

**Assortative Mating of the Divorced and the Never Married, 1970-1988**

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## ABSTRACT

I investigate whether there is an underlying tendency for divorced and never married persons to marry within their marital history group in the United States. A theory of assortative mating suggests that if the never married and the divorced were to intermarry, their differences in distributional ties would create inefficiencies in the marriage; partly in order to avoid the inefficiencies, they tend to be homogamous. I apply log-linear models to marriages from the Vital Statistics Marriage Files, 1970-1988, to investigate the presence of the homogamous tendency. Consistent with the theory, the never married and the divorced are more likely to marry within their group than to intermarry, even when removing the influences of relative group size and controlling for spousal education and age. Additional findings indicate that: a) in general, the tendency toward homogamy weakened between 1970 and 1988; and b) no evidence is available that the divorced and the never married engage in status exchange in order to intermarry and hence are groups ordered on a social hierarchy. Implications of the findings are discussed.

Status groups, which are in part differentiated by the distribution of social honor, have been of interest to sociologists and demographers as components that build a stratified society (DiMaggio and Mohr 1985; Weber 1968 [1921]). Previous studies note that status group members tend to marry within their own group (i.e., homogamy)--the extent of this tendency has been used as a barometer to assess the degree of status differentiation between groups (e.g., Kalmijn 1991; Mare 1991). More specifically, status differentiation has been captured by the likelihood of homogamy relative to the likelihood of intermarriage: the higher the relative likelihood of homogamy, the larger the status differentiation (see Kalmijn 1998 for review).<sup>1</sup> Homogamy-intermarriage has been used to study status differentiation on dimensions such as race/ethnicity (e.g., Kalmijn 1993; Qian 1997) and education (Mare 1991; Rockwell 1976).<sup>2</sup>

Researchers less typically study homogamy (as opposed to intermarriage) among groups that define a dimension of differentiation that is not easily recognized as status or class (Weber 1968 [1921]), but yet have major links to inequality. For example, none have systematically studied homogamy among groups with distinct rights and obligations over resource distributions (Linton 1936; Turner 1988), such as the divorced and the never married. While the divorced typically shares resources with family members from the former marriage, the never married does not. The homogamy of the never married and the divorced, who have distinct distributional patterns, creates two distinct units of resource distribution, a first marriage and a remarriage.<sup>3</sup> These two distinct distributional units may be contributing to inequality among coresiding family members of the divorced and the never married who are homogamous on marital history. For example, previous studies report that the well-being of children who live with remarried parents is poorer than the well-being of children who live with parents in their first marriage (Furstenberg, Hoffman, and Shrestha 1995; Hofferth and Anderson 2001; McLanahan and Sandefur 1994; McLanahan, Seltzer, Hanson, and Thomson 1994; Thomson, Hanson, and McLanahan 1994; Zitlow and Rogers 1999). Investigating the presence of a tendency toward marital history homogamy would provide insights into whether adults are setting up their marriages in ways that foster inequality among children.

Marital history homogamy and related inequalities would be particularly persistent if the never married and the divorced have an underlying preference towards marital history homogamy. It is possible that no such underlying tendency exists. The ties between former spouses may be short lived or may not be prevalent enough to affect how couples sort themselves in a marriage. From this perspective, any tendency toward homogamy would be an artifact of the larger group size of the never married relative to that of the divorced, once holding constant sociodemographic characteristics, such as education and age, and the homogamous

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<sup>1</sup> By using odds ratios to indicate relative likelihoods, researchers separate the incidence of intermarriage due to the underlying tendency for couples to be homogamous from that due to imbalances in group size, which has an inverse relationship to the level of intermarriage (Blau, Blum and Schwartz 1982).

<sup>2</sup> Status groups are distinguished from class (Weber 1968 [1921]). However, some of the dimensions on which homogamy has been studied, such as education and occupation (e.g., Hout 1982; Mare 1991; Rockwell 1976) can be characterized as a combination of status and class.

