kind of data is *event history analysis* (Blossfeld, Hamerle, Mayer 1989; Yamaguchi 1991; Blossfeld, Rohwer 1995).

In this study we use the *discrete-time method* of the event history approach to analyze marriage transition rates (Allison 1982). This is done because 1) in the sample the unit of time used to measure duration is the year which is not a refined time unit, thus, it is more natural to use a discrete-time model compared to a continuous one; 2) events of interest are tied which means that several persons in the sample experience the investigated event (the marriage) at the same time. In consequence of



the time unit of the analysis, events are measured at discrete time points. Technically, a discrete-time model is equal to a *logit model* in which the odds for conditional probabilities are estimated.

In general, survey data are recorded into a rectangular file format in which rows represent the subjects and columns indicate variables related to subjects. In order to use discrete-time event-history methods this rectangular file must be converted into a special data-file called *person-period* file. In such a file the observation unit is not the individuals any more but the discrete-time points (in our analysis the person-age) at which the individuals are at risk of experiencing the event of interest (in this case the marriage). In this analysis for each respondent the observation (risk) period begins at the age of 15 and continues up to the year he/she marries, or reaches age of 60, or his/her life-course experience censored by the interview.

The aim of this analysis is not just to model the overall marriage rate, but we are interested in modeling the rate at which particular types of marriage occur. More precisely, we would like to outline the determinants of homogamous, upward, and downward marriage transitions for both sexes.

#### *Variables in the Analysis*

We have developed three time-varying covariates and one time-independent variable to measure different facets of mate selection: school enrollment, time out of school, educational attainment, and father's education. Individual's age is also used as a control variable<sup>2</sup>. In addition, our analysis includes information on the change of marriage market composition to capture historical variation in marital behavior.

*Educational attainment.* Education is an important determinant of both cultural assets and long-run labor-market position. As it was outlined in the theoretical framework of this study, we can expect that inmarriage tendency is dependent on educational level. It is also supported by the previous empirical results, namely that in Hungary inmarriage is highest at the extremes of the educational hierarchy (Uunk, Ganzeboom, Róbert 1996). In our study educational attainment is coded into four categories: 1) elementary (less than primary), 2) compulsory (primary and vocational training without maturity diploma), 3) secondary (maturity examination), 4) tertiary (college and university). Cross-classifying potential partners according to their education, we get a frequency table which represents the observed numbers of marriage between husbands in the *i*th category of schooling and wives in *j*th schooling category. Marriages located along the main diagonal of this table represent educational homogamy; those situated in the upper triangle of the table indicate upward marriage from the husband's point of view; those found in the lower triangle measure downward marriage also from the husband's point of view. Of course, from the wife's point of view the situation is reversed. Transitions to homogamous, to upward and to downward marriages are the dependent variables of this analysis.

*In school.* We can regard school enrollment as a period of investment in human capital as well as an indicator of "immaturity" for marriage. Thus, as most previous researches, we expect that school completion has a positive effect on the propensity to marriage of any kind. To investigate this effect, we have created a dummy vari-

able which takes on "1" for years a respondent enrolls in day-course educational institutions, after school completion it takes on "0".

*Time out of school.* Researchers usually examine marriage formation in relation to age as a major life cycle variable. However, age can obscure important differences in marital behavior when the focus is on its place in the life career process. It is straightforward that the incentive to marriage is partially age-determined, but "...that transition is embedded in a singular process of maturation." (Winship 1986, p. 253). Hence, individuals at the same chronological age may be at very different positions with respect to their life cycle developments. For instance, better educated people leave school at a later age, however, their careers develop rapidly in the first few years after school completion. Thus, those at the same age but in a different educational group are probably at different stages of their life cycle. The result would be a reduction in the effect of educational attainment on marriage transition regardless of its type. Taking these arguments into account, we include the "time out of school" variable in this analysis. This variable represents the linear as well as quadratic effect of time elapsed from school completion on the likelihood of different types of marriage.

A part of the previous analyses on homogamy has shown that for individuals who marry shortly after school completion, the marriage is more likely homogamous with respect to education than for others (Mare 1991). According to Mare, one reason is that schools function as marriage markets which provide opportunities of meeting with a potential spouse within the same educational group. In addition, the longer an individual has been out of school, the more likely he/she is embedded in the labor market as opposed to the school setting. From these arguments it follows that a linear increase in the elapsed time since leaving school will result in a decrease in the likelihood of homogamous marriage. However, according to other studies the association between a husband's and wife's education is stronger for individuals who marry later in relation to their educational career (Kalmijn 1994; Qian 1998). It can be interpreted by considering certain kinds of uncertainty people face searching for a marriage partner (Oppenheimer 1988, 1994; Oppenheimer, Kalmijn, Lim 1997). Individuals at the time of their marriage are usually at the beginning of their labor market career. Hence, it is difficult to take future economic prospects into account at that time. These uncertainties may decrease as people marry later. Since education partly represents human capital investment which is the best proxy of an occupational career, delayed marriage results in an increase in educational homogamy as time out of school increases.

*Paternal education.* Using "father's schooling" as an indicator may provide substantive insight into marital selection process as it was theoretically argued above. A well-educated father may enhance one's chance for making a good match, while a poor-educated background may reduce it. In our analysis a father's education is coded according to his completed years of schooling.

*Marriage market composition.* We use age- and historical period-specific measures of partner availability for each educational level. (Data derived from the Censuses from 1949 to 1990.) The so-called sex ratios are computed as the number of males aged  $x+4$  divided by the number of females aged  $x+4$  for each educational

category and for each census year (then, the natural logarithm of these figures are taken). Thus, all individuals are embedded in a period-specific 5-year age group of potential mates. If persons change their educational attainment, the sex ratio specific to the „new” marriage market (defined by the „new” educational level) is attached to the person-year record. For the upward marriage transition the sex ratio is calculated as follows: the number of men (women) aged  $x+4$  belonging to a particular educational category divided by the number of women (men) aged  $x+4$  attaining higher educational levels. For downward marriage the computation is reversed.

## FINDINGS

### *An Overview of Marital Selection Based on Descriptive Results*

To provide some perspective on the nature of marital selection according to educational attainment, we have displayed the distribution of different kinds of marriage for both partners (Table 12.1.).

As the theoretical explanations predict, there is a tendency to high educational in-marriage, people tend to marry someone from their own educational group. The propensity to this “intrinsic homogamy” (Johnson 1980) appears to be dominant in each marriage cohort. The important difference between males and females lies in the incentive to marry upwardly or downwardly. For women, the proportion of downward marriage has been increasing gradually over last decades, while the propensity toward upward marriage has been decreasing. For men the trend is reversed. This evidence indicates the violence of the traditional pattern of marital selection - when better educated men marry women with less education - which is a consequence of, at least in part, males' and females' unequal educational distribution (Rockwell 1976). As women's educational attainment improves, the character of schooling asymmetry in marital selection may change which can be captured in the trend concerning proportions of upward and downward marriages for women. If the traditional schooling asymmetry hypothesis were upheld, the probability of females' upward marriage transition would be greater than their incentive to downward marriage. However, the facts contradict this assumption indicating that the increase in women's schooling results in the “lack” of eligible men for upward partnership, thus, well-educated females “are forced” to marry downwardly - if they do not marry homogamously - or to delay marriage or, finally, to remain single.

Similarly to most of the previous analyses, we have found that transition to different kinds of marriage depends on an individual's educational attainment (see figures in Table 12.1). Males with compulsory schooling are more likely to marry homogamously than men with other educational levels. However, historical trends reveal a changing pattern. Namely, for men with elementary and tertiary schooling the proportion of homogamous marriages has been increasing, while for males with compulsory education the propensity to marital homogamy has been declining. For wives the proportion of homogamous marriages is highest on the level of compulsory education - similarly to the husbands' pattern. The greater gender differences

appear for secondary and tertiary education. In the former case the share of homogamous marriages is much more lower for women than for men - with the exception of the oldest cohort. In contrast, on the tertiary level the propensity to establish a homogamous partnership is more likely for females compared to males - except the youngest cohort. Women's „surplus” concerning homogamous marriages has disappeared in the latest marriage cohort. As for the likelihood of upward marriage, it is largest for individuals with a primary education. This result is straightforward in some respect because opportunities for an even “better spouse” decline as achieved schooling level increases, in other words, high educational level constitutes a “ceiling” for upward marriage. In the case of downward marriage, figures reveal again a gender difference. For husbands the likelihood of this kind of transition is greatest on the tertiary level (this is in line with the previous logic according to which the likelihood of downward marital selection should be largest for individuals with a tertiary diploma because they have the highest chance to find a less-educated partners). However, for females the odds of marrying downwardly is somewhat higher for secondary school graduates.

### *Causal Models for Marriage Formation*

Subsequently, investigating predictor factors of the transitions to homogamous versus heterogeneous marriage, 3 nested models are tested. Comparisons between these models, based on the differences in log-likelihood-ratio statistics, are given in Table 12.2.1 for males and Table 12.2.2 for females. Parameter estimates for nested models are also shown in Table 12.3.1-Table 12.3.3.

Model 1 specifies age effects, and displays the impact of school-related factors, Model 2 includes - in addition to the above mentioned predictors - paternal education. A comparison of Model 1 and 2 shows that the latter model attains a significantly better fit than the former one for both sexes. The only exception is the upward marriage transition for females. These findings confirm our hypothesis on the role of paternal resources in marriage behavior, namely, a father's education can serve as an individual's „second signal” in marital bargains.

Model 3 tries to account for the effect of historical variations in marriage market composition on educational homogamy/heterogamy. The comparison of the overall test statistics between Model 2 and Model 3 reveals that the propensity to marry homogamously has changed significantly over the last decades for both sexes due to the variation in marriage market conditions. It is true for upward and downward marriage mobility as well, but the improvements of fit statistics are smaller in these cases, especially for females. In other words, the likelihood of marriage between partners with unequal education has varied less over time - especially for females - than the incentive to make a long-run partnership between spouses with equal schooling.

Table 12.1. Distribution of Husbands and Wives According to their Marriage Types, Educational Levels, and Marriage Cohorts (%) (Only First Marriage)

	Upward Marriage				Homogamous Marriage				Downward Marriage						
	Elementary	Compulsory	Secondary	Tertiary	Total	Elementary	Compulsory	Secondary	Tertiary	Total	Elementary	Compulsory	Secondary	Tertiary	Total
<b>Husbands</b>															
1950-59	63.4	3.7	10.1	-	8.9	36.6	86.0	35.3	30.2	74.0	-	10.3	54.6	69.8	17.1
1960-69	60.1	15.6	9.1	-	17.6	39.9	78.3	48.3	44.4	68.0	-	6.1	42.6	55.6	14.4
1970-79	58.0	24.8	15.4	-	21.4	42.0	72.4	51.3	48.6	65.5	-	2.8	33.3	51.4	13.1
1980-92	50.0	31.4	14.6	-	24.6	50.0	66.4	48.7	58.3	61.5	-	2.2	36.7	41.7	13.9
<i>Total</i>	59.6	19.9	13.4	-	19.0	40.4	75.1	48.0	49.0	66.6	-	5.0	38.8	51.0	14.4
N of Cases	209	960	139	-	1308	141	3620	511	321	4593	-	247	408	337	992
<b>Wives</b>															
1950-59	74.1	9.3	28.6	-	17.1	25.9	84.6	36.6	62.2	73.4	-	6.1	34.8	37.8	8.9
1960-69	54.5	10.5	13.0	-	14.4	45.5	81.4	32.1	67.0	68.0	-	8.1	54.8	33.0	17.6
1970-79	69.9	11.0	14.6	-	13.1	30.1	86.4	30.6	57.7	65.5	-	2.6	54.8	42.3	21.4
1980-92	64.0	16.9	11.9	-	13.9	36.0	81.2	32.0	52.3	61.5	-	1.9	56.2	47.7	24.6
<i>Total</i>	66.2	11.9	14.2	-	14.4	33.8	83.5	31.8	57.2	66.6	-	4.6	54.0	42.8	19.0
N of Cases	270	537	246	-	1053	140	3806	525	329	4800	-	208	911	244	1363

Source: Hungarian Social Mobility and Life History Survey, 1992

*Table 12.2.1. Log-Likelihood Ratio Chi-Square Tests for Logistic Regression Models of Marriage Transitions, Males Ages 15 to 60. (Only First Marriages)*

Model/Comparison	Type of Marriage Transition			Degrees of Freedom
	Homogamy	Upward	Downward	
<i>Models</i>				
1. (Life Course + Schooling)	5843.67*	2407.14*	2559.13*	17 (13) <sup>#</sup>
2. (Model 1 + Paternal Education)	5883.63*	2451.67*	2601.49*	21 (16) <sup>#</sup>
3. (Model 2 + Marriage Market Conditions)	5981.37*	2536.40*	2649.51*	25 (19) <sup>#</sup>
<i>Comparisons</i>				
Model 2 Versus Model 1	39.96*	44.53*	42.36*	4 (3) <sup>#</sup>
Model 3 Versus Model 2	97.74*	84.73*	48.02*	4 (3) <sup>#</sup>
<i>Number of Events</i>	4593	1308	992	
<i>Number of Subepisodes</i>	97170	87827	88984	

\*:  $p < .05$

#: degrees of freedom in the case of upward/downward marriage mobility

Note: Fit assessed by  $-2 \log(L_0/L_1)$ , where  $L_1$  is the likelihood of fitted models and  $L_0$  is likelihood of intercept models in the first three rows (Model 1 through 3) and comparison models in the last two rows.

Source: Hungarian Social Mobility and Life History Survey, 1992

*Table 12.2.2. Log-Likelihood Ratio Chi-Square Tests for Logistic Regression Models of Marriage Transitions, Females Ages 15 to 60. (Only first marriages)*

Model/Comparison	Type of Marriage Transition			Degrees of Freedom
	Homogamy	Upward	Downward	
<i>Models</i>				
1. (Life Course + Schooling)	5857.47*	1843.81*	2609.16*	17 (13) <sup>#</sup>
2. (Model 1 + Paternal Education)	5903.37*	1848.40*	2703.26*	21 (16) <sup>#</sup>
3. (Model 2 + Marriage Market Conditions)	6005.85*	1868.05*	2726.53*	25 (19) <sup>#</sup>
<i>Comparisons</i>				
Model 2 Versus Model 1	45.90*	4.59	94.1*	4 (3) <sup>#</sup>
Model 3 Versus Model 2	102.48*	19.65*	23.27*	4 (3) <sup>#</sup>
<i>Number of Events</i>	4800	1053	1363	
<i>Number of Subepisodes</i>	69552	60299	62903	

\*:  $p < .05$

#: degrees of freedom in the case of upward/downward marriage mobility

Note: Fit assessed by  $-2 \log(L_0/L_1)$ , where  $L_1$  is the likelihood of fitted models and  $L_0$  is likelihood of intercept models in the first three rows (Model 1 through 3) and comparison models in the last two rows.

Source: Hungarian Social Mobility and Life History Survey, 1992

*Life course variation in the effect of education on marriage transition*

The effect of education on the homogamy rate varies with age for both sexes. Looking at individuals with either a secondary or a tertiary school diploma, parameter estimates indicate a steeper increase in the likelihood of homogamous marriage up to a certain age compared to persons with compulsory education; and after that age, a decrease in the homogamy rate is also steeper compared to individuals with compulsory schooling. For persons with elementary education the pattern is reversed. Unlike the homogamous marriage, in the case of an upward transition the impact of schooling on the odds of getting married changes with age only for elementary educated persons in a way which is identical to homogamous partnerships. Finally, on the likelihood of downward marriage transition the influence of education shapes the same life course pattern as in the case of homogamy.

As it was expected, school enrollment exerts a large negative effect on marriage formation regardless of its type for both sexes. As for the impact of time out of school, there are some differences according to the type of marriage. In the case of a transition to a homogamous partnership the linear effect of this variable is positive for both sexes. In other words, the odds of marrying persons with equal education increases as individuals get older. However, the magnitude of this effect becomes smaller and smaller the higher the level of education. It means that for persons with a tertiary diploma the homogamous marriage will most likely directly follow school completion. It confirms our hypothesis on the "low-cost" marriage market function of universities and colleges. Students at these institutions are very homogeneous in terms of their expected socioeconomic characteristics which suggests that people who enroll in tertiary education are more likely to marry someone with the same schooling than to seek a spouse out of their own educational group. Besides the linear effect of the variable indicating the time out of school, our model includes the quadratic term of this predictor as well. According to its estimation, if college or university graduates do not get married after school completion, the incentive to educational homogamy increases in later stages of the life course. As for the propensity to upward marriage the similarities among the women and men should also be emphasized. For both sexes the likelihood of marrying upwardly does increase linearly after leaving school, however, this effect is much more smaller for those completing an education at the secondary level compared to those having only completed the compulsory level. Unlike the homogamous and upward marriage, the odds of downward marital transition shapes a reversed U-curve over life course - at least for males. This effect is stronger for those with a higher education compared to those having completed compulsory schooling, as indicated by the quadratic term of the "time out of school" variable. In sum, findings concerning the impact of the variable identifying the time elapsed since school completion give some support to the economic view of marital bargain. The longer time period individuals with a higher education spend out of school, the more likely they appreciate the economic prospects offered by their potential partners. Because educational attainment as a measure of human capital predicts the potential spouse's - as well as the individual's - future socioeconomic success quite well, educational homogamy will increase -

and downward marriage mobility will decrease - as the individuals with at least secondary schooling marry later.

Table 12.3.1. Coefficients for Logistic Regression of the Odds of Educational Homogamy

	Male			Female		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<i>Age Effects</i>						
Log (Age-15)	5.15***	5.24***	5.38***	3.08***	3.10***	3.07***
Log (60-Age)	16.1***	15.9***	15.6***	17.8***	17.5***	17.8***
<i>Schooling Characteristics</i>						
Elementary Education*Log(Age-15)	-1.34***	-1.30***	-1.34***	-.799 **	-.728 **	-.612 *
Compulsory Education*Log(Age-15)	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Log(Age-15)	.685 *	.596 *	.423	1.04***	.977***	1.06***
Tertiary Education*Log(Age-15)	2.35***	2.25***	2.19***	3.33***	3.21***	2.99***
Elementary Education*Log(60-Age)	.690***	.738***	.673***	.066	.139	.030
Compulsory Education*Log(60-Age)	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Log(60-Age)	-.482***	-.501***	-.461 **	-.795***	-.825***	-.859***
Tertiary Education*Log(60-Age)	-1.32***	-1.64***	-1.61***	-2.02***	-2.07***	-1.91***
In School	-.605***	-.608***	-.695***	-1.12***	-1.10***	-1.08***
Time since School Completion	.039***	.026 **	-.002	.034***	.021 *	.035 **
Time <sup>2</sup> since School Completion	.001	.001	.001	.005***	.006***	.006***
Elementary Education*Time	-.068	-.076	-.040	-.004	-.015	-.012
Compulsory Education*Time	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Time	-.035	-.023	-.002	-.073 *	-.064 *	-.077 **
Tertiary Education*Time	-.163 **	-.152***	-.135	-.270***	-.256***	-.248***
Elementary Education*Time <sup>2</sup>	.001	-.001	.009	-.001	.003	.003
Compulsory Education*Time <sup>2</sup>	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Time <sup>2</sup>	.009***	.009***	-.001	.004	-.001	-.001
Tertiary Education*Time <sup>2</sup>	.009***	.009***	.009	.013***	.013***	.013***
<i>Paternal Characteristics</i>						
Father's Education		-.036***	-.024***		-.036***	-.039***
Elementary Education*Father's Educ		-.049 *	-.060		-.071 *	-.066 *
Compulsory Education*Father's Educ		[.000]	[.000]		[.000]	[.000]
Secondary Education*Father's Educ		.028	.014		.027	.030
Tertiary Education*Father's Educ		.062***	.042 **		.045 **	.053 **
<i>Marriage Market Conditions</i>						
Sex Ratio <sup>a</sup>			-2.29***			1.30***
Elementary Education*Sex Ratio			4.701			1.149
Compulsory Education*Sex Ratio			[.000]			[.000]
Secondary Education*Sex Ratio			1.57 **			-1.84 **
Tertiary Education*Sex Ratio			1.32***			-1.04 *
Constant	-71.6***	-71.2***	-70.0***	-72.6***	-71.3***	-72.4***

# : Sex ratio = LN (MALEDU<sub>id</sub> / FEMALEDU<sub>id</sub>).

k: historical periods (1=1950-55; 2=1956-65; 3=1966-75; 4=1976-85; 5=1986-92);

l : age groups (1=15-19; 2=20-24; 3=25-29; 4=30-34; 5=35-39; 6=40-44; 7=45-49; 8=50-54; 9=55-59);

MALEDU: males' educational attainment;

FEMALEDU: females' educational attainment;

i: educational categories (1=elementary; 2=compulsory; 3= secondary; 4=tertiary).



Table 12.3.2. Coefficients for Logistic Regression of the Odds of Upward Marriage

	Male			Female		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<i>Age Effects</i>						
Log (Age-15)	7.81***	7.67***	7.83***	4.05***	4.03***	3.97***
Log (60-Age)	16.2***	16.3***	17.3***	10.7***	10.8***	10.4***
<i>Schooling Characteristics</i>						
Elementary Education*Log(Age-15)	-1.95***	-1.86***	-1.53***	-1.61***	-1.60***	-1.55***
Compulsory Education*Log(Age-15)	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Log(Age-15)	-.776	-.629	-.531	-.385	-.386	-.738 *
Elementary Education*Log(60-Age)	1.25***	1.31***	1.42***	1.02***	1.04***	1.10***
Compulsory Education*Log(60-Age)	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Log(60-Age)	-.134	-.115	-.244	-.059	-.179	-.129
In School	-1.94***	-1.85***	-1.64***	-.958***	-.976***	-.931***
Time since School Completion	.243***	.217***	.198	.221***	.214***	.211***
Time <sup>2</sup> since School Completion	.005	.004	.004	.001	.001	-.001
Elementary Education*Time	-.169	-.156	-.094	-.188	-.185	-.174
Compulsory Education*Time	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Time	-.256***	-.235***	-.213	-.117 **	-.120 **	-.132***
Elementary Education*Time <sup>2</sup>	-.002	-.001	.001	-.001	-.001	-.001
Compulsory Education*Time <sup>2</sup>	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Time <sup>2</sup>	-.013	-.012	-.011	-.008	-.008	-.005
<i>Paternal Characteristics</i>						
Father's Education		.074***	.055***		.024	.023
Elementary Education*Father's Educ		-.034	-.016		-.004	-.003
Compulsory Education*Father's Educ		[.000]	[.000]		[.000]	[.000]
Secondary Education*Father's Educ		-.040	-.023		.042	.048
<i>Marriage Market Conditions</i>						
Sex Ratio <sup>#</sup>			-.476***			.017 *
Elementary Education*Sex Ratio			1.03***			-.443 **
Compulsory Education*Sex Ratio			[.000]			[.000]
Secondary Education*Sex Ratio			.359			-.139
Constant	-77.4***	-78.0***	-81.6***	-48.9***	-49.5***	47.9***

# : Sex ratio for males=  $\text{LN}(\text{MALEDU}_{ik} / \sum (\text{FEMALEDU}_{jk}))$ , where  $j > i$ .

Sex ratio for females=  $-\text{LN}(\text{FEMALEDU}_{ik} / \sum (\text{MALEDU}_{jk}))$ , where  $j > i$ .

k: historical periods (1=1950-55; 2=1956-65; 3=1966-75; 4=1976-85; 5=1986-92);

l: age groups (1=15-19; 2=20-24; 3=25-29; 4=30-34; 5=35-39; 6=40-44; 7=45-49; 8=50-54; 9=55-59);

MALEDU: males' educational attainment;

FEMALEDU: females' educational attainment;

i: educational categories (1=elementary; 2=compulsory; 3=secondary; 4=tertiary).

Table 12.3.3. Coefficients for Logistic Regression of the Odds of Downward Marriage

	Male			Female		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<i>Age Effects</i>						
Log (Age-15)	3.05***	3.24***	3.47***	1.17***	1.29***	1.41***
Log (60-Age)	18.5***	18.3***	17.1***	13.0***	12.6***	11.9***
<i>Schooling Characteristics</i>						
Compulsory Education*Log(Age-15)	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Log(Age-15)	3.73***	3.47***	2.71***	2.34***	2.17***	1.98***
Tertiary Education*Log(Age-15)	3.83***	3.54***	2.80***	1.84***	1.75***	1.08 *
Compulsory Education*Log(60-Age)	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Log(60-Age)	-904***	-921***	-1.10***	-1.40***	-.201	-.390
Tertiary Education*Log(60-Age)	-930***	-.864***	-107***	-.001	-.005	-.115
In School	-.674***	-.691***	-.720***	-1.26***	-1.24***	-1.24***
Time since School Completion	.369***	.328***	.251***	.208***	.167***	.133 **
Time <sup>2</sup> since School Completion	-.007***	-.005***	-.004***	-.003	-.001	-.001
Compulsory Education*Time	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Time	-.387***	-.348***	-.263***	-.319***	-.291***	-.266***
Tertiary Education*Time	-.354***	-.316***	-.237***	-.233***	-.214***	-.160 **
Compulsory Education*Time <sup>2</sup>	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
Secondary Education*Time <sup>2</sup>	.007 *	.005	.002	.005	.003	.002
Tertiary Education*Time <sup>2</sup>	.010 **	.008 *	.006	.002	.001	-.001
<i>Paternal Characteristics</i>						
Father's Education		-.108***	-.089***		-.140***	-.130***
Compulsory Education*Father's Educ	[.000]		[.000]		[.000]	[.000]
Secondary Education*Father's Educ		.068 *	.059		.077 **	.063 *
Tertiary Education*Father's Educ		.049 *	.035		.050 *	.043
<i>Marriage Market Conditions</i>						
Sex Ratio <sup>a</sup>			-.684***			.633 **
Compulsory Education*Sex Ratio			[.000]			[.000]
Secondary Education*Sex Ratio			.389 *			-.783***
Tertiary Education*Sex Ratio			.485 **			-.463 *
Constant	-81.1***	-79.7***	-74.1***	-55.7***	-53.2***	-49.5***

# : Sex ratio for males= LN (MALEDU<sub>ik</sub> / Σ (FEMALEDU<sub>ik</sub>)), where j < i.  
 Sex ratio for females= - LN (FEMALEDU<sub>ik</sub> / Σ (MALEDU<sub>ik</sub>)), where j < i.  
 k: historical periods (1=1950-55; 2=1956-65; 3=1966-75; 4=1976-85; 5=1986-92);  
 l : age groups (1=15-19; 2=20-24; 3=25-29; 4=30-34; 5=35-39; 6=40-44; 7=45-49; 8=50-54; 9=55-59);  
 MALEDU: males' educational attainment;  
 FEMALEDU: females' educational attainment;  
 i: educational categories (1=elementary; 2=compulsory; 3= secondary; 4=tertiary).

To illustrate the life course changes of the effect of education on marriage transition, we have plotted the predicted values of expected homogamy rates by individual educational attainment estimated from Model 1.

The pattern of age effects indicates that the odds of getting married with equally educated partner peak at later ages for better educated individuals than for poorly educated persons. It is true for males as well as females. However, women's propensity toward homogamous marriage formation appears to be more dependent on school completion rather than age, whereas for males the age seems to be a more important factor for positive assortative mating than leaving school (Oppenheimer 1994). As Figures 12.1.1-12.1.2. indicate differences among "marriage peaks" according to individual educational attainment are larger for women.

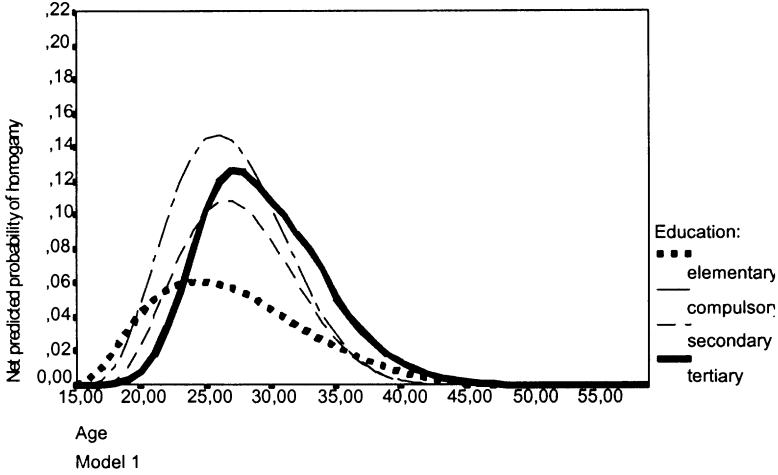


Figure 12.1.1. Life-Course Variation in Marriage Homogamy Rate According to Education, Males

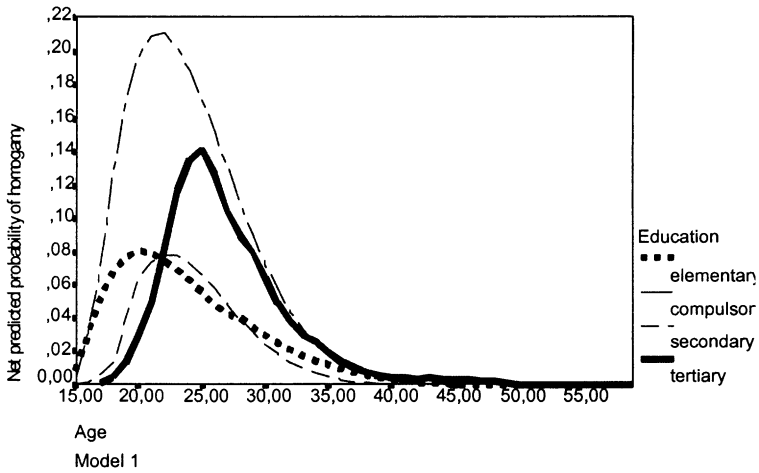


Figure 12.1.2. Life-Course Variation in Marriage Homogamy Rate According to Education, Females

*Effects of paternal education on mate selection*

Concerning the role of paternal education in the marital selection process three hypotheses have been tested: 1) whether increasing stock of father's educational capital results in more likelihood of educational homogamy; 2) whether the possession of more paternal education promotes upward intermarriage when homogamy does not occur; 3) whether more paternal education will "hinder" downward intermarriage and so to speak protect his daughter/son who has attained less schooling than his/her inherited educational capital.

According to our results the odds of educational homogamy vary significantly for both sexes according to a father's education. As parameter estimates indicate, individuals with a university or college diploma, who have from an advantageous family educational background, have a better chance of finding a homogamous match than their counterparts originating from less advantageous family educational backgrounds. For individuals with a minimum education the inherited cultural capital also serves as a means of "status-confirmation": the likelihood of homogamous marriage is greater for persons whose fathers achieved at most elementary schooling compared to respondents with a higher educational background (who experienced intergenerational downward mobility) (Figure 12.2.1. – 12.2.2).

As for the upward marriage, a small increase in father's educational status from one level to the next higher level results in a substantial increase in the odds of this kind of marital transition - especially for males. In other words, upward marital mobility is more likely if individuals possess a higher amount of inherited educational resources. And, this effect is independent of the educational level - as the non-significant interaction effect between father's schooling and respondent's education indicates.

Results are also interesting in the case of downward marriage. As estimates show individuals with a higher stock of inherited schooling capital have a lower "chance" to marry downwardly than persons from less advantageous backgrounds. It is particularly true for people with secondary and tertiary education. These findings can be regarded as evidence of the "protection" function of a father's schooling.

Summarizing our results concerning the influences of paternal education, the major features are as follows: In the absence of homogamy, individuals with more paternal education are more likely to marry up than persons with less stock of inherited educational capital. At the same time, the lack of paternal education increases further the chance of downward marital mobility. Thus, individuals with increased inputs of paternal education appear to be relatively advantageously positioned in marriage market; inherited educational capital enhances their chance to make a good match. This means that persons who have not attained a high level of education of their own right but who have inherited cultural advantages have more ability to bargain on the marriage market than individuals with similar levels of schooling but less inherited capital though paternal education. In the case of downward marital mobility the trend is reversed: the lack of inherited educational capital may lead to marriage with less educated people in spite of a higher level of attained schooling.

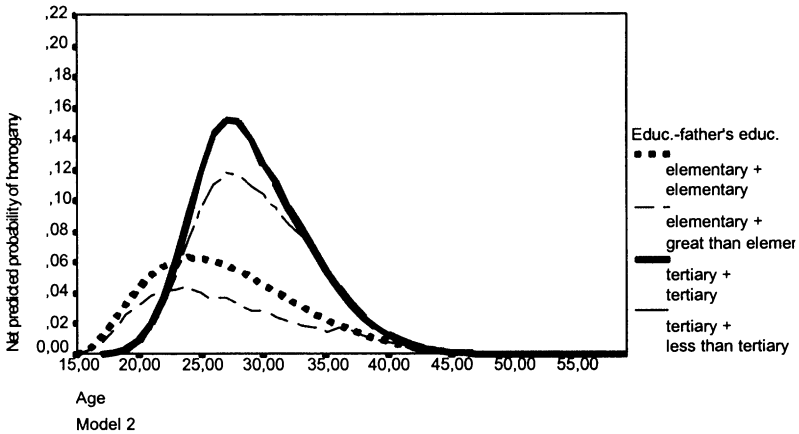


Figure 12.2.1. The Effect of Paternal Education on Marriage Homogamy Rate, Males

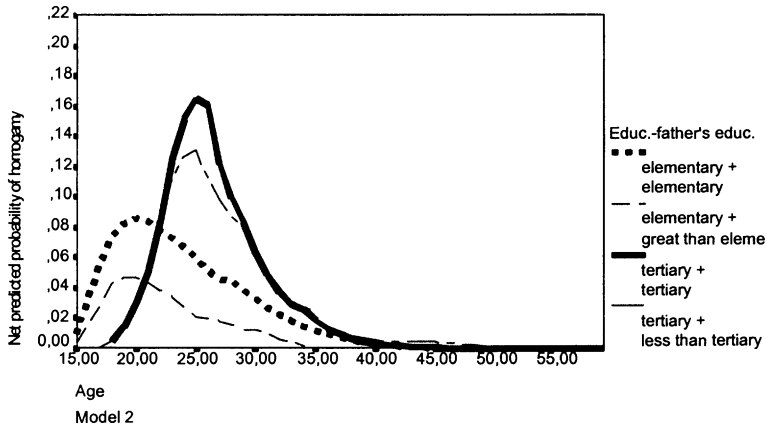


Figure 12.2.2. The Effect of Paternal Education on Marriage Homogamy Rate, Females

*Historical variation in the effect of education on marriage transition*

The effect of educational level on marriage behavior changes significantly over time for both sexes as it is captured by the impact of marriage market composition. For women, a higher sex ratio - indicating that more men in a particular age group

and with a particular educational level are available for marriage - increases the probability of transition to first marriage regardless of its type. For the men, in the same age and educated group, the pattern is of course reversed. The impact of the marriage market attributes on mate selection appears to be strongest for homogamous marriages for both sexes. This model also adds the interaction terms between the education and mate availability measures to account for schooling differences in the effect of marriage market conditions on the decision making process.

Concerning marriage homogamy, for females the coefficient of this interaction is negative on the secondary as well as on the tertiary level compared to compulsory education. For males the sign of the corresponding estimates is positive. In other words, the sex ratio has a smaller effect on the probability of making a transition to homogamous marriage for women with higher education. For men the underlying process is reversed. This may suggest that well-educated females select mates with equal schooling from a broader field of eligible men than do women with less advantageous educational status.

As for the upward marital transition, the influence of marriage market characteristics is strongest on persons with an elementary level education. This relationship is captured by the interaction term between schooling and sex ratio. For women the sign of the coefficient concerning the association between minimal education and market traits is negative, indicating that the odds of upward marriage for poorly educated females is much smaller than that for their counterparts with higher schooling. As for males the parameter estimate for the sex ratio variable is negative, while the interaction of the sex ratio and an elementary education is significant with a positive coefficient. Thus, marriage market composition has the largest effect on the likelihood of marrying upwardly for poorly educated men: i.e., the probability of this kind of transition is lower for men with minimal schooling compared to higher educated males.