<sup>3</sup> If the never married and the divorced intermarry on marital history, then they create identical distributional units. In this study, I refer to a marriage between two never married persons as a first marriage, a marriage between two divorced persons as a remarriage, and a marriage between a divorced person and a never married person as an intermarriage. In a first marriage, the coresiding family members have relatively exclusive access to spousal resources (e.g., time, money, affection, and support) compared to those in a remarriage. Thus, even when spouses in a first marriage and a remarriage have the same amount of resources, they distribute resources differently to the coresiding family members.

tendencies on these characteristics (e.g., Mare 1991; Vera, Bernardo and Vandiver 1990). Alternatively, there may be an underlying tendency for never married and divorced persons to be homogamous. Resource sharing among the divorced, even if not lifelong, may affect how married couples sort themselves with respect to marital history.<sup>4</sup> The preferences, rights, and obligations of the divorced (Masheter 1997) to share resources with family members from the former marriage may encourage mating between persons of like marital history (DiMaggio and Mohr 1985; Lam 1988)--if the never married and the divorced were to intermarry, they would experience: a) inefficiencies in their marriage due to conflicts arising from the distinct distributional patterns between the spouses (Becker 1981; Posner 1986); and b) the relatively slow development of social bonds.

I ask one main question—is there an underlying tendency for the never married and the divorced to be homogamous (partly due to the distributional ties of the divorced to family members from the former marriage)? To answer this question, I apply log-linear models to the Vital Statistics Marriage File, 1970-1988, controlling for spousal educational levels and age.<sup>5</sup> Using these models and available data, I measure the underlying tendency of individuals to be homogamous. I ask two additional questions. First, if a homogamous tendency exists, has it declined over historical time? The tendency may have declined with several social changes in the U.S., including the increase in cohabitation rates that contributes to the assimilation of the never married to the divorced. Second, are the never married and the divorced unequal in social standing (Weber 1968[1921]) because they treat divorce as a dishonor (Gerstel 1987; Zimmerman 1935) and, consequently, do they engage in a social exchange in order to intermarry?<sup>6</sup> If evidence suggests that the groups engage in exchange and are stratified, such evidence would have additional implications for inequality.<sup>7</sup>

## BACKGROUND

### *Marital history composition, group differentiation, and homogamy*

Some researchers note that imbalances in group size between two groups (i.e., the proportion of one group is substantially larger than that of the other) produce homogamy in the larger group of the two (Blau, Blum, and Schwartz 1982; Kalmijn 1998). In other words, when group size is highly uneven, even in the absence of an underlying tendency toward homogamy, homogamous marriages form because individuals in the larger group have a higher chance of finding mates in their own group than in the smaller group. An imbalance in relative group size

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<sup>4</sup> It is probably most prevalent at the onset of (and soon after) the divorce, which roughly coincides with the time period when the divorced select their new mate. Also, resource sharing is nurtured in the former marriage (Treas 1993) and is reinforced by institutions governing the life of the divorced, such as alimony and child support (Goode 1956; Hunt 1966).

<sup>5</sup> These controls remove the possibility that couples tend to be homogamous with respect to marital history only because the divorced, on average, are better educated or older than the never married, as was indicated by the 1980 1% IPUMS data (Ruggles and Sobek 1997) for men and women age 16-45, and prefer to marry persons of like-education (Mare 1991) or like-age (Atkinson and Glass 1985).

<sup>6</sup> These patterns of exchange have been noted among racial groups (Kalmijn 1993; Qian 1997).