In the case of downward marriage, the coefficient for marriage market characteristics is positive for women and negative for men. The interaction between the sex ratio and schooling level is significant for individuals with a secondary or a tertiary diploma. For males the sign of these estimates is positive, for females these are negative. In other words, for men possessing a more advantageous educational status, the market attributes have a stronger effect on the probability of making a transition to a downward marriage compared to men with less schooling. For well-educated women the pattern is reversed.

To illustrate historical trends in marital selection, we have plotted the predicted values of marriage homogamy rate derived from Model 3 (Figure 12.3.1 – 12.3.2). For men with at least a secondary school diploma the likelihood of homogamous marriage has increased gradually over the last decades, whereas in the case of elementary and compulsory education the probability of getting married homogamously has been decreasing. Looking at women, the pattern appears to be similar, the only difference concerns tertiary educated females for whom the slight increase in transition to homogamous marriage started in the early 80s. These processes have two consequences. On the one hand, there is a narrowing gap in educational homogamy between individuals belonging to the two middle schooling categories. On the

other hand, there is an increasing „marriage” gap between persons at the two extremes of the educational hierarchy.

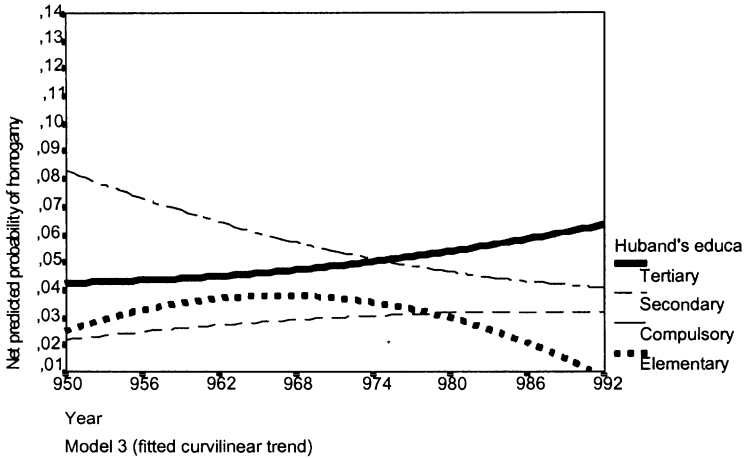


Figure 12.3.1. Historical Variation in Marriage Homogamy Rate, Males

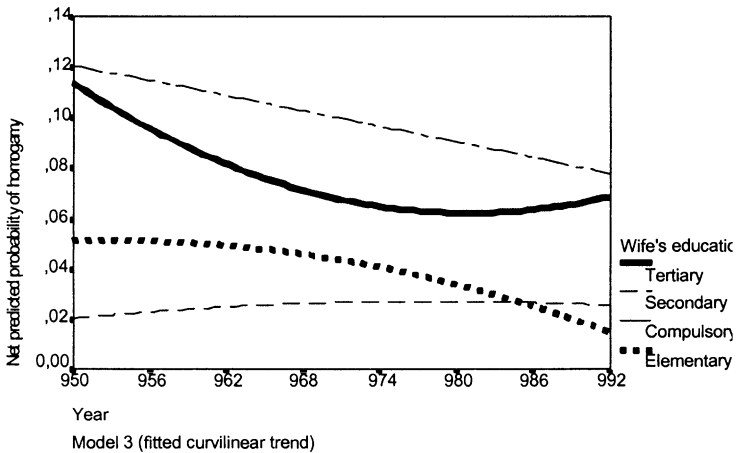


Figure 12.3.2. Historical Variation in Marriage Homogamy Rate, Females

In sum, the above mentioned historical trends underline the fact that acquired human capital has been becoming a more substantial factor for marriage behavior over time. The increasing impact of education on marital selection derived from two sources. The first one concerns structural constraints of the marriage market. As it was noted earlier, when one population group is small relative to another, the likeli-

hood of in-group marriage for members of the larger group is restricted and they are more likely to intermarry. Thus, in the situation when women's participation in secondary and tertiary education was moderate, for men with secondary or different kinds of tertiary diploma the likelihood of getting married to a woman with the same school level was low. As secondary and, later, tertiary education has become universal for females, the odds of homogamous marriage in these groups started to increase. The second source of increasing status homogamy in more educated groups lies in the changing nature of marital bargain. As women's labor market position has been shifting, it is obvious that changing economic roles of females have substantial implications for marriage. In particular, women are increasingly evaluated as potential spouses on the basis of their own socioeconomic status, rather than more traditional characteristics such as their cultural capital. Thus, it is in males' interest to marry females with a marketable labor force outlook because it may lead to more gains for the long-run partnership. Since the best proxy for the future labor market success is acquired qualification, the changing nature of marriage results in an increasing trend toward educational homogamy in well-educated groups. As for individuals without a qualification, they have two "choices": either to be "stuck" with one another or to delay their marriage until they have improved their socioeconomic outlook and become an attractive candidate for a marriage partnership.

#### SUMMARY AND CONCLUSIONS

In this study we tried to model dynamically the determinants of the odds of particular types of marriage (homogamous, upward, downward) over individuals' life course. Our analysis went beyond the traditional research on status homogamy based on log-linear methods which are able to focus only on existing couples and do not allow for the inclusion of all eligible persons for marriage; using that method makes it impossible to draw conclusions about the inner mechanism of marital selection process. Moreover, log-linear analysis is limited as a method because only a few categorical variables can be included at the same time. Moreover, in many cases, it is not feasible to investigate higher order marriage tables because the number of zero cells in the table is too excessive. Our study, however, challenged the traditional "marriage timing" research as well employing the competing risks model. Investigations of explanatory factors of marriage timing concentrate on the so-called overall hazard rate of getting married. In this case researchers consider marital selection as a sequential decision-making process in which there are two distinct causal processes at work. One process determines the occurrence or nonoccurrence of marriage (marriage timing research); another determines, conditional on the transition to marriage, which type of long-run partnership it is (homogamy research). But, we believe that this sequential decision-making model is inappropriate for investigating marriage behavior because the two elements of decision are interrelated. It is not reasonable to assume that there is one process that determines whether someone gets married regardless of attributes of a potential partner and a second process that determines whether this marriage is homogeneous or heterogeneous. Since these two outcomes - marriage and type of marriage - are interrelated, we should model the type-specific



rates of homogeneous and heterogeneous marriage. Following this research strategy our major findings can be summarized as follows.

*With respect to positive assortative mating:* In line with the theoretical hypotheses and the findings of previous research, we have found a tendency for individuals with similar levels of education to marry one another. Persons with compulsory schooling are the most likely to marry homogamously. However, historical trends reveal a changing pattern. Namely, for individuals with secondary and tertiary schooling the probability of homogamous marriages has been increasing, while for individuals with elementary and compulsory education the propensity to marital homogamy has been declining.

*With respect to school completion and time out of school as substantial factors in homogamous marital selection:* It has already been proven by the previous research that school enrollment impedes marriage formation. However, there are two competing hypotheses concerning the effect of time out of school. According to one of them the impact of education on the odds of getting married homogamously decreases as time between leaving school and the date of marriage increases, because individuals will be embedded in the labor force compared to in a school setting. The other hypothesis focuses on career-entry uncertainties and argues that if people at the time of their marriage are beginning their occupational career, it is difficult to predict their future economic prospects. But these uncertainties may decrease if people marry at later ages which lead to an increasing tendency in educational homogamy as time out of school increases. Our results confirm both hypotheses: The odds of marrying persons with similar educational attainment increases as individuals get older. However, the magnitude of this effect becomes smaller on the higher the level of educational achievement, especially if a person has a tertiary level of education. This finding can be explained by the low-cost marriage market function of universities and colleges, derived from the fact that these institutions collect students whose future socioeconomic outlooks are very homogeneous. Thus, a tertiary school diploma serves as the most productive "uncertainty minimizer". In addition, according to our results, if college or university graduates do not get married after school completion, their propensity to seal an educationally homogamous marriage increases in later stages of life course. This result gives some support to the economic view of marital bargain. The longer time period well-educated persons spend out of school, the more likely they appreciate the economic prospects offered by their potential partners.

*With respect to paternal education as a second order signal in the marriage market:* Paternal education has a consistent effect on marital behavior. As for the educational homogamy, well-educated individuals who possess more amount of inherited educational capital appear to gain more advantage in the marriage market compared to their counterparts with less advantageous backgrounds. When no homogamy occurs, upward intermarriage is fostered by the influence of a higher paternal educational background, and downward marriage is prevented by the larger stock of inherited educational assets. These findings suggest that in the marital selection process inherited educational status and achieved educational credentials are substitutes in a certain sense: the transfer of paternal educational status compensates for the lack of attained human capital. The more surprising result

for the lack of attained human capital. The more surprising result concerning paternal education is the lack of gender differences in its effect on marriage behavior. Several scholars have argued that the possession of inherited educational capital may be more advantageous for women in marriage transactions than for men since education is considered more of a cultural asset for females. Following this argument it can be expected that additional paternal inputs make women more attractive as partners allowing them to marry upwards to men with higher educations than they themselves have. However, our findings do not confirm this assumption. Men may benefit from additional stock of cultural capital to the same extent as women. This result is not consistent with the traditional view of marital bargaining according to which a women's "job" is to bring more cultural assets into marriage, while men are evaluated according to their earning potential. Our results, however, suggest that paternal education as a measure of one's cultural status is an additional signaling device for finding a spouse for both sexes; and the possession of this type of cultural capital may reduce career uncertainties which individuals encounter when searching for a marriage partner.

*With respect to toward the new foundations of marital bargaining:* Our understanding of marriage is improved by current findings on changing relationships between individuals' socioeconomic prospects and mate selection process. The starting point of our analysis was the specialization-trading model of marriage which implicitly indicates a declining tendency in educational homogamy. According to this sex-role specialization theory the notion of education connotes different meanings for males and females: for men it represents labor force prospects, for women it indicates cultural prospects. In other words, men are trained for specialization in market production while women are trained for household production. With females' increasing labor force participation it is entirely possible that - to protect the traditional division of labor in the household - men prefer to marry women with a moderate education, leaving open the route to an increasing trend in educational intermarriage. In addition, according to this resource trading model, as females' educational as well as occupational achievement rises as a concomitant of modernization, they experience major involvement in paid employment and increasing economic independence which inevitably lead to reducing gains from marriage for them. However, our findings do not support this marriage concept. As it was shown the likelihood of marital homogamy among the well-educated people has been increasing. This tendency indicates a changing economic context of marriage. Wives' potential occupational success - which is predictable quite well by their educational attainment - may provide the family with a highly adaptive strategy. Women's economic resources may reduce the risk of the collapse of the family's financial situation and it provides a device of helping to maintain living conditions over the family "life cycle". In addition, wives' career resources may have a positive effect on their husbands' future labor market success. As a number of studies argue, the more resources a spouse possesses, the more likely it is that the individual move up the occupational ladder (Philliber, Vannoy-Hiller, 1990; Bernasco 1994, Róbert, Bukodi, 2002). In sum, modern long-run partnerships are based on whether partners

can make similar valuable contributions to the marriage in order to maintain or increase the total wealth and success of the family.

#### NOTES

1. We are aware of the fact that our analysis overestimates the trend in educational homogamy because - as it is believed - marriage homogamy is inversely related to the risk of marital dissolution, and the older cohorts in our study are exposed to that risk for a longer time.
2. A combination of two variables was used to measure the non-monotonic age dependence of the marriage rate (Coale, 1971). This approach takes into account individuals at risk of entering first marriage between the ages 15 and 60 ( $i$  is an index for the  $i$ th year interval):  $\log(D_i) = \log(\text{current age} - 15)$  and  $\log(R_i) = \log(60 - \text{current age})$ . Including these variables in our event history model as time-dependent covariates, the bell-shaped curve of the marriage transition rate is modeled. This curve is symmetric around a certain age when  $\beta_D = \beta_R$  (for males this age is about 25, for females it is about 21), left-skewed for  $\beta_D < \beta_R$ , and right-skewed for  $\beta_D > \beta_R$ .

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## WHO MARRIES WHOM IN SLOVENIA?

SONJA DROBNIČ AND NEVENKA ČERNIGOJ SADAR

## INTRODUCTION

The role of education in occupational positions and transmission of social status across generations has been a subject of numerous studies in sociology for decades. The mechanisms through which social inequalities are reproduced have received broad attention particularly in the analyses of intergenerational occupational mobility flows. However, the importance of marriage patterns has also been recognized as a fundamental building block in understanding social structure and social life.

Research on educational homogamy has demonstrated that in all modern industrial societies, education plays a critical role in the choice of a spouse. Although a slight trend towards higher rates of heterogamy has been detected in cross-national comparison of outmarriage tables (Ultee, Luijkx 1990), other studies - using more differentiated long-term analyses - show a trend towards increasing educational homogamy (Blossfeld, Timm 1997; Kalmijn 1991; Mare 1991). These results can be explained by changes in structural opportunities. Marriage patterns also depend on the opportunities to meet individuals within or outside the group (Blau 1977; Blau, Schwartz 1984). Educational expansion led to the convergence between sexes in levels of educational attainment (Shavit, Blossfeld 1993), which means that young men and women spend more time together in settings that are homogeneous with respect to people's current and expected socioeconomic status. As a result, opportunities for meeting a future spouse within the school system have increased. One important consequence of increasing educational homogamy on the individual level is the cumulation of socially-relevant advantages and disadvantages, and, on the macro level, the perpetuation of the structure of social inequalities across generations.

In this chapter, we examine long-term trends in the level of educational marriage homogamy in Slovenia. We do not follow the conventional studies which analyze the characteristics of spouses in existing marriages. Instead, our aim is to reconstruct

the process of spouse selection in the life course of individuals up to the point of marriage or „right censoring“, that is, up to the point of last observation if individuals have not married beforehand. Slovenia is a particularly interesting case for studying educational marriage homogamy. As a part of former Yugoslavia with a specific “market socialist” system, the country underwent radical socio-political changes after World War II. One of the important goals of the socialist regime and a long-standing political concern was to reduce the impact of social class origin on what credentials a person achieves, and on the social position he or she attains. In effect, in the decade after the Second World War, attempts to abolish social inequalities resulted not only in the abolition of many forms of private property but also in systematic attempts to increase educational opportunities for children from lower social strata.

The paper is organized as follows. In the next section, we present the educational system in Slovenia and its development in this century. Also, we address differences and developments in educational attainment of men and women in order to better understand the context for homogamous or heterogamous marriages. Next, we briefly discuss other settings where young people can meet their potential marriage partners: leisure activities and employment. This section is followed by an empirical longitudinal analysis, based on the data from the Quality of Life Survey in Slovenia 1974-1994. The final section summarizes the findings and discusses the results of the analysis.

## EDUCATIONAL SYSTEM IN SLOVENIA

The so-called School Law of 1929 introduced a compulsory 8-year schooling in old Yugoslavia<sup>1</sup> (Ciperle, Vovko 1987). After four years of elementary school, pupils could continue their education at the gymnasium, intermediate secondary school, professional or vocational school. The same law also introduced the coeducation of boys and girls, with certain limitations. There were some gender segregated schools after the four-year elementary schooling. The presence of gender-mixed or gender-integrated schools was also dependent on the number of children in towns and their surroundings.

After World War II, there was a great expansion of secondary education and an increase in the number of years of elementary schooling. In the fifties, elementary school was prolonged from four to eight years. At the beginning of the 1980s, secondary education was significantly reformed. The idea behind the reform was to decrease cultural and social differences between the traditional academic secondary schools (gymnasium) and vocational schools, and to better prepare young people for labor market demands. General and vocational education at the secondary level were unified. Students could leave the system after completing two, three or four-year programs. This system was school-based but oriented towards the development of certain occupational skills. Schooling was combined with periods of obligatory work practice in enterprises where school-leavers were expected to be employed.

This reform was strongly criticized from the beginning. It was accused of being ideologically imposed and not being able to fulfill any of its goals. The quality of

general education as well as the quality of vocational and professional skills decreased. Since 1990, the differentiation between general secondary education and vocational schools has been introduced again, with fewer cross-over options (Trbanc 1997). New educational concepts have been developed and are still in the process of implementation.

Until recently, compulsory elementary education began at the age of 7 and lasted for 8 years. Currently, compulsory schooling is being extended from 8 to 9 years, starting at the age of 6. At the secondary level, general educational programs (gymnasium, classical gymnasium and advanced technical programs) take four years and are completed by an external examination. The secondary vocational and technical-professional education and training consists of the following programs (Trbanc 1997, p. 44): two-year lower vocational programs; three-year vocational programs; two-year programs for upgrading the three-year vocational education (option 3+2); four-year technical and professional programs; five-year program of trade academy.

Tertiary education in Slovenia takes place in two universities and seven institutions of higher education. A third university has just been established in 2003. Two types of higher education programs are offered: university (four to six years) and professional colleges (three years). In addition to a general educational expansion among younger cohorts, there was a boom of adult education in the 1970s in the form of combining employment and part-time study. The number of employed part-time students decreased during the 1980s on all educational levels but rose again during the 1990s.

In cross-national comparison of population aged 25-64, Slovenia was with an average of 9.9 years of schooling in 1991 two years below the OECD average in 1995 (Hanžek 1998, p. 24). The enrolment ratio for all levels (percentage of people aged 7-24 in school) increased from 66.3% in 1991 to 70.6% in 1996. Among small countries at medium and high levels of development, Slovenia scores behind Switzerland, Austria, Belgium, Israel and Hungary but ahead of the Czech Republic, Slovakia, new Baltic states, Croatia, Macedonia, Ireland and Portugal (Human Development Report 1994).

#### GENDER DIFFERENCES IN EDUCATION, LEISURE AND EMPLOYMENT

Gender differentiation in education is particularly exhibited in two phenomena: educational efficiency and the choice of educational programs. On the average, girls attain higher grades than boys and are more successful in completing secondary schools. Since the end of 1970s, the proportion of women enrolled in education has been higher than that of men (Hanžek 1998). However, secondary level professional and vocational schools are highly gender segregated. Technical schools (vocational and professional) are male dominated while girls dominate in schools preparing for service and care occupations.

Before World War II, a large majority of students at the tertiary level were men<sup>2</sup>. The proportion of female students significantly increased during the 1960s. In 1980, there were already more women than men at universities and colleges and this proportion remained quite stable (56% of women) during the 1990s (Statistical Year-

book of the Republic of Slovenia, 1980, 1995, 1997). At the same time, segregation of certain programs increased. Colleges for teachers and social workers are almost exclusively female. Also, men are a minority at the following colleges: pharmacy, medicine, arts and humanities, economics and biotechnology. Feminization of highly skilled occupations is particularly visible among teachers, physicians and other caring professions.

*Table 13.1. Percentage of Women in Total Employment*

Year	% women
1953	33.3
1960	36.1
1970	41.2
1980	44.2
1990	46.5
2000	46.2

Source: Statistical Yearbook of the Republic of Slovenia, 1995, 2001; Glazer, 1998.

The rapid improvement in women's educational level also gave women more possibilities in other domains. Those who have less than four years of secondary education are more likely to remain single no matter which birth cohort they belong to (Černigoj Sadar 1999). Women with higher education have more extended social networks outside the family circle; their leisure patterns are more similar to those of men, especially as far as sports activities and socializing outside the home are concerned. Leisure activities of young people with lower education are more gender segregated than those who have higher educational levels. However, education has a greater influence upon the patterns of leisure activities for women than for men. Consequently, higher educated women have more chances to meet men (particularly of the same educational level or lower) in their leisure activities (Černigoj Sadar 1996).

Employment is another important sphere where a potential marriage partner can be met. Female employment traditionally represented a considerable proportion of total employment. At the beginning of the twentieth century, 20% of the employed were women. This proportion increased rapidly after World War II. The percentage of women among the employed also increased in the 1990s, although the number of employed persons in Slovenia had been decreasing since 1987 (Table 13.1).

In cross-national comparison, labor force participation of Slovenian women is very high. Figure 13.1 shows labor force participation rate for men and women in Slovenia in 1993, compared to the average rates in 12 European countries, members of the European Union in 1991. Men's participation rate displays a shape which is very similar to that in the EU countries. The difference is only visible at older ages; this can be attributed to a low statutory retirement age, labor market problems in the transition period and early retirement schemes. Women, however, show a very different curve across the life course. Their participation rate is particularly high in



childbearing and childrearing ages, compared to the EU average. When individually compared with 12 member states, only women in Denmark have a participation rate which is close to that of Slovenian women at prime working age<sup>3</sup>. However, the difference is that women in Slovenia as a rule work full-time, and part-time employment is a negligible phenomenon (Drobnič 1995, 1997).

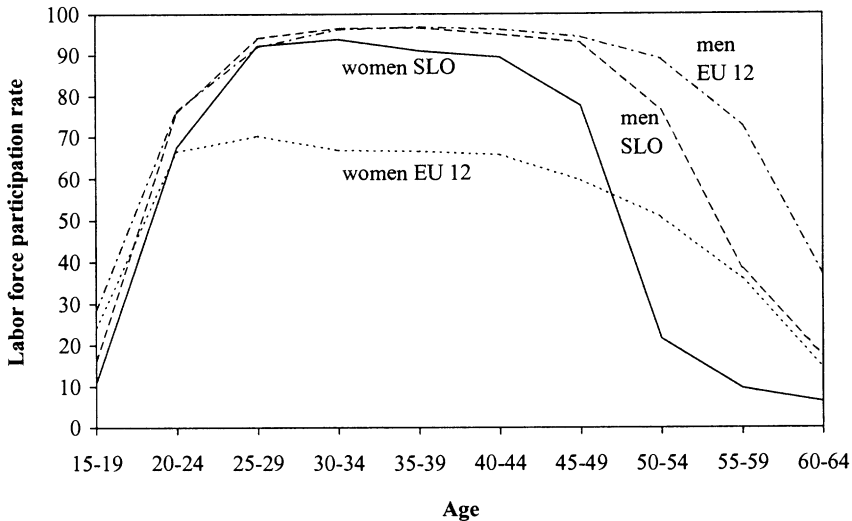


Figure 13.1. Labor force participation rate, by age groups (Slovenia 1993, EU countries 1991)

Similarities in employment behavior of men and women in Slovenia do not imply, however, that employment setting is necessarily gender-mixed. As a consequence of gender segregation in the educational system, there is a considerable horizontal and vertical segregation in the labor market. Women dominate in the service sector, particularly in health care, social services, education and culture. Also industrial branches are gender segregated; women dominate in the textile and footwear industry. Women are also concentrated at the lower levels of work hierarchy; they often work in groups or departments that are supervised by men.

#### LIFE COURSE AND FAMILY PATTERNS IN SLOVENIA

In a cross-national comparison, it is difficult to place Slovenia within any "typical" group of European countries (Table 13.2). Women's age at the birth of first child is relatively low and thus similar to that in other Central and East European countries. However, marriage and motherhood are becoming increasingly detached. The non-marital birth rate is very high, much higher than that in East and South European countries, and close to countries such as Finland and Austria. In terms of

marital dissolution, however, Slovenia rather resembles South European countries with their low divorce rate (Höpflinger 1997).

*Table 13.2. Indicators of Marriage, Fertility and Divorce, 1960-2000*

Year	1960	1980	1990	2000
Number of Marriages Per 1000 Inhabitants	8.9	6.5	4.3	3.6
Number of Divorces Per 1000 Inhabitants	1.0	1.2	0.9	1.1
Total Fertility Rate	2.2	2.1	1.5	1.3
Extra-Marital Births Per 100 Live Births	9.1	13.1	24.5	37.1
Average Age of Women at Birth of Any Child	27.8	25.3	26.0	28.1
Average Age of Women at Birth of First Child	24.9	22.8	23.9	26.5

Sources: Research Results No. 617, Ljubljana 1994. Results of Surveys No. 685, Ljubljana 1997. Statistical Yearbook of the Republic of Slovenia, 1997, 1998, 2001.

*Table 13.3. Family Structure at the Birth of First Child, by Birth Cohorts*

Birth Cohort	1950-55		1961-65		1971-75	
	Age at Interview		30-34		20-24	
	Men	Women	Men	Women	Men	Women
Married	80.0	79.5	66.0	69.9	58.5	51.6
Cohabiting	7.4	5.6	18.1	14.7	30.1	26.5
Single	12.6	14.9	15.9	15.4	11.1	21.9
N	309	465	255	432	27	159

Source: Kožuh-Novak et al. (1998:45)

During the last thirty years, significant changes occurred in partnership relations and family life patterns in Slovenia. Young people stay in education and training longer and also live with their parents for a longer time. Being economically dependent upon parents or upon the state during the years of education, they also postpone steady partnerships. Marriage is losing its social meaning and is postponed more and more often or avoided altogether. Mean age at marriage has increased from 23.8 for women and 26.6 for men in the period 1985-1989 to 28.3 years and 31.4 years, respectively (Statistical Yearbook of the Republic of Slovenia 2001). Families are becoming more diverse; there are growing numbers of single parents, childless relationships and cohabitations. The share of married couples with children among all family forms decreased from 63.3% in 1981 to 59.0% in 1991 (Results of Surveys No. 607 1994).

Marriages are more stable than non-marital cohabitations; however, the most stable marriages are those with preceding cohabitations. Marriage timing and the

birth of first child are strongly related, the best predictor for the first marriage is pregnancy (Černigoj Sadar, Brešar Iskra 1997). Comparing various cohorts, variations in the family forms at the birth of the first child are greater among women than among men (Table 13.3).

## DATA AND METHODS

Data for this analysis are drawn from the "Quality of Life Survey in Slovenia 1974-1994," a national representative sample survey conducted in 1994. This survey contains detailed retrospective information on a wide variety of family events, partnership histories, housing mobility, education and employment careers. Interviews were conducted with 1807 primary respondents. In addition, over 1,000 partners of primary respondents participated with a shorter version of the questionnaire where the focus was on educational and employment histories (Drobnič 1996).

This data set enables us to analyze the process of schooling, partnership selection and marriage in a dynamic perspective. We used detailed information on school attendance, which is available for the period since 1974, to reconstruct the educational career of individuals. However, for respondents who were not in school after 1974, did not attend school after leaving compulsory education at the age of 15, or whose data on type of school and starting and ending dates were missing, we used information on total years of schooling, highest educational level and age to reconstruct ideal-type career histories. If information on actual school attendance was available for part of an educational career (e.g. the respondent attended university in 1974, which means we have information on the starting and ending dates for university education but no prior schools), we combined data provided by respondents with the ideal-type reconstruction of prior educational history.

We dynamically modeled the following school degrees: less than the 8-year elementary school, completed 8-year compulsory school, 1-2 years vocational training (reduced program), 2-3 years vocational training (standard program), 4-5 year technical or upper secondary school (gymnasium) which opens graduates the possibilities of entering college and university, specialized college degree, university education, post-graduate level. Educational attainment is a time-varying covariate. The educational qualification level is reconstructed for each point in time over the life course. The values change when the respondent and his/her partner, respectively, successfully complete a certain school.

For the purpose of defining a homogamous marriage, this fairly detailed educational classification has been compressed into five educational levels:

- less than the 8-year elementary school
- completed 8-year elementary school
- elementary school and vocational training
- upper secondary school (i.e. gymnasium)
- technical or professional college, university, post-graduate degree.

Table 13.4. Educational Distribution Across Birth Cohorts (Percentages)

Educational Level	Birth Cohort ≤1929		Birth Cohort 1930-1939		Birth Cohort 1940-1949		Birth Cohort 1950-1959		Birth Cohort 1960 and later	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Less Than 8-Year Elementary School	25	31	22	30	12	16	5	8	1	1
Completed 8-Year Elementary School	25	39	15	32	26	30	17	26	16	19
Vocational Training	25	21	29	13	29	25	39	24	41	26
Upper Secondary School	16	8	21	17	21	16	23	23	32	42
College or University Degree	9	1	13	8	12	12	16	19	10	12
Total	100	100	100	100	100	100	100	100	100	100
N	111	211	119	125	144	142	191	165	290	279

Source: Quality of Life in Slovenia 1974-1994, own calculations

The assumption is that these educational levels more adequately represent variations in social opportunities, such as occupational position, career prospects and income. Thus, marriage within the same educational level is considered homogenous. Upward or downward marriage implies that spouses belong to different educational groups in this five-stage classification. We also reconstructed the educational level of spouses, using data on partners of primary respondents. In this way, we successfully reconstructed educational histories for 1777 persons. Educational distribution for men and women across birth cohorts is shown in Table 13.4.

The dependent variable in our analysis is the transition rate from status “single, never married” into first marriage. For each individual, the observation starts at the age of 15 and ends with an event at the time of first marriage, or as right censored at the time of interview or age 55. Three destination states are distinguished: homogenous marriage, upward marriage (respondent marries a spouse with a higher educational level) and downward marriage (respondent's spouse has a lower level of educational attainment).

We used event history analysis to analyze transition rates (Allison 1984; Blossfeld, Hamerle, Mayer 1989; Blossfeld, Rohwer 1995; Kalbfleisch, Prentice 1980; Rohwer, Pötter 1998; Tuma, Hannan 1984). The dependent variable is the instantaneous rate of change from one state,  $j$ , to another state,  $k$ . It is defined as:

$$r_{jk}(t) = \lim_{\Delta t \rightarrow 0} \frac{1}{\Delta t} P_{jk}(t \leq T < t + \Delta t | t \leq T), \quad j \neq k$$

where  $r_{jk}$  is, for example, the instantaneous probability of marrying upward in a time interval  $(t, t + \Delta t)$ , conditional on remaining single until  $t$ . Transition rates were estimated separately for upward, homogenous and downward moves. Since persons without a completed elementary degree per definition cannot marry downward and those with a university degree cannot marry upward, the risk sets were adjusted accordingly. For example, an individual who eventually completed university remained in the risk set for an upward move at lower educational levels. However, if he/she did not marry beforehand, he/she was considered right censored at the time of receiving the university degree.

To estimate the transition rates, we used an exponential model with time-constant and time-varying covariates. The following covariates were used in the analysis:

*Age* in a non-monotonic shape was used in order to capture the well-known age distribution of first marriages. This distribution tends to be smooth, unimodal, skewed to the right, and have density close to zero below age fifteen and above age fifty (Willekens 1997). Following Blossfeld and Jaenichen (1993) and Blossfeld and Timm (1997), we modeled age as

$$\text{Log}(D_i) = \log(\text{Current Age} - 14)$$

$$\text{Log}(R_i) = \log(54 - \text{Current Age})$$

*Interaction of education and age:* Since people tend to postpone family formation when they are still in school, and participation in the educational system depends to a large extent on age, two interaction effects (time-varying) were estimated in the analysis:  $\text{Log (Di) * Educational Level}$  and  $\text{Log (Ri) * Educational Level}$ .

*Duration of schooling:* In general, Southern and Eastern European countries have not experienced a postponement of marriage and the rise in age at first marriage to the extent known from Northern and Western Europe. However, Slovenia represents one of the few exceptions in this respect (Macura 1995). It has been hypothesized that a prolonged stay in the educational system has important consequences for marriage timing. The longer that young people stay in school, the more educationally homogenous their environment will be; this adds up to a higher probability of homogenous partnerships. Duration of schooling was measured in years.

The process of postponing marriage and catching up after completing one's education was modeled by the variable *Not in school*. This is a dummy variable that has a value of 0 when the person is in the educational system and a value of 1 otherwise. The variable can switch values several times in the life course for those respondents who have provided data on school attendance. However, to prevent artificial breaks in the educational career, we disregarded gaps if their duration was less than one year<sup>4</sup>.

*Main effect of social origin:* The indicator of social origin is the respondent's father's highest educational level. This variable has 5 categories which correspond with the educational categories which were used for the classification of homogenous vs. upward and downward marriages. We expect marriage homogamy to increase with the level of education of the family of origin. Social origin positively correlates with the educational attainment of the children; hence, the social networks of the family of origin and the social networks developing within the educational system will overlap and mutually reinforce each other.

*Indirect effect of social origin and intergenerational mobility:* Persons who considerably depart from their parents' social status, show a tendency to "correct" this status incongruity by marrying a spouse who comes from the social strata close to their parents' (Blossfeld, Drobnič, Rohwer 2001). To control for this social phenomenon, we constructed a set of time-varying dummy variables, where we compared the respondent's educational level with that of his or her father: father's educational level is lower than daughter's/son's; father's educational level is equal to daughter's/son's; father's educational level is higher than daughter's/son's.

*Premarital birth or pregnancy:* Pregnancy is an important triggering event that influences the timing of marriage (Blossfeld, Klijzing, Pohl, Rohwer 1996). Also, non-marital childbearing in Slovenia often precedes a couple's marriage. The effect of premarital birth or pregnancy is estimated by a dummy variable indicating that a person had a child before marriage or a child was born within seven months after marriage.

*General marriage rate:* General trends in postponement of marriage in the life course can be observed in Slovenia. If the probabilities of having a specific type of marriage (homogamous, upward, downward) also changed over time, there is a danger of compounding the effects of independent covariates on general and specific

marriage rates. To separate these effects, a general transition rate into marriage was first estimated for men and women born before 1930, 1930-1939, 1940-1949, 1950-1959, and 1960 and later. These cohort- and sex-specific coefficients were then added as covariates to the models estimating specific transition rates.

*Structural opportunities:* Also in Slovenia, the increase in educational attainment has been striking. Between the censuses 1961 and 1991, for example, the proportion of the population with a university or specialized college degree increased almost five-fold, from 1.8% to 8.8% (Statistical Yearbook of the Republic of Slovenia, 1997). This educational expansion has been particularly important for women. In 1961, the ratio of the proportion of men and women with college degree was 1:3.2. At the beginning of the 1990s, this proportion dropped to only 1:1.2.

Table 13.4 shows how the educational structure of our sample changed over time. Half of the men and even 70% of women born in the first two decades of the twentieth century had only an elementary education or less. Of the cohort born in the 1960s, the group of those who did not complete the 8-year compulsory school have almost disappeared and only 16% of the men and 19% of the women have an elementary education. Changes at the upper levels of the educational ladder are even more striking (Table 13.4). The proportion of the population with at least an upper secondary education increased considerably and this increase was particularly pronounced for women. Starting with the generation born in the mid-1950s, women have surpassed men in educational attainment and the gap has been widening ever since.

Hence, the extent of structurally given opportunities for upward, downward and homogamous marriages (i.e. the availability of marriage partners with specific levels of education) has significantly changed over time. It is necessary to control this structural context when estimating specific hazard rates with the individual-level data. As a proxy for the structural context, we used the difference in average years of education for men and women, calculated for five-year birth cohorts on the basis of survey data (Kramberger, Nieuwbeerta, Ganzeboom 1998)<sup>5</sup>.

*Linear cohort trend:* After controlling for individual's age, educational history, childbearing, social origin and general social changes in marriage timing and structural opportunities, we also include a variable that should measure additional changes in specific marriage rates over historical time. We interpret this effect as changes in social norms concerning upward, downward, and homogamous marriages. The range of values of this variable is between 1 and 5. The oldest cohort, born before 1930, is assigned the value 1, respondents born in 1930-1939 have value 2, those born in 1940-1949 value 3, in 1950-1959 value 4 and the youngest birth cohort born in 1960 and later value 5.

## RESULTS

*Marriage Patterns*

Table 13.5 provides information on changes in marriage homogamy for cohorts born in the twentieth century. A measure of educational homogamy is the percentage of marriages involving men and women of the same educational strata. For each type of marriage union, the first column shows the observed distribution of marriages; the second column shows the estimated distribution. Estimates based on the random model take into consideration the educational distribution of all men and women in a given birth cohort. Percentages of homogamous, upward and downward marriages are then calculated under the assumption that a marriage partner belongs to the same birth cohort but selection according to the educational level within cohort is random<sup>6</sup>.