<sup>7</sup> I use relative educational hypergamy ratios of the wives, a measure typically used in studies of intermarriage to mark racial stratification (Kalmijn 1993; Qian 1997), to examine this question. Relative educational hypergamy ratios indicate the extent to which wives in intermarriage marry above or below the level expected from educational composition.

characterizes the never married and the divorced, with the never married being the larger group. Figures 1.A and 1.B present the percentage of never married and divorced individuals (age 16 or older) by year in the unmarried (1.A) and the married (1.B) population. In any year between 1964 and 1995, approximately 17 to 25 percent are divorced, while 75 to 83 percent are never married, in a year. A similar size imbalance is also present in the married population, although it was slightly less pronounced compared to the imbalance observed in the unmarried. In any year between 1970 and 1995, 20 to 33 percent in a year are (previously) divorced, while 67 to 80 percent are (previously) never married.<sup>8</sup> If the discrepancy in group size is the major source of homogamy, then when controlling for spousal sociodemographic positions and homogamous tendencies on these positions with education and age, it should account for the homogamous tendency of the never married and the divorced.

An alternative to the compositional hypothesis is that, partly due to ties of the divorced with family members and conditions from the former marriage, couples are more likely to be homogamous than heterogamous on marital history. Explicit and implicit social rules often prevent individuals from maintaining distributional ties with persons and conditions from the former non-marital unions once dissolution takes place (Argyle, Henderson, and Furnham 1985). However, among the divorced, maintaining these ties with persons and conditions from the former marriage can be beneficial as well as obligatory. Because marriage is an institution that nurtures long-term ties through post-marital socialization and joint investments of the spouses (Oppenheimer 1988), the ties from the former marriage may be difficult to sever even after the divorce is finalized on paper. The high psychological and financial costs of dissolving a marriage (as opposed to a non-marital union) may encourage couples to engage in an exchange when only one of the spouses wants a divorce. The spouse who does not want a divorce may agree to a divorce in exchange for maintaining ties (Karbo 2001). The ties are reinforced by legal and non-legal institutions. Examples of institutional reinforcement are many: a divorced woman keeps in contact with her ex-husband for alimony arrangements; divorced parents are legally obligated to share custodial responsibilities, which restrict their geographic mobility or time (Pearson and Anhalt 1993; Seltzer, Schaeffer, and Charng 1989); the poor credit of an ex-spouse disadvantages a divorced person's credit history long after the divorce occurs (Quinn 1992).

If the never married and the divorced were to intermarry when the divorced have distributional ties to their former marriages, conflicts may ensue and social bonds may be relatively slow to develop. In particular, the expectation of exclusivity among the never married may conflict with the ties of the divorced. Also, the former marital ties could impose constraints over resources made available by the divorced partner to the coresiding family members, and lead to spousal conflict. Conflicts on issues surrounding ties from the former marriage may reduce efficiency in the production of marriage-specific capital.<sup>9</sup> Homogamy with respect to marital history would improve marital productivity by eliminating these conflicts (Posner 1986). Becker (1981) argues that couples tend to mate their likes when doing so would be more efficient for the marriage. Other researchers also argue that social bonds that hold together a marriage develop more easily between partners who have similar consumption patterns, as in the case of divorced and never married persons who pair within their marital history group (e.g.,

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<sup>8</sup> Widows are a small fraction (approximately 3% or less) of the unmarried and married population in the U.S., based on the Vital Statistics Marriage Files and the March Current Population Surveys.

<sup>9</sup> Spouses jointly produce marriage specific capital (Becker, Landes, and Michael 1977; Greene and Quester 1982; Waite and Lillard 1991). They include a house, children, child rearing skills, and sexual adjustment to a particular spouse, and increase the benefits of a particular spousal match.

DiMaggio and Mohr 1985). These arguments imply that the never married and the divorced should tend toward homogamy with respect to marital history, even when removing the influence of relative group size and controlling for spousal education and age.