*Table 13.5. Distribution of Upward, Downward and Homogamous Marriages With Regard to Educational Level for Birth Cohorts (Partner's Highest Educational Level at Time of Marriage)*

Birth Cohorts	Upward Marriage		Homogamous Marriage		Downward Marriage		N	
	O	E	O	E	O	E	O	E
	%	%	%	%	%	%		
<u>Wives</u>								
1900-1929	44,3	48,8	45,9	24,0	9,8	27,2	61	211
1930-1939	44,2	50,0	48,0	19,9	7,8	30,1	77	125
1940-1949	33,3	43,6	50,0	22,0	16,7	34,4	84	142
1950-1959	39,1	40,7	43,8	22,6	17,1	36,7	105	165
1960-	31,6	32,4	40,0	28,4	28,4	39,2	95	279
<u>Husbands</u>								
1900-1929	13,0	27,2	46,8	24,0	40,2	48,8	77	111
1930-1939	14,5	30,1	44,4	19,9	41,1	50,0	90	119
1940-1949	26,8	34,4	42,0	22,0	31,2	43,6	93	144
1950-1959	25,9	36,7	34,8	22,6	39,3	40,7	112	191
1960-	30,0	39,2	48,8	28,4	21,2	32,4	80	290

O = Observed.

E = Estimated. (Estimated distribution is based on the random model).

Source: Quality of Life in Slovenia 1974-1994, own calculations.

The comparison of observed and estimated marriage patterns shows that homogamous marriages are more common than would normally be expected under the assumption of a random selection within cohorts. Both upward and downward observed marriages are less common than expected. However, the patterns differ



somewhat for men and women, and across birth cohorts. The proportion of upward marrying women is high but less than expected under the assumption of a random selection. Moreover, there is a decreasing tendency over time for women to marry better educated men. Concerning downward marriage, the differences between observed and predicted values are in general larger but the proportion of women marrying downward has increased considerably over generations. Although this pattern is still the least common, it is far from being exceptional. Data for men show reversed tendencies: an increasing propensity to marry upward and a falling trend for downward marriages.

### *Specific Marriage Transition Rates*

Next, we estimate the rates of transition into upward, homogamous, and downward marriages, and the effects of covariates on these rates. Table 13.6 shows the estimated transition rates for women. The first notable result is that marrying upward is more common for less educated women and is independent of women's school attendance. Holding other characteristics constant, women tend to marry upwards in their early twenties, and the marriage rate is highest for less educated women. It seems that in this type of marriage, where the husband has a higher level of education than his wife, a more traditional division of roles is anticipated. What might be decisive for the marriage decision is the husband's educational level and the fact that he has completed his education. For wives, attending school does not present a significant barrier to marriage.

Contrary to that, homogamous and downward marriages are more common for higher educated women and leaving school is an important precondition for marriage. After leaving school, the risk of marrying homogamously or downward is more than three times higher than during schooling<sup>7</sup>. The marriage rate for homogamous marriages reaches its peak when women reach their late twenties, when other characteristics are controlled. For downward marriages, the pattern is more complex. Highly educated women who marry downwards, have the highest marriage rate in their late twenties and early thirties; however, lower educated women who marry a partner with even less education show a tendency to marry later in life.

Social origin plays a significant role in marriage patterns; however, it is necessary to remember the societal context of this study to better understand the results. Data on educational distribution across birth cohorts (Table 13.4) demonstrate how significant the educational improvement in Slovenia was. This implies that low education in absolute terms prevailed in the parental generation and a very large proportion of respondents surpassed their parents in educational attainment. Parameter estimates in Table 13.6 show that coming from a better educated family (which was rare in the past) prevents women from marrying downward. Also, if the daughter remains below the educational level of her father, the risk of marrying homogamously decreases. Hence, two tendencies related to social origin can be detected: an inclination to avoid downward moves if women come from a higher social class, and a tendency to "correct" social status through marriage, if there is an incongruity between the daughter and her family of origin.

Next, premarital birth or premarital pregnancy have a strong positive effect on marriage rates. Interestingly, the effect is somewhat weaker for homogamous than for downward and particularly upward marriages. It seems that pregnancy or child-birth provide a triggering event for marriage timing particularly in heterogamous partnerships. The general cohort-specific marriage rate for women has a positive effect on upward and homogamous marriages. The difference in average years of schooling between men and women has a borderline significant effect on homogamous marriages, which is unexpected. The linear cohort trend is not statistically significant.

Table 13.6. Estimated Transition Rates of Women for Upward, Homogamous, and Downward Marriages

	Upward	Homogamous	Downward
Constant	-51.6041***	-35.4119***	-30.3746***
Log (Current Age - 14)	3.2317***	2.9279***	3.0277***
Log (54 - Current Age)	11.0744***	6.2121***	3.7650
Log (Curr.Age-14)*Educ. Level	0.1111	-0.1909	-0.4562*
Log (54-Curr.Age)*Educ. Level	-0.1968*	0.1997**	0.5792***
Duration of Schooling	-0.0074	-0.1154	-0.1044
Not in School (Ref.=In School)	0.3072	1.1456**	1.1839*
Father's Educ.	0.1233	0.0340	-0.3519**
F.'s Educ. < Daughter's	0.0121	0.0734	0.0948
F.'s Educ. > Daughter's (Ref. = F.'s Educ. = Daughter's)	0.1639	-0.7226**	-0.2308
Premarital Birth or Pregnancy	1.0359***	0.6850***	0.8566***
General Cohort Specific Marriage Rate for Women	0.6251**	0.8103***	0.5602
Men's Educ.- Women's Educ.	0.2995	0.5962*	0.5206
Linear Cohort Trend	0.2129	0.2127	0.3885
Number of Episodes	584	584	502
Number of Events	153	183	68
Number of Splits	7143	7432	5585
Likelihood Ratio Test <sup>a</sup> :	242.9	286.6	151.2
df	13	13	13

\*\*\*  $p \leq .01$ ; \*\*  $p \leq .05$ ; \*  $p \leq .1$

<sup>a</sup> LR = 2 \* (loglikelihood (model with covariates) - loglikelihood (model without covariates))

Estimated transition rates for men display some dissimilarities when compared to women but also important differences. First, there is no significant interaction effect between the educational level and age (Table 13.7). Duration of schooling does,

however, play a significant positive role in upward marriages for men. This implies that “non-conventional”<sup>8</sup> marriages, where women surpass their husbands in terms of education, do not occur indiscriminantly across the educational spectrum. Instead, men have to stay in school and achieve a certain educational level before they become acceptable partners for (even better educated) women. Also a very strong and significant effect of completed schooling goes in the same direction. Leaving school is an important precondition for men to enter all types of marriages; however, the effect is strongest for upward marriages.

Table 13.7. Estimated Transition Rates of Men for Upward, Homogamous, and Downward Marriages

	Upward	Homogamous	Downward
Constant	-45.2627***	-46.1729***	-28.0029***
Log (Current Age - 14)	4.9317***	4.4039***	2.5003***
Log (54 - Current Age)	7.3127***	8.7042***	3.7335***
Log (Curr.Age-14)*Educ. Level	-0.2939	0.0868	0.1080
Log (54-Curr.Age)*Educ. Level	-0.0650	-0.0961	0.1034
Duration of Schooling	0.2572***	-0.0707	-0.0458
Not in school (Ref.=In School)	1.4818**	1.2579**	1.1803*
Father's Educ.	-0.0373	0.1694*	-0.1965**
F.'s Educ. < Son's	0.0331	0.1840	0.2768
F.'s Educ. > Son's (Ref. = F.'s Educ. = Son's)	0.4477	-1.1394***	-0.5236
Premarital Birth or Pregnancy	1.1969***	1.1059***	0.6699***
General Cohort Specific Marriage Rate for Men	0.1245	-0.0886	0.7893
Men's Educ. - Women's Educ.	-0.0613	-0.0347	0.8995***
Linear Cohort Trend	0.2283	-0.0303	0.2378**
Number of Episodes	667	667	606
Number of Events	97	186	155
Number of Splits	9132	9598	7784
Likelihood Ratio Test <sup>a</sup> :	198.0	327.8	279.9
df	13	13	13

\*\*\*  $p \leq .01$ ; \*\*  $p \leq .05$ ; \*  $p \leq .1$

<sup>a</sup> LR = 2 \* (loglikelihood (model with covariates) - loglikelihood (model without covariates))

Social origin has a systematic impact on marriage behavior. The higher the social class of the family of origin, the higher the rate of homogamous marriages and closure of social circles. Marriage also serves as a corrective mechanism for the inter-generational reproduction of the social class position. If a son does not reach the

educational level of his father, the likelihood of a homogamous marriage strongly declines.

Premarital birth or pregnancy significantly increases the marriage rate but somewhat less for downward than for homogamous and upward unions. Also, structural opportunities in the marriage market have an expected effect: men are more likely to marry downward when they have higher education than women on the aggregate level. However, the linear cohort trend coefficient for downward marriage rates is contrary to what was expected. When controlling other factors, younger cohorts of men have a higher tendency to marry downward than older cohorts.

### SUMMARY AND CONCLUSION

The analysis in this paper was guided by several questions, such as: What are the long-term trends of marriage homogamy in Slovenia? What are the effects of educational expansion across cohorts? How important is leaving school for marriage timing as a precondition for economic independence? What is the role of social origin and how open or closed is the society in this respect? Does the impact of various factors on marriage type and timing differ for men and women?

First, the description of the development of educational homogamy in Slovenia shows that the proportion of homogamous marriages by far exceeds the expected proportion under the assumption of "random choice." Marriage homogamy is thus a systematic social phenomenon. Across birth cohorts, the data indicate a tendency towards less educational homogamy although the trends are not entirely unidirectional. Also, there is a trend of fewer marriages where wives have a lower education than their husbands, and an increase of non-conventional marriages with higher educated wives.

Results for Slovenia considerably differ from results in some other countries. In West Germany, for example, Blossfeld and Timm (1997) found a strong long-term trend towards more educational homogamy across birth cohorts, and a relatively modest increase of non-conventional marriages. There are several possible reasons for the discrepancy regarding the homogamy trend. In older birth cohorts, the general educational level in Slovenia was very low. The majority of men and women were distributed among the two lowest educational groups. Therefore, the opportunities for homogamy were high for older generations. With the general increase of education, women not only rapidly caught up with men but also surpassed them. Thus, the distribution of educational attainment became reversed for the first time in history. This asymmetry again reduces opportunities for homogamy in younger generations. In light of these developments, it is of no surprise that the homogamy level has not been increasing across cohorts.

The proportion of upward and downward marriages has changed across birth cohorts, and marriages where women surpass their husbands in educational level are becoming more and more common among younger cohorts. Nevertheless, there are distinct gender patterns in such couples. In "conventional" couples, it is decisive that men finish schooling and in this way achieve the basis for economic independence. Women's school completion is not relevant for marriage timing. The situation is

quite different in “non-conventional” couples where wives have a higher level of education than their husbands. Here, men, too, must finish their schooling and achieve a certain educational level before becoming adequate marriage partners for better educated women. To step out of conventional marriage patterns, men must fulfill higher social and economic requirements.

Finally, our results show that social origin matters in marriage decisions. We found direct and indirect effects of social origin. As predicted, there is a significant positive effect of the father's educational attainment level on the tendency to marry homogamously and a negative effect on marrying downward for men. Coming from higher social strata implies a tendency towards the closure of social circles that transcends across generations. For women, the effect goes in the same direction. There is a strong negative impact of social origin on downward marriage mobility, that is, young women from better educated families are not likely to marry lesser educated men.

The indirect effect of social origin takes into account the intergenerational mobility. Sons and daughters who have not achieved a level of education found in the family of origin, show a low tendency to marry an educationally homogamous partner. We hypothesize that these people have little interest in anchoring their social position after experiencing downward social mobility. Instead, having the opportunity to meet better educated persons through the social networks of the family of origin, they should attempt to move up through marriage. Indeed, the coefficient for upward marriage is consistently positive for both men and women, albeit not statistically significant in this model specification.

In conclusion, our analysis suggests that there is a trend toward greater symmetry in marriage decisions in Slovenia. Since women have not only reached but even surpassed men in their educational attainment, and women's continuous gainful employment and income have become a constituent part of the family life, the traditional gender-specific marriage patterns have become weaker. Upward marriage for women happened less and downward marriage became more common. However, this does not imply that an inverted pattern of the traditional family model is in formation; men in such unions must meet certain standards allowing them to take part in the support of the family. Second, we conclude that marriage decisions continue to play a significant role in the process of reproduction of social inequalities. Besides the direct effect of social origin, marriage serves as an important “corrective mechanism” in intergenerational status incongruity. The Slovenian case shows that the socialist system was not successful in its attempts to eliminate or significantly reduce the impact of social origin on life chances of children. However, it succeeded to rapidly improve the educational level of the population, particularly for women. In general, gender differences in education disappeared faster and earlier than in West European countries. Women's changing role in society is thus the fundamental reason for changing marriage and family patterns.

## NOTES

1. The territory of Slovenia belonged to the Austro-Hungarian Empire until the end of World War I. The first Slovenian university was founded in Ljubljana in 1919. After WW I, the Kingdom of Serbs, Croats and Slovenians was established and this monarchy is now known as old Yugoslavia. After World War II, Slovenia was one of the six republics in the Socialist Federative Republic of Yugoslavia. Slovenia established itself as an independent state in 1991, since 1992 it has been internationally recognized and became a permanent member of the United Nations. Currently, the state is in the process of joining the EU. It covers an area of slightly over 20.000 square kilometers and has about 2 million inhabitants. The territory of Slovenia before WW2 was smaller than today. Therefore, part of the older Slovenian population attended schools in Italy or in some other neighboring states and experienced different educational systems than people living in central parts of the country.
2. In winter semester 1935/36, there were 338 women (19%) among 1776 full-time students at the University of Ljubljana (Krajevni leksikon Dravske banovine, cited in Serše, 1998).
3. Wage gender gap in Slovenia is comparatively small. According to a World Bank report, relative wages for women in Central and Eastern Europe were comparable to those in Western Europe, but relative wages for Yugoslav women at the end of the 1980s were higher than in all other European countries included in the study. The female-male wage ratio in Slovenia was 0.88 in 1987 and rose to 0.90 in 1991 (Vodopivec 1995). The estimated rates of return to education in Slovenia were rather low in the past but increased considerably in the transition period (Stanovnik, 1997).
4. Most of the gaps in the original data were of short duration, e.g. a respondent reported attending school A until June of a particular year and starting a new school B in September or October the same year. Also, since the earliest directly reported information on school attendance is not available before respondent's age of 15, the attendance of elementary school was reconstructed for all respondents. This ideal-type reconstruction was based on the date of birth and could therefore produce an artificial time gap between the completion of the elementary school and the reported attendance date of the following school.
5. Data for this indicator come from five different surveys, conducted between 1968 and 1992 (7598 respondents altogether). This solution was used because it was not possible to use official statistical data on educational levels of the population to construct an indicator of structural opportunities. The reason is that -- due to educational system reforms -- the distinction between "vocational training" and "upper secondary level" could not unequivocally be made for younger cohorts.
6. Estimates based on the random model are symmetrical for men and women. In effect, the assumption that couples belong to the same birth cohort is not entirely realistic; there is an age gap of about three years in Slovenian couples. However, results do not change much if this age difference is taken into account when defining birth cohorts. For a better overview, we present results in which partners belong to the same birth cohort.
7. Since , e.g. for homogamous marriages ,  $\exp(1.1456)=3.14$ .
8. We use the term "conventional" marriage rather than "traditional" to avoid the connotation of a traditional division of labor with the husband as breadwinner and the wife as homemaker. This family model, which reached its peak in industrialized Western countries in the decades after WW II, was marginal in Slovenia. Here, the development went early towards dual-working couples.

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## TWO DECADES OF EDUCATIONAL INTERMARRIAGE IN ISRAEL

HAYA STIER AND YOSSI SHAVIT

### INTRODUCTION

The propensity of people from various social groups to marry one another reflects cultural similarities or differences between groups and indexes the degree of integration among them. In addition patterns of mate selection can help predict changes in the social structure. For example increasing rates of ethnic intermarriage may indicate that ethnicity is losing its social significance and ethnic tensions are declining (e.g. Schmeltz et. al 1991). Increasing rates of educational homogamy may lead to greater educational inequality in the population because some children will benefit from having two educated parents while others will have none (Mare 1991). Thus, society's patterns of assortative marriages mirror its past and its present, and shape its future.

In most industrialized societies the level of education increased dramatically in recent decades, and more so for women than for men. In fact, in many countries women's educational attainment is now higher than that of men (Shavit, Blossfeld 1993). While education increased gradually throughout the century, the major recent change is in the rates of post secondary education.

The rise in education had some important consequences for both men and especially women's lives. First, a higher educational level improves the prospects of women in the labor market and educated women are more likely to be employed. Second, the rise in education is also related to changes in family formation, in particular it entails a postponement of entry into marriage (Cherlin 1992; Blossfeld, Huinink 1991; Blossfeld, Jaenichen 1992) and a decline in the overall propensity to marry. Less clear is the effect of changes in educational attainment on the choice of spouses. One hypothesis would state that as education increases for both men and women, and as marriage is delayed to later ages educated persons would increasingly prefer to marry equally educated spouses (Oppenheimer 1988). The reason for

this is that previously women were valued for their roles in the family rather than at the work place, and there was little premium for marrying an educated wife. When marriages are delayed and education prolonged, women are valued for their earning potential. Both men and women now seek educated spouses who are expected to have strong earnings potentials. Another, alternative hypothesis is that an increase in women's rates of higher education may create a „marriage squeeze“. Women tend to marry better educated husbands, and as their own education surpassed that of men, they face a shortage of potential husbands with similar or higher education. In response, some women will either refrain from marriage altogether, or marry downward (Guttentag, Secord 1983). In studying the tendency towards ethnic and educational homogamy among Israeli Jewish couples marrying in early and later ages, Stier and Shavit (1994) found that marriage squeezes resulting from the shortage of well educated Sephardi men lead to a higher ethnic heterogamy in marriage as educated Sephardi women married across ethnic lines in search for educated mates.

Israel is a diverse society with multiple and crosscutting divisions. Most notable are ethnic, religious and socioeconomic divisions, and distinctions by level of religious orthodoxy (Goldscheider 1996). This diversity is a product of massive migration to Israel of Jewish people from different areas of the world. About 85 percent of Israelis are Jews and the remainders are Muslim, Christian and Druze Arabs. Inter-marriages between the religious groups are very rare, to the point that they each constitute a separate marriage market. The present paper concerns marriages of Jews. Within the Jewish population, there is a substantial, and growing, rate of inter-marriage between the various ethnic groups (Peres, Katz 1991; Shavit, Stier 1997; Goldscheider 1996).

Most studies of mate selection in Israel focused on ethnicity as a salient dimension of the process, ignoring, for the most part, other dimensions, such as class and educational attainment (Peres, Schrift 1978; Schmeltz et al 1991; Eisenbach 1992). In a recent paper Shavit and Stier (1997) studied change in the patterns and magnitudes of ethnic and educational assortative mating among couples who married between 1967-72 and between 1978-83. The main findings of the study indicated that in general ethnic homogamy declined over time, but educational homogamy remained stable, except at the very bottom of the educational hierarchy where it declined. Yet, this study has two important limitations. First, education was measured very crudely, and, second, the study preceded important changes in the rates of tertiary educational attainment and in marriage which took place during the 1980s and early 1990s.

The current study aims to overcome these deficiencies. In particular, we focus on the patterns of educational assortative marriages in the Israeli marriage market, and their changes during the 1980s and early 1990s. We ask whether the changes in the educational attainment of young men and women affected their marriage patterns and especially, their mate selection with regard to education. In the following we summarize the main changes in education and in family formation that took place in Israel and our expectations regarding changes in educational assortative mating.

## RECENT CHANGES IN EDUCATION AND MARRIAGE

During the 80s and early 90s there was a very large increase in the proportion of Israeli Jewish men and women who attended tertiary education. In 1983, 34.4 percent of Jewish men in the ages 25-34 had at least some post-secondary education. Among Jewish women of the same age category the proportion was 35.4 percent (Israel 1985: Table 22.2). By 1995 the proportions rose to 47.6 and 49.6, respectively (Israel 1997: Table 22.2). The increase is due to two factors. First, to the influx of immigrants from the CIS, many of whom are highly educated, and second, to increases in the university attendance rates among Sephardi Jews originating in Iraq, Iran, and Egypt – but not those originating in other North-African countries.

Family formation patterns have also changed during the 80s and early 90s. Between 1980 and 1995 the median age of Jewish grooms rose from 25.3 to 26.6 (24.8 to 26.2 among firstly married) and among Jewish brides it rose from 22.3 to 24.0 (22 to 23.6 among firstly married). In 1995 among the 20 to 24 years old females, 69 percent never married, but by the ages 25-29 this rate declines sharply to 27 percent. For men the rate of never-married for each age group is even higher: 88.7 and 49.8 percent, respectively. By ages 35-39 only a small minority (10 percent of males and 7 percent of females) were still single (Israel, 1998). These figures can be summarized as follows: first, marriage is still the dominant form of family formation in Israel, and second, during the 80s and early 90s there was a substantial postponement of marriage.

The issue of age-at-marriage is closely related to that of military service. Among Jewish men, about 80 percent serve three years, between ages 18 and 21. Exempt are only some of the ultra-orthodox (about 7-10 percent of recent cohorts), and the physically or psychologically disabled. Among Jewish women about 60 percent serve two years, while a 40-percent rest obtain exemptions on various grounds, including religiosity, and marriage.

The prevalence of military service has several possible conflicting implications for the pattern of educational assortative mating. On the one hand, the service itself is a meeting ground for young available men and women. It is often said to be an integrating milieu where people from different walks of life meet and mix. If so, it may enhance the prevalence of heterogamous marriages. On the other hand, military service postpones marriages, delaying some of them to the ages of university attendance. We would expect that marriages forged on university and college campuses would be educationally homogamous.

We expect that as marriages were delayed, during the 80s and early 90s, more of them were formed either during college or university attendance or after graduation, and a smaller proportion of marriages were forged during the military service. This may have increased the odds of educational homogamy among the highly educated.

The current paper examines changes in the rate of educational homogamous marriages in Israel over time. We focus on two time periods, the early eighties and the mid-nineties, in order to understand the effect of the increase in educational attainment, on the one hand, and the postponement of marriage, on the other, on mate selection. In particular we ask whether the delay in the age-at-marriage and the ris-

ing levels of educational attainment, led to a higher level of educational homogamy among Jewish men and women. We also ask whether a later age-at-marriage and a higher level of education resulted in growing marriage squeezes for women which forced them to marry downward in higher rates than before.

#### DATA AND METHODS

We employ data drawn from the 20 percent Public Use File of the 1983 and 1995 Censuses. The analysis is restricted to Jews 18 to 50 years old at the time of each census, who had not married by the beginning of the two year interval preceding the census.<sup>1</sup> For the early period, 1983, we had a sample of 39,297 women and 55,724 men, and, for 1995 54,790 women and 67,780 men. Thus, we created files consisting of the population at-risk for marriage during the two-year interval. To the records of those who married during the interval, we merged the spouse's record. The religion and age of spouses were not restricted.

For each respondent and, where applicable, for each spouse, we have the following variables: *Education* was measured as the highest diploma obtained, in 5 categories: primary school diploma; secondary school diploma; secondary education + matriculation diploma (bagrut); post secondary, non-academic diploma; and tertiary academic diploma. *Ethnicity* was measured as place of birth or, for natives, father's place of birth, consolidated/classified into 5 categories: Asia -- includes those born or originating in the Middle East, including Yemen; Africa -- including those born or originating in North Africa; Europe -- including Europe, America, South Africa, Australia<sup>2</sup>; and Israel -- including those who themselves and their parents were born in Israel. In addition our models included a measure of time exposed to the risk of marriage (*exposure time*) measured as the number of years from age eighteen until the year of the first marriage, or, for those who remained single, to the census year; whether respondent was *in school* at the time of the survey; and whether the respondent is *Israeli born*.

The dependent variable in the study indicates whether respondents married during the two years prior to the census, and if so, what was the level of their spouses education. Spouse's educational level was coded into five categories which are identical to those employed for respondents. We further calculated whether the spouses were more educated than the respondents (upwards marriage), less educated (downwards marriage), or equally educated (homogamous marriage).

#### ANALYSIS AND FINDINGS

We begin our analysis by looking at the characteristics of men and women in the two risk-sets for marriage. Table 14.1 presents the education, age and ethnic distribution of respondents who never married by 1981 and 1994, respectively. The table also shows the percentages, within each category of single men and women, who married during the 2-year interval.

The marriage markets during the two time periods consisted of more men than women. This is due to men's later age at marriage. The table also shows a growing

surplus of highly educated women. Of all women who were still single in 1981, 8.3 percent had university diplomas by the 1983 census, as compared with just 6.1 percent of men. In the later risk-set, the proportions were 13.1 and 8.7 respectively. In both risk-sets women are by far less likely, than men, to have but a primary education, and their percent holding matriculation diploma was higher than that of men. Overall, the educational advantage of women in the risk-set increased between the two time points. These differences likely result from several factors. First, in recent birth cohorts women are more educated than men overall. Second, on the average, women begin and complete post-secondary education earlier than men. Third, men are more likely to marry while still at university, before they become eligible for inclusion in either one of the highest educational categories. The educational advantage of women in the risk-sets suggests that fewer educated women will find mates of comparable education. Some women may be forced to either marry downward or remain single.

*Table 14.1. Descriptive Statistics of the Israeli Jewish Marriage Market 1981-83 and 1994-95*

	1983				1995			
	Men	% married	Women	% married	Men	% married	Women	% married
Education								
Primary	27.7	12.7	18.8	16.6	17.0	10.6	8.6	18.2
Secondary	30.2	14.4	24.8	21.5	28.0	9.0	21.9	13.3
Secondary+ <i>Bagrut</i>	30.3	9.5	39.6	15.1	37.1	5.8	48.1	7.0
Post high school	5.7	24.0	8.5	31.6	9.1	15.1	8.3	23.3
Academic	6.1	30.8	8.3	25.6	8.7	22.7	13.1	22.4
Age								
18-24	65.1	6.7	68.8	17.6	62.9	3.0	67.0	7.7
25-30	25.5	29.4	19.1	27.7	23.6	19.8	18.2	24.2
30+	9.4	19.1	12.1	11.1	13.5	23.1	14.8	21.9
Ethnic origin								
Asia	27.9	12.6	28.0	17.8	21.7	10.2	21.6	12.3
Africa	27.5	13.6	25.9	21.0	24.5	11.5	22.5	15.1
USSR	5.8	14.6	5.0	20.4	12.7	9.1	11.5	14.2
Europe/America	27.3	15.8	28.7	18.9	21.5	12.3	25.5	12.9
Israel	11.4	10.9	12.4	15.3	19.6	8.1	18.9	9.4
N	55,724		39,297		67,780		54,790	

Indeed, the proportion of university educated women who married during each of the two time intervals, 1981-83 and 1994-95, was lower than that of men, although the differences seem to have declined a bit between the two intervals. By

contrast, in the lower educational categories, women are more likely than men to marry.

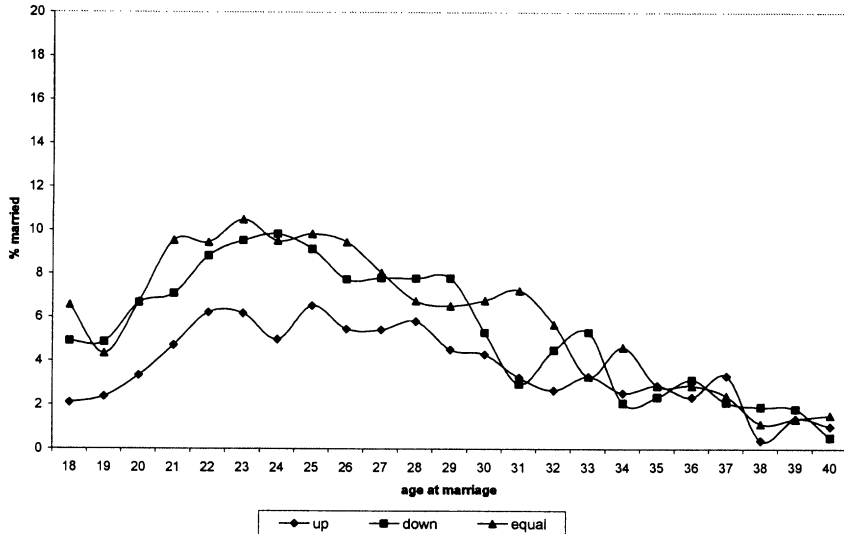


Figure 14.1a. Percent Upward, Downward and Homogamous Marriages by Age at Marriage, Women 1981-83

In both time periods the majority of single men and women are 18 to 24 years old. This proportion is somewhat larger among women because fewer women leave this age category single. On the other hand, a slightly larger proportion of women remains single to age 30. This probably reflects the marriage squeeze that we mentioned earlier: women tend to marry older men and the older they get the more difficult it is to find an available mate. Between the two time points, the proportion of older men and women among singles increased somewhat (to 13.5 and 14.8 percent of men and women, respectively).

The marriage rates of each age group show a clear change in the timing of marriage that took place between the two periods. In the first two-year interval, about 18 percent of 18-24 year old women married, and this proportion declined to eight (!) percent by the second time point. Similarly, the proportion of women marrying after age 30 doubled from 11 percent to about 22 percent. Among men too, there was a general delay in the age at marriage: the proportion marrying early declined from 6.7 to three percent while the proportion marrying past thirty increased from 19.1 to 23.1 percent.

The distribution of ethnicity show increases in the proportions of second generation Israeli natives (from 11.4 and 12.4 of men and women, respectively, to about 19 percent of each), and of those originating from the USSR. Within each of the ethnic

groups, and for both men and women, there was a decline in the marriage rate between the two time points.

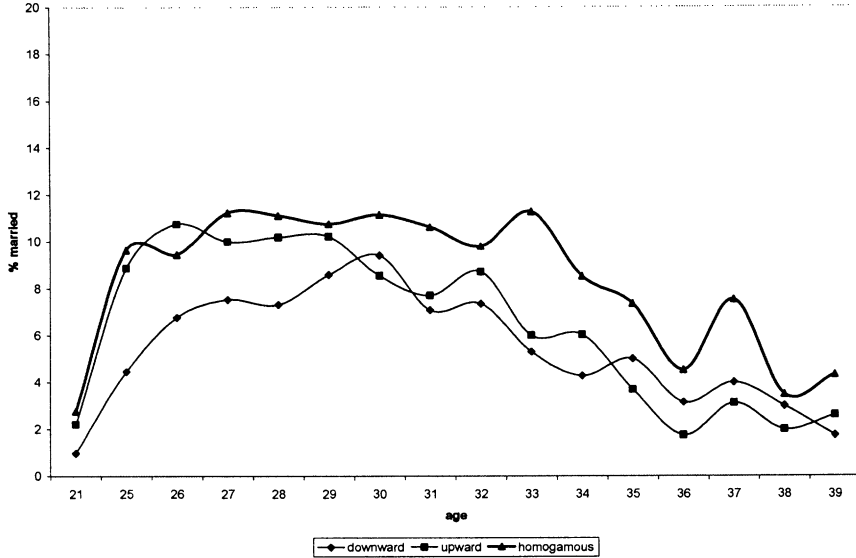


Figure 14.1b. Rates of Upward, Downward and Homogamous Marriages, Men 1981-83

Next we present the rates of upward, downward, and homogamous marriage in regard to education, by age at marriage, in the two periods under study. For each period and gender, we computed the proportion of persons still single at the beginning of each age-year who married up, down, or homogamously during that year. These rates of marriage are presented in Figures 14.1a and 14.1b for 1981-83 and in Figures 14.2a and 14.2b for 1994-95. Beginning with Figures 14.1a and 14.1b, they show declines, with age, in the rates of all three types of marriage. For women, marriage rates of all three types peak at ages 22-23 but they are higher for homogamous or downward marriages. For men, marriage peaks later (ages 27-33 for homogamous marriages, 26-29 for upward marriages and 30 for downward marriages), and decline thereafter.

The marriage pattern is clearly different in 1994-5. First, with some fluctuations, and for both sexes, the postponement of marriage is no longer associated with an overall decline in the odds of marriage. Furthermore, delaying marriage does not reduce the odds of marrying up or laterally. We conclude that the „rules of the game“ may have changed in the Israeli marriage market. In the early period, women were least likely to marry up, and those who delayed marriage were progressively less likely to marry in any of the three directions. Now, delaying marriage does not seem to entail such risks. One can delay marriage and still retain a good chance of

marriage and of marrying up or laterally. This means that the marriage squeeze was relieved/relaxed during the period under study, as the age at marriage was delayed.

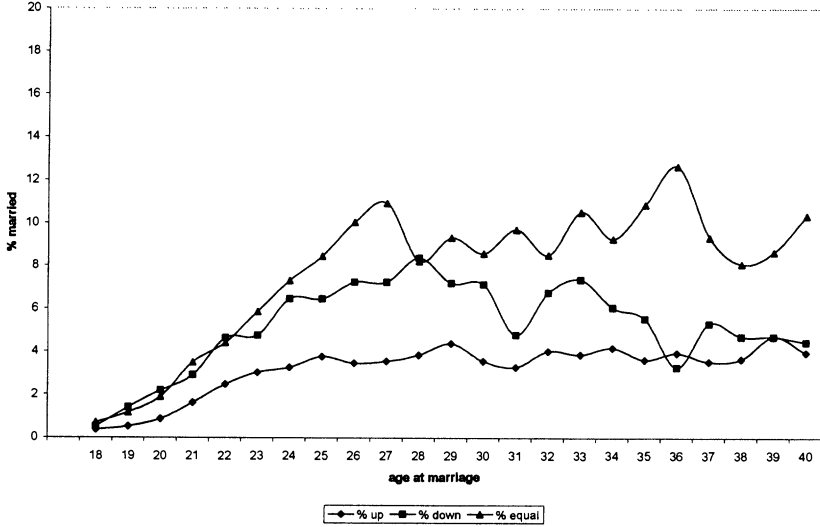


Figure 14. 2a. Rates of Upward, Downward and Homogamous Marriage by Age at Marriage, Women 1995

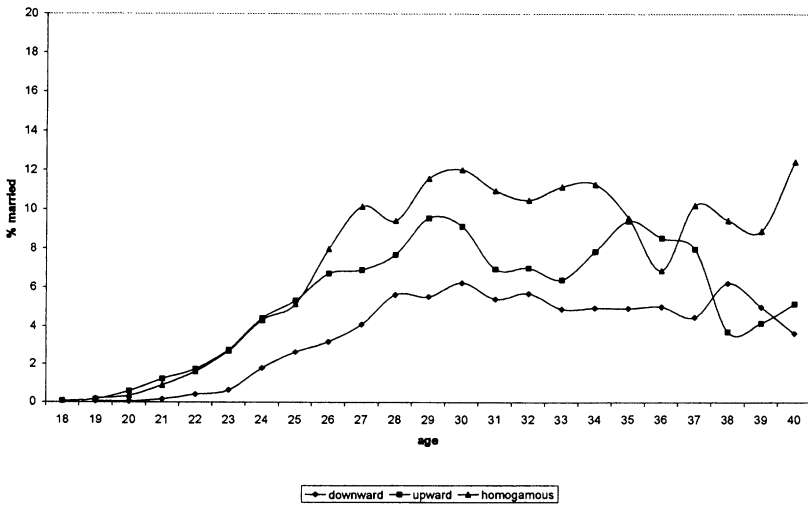


Figure 14.2b. Rates of Homogamous, Downward and Upward Marriages, Men 1993-1995



*Multivariate Analysis*

We next test whether the patterns of educational inter-marriage changed over time. We do so in the context of multinomial logit models which are estimated separately for men and women and for the two time points. The dependent variable is the log odds of marrying a spouse whose educational attainment corresponds to one of the five educational categories listed earlier, rather than staying single during the two-year interval. The independent variable of interest is the respondent's level of education (in the same five categories). In addition to own education, the models include also a control for the timing of marriage („exposure time“); ethnicity; whether the respondent was born in Israel; and whether he or she is still in school at the beginning of the two-year interval. The results are presented in Tables 14.2-14.5.

The most obvious result of the analysis is the interesting finding that the effects of 'exposure time', especially for women, changed between the two time periods. In 1981-83, women's odds to marry men in all educational groups *decreased* as they aged (a negative coefficient of 'exposure time') while the odds of men to marry increased with 'exposure time'. In the second time period, the effects of exposure time on women's odds of marrying into all five educational categories of spouses are positive. This result is consistent with the one seen in Figures 14.1a, 14.1b, 14.2a and 14.2b. Women no longer 'suffer' by delaying marriage. Postponement does not reduce their chances to marry and to marry 'well'.