### *Compositional shifts, diminishing differentiation, and a decline in the level of homogamy*

Compositional shifts have been linked to an increase in the level of intermarriage and a decline in the level of homogamy. In particular, as group sizes become more balanced, the chance that individuals from the larger group will interact with someone from the smaller group increases, reducing the level of homogamy while increasing the level of intermarriage (Blau, Blum, and Schwartz 1982; Kalmijn 1998). Both Figures 1.A and 1.B indicate that the percentage of divorced persons has increased over the last three decades, suggesting an expansion in the opportunity for never married persons to marry divorced persons. Even when the differentiation between the never married and the divorced is not weakening, this type of compositional shift alone would reduce the observed level of homogamy and increase the level of intermarriage over historical time. Thus, if the shift in relative group size were a major contributor to the decline in the tendency toward homogamy and spousal education and age were controlled, then removing the effect of these shifts should yield no major change in couples' underlying tendency to be homogamous.

An alternative possibility is that an underlying tendency toward homogamy, as measured by the relative likelihood of homogamy, may be diminishing over historical time. This shift may result from the weakening distinction between the never married and the divorced in the process of marriage pairing, which could accompany several social changes. First, the never married as a group may be “assimilating” toward the divorced with the increase in the rate of cohabitation, which tends to be short-lived (Smock 2000). With this increase, more never married persons may have a history of dissolved “marriage-like” relationships with “divorce-like” ties to their ex-partner.<sup>10</sup> Also, the perception that divorce is an unusual event is disappearing—divorce is becoming more accepted as an everyday life event (Thornton 1985). Finally, because the marriage market is increasingly driven by competitive forces to maximize socioeconomic advantages (Kalmijn 1991; Mare 1991), individuals may increasingly place weight on socioeconomic attractiveness rather than on other qualities, such as marital history, as the criteria of determining a spousal match.

### *Are the divorced and the never married hierarchically ordered?*

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<sup>10</sup> Another possibility is that the divorced are becoming more like the never married—for example, the percentage of the divorced who have no children from the former marriage may be increasing. To investigate this possibility, I calculated the percentages of divorced women age 16-45 without children between 1970 and 1990 using the 1% IPUMS data (Ruggles and Sobek 1997). Specifically, the percentages of divorced women without children were 18.6% in 1970, 23.5% in 1980, and 22.5% in 1990—they do not increase consistently over the two decades. In general, similar conclusions are drawn when the percentages are calculated by two-year age groups and race, with a few exceptions in the mid-30s age range. Specifically, the percentage of childless divorced women increased consistently over the two decades among non-Hispanic white women age 33-34 and 35-36. However, even for these subgroups, the percentages do not increase substantially between 1980 and 1990.

It is possible that the never married and the divorced are ordered on a social hierarchy, partly because divorce was originally granted only on the basis of fault (Smart and Neale 1997; Weitzman 1985). An individual could divorce only when one of the spouses conducted a major breach of the marriage contract in the form of adultery, abandonment, neglect, commission of a felony, intemperance, and cruelty (Gerstel 1987; Goode 1956; Zimmerman 1935). The use of fault to establish a divorce continued well into the 1980s (Jacob 1988). Thus, even in recent history, the divorced may have been dishonored by the assignment of the fault, which may have reduced their social standing relative to that of the never married.

One way to assess the potential hierarchical ordering of the groups is to test for evidence of a social exchange process. Some researchers argue that, when individuals are in a lower status group, they exchange their socioeconomic status in order to marry into the higher status group (Davis 1941; Merton 1941).<sup>11</sup> Evidence of such an exchange has been found in studies of racial groups by using wives' educational hypergamy ratios (Kalmijn 1993; Qian 1997). For example, a divorced woman may tend to reduce the socioeconomic status of her husband when marrying a never married man. Also, a never married woman, by marrying a divorced husband, may gain in her husband's socioeconomic status. Given that women tend to marry up (Kalmijn 1993), an exchange between socioeconomic status and a never married status could be evidenced in two ways: a) a divorced woman matched to a never married man may marry up in socioeconomic status less frequently than expected from educational composition; and b) a never married woman who marries a divorced man may marry up more frequently than expected from educational composition. Alternatively, if the groups are not stratified, either because the dishonor of divorce is minor or because any dishonor has little impact on their social standing, these wives' patterns of hypergamy should not be substantially different from those expected from educational composition.