The interpretation of the multinomial logit effects of own education on the log odds of marriage is difficult because each one contrasts the effect of own educational category with that of primary education on the log odds of marrying a spouse with a certain level of education rather than staying single. We prefer to discuss the association between spouses' education on the probability, rather than on the logit scale. In Tables 14.6 and 14.7 we calculate the predicted probabilities, of women and men, respectively, to marry during the two intervals, and, for those who did marry, the probabilities to marry up, down or laterally on the educational hierarchy. The probabilities are calculated on the basis of the models shown in Tables 14.2-14.5. They are computed separately for each gender, time point and educational category of respondent. The other independent variables in the models are set to their means within the corresponding gender and time period.

The Tables show clearly that the major change between the two time points is in the probability to marry. In all educational categories a larger proportion remained single in 1994-95 than in 1981-83. This is especially true for women: rates of remaining single in the 1994-95 interval are much more similar to those of men than they were in the earlier time period. The second result is that among women who married during the intervals, in most educational categories, there was a decline in the rates of upward and downward marriage and a general increase in educational homogamy. The rates of downward marriage tend to be more prevalent as women's education increases while the converse is true for upward marriages. This is an obvious pattern, which simply reflects floor and ceiling effects on the availability of spouses. Interestingly, downward marriages are most prevalent among women with non-academic post-secondary education. This educational category consists of pro-

grams which cater to those without a *bagrut* or whose *bagrut* grade-point-average is not sufficient for university admission. An inspection of the logit coefficients in Tables 14.2-14.5 shows that in 1981-83 men and women with a *bagrut* preferred spouses with just a *bagrut* over those with non-academic post-secondary education. In 1994-95 the same was still true for men, but, inexplicably, not for women.

*Table 14.2. Multinomial Logistic Regression Estimates of Husband's Education, Never Married Women in 1981, (Staying Single as Reference Category)*

	Husband's Education				
	Primary	Secondary	Bagrut	Post Secondary	Academic
Wife's Education					
Secondary	-0.595*	0.827*	0.983*	0.881*	0.806*
	(.063)	(.075)	(.137)	(.194)	(.242)
Bagrut	-1.515*	0.105	1.243*	0.932*	1.218*
	(.077)	(.079)	(.129)	(.184)	(.184)
Post Secondary	-0.334*	1.079*	2.005*	2.558*	2.917*
	(.102)	(.096)	(.144)	(.190)	(.225)
Academic	-1.523*	0.203	1.657*	2.010*	3.611*
	(.219)	(.140)	(.155)	(.208)	(.222)
Exposure time	-0.107*	-0.076*	-0.058*	-0.070*	-0.052*
	(.007)	(.006)	(.007)	(.010)	(.008)
Ethnicity					
Asia	0.624*	0.213*	-0.541*	-0.424*	-0.732*
	(.081)	(.065)	(.079)	(.106)	(.106)
Africa	0.634*	0.344*	-0.377*	-0.528*	-0.833*
	(.079)	(.063)	(.078)	(.112)	(.115)
Israel	0.172	-0.024	-0.175*	-0.463*	-0.167
	(.116)	(.090)	(.088)	(.141)	(.115)
Israeli born	-0.432*	-0.375*	-0.136	-0.223*	-0.370*
	(.065)	(.058)	(.072)	(.096)	(.080)
In school	-2.377*	-1.126*	0.055	-0.280*	0.084
	(.163)	(.085)	(.065)	(.100)	(.079)
Constant	-1.518	-2.426	-3.633	-4.084	-4.420
	(.099)	(.098)	(.146)	(.203)	(.229)
X <sup>2</sup> (50 df)	4478.21*				
N	36,174				

*Table 14.3. Multinomial Logistic Regression Estimates of Husband's Education, Never Married Women in 1994, (Staying Single as Reference Category)*

	Husband's Education				
	Primary	Secondary	Bagrut	Post Secondary	Academic
Wife's Education					
Secondary	-1.013* (.076)	0.914* (.095)	0.319* (.162)	1.071* (.204)	0.138 (.230)
Bagrut	-2.018* (.092)	-0.128 (.102)	0.788* (.149)	0.792* (.202)	0.494* (.207)
Post Secondary	-0.577* (.090)	0.624* (.113)	1.323* (.159)	2.410* (.199)	1.971* (.209)
Academic	-2.439* (.158)	-0.178 (.123)	1.267* (.154)	1.690* (.202)	2.961* (.198)
Exposure time	0.050* (.003)	0.046* (.003)	0.028* (.004)	0.040* (.004)	0.034* (.004)
Ethnicity					
Asia	0.329* (.088)	0.422* (.071)	-0.069 (.083)	0.064 (.094)	-0.412* (.090)
Africa	0.918* (.076)	0.672* (.068)	0.060 (.081)	0.151 (.094)	-0.310* (.094)
Israel	0.345* (.112)	0.156 (.087)	-0.112 (.088)	-0.168 (.115)	0.072 (.083)
Israeli born	-0.546* (.073)	-0.015 (.074)	-0.210* (.078)	-0.334* (.087)	-0.272* (.071)
In school	-0.888* (.107)	-0.509* (.076)	0.281* (.063)	-0.148 (.084)	0.137 (.065)
Constant	-2.705 (.100)	-4.161 (.121)	-4.518 (.161)	-5.208 (.211)	-5.028 (.209)
X <sup>2</sup> (50 df)	6445.92*				
N	54,852				

*Table 14.4. Multinomial Logistic Regression Estimates of Wife's Education, Never Married Men in 1981, (Staying Single as Reference Category)*

	Wife's Education				
	Primary	Secondary	Bagrut	Post Secondary	Academic
<b>Husband's Education</b>					
Secondary	-0.970*	0.449*	0.690*	0.753*	1.370*
	(.077)	(.059)	(.074)	(.115)	(.258)
Bagrut	-2.006*	-0.487*	0.666*	0.474*	1.789*
	(.132)	(.081)	(.076)	(.124)	(.249)
Post Secondary	-1.272*	0.354*	1.432*	1.964*	3.140*
	(.196)	(.105)	(.092)	(.126)	(.254)
Academic	-1.497*	-0.185	1.300*	1.737*	4.208*
	(.245)	(.138)	(.097)	(.129)	(.241)
Exposure time	0.004	0.029*	0.018*	0.062*	0.055*
	(.005)	(.005)	(.005)	(.006)	(.007)
<b>Ethnicity</b>					
Asia	0.489*	0.186*	-0.367*	-0.483*	-0.678*
	(.097)	(.066)	(.062)	(.095)	(.116)
Africa	0.535*	0.322*	-0.338*	-0.200*	-0.785*
	(.095)	(.066)	(.064)	(.093)	(.138)
Israel	0.110	-0.207*	-0.122	-0.183*	-0.288*
	(.154)	(.104)	(.075)	(.122)	(.136)
Israeli born	-0.379*	0.030	0.087	0.031	-0.035
	(.076)	(.061)	(.058)	(.082)	(.088)
In school	-1.298*	-1.131*	-0.026	0.035	0.263*
	(.171)	(.110)	(.059)	(.090)	(.089)
			(.065)		
Constant	-2.982	-3.455	-3.661	-4.892	-6.385
	(.114)	(.094)	(.095)	(.144)	(.259)
$X^2$ (50 df)	4181.17*				
N	48,301				

*Table 14.5. Multinomial Logistic Regression Estimates of Wife's Education, Never Married Men in 1994, (Staying Single as Reference Category)*

	Wife's Education				
	Primary	Sec- ondary	Bagrut	Post Sec- ondary	Acade- mic
<b>Husband's Education</b>					
Secondary	-0.846* (.112)	0.562* (.072)	0.622* (.090)	-0.123 (.105)	0.759* (.161)
Bagrut	-1.582* (.156)	-0.851* (.102)	0.723* (.090)	-0.572* (.112)	1.065* (.153)
Post Secondary	-1.569* (.216)	0.131 (.103)	1.006* (.101)	0.987* (.101)	1.998* (.155)
Academic	-2.423* (.288)	-1.134* (.163)	0.736* (.105)	0.394* (.111)	3.130* (.143)
Exposure time	0.126* (.005)	0.096* (.004)	0.084* (.003)	0.093* (.004)	0.095* (.004)
<b>Ethnicity</b>					
Asia	0.257* (.129)	0.338* (.083)	0.027 (.072)	-0.202* (.094)	-0.512* (.088)
Africa	0.700* (.115)	0.682* (.078)	0.138* (.070)	-0.072 (.092)	-0.261* (.087)
Israel	0.186 (.195)	0.124 (.106)	-0.031 (.081)	0.101 (.102)	0.120 (.078)
Israeli born	-0.588* (.105)	0.223* (.082)	0.056 (.070)	0.055 (.085)	0.289* (.072)
In school	-0.174 (.171)	-0.244* (.100)	0.298* (.064)	0.621* (.079)	0.546* (.064)
Constant	-4.940 (.159)	-4.961 (.117)	-4.946 (.109)	-4.989 (.124)	-6.300 (.163)
X <sup>2</sup> (50 df)	7137.84*				
N	62,458				

*Table 14.6. Predicted Probabilities of Remaining Single, and of Upward, Downward and Homogamous Marriages with Regard to Education Conditional on Marriage: Women Married During 1981-83 and 1994-95*

	Remain Single		Upward		Downward		Homogamous	
	1983	1995	1983	1995	1983	1995	1983	1995
Wife's Education								
Primary	82.8	89.8	48.5	40.2			51.5	59.8
Secondary	77.7	89.1	32.7	29.8	20.9	20.3	46.3	49.9
Bagrut	82.6	92.9	22.8	26.3	45.0	39.7	32.2	34.0
Post Secondary	59.1	81.5	17.5	15.8	62.7	58.5	19.8	25.7
Academic	62.5	82.7			56.5	50.2	43.5	49.8

*Table 14.7. Predicted Probabilities of Remaining Single, and of Upward, Downward and Homogamous Marriages with Regard to Education, Conditional on Marriage: Men Married in 1981-83 and 1994-95*

	Remain Single		Upward		Downward		Homogamous	
	1983	1995	1983	1995	1983	1995	1983	1995
Husband's Educa- tion								
Primary	88.4	93.8	63.1	74.7			36.9	25.3
Secondary	85.6	91.8	49.9	53.4	11.3	6.7	38.8	39.9
Bagrut	89.5	94.2	23.1	34.6	29.4	18.5	47.4	46.9
Post Secondary	75.7	88.2	12.5	23.0	62.5	47.2	24.9	29.8
Academic	73.0	86.6			68.3	38.8	31.7	61.2

For men, change in the patterns of educational intermarriage was different and more pronounced than for women. Whereas for women both upwards and downwards marriages declined, for men the proportion marrying up *increased* sharply and the proportion marrying down *declined* sharply. Men's proportion marrying homogamously also increased in all but the bottom educational category.

## CONCLUSIONS

In this chapter we examined changes, between the early 80s and mid 90s, in educational assortative mating among Israeli Jews. The period under study saw a postponement of marriage in the life course of both men and women, and increases in their educational attainment, especially at the post-secondary levels. The delay in marriage, on the one hand, and the increase in educational attainment, on the other hand, had three important implications. First, in the earlier period, women suffered from a serious marriage squeeze. Those who delayed marriage found it increasingly difficult to find a mate. As a consequence, women were pressured to marry before or

during their post-secondary education. Second, by the mid-nineties, with the overall delay in the age-at-marriage the squeeze was attenuated considerably, to the point that women could postpone their marriage with no appreciable reduction in the odds of finding a mate. Whereas in the first period, many women were forced to marry down, educationally, by the mid-90s the prevalence of such marriages declined substantially, and more women married homogamously. At the same time, and this is the third change that we found, by the mid-90s the proportion of women completing post-secondary education rose substantially, to the point where educated women outnumbered educated men. As a consequence, the proportion of women marrying up along the education scale declined. In short, the rates of both upward and downward marriages of women declined and their rates of homogamy increased.

Although women's marriage market situation improved, the real 'gains' were reaped by men. In the past, a large number of men married less educated women. This pattern was economically rational in a society where men earned a living and women provided complimentary services in the home (Becker 1981). Now, that most women work outside the home, it makes economic sense for men to seek educated women with strong potential earning capability. Indeed, men's rates of downward marriages declined, while their proportions marrying up or laterally increased sharply.

These results show that the delay in the age distribution of marriage and the increases in women's post-secondary education enabled both educated men and educated women to capitalize on their education in the marriage market. Women were freed from the marriage squeeze which forced many of them to discontinue university or to marry down, while men were now provided with a more abundant supply of educated wives.

Clearly, the growing educational homogamy can have important implications for social inequality. As noted at the outset, a prevalence of educational homogamy can increase social and economic inequalities *between* families and contribute to the intergenerational reproduction of social advantage and disadvantage. In a society where homogamous marriages are the rule, some children benefit from high concentrations of wealth, cultural capital and scholastic aptitude while others are deprived of these.

Moreover, our findings suggest that ethnic inequality may persist into coming generations. There is a strong correlation between education and ethnicity in Israel, especially with regards to post-secondary education. The university graduation rates of Ashkenazim are twice and three times as high as those of Sephardim from Asian and North-African countries respectively (Shavit et al. 1998). The implication of rising educational homogamy is a rise in ethnic homogamy and a reduction in ethnic integration.

## NOTES

1. The early census was taken in April of 1983, thus we restricted the sample to those who were never married by 1981. The later census was taken in November of 1995, so we include in the sample those who were never married by 1994.
2. In parts of the analyses we separate those who were born in former USSR from other Europeans.

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## ASSORTATIVE MATING IN CROSS-NATIONAL COMPARISON: A SUMMARY OF RESULTS AND CONCLUSIONS

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In this final chapter, we summarize the major findings of the book's country-specific case studies on assortative mating. The focus of our discussion is on the role of the educational system as a marriage market in the course of educational expansion and the impact of social origin on the process of assortative mating in the life course. We are especially interested to examine the generality of the earlier findings from our German pilot study (see Chapter 2).

### HOMOGAMOUS, UPWARD AND DOWNWARD MARRIAGE

We begin with a summary of the rates of homogamous, upward and downward marriage across birth cohorts in the various countries (see Tables 15.1 and 15.2). We only interpret the results for women in Table 15.1 because the results for men are similar (see Table 15.2). Since homogamous, upward and downward marriage rates are not only dependent on the number of educational attainment levels in each country but also on the educational distributions of men and women and their changes across cohorts, we do not compare directly the absolute marriage rates across countries. Instead, we concentrate our cross-national comparative interpretation on the differences between empirically observed and estimated rates and their trends across cohorts. The computation of the estimated rates are based on the assumption that marriage decisions in each birth cohort were taken randomly, given the distributions of educational attainment levels of men and women within each birth cohort. Eight of the thirteen case studies in this book reported these differences (see Tables 15.1 and 15.2). All eight studies showed that the observed homogamy rates have always been higher than the rates estimated under the assumption of a random marital matching. In other words, people seem to prefer to a large extent marrying an

equally educated partner in all countries. This finding supports Becker's (1981) hypothesis that men and women benefit mostly from each other if they resemble themselves as much as possible or Blau's (1994) thesis that "the like likes the like."

Table 15.1 shows in addition that for all eight countries the gaps between observed and estimated homogamy rates have been increasing in the course of the expansion of education. This finding can be considered as a first hint that through educational expansion the structurally increased chance of meeting a partner of equal qualification in the educational system raises the level of educational homogamy. In this sense, the educational system seems to increase its role as an important marriage market for equally qualified people in modern societies – even across ethnic groups, as shown in the Israeli study (see Chapter 14).

If we examine women's rates of marrying upwardly, we find the opposite pattern. In all eight countries, the observed upward rates for women have been consistently lower than the upward rates estimated under the assumption of a random marital matching (Table 15.1). This means that even in earlier gender-traditional historical periods, women's upward marriages, to a high degree, seem to have been structurally forced marriages. Many women had to marry upwardly (or many men had to marry downwardly) simply because the average level of education of women was below that of men. However, in more gender-traditional historical periods this downward marriage of men was economically rational because women were supposed to stay at home. Of course, this situation changed fundamentally when societies moved from male breadwinner to dual earner societies (Blossfeld, Drobnič 2001). In the course of this transition, wives' income has become a significant determinant of the living standard and "lifestyle" of the family. Thus, educational attainment gained importance for young women, too. The country-specific chapters show that the proportion of upwardly marrying women has declined sharply as women's educational attainment levels have caught up with those of men's. Table 15.1 documents that in this decline the gap between observed and estimated rates has been stable in most countries over time ("no trend") or has even widened, so that the proportions of women marrying upwardly dropped faster than they were forced by the convergence in average educational attainment levels of men and women.

Women's rate of marrying downwardly is even more interesting (Table 15.1). In seven of the eight countries (the exception is France) women's observed downward marriage rates have always been systematically lower than the rates estimated under the model of random marriage. For earlier gender-traditional historical periods, this result is not surprising. During these days a good education was particularly important for men, since it was the husband's income which normally determined the economic and social status of the family. Thus, women in gender-traditional societies tended to prefer men with high levels of education and good labor market opportunities and competed for them in the marriage market. In such gender-traditional societies, women who married downwardly (or men who married upwardly) deviated with regard to the dominant distributive realities regarding the gender of providers and dependents (see Brines 1994). They also violated socially sanctioned arrangements offering recurrent opportunities to advance claims about the self as "naturally" male and female (Berk 1985) and they risked social accountability, nega-

tive judgements from relatives, friends, colleagues, and even a threat of their gender identities (Brines 1994). It is therefore not surprising that downwardly marrying women were a minority in all countries in the past.

Based on the fact that gender roles are deeply entrenched in all social relations and social and interactional pressures concerning the male breadwinner role continue to be important even in dual-earner societies (Blossfeld, Drobnič 2001), we expected that the increase in women's downward marriage across cohorts should be lower than it would have been possible based on the increasingly balanced educational attainment levels of men and women across cohorts. And indeed, Table 15.1 reveals that there has been an increasing divergence between observed and estimated downward marriage rates for women in most countries. The male breadwinner norm still seems to be a significant mechanism for partner choice (see Blossfeld, Drobnič 2001). This norm defines wives as secondary providers and makes it still difficult for women (and men) to marry downwardly (upwardly) in terms of educational level. The study on Israel (Chapter 14) in this book demonstrated that sometimes highly educated women have another option. Instead of downward marriage within the own ethnic group, they marry across ethnic lines in search for equally educated men (see also Stier, Shavit 1994).

To sum up, the country-specific patterns of homogamous, downward and upward marriage rates, as shown in Tables 15.1 and 15.2, support the hypothesis that peoples' preferences are inherently prone to (educational) homogamy: "the like likes the like." While in more gender-traditional societies - characterized by a low degree of women's labor force participation - women's educational attainment levels were less important characteristics for the marriage market, this situation changed when modern societies started to transform from male breadwinner to dual-earner societies (Blossfeld, Drobnic 2001). In dual-earner societies, wife's income becomes a significant determinant of the living standard of the family, so that young men increasingly prefer women with a high income potential, too. This change in men's preferences, together with the structurally increased chance of men to meet women of equal qualification in the educational system, seems to increase the observed homogamy rates above the rates estimated under the assumption of a random marital matching. On the other hand, women's upward marriage always appears to have been the result of structural constraints: many women had to marry upwardly simply because the average level of education of women was below that of men. The proportion of these upwardly marrying women clearly declined as the educational attainment structure of men and women became more balanced. Finally, women's downward marriage is still under some social and interactional pressures. In many countries, downwardly marrying women still risk social accountability and negative judgements from relatives, friends, colleagues. Thus, in most countries women's observed downward marriage rates stayed far below the downward marriage rates which were possible under the assumption of a random marital matching.

*Table 15.1. Observed Versus Predicted Homogamous, Upward, and Downward Marriage Rates of Women and Their Changes in Various Countries*

Country	Observed Versus Estimated *)				Upward Rates	Trend	Downward Rates	Trend
	Homogamy Rates	Trend	Upward Rates	Trend				
West Germany	Higher	Gap increasing	Lower	No trend	Lower	Gap increasing	Lower	Gap increasing
The Netherlands	Higher	Gap increasing	Lower	No trend	Lower	Gap increasing	Lower	Gap increasing
Flanders	Higher	No trend	Lower	Gap increasing	Lower	Gap increasing	Lower	No trend
France	Higher	Gap increasing	Lower	Gap increasing	Lower	Gap increasing	Higher then lower	Gap decreasing, then increasing
Italy	Higher	Gap increasing	Lower	Gap increasing, then decreasing	Lower	Gap increasing, then decreasing	Lower	Gap decreasing, then increasing
Spain	-	-	-	-	-	-	-	-
Great Britain	Higher	Gap increasing	Lower	No trend	Lower	Gap increasing	Lower	Gap increasing
United States	Higher	Gap increasing	Lower	No trend	Lower	Gap increasing	Lower	Gap increasing
Denmark	-	-	-	-	-	-	-	-
Sweden	-	-	-	-	-	-	-	-
Hungary	-	-	-	-	-	-	-	-
Slovenia	Higher	Gap increasing, then decreasing	Lower	Gap increasing, then decreasing	Lower	Gap increasing, then decreasing	Lower	No trend
Israel	Not studied	Not studied	Not studied	Not studied	Not studied	Not studied	Not studied	Not studied

\*) Estimated rates assume a random matching between men and women and take into account the changing educational structure of men and

*Table 1.5.2. Observed Versus Predicted Homogamous, Upward, and Downward Marriage Rates of Men and Their Changes in Various Countries*

Country	Observed Versus Estimated *)				Upward Rates	Trend	Downward Rates	Trend
	Homogamy Rates	Trend	Upward Rates	Trend				
West Germany	Higher	Gap increasing	Lower	Gap increasing	Lower	Gap increasing	Lower	No trend
The Netherlands	Higher	Gap increasing	Lower	Gap increasing	Lower	Gap increasing	Lower	No trend
Flanders	Higher	Gap increasing	Lower	Gap increasing	Lower	Gap increasing	Lower	Gap increasing
France	Higher	Gap increasing	Lower	Gap increasing	Lower	Gap increasing	Higher	Gap decreasing, then increasing
Italy	Higher	Gap increasing	Lower	Gap increasing	Lower	Gap increasing, then decreasing	Lower	Gap increasing, then decreasing
Spain	-	-	-	-	-	-	-	-
Great Britain	Higher	Gap increasing	Lower	Gap increasing	Lower	No trend	Lower	No trend
United States	Higher	Gap increasing	Lower	Gap increasing	Lower	Gap increasing	Lower	No trend
Denmark	-	-	-	-	-	-	-	-
Sweden	-	-	-	-	-	-	-	-
Hungary	-	-	-	-	-	-	-	-
Slovenia	Higher	Gap increasing, then decreasing	Lower	Gap increasing, then decreasing	Lower	No trend	Lower	No trend
Israel	Not studied	Not studied	Not studied	Not studied	Not studied	Not studied	Not studied	Not studied

\*) Estimated rates assume a random matching between men and women and take into account the changing educational structure of men and

TIME-DEPENDENT EFFECTS OF THE EDUCATIONAL SYSTEM ON  
ASSORTATIVE MATING

In twelve country-specific chapters, advanced longitudinal analyses were used to study the impact of the educational system on the rate of homogamous marriage in greater detail. We hypothesized that the organizational structure of educational systems in modern societies imposes a stepwise selection process and a relatively rigid age-graded logic on the life course, so that educational expansion translates into highly time-dependent homogamy rates over the life course.

*Table 15.3. Summary of Effects of the Educational System as a Marriage Market in the Models for Women Across Countries*

Country	Effects of Selected Variables on the Rate of Homogamous Marriage (Models for Women)		
	“Not in school	“Duration in school“	Duration after school““
West Germany	Positive	Positive	Curvilinear: at first increasing, then decreasing
The Netherlands	Positive	Positive	Curvilinear: at first increasing, then decreasing
Flanders	Positive	Positive	Monotonically decreasing
France	Positive	Positive	Curvilinear: at first increasing, then decreasing
Italy	Positive	Not studied	Curvilinear: at first increasing, then decreasing
Spain	Positive	Negative	Curvilinear: at first increasing, then decreasing
Great Britain	Positive	Positive	Monotonically decreasing
United States	Positive	Not significant	Curvilinear: at first increasing, then decreasing
Denmark	Positive	Positive	Not significant
Sweden	Positive	Not significant	Curvilinear: at first increasing, then decreasing
Hungary	Positive	Positive	Monotonically decreasing
Slovenia	Positive	Not significant	Not studied
Israel	Not studied	Not studied	Not studied

First, we argued that in each generation the less able and educationally disadvantaged are leaving the educational system earlier so that the stepwise selection process in the educational system creates increasingly homogeneous groups. With rising duration in school, we expected therefore an increasing likelihood of establishing a social relationship with a similarly qualified partner – and then perhaps of later marriage. These opportunities to meet do not only include the contacts that one makes within the classroom or the educational institution itself, but also the opportunities to meet similar people in leisure and sports activities which are also, to a large extent,

structured by the fact that young people continue to be in school. Table 15.3 shows that in most countries, there is indeed the statistically significant positive effect of "duration in school" on the rate of homogamous marriage for women (for men similar results can be found in Table 15.4). This means that with increasing duration in school the rate of homogamous marriage rises. However, three countries (the United States, Sweden, and Slovenia) report no statistically significant impact of "duration in school" on the homogamous marriage rate. In these countries, duration in school does not matter for the homogamy rate. It seems that these are especially those countries that are characterized by an open and unstratified educational systems. In these educational systems, almost all children have the opportunity to attend school until the age of about 18. In Spain this effect is even negative. The negative effect for Spain is particularly difficult to interpret. It might be a methodological artifact or an instance of an interesting difference of the Spanish society. Further in-depth research is needed on the Spanish case to solve this interpretative puzzle. The general picture is, however, that there is a high degree of similarity with regard to the positive effect of "duration in school" on the rate of homogamy in very different societies.

Second, we assumed that in most modern countries attaining an education makes it difficult to adopt family roles and educational participation is connected to a high degree of economic dependence on parents or the state. Most young men and women participating in the educational system are therefore "not ready" to start a family. Completing education is thus a socially significant precondition for entering into marriage. Tables 15.3 and 15.4 show that in all countries the time-dependent variable "not in school" has - the expected - positive effect on the homogamy rate. This means that the transition from school to work has a cross-nationally consistent impact on (homogamous) marriage (see also Blossfeld, Huinink 1991). In all twelve countries, varying widely in important characteristics, the transition from school to work is therefore an important step in the normative (and economic) conception for entering into (homogamous) marriage.

Third, since young people participating in the educational system are "not ready" for marriage, they do not only postpone family formation, but will often catch up after leaving school. Thus, we expected that, after leaving the educational system, the tendency to marry homogamously should at first increase because many school leavers transform their partnerships formed in school into marital ones, and then, with increasing exposure to a more heterogenous environment outside the educational system, decrease again. Tables 15.3 and 15.4 show that for most countries the rate of homogamous marriage is in fact at first increasing and then decreasing after people have left school. For some few countries (Flanders, Great Britain, and Hungary) the rate jumps up immediately after the transition from school to work and afterwards declines. The general observation is therefore that with increasing duration in more heterogeneous environments after leaving school, the homogamy rate is declining.

In summary, the organizational structure of the educational system in modern societies produces a highly time-dependent homogamy rate over the life course. In most countries duration in school increases the likelihood of homogamous marriage.

However, as long as young people are in school, they are normally “not ready” to start a family and they delay family formation until they have left school. They then quickly catch up with their age cohort and the (homogamous) marriage rate is rising steeply. Finally, with increasing time out of school and exposure to more heterogeneous environments, the homogamy rate is declining again. Of course, such a time-dependent homogamy rate over the life course cannot be reasonably studied with cross-sectional data or traditional mobility tables.

*Table 15.4. Summary of Effects of the Educational System as a Marriage Market in the Models for Men Across Countries*

Country	Effects of Selected Variables on the Rate of Homogamous Marriage (Models for Men)		
	“Not in school	“Duration in school”	Duration after school”
West Germany	Positive	Positive	Curvilinear: at first increasing, then decreasing
The Netherlands	Positive	Positive	Curvilinear: at first increasing, then decreasing
Flanders	Positive	Positive	Monotonically decreasing
France	Positive	Positive	Curvilinear: at first increasing, then decreasing
Italy	Positive	Not studied	Curvilinear: at first increasing, then decreasing
Spain	Positive	Negative	Curvilinear: at first increasing, then decreasing
Great Britain	Positive	Not significant	Decreasing
United States	Positive	Positive	Curvilinear: at first increasing, then decreasing
Denmark	Positive	Positive	Not significant
Sweden	Positive	Not significant	Curvilinear: at first increasing, then decreasing
Hungary	Positive	Not studied	Monotonically decreasing
Slovenia	Positive	Not significant	Not studied
Israel	Not studied	Not studied	Not studied

#### THE IMPACT OF SOCIAL ORIGIN ON ASSORTATIVE MATING

Finally, we sum up the findings of the country-specific chapters with regard to the impact of social origin on assortative mating over the life course. Social origin refers to a conglomerate of highly correlated economic and social characteristics of parents such as wealth, household income, prestige, jobs, education etc. These correlates not only make status differentials between educational groups of parents symbolically more important, but also function as barriers between social circles. We therefore hypothesized that with increasing level of father’s education social net-



works become more exclusive so that father's educational attainment level should have a positive direct effect on the rate of educational homogamy of children. Tables 15.5 and 15.6 clearly show that the results of the direct effect of father's education on children's homogamy rate differs from country to country. The finding of the German pilot study can therefore not be generalized. Further research is needed to study which of the many differences between countries produce the heterogeneity in these findings.

*Table 15.5 Summary of Effects of Social Origin on Marriage Patterns for Women Across Countries*

Country	Direct Effect of Father's Edu- cation on Homogamy	Indirect Effects of		
		Father's Edu = Daughter's Edu on Homogamy	Father's Edu < Daughter's Edu on Homogamy	Father's Edu > Daughter's Edu on Homogamy
West Germany	Positive	Positive	Positive	Positive
The Netherlands	Not significant	Positive	Positive	Positive
Flanders	Negative	Positive	Not significant	Positive
France	Negative	Positive	Negative	Positive
Italy	Not studied	Positive	Positive	Not significant
Spain	Negative	Positive	Not significant	Not significant
Great Britain	Not studied	Not studied	Not studied	Not studied
United States	Not significant	Positive	Positive	Positive
Denmark	Not significant	Positive	Positive	Positive
Sweden	Not significant	Positive	Positive	Positive
Hungary	Negative	Not studied	Not studied	Not studied
Slovenia	Positive	Positive	Not significant	Not significant
Israel	Not studied	Not studied	Not studied	Not studied

With regard to the indirect effects of social origin on marriage decisions, we find more similarity across countries (Tables 15.5 and 15.6). First, we expected a positive effect, if the level of education of son/daughter corresponds to that of the father. In this case, the social networks of the family of origin and the social networks mediated through the educational system will overlap the most and mutually reinforce each other. Tables 15.5 and 15.6 show unanimously that this is indeed the case. A correspondence between father's and children's level of education has a positive effect on the homogamy rate of the children.

Second, we argued that educationally upward mobile sons and daughters (with regard to the educational level of their fathers) continue to stay in contact with the people with whom they grew up (friends, acquaintances, relatives, etc.). We therefore hypothesized that these young men and women will still meet persons from the network of their social origin and, to a large extent, also marry downwardly. For women, with the exception of France (where the effect is significantly negative), we find a high degree of similarity of this effect across countries (see Table 15.5). Thus,

in most countries, women's downward marriage is positively related to individual upward mobility in educational attainment level: in particular educationally upward mobile women are very likely to marry downward. Surprisingly, for men the insignificance of this effect abounds across countries (see Table 15.6).

Finally, we assumed that educationally downward mobile sons and daughters still have the opportunity to meet better educated potential (marriage) partners through the networks of their families of origin and therefore are likely to marry upwardly. Again, for daughters (Table 15.5) and sons (Table 15.6) there is a consistent relationship across countries that allows us to generalize the result of the German pilot study: Sons and daughters who have not attained the educational level of their family of origin in modern countries have a tendency of counter mobility through marriage and are thus, at least partially, able to correct their individual educational failure.

*Table 15.6 Summary of Effects of Social Origin on Marriage Patterns for Men Across Countries*

Country	Direct Effect of	Indirect Effects of		
	Father's Education on Homogamy	Father's Edu = Son's Edu on Homogamy	Father's Edu < Son's Edu on Homogamy	Father's Edu > Son's Edu on Homogamy
West Germany	Positive	Positive	Positive	Positive
The Netherlands	Positive	Not significant	Not significant	Positive
Flanders	Not significant	Positive	Not significant	Positive
France	Not significant	Positive	Negative	Positive
Italy	Not studied	Positive	Not significant	Not significant
Spain	Negative	Positive	Positive	Not significant
Great Britain	Not studied	Not studied	Not studied	Not studied
United States	Positive	Positive	Positive	Positive
Denmark	Not significant	Positive	Not significant	Positive
Sweden	Not significant	Positive	Not significant	Positive
Hungary	Negative	Not studied	Not studied	Not studied
Slovenia	Positive	Positive	Not significant	Not significant
Israel	Not studied	Not studied	Not studied	Not studied

To sum up, we can say that the results of the cross-national comparison of the effects of social origin on assortative mating produced a complex picture. The direct effect of father's educational attainment level on the homogamy rate, which we found in our pilot study for West Germany, certainly cannot be generalized across countries. This relationship is obviously much more complex and dependent on country-specific idiosyncrasies which need to be analyzed in more detail in future. Also the positive effect of educationally upward mobile sons on downward marriage, documented in the West Germany pilot study, does not systematically show up in other countries. The dominant picture is that there is no significant effect for

men. Only educationally upward mobile women have a higher likelihood to marry downwardly in most countries. It seems that educationally upward mobile women are better able to cope with social and interactional pressures concerning the male breadwinner role, if they marry downwardly. It is interesting, that in almost all countries analyzed, educationally downward mobile sons and daughters still have the opportunity to marry upwardly. They are able to meet better educated potential (marriage) partners through the networks of their family of origin. Finally, a correspondence between father's and children's level of education clearly has a positive effect on the homogamy rate of children in all countries under study. In this case, the social networks of the family of origin and the school system overlap most and reinforce each other.

#### ASSORTATIVE MATING AND SOCIAL INEQUALITY IN MODERN SOCIETIES

It seems that in many modern societies a combination of at least three factors tends to increase the formation of couples with equally educated partners and educational homogamy: (1) people often prefer to associate with equally educated partners; (2) educational expansion increases contact opportunities for equally educated men and women at an age when young people start to look for partners and form couples; and (3) women's changing economic role in dual-earner societies increases the importance of women's education and labor force attachment. Thus, the changing role of the educational system as a marriage market in the course of educational expansion and women's changing economic roles in the labor market and the family are the main driving forces behind this development.

The rise of cohabitation and the increase in separation and divorce do not seem to be balancing forces for these changes. A recent international comparative study on the impact of assortative partnership selection, division of work in the household and union separation shows that educational heterogeneity of partners in cohabiting couples does indeed increase the rate of separation (Blossfeld, Müller 2002-3). Thus, cohabitation seems to function as an additional social filter in the process of family formation. In addition, the divorce rate is higher for marriages where the partners have different educational attainment levels.

What is the relevance of these structural changes for social inequality? Since education is the most important determinant of occupational success and it is connected with valuable cultural resources, an increase in the formation of couples with equally educated partners and educational homogamy implies a rise in social differences *between* couples and families in modern societies. Social inequality engendered in individuals' life courses is further enhanced through couple formation and marriage because individuals then pool their advantageous or less advantageous socioeconomic resources, respectively. An increase in homogamy therefore enhances the inter-household distribution of economic well-being as well as class and status in modern societies. This is particularly true when women's labor force participation is increasing and the whole family system moves from male breadwinner towards dual-earner structures (Blossfeld, Drobnič 2001). The cumulative advantage

within some families and the growing status differentiation between families in the course of increasing educational homogamy is also very likely to lead to a growing inequality of opportunities among the children of the next generation. These processes have to be studied in more detail in the future.

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