## DATA AND METHODS

Large data sets containing information on the marital histories of both husbands and wives that cover a few decades of historical time are not often available. Most often, surveys ask about the respondent's marital history, but not the respondent's spouse's marital history, cover a short period of historical time, and are not large in sample size. In addition, underreporting of divorce is a serious issue in analyses using retrospective marital history data in surveys (Bumpass, Martin, and Sweet 1991). The Vital Statistics Marriage Files, compiled at the National Center for Health Statistics (NCHS), provides the necessary information to study patterns of marital history intermarriage over a couple of decades. Age at marriage, order of current marriage, previous marital status, race, and education at the time of marriage of both spouses are included in the Vital Statistics data set, which contains a large sample. Vital Statistics data set does not undercount divorce because it bases its information on marriage certificates. Thus, the Vital Statistics data set is well-suited for the purpose of this study. Some of the limitations of the Vital Statistics data set include the small number of variables available for analysis and the exclusion of data from some of the states, particularly data on education. Although Vital Statistics data are currently available up to 1995, spouses' educational levels are available only up to 1988. As a result, this analysis covers only years up to 1988. Parent status is

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<sup>11</sup> The discussion centers on women in this literature because it has been argued that women tend to select mates on socioeconomic status, while men select mates on other characteristics, such as appearance and age (Kalmijn 1993; Waller 1937).

not available in the data set. Even if available, it is unclear whether controlling for parent status is appropriate for the purpose of this study. Doing so would remove the influence of a major condition that strengthens the ties between ex-spouses, namely joint investment of the spouses in the well-being of their children. Children are likely to produce relatively minor ties between ex-partners from non-marital unions, in which joint investment in children by coresident parents is less institutionalized (Manning and Lichter 1996). Both black and white couples are included in the sample,<sup>12</sup> but marriages of those who were previously widowed are excluded from the analysis.

I focus the discussion on never married and once divorced persons to obtain a lower bound estimate of the underlying tendency of homogamy and to simplify the analysis. Preliminary analysis indicated that the likelihood of homogamy as opposed to intermarriage is even more pronounced between never married and twice divorced persons.<sup>13</sup>

The sample contains a total of 2,765,206 marriages and is substantially larger than those used in most previous studies of assortative mating. For example, Kalmijn (1993), who also used the same Vital Statistics sample, analyzed a sample less than half this size. Sample size affects the Bayesian Information Criterion (BIC) statistics (see Raftery 1986), which are goodness of fit measures adjusted by degrees of freedom and sample size.<sup>14</sup>

The analysis controls for age at the time of marriage--later age at marriage may contribute to a decrease in homogamy and an increase in intermarriage over historical time by increasing the peer-based social interaction of never married and divorced persons (who tend to be older than never married persons). Six subgroups, defined by the wife's age where the sample size was large enough for analysis,<sup>15</sup> are used: 23-24 ( $N = 381,536$ ), 25-26 ( $N = 267,130$ ), 27-28 ( $N = 185,087$ ), 29-30 ( $N = 131,728$ ), 31-32 ( $N = 93,226$ ), and 33-34 ( $N = 67,505$ ). Marriages prior to age 23 and above age 34 are excluded from the age-specific analysis—in these age

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<sup>12</sup> The analysis was repeated by race to the extent that sample size made it possible. The results presented here are similar to the results obtained for whites. For blacks, many cell frequencies were zero, making a comparable race specific analysis difficult. Where estimation was possible, the results indicated that the conclusion in this paper still holds—however, the tendency for couples to be homogamous with respect to marital history was lower among blacks than among whites.

<sup>13</sup> Most of the intermarriages that take place are between the never married and the once divorced. Marriages involving persons divorced twice or more are no more than 11 percent of all marriages formed between 1970 and 1988.

<sup>14</sup> When the analysis uses an extremely large sample size, obtaining a model with a good fit becomes more difficult. BIC statistics adjust the Likelihood-Ratio Chi-Square ( $G^2$ ) with the residual degrees of freedom (DF) and sample size (N). The formula for BIC is  $BIC = G^2 - (DF) * \log(N)$ . Smaller BIC values indicate that the model fits better. Negative BIC values indicate that the model fits better than the saturated model (Raftery 1986).

<sup>15</sup> The main purpose of the age-specific analysis is to test whether couples' homogamous tendency with respect to marital history is observed in all ages. Whether the tendency varies systematically with age will not be the focus of this analysis. It deserves a focused analysis in a separate paper. Lichter (1990) argues that older persons are more likely to cross the marital history line than are younger persons. He offers a couple of potential explanations: a) older never married persons seek out divorced persons in an attempt to expand the "field of eligibles"; and b) maturity, as measured by age, increases the person's tolerance for differences.

The age-specific analysis also provides insights into the extent to which the presence of children, a variable that is not available in the Vital Statistics Marriage File, accounts for the tendency toward homogamy. For example, based on statistics obtained from the 1990 1% IPUMS file, combining non-Hispanic whites and blacks, only 19% of the never married 23-24 year old women had children, but 31% of their 33-34 year old counterparts had children. Among the divorced, 68% of the 23-24 year old women had children, but 75% of the 33-34 year old women had children. If the homogamous tendency were mainly due to the presence of children, then it should be more pronounced among marriages of older women than those of younger women.

ranges, the appropriate age-specific subsamples had a number of empty cells. Preliminary analyses further divided each of the six subsamples by three categories of the husband's age relative to his wife's age (i.e., the husband is older than the wife, the husband and the wife are the same age, and the husband is younger than the wife). The same conclusions held regardless of the relative age of the husband. Thus, the analysis reported in this paper collapses the three categories of husband's age relative to the wife and only maintains the six categories of wife's age.

Log-linear models presented here are applied to frequency tables of the whole sample and the six subsamples defined by the wife's age. One advantage of employing a log-linear framework for this study is that it allows statistical tests for the presence of an association between the husband's and wife's marital history and its historical shift, net of the effect of relative group size, in each subsample. It also allows an estimation of a set of odds ratios with an interaction term between a husband's and a wife's marital history. Log-linear models continue to be the most popular method to study intermarriage (e.g., Qian 1997; Qian 1998; Qian and Lichter 2001; Rosenfeld 2002).

However, log-linear models also have some limitations. For example, a way to account for biases caused by the selection of individuals into marriage has not been well developed and tested. Selection would be problematic if, when the mating preference of those who never (re)marry is taken into account, the conclusions are altered. For two reasons, correcting for selection would probably not alter the conclusions of this study. First, there is little theoretical basis to expect that those who remain unmarried are distinct in their sorting preferences regarding marital history from those who enter marriage. Second, tests indicate that the empirical sensitivity of the findings to selection is minor. In these tests, I added the estimated number of never married and divorced men and women who never (re)marry to the frequency tables by assigning them hypothetical sorting preferences. Based on statistics from previous studies, I added approximately 10% more never married men and women (Goldstein and Kenney 2001) and approximately 25% more divorced men and women (Bumpass, Sweet, and Martin 1990). In order to cover the range of sorting preferences that these added individuals could have if they were to marry, two extreme assumptions were made. Under the first assumption, all of the added cases prefer to intermarry with respect to marital history. Under the second assumption, all of the added cases prefer to marry persons of like marital history. Using either assumption, the conclusion drawn in this paper remained unchanged. These results served as one indication that the conclusions would probably not be altered by the sorting preference of those who do not (re)marry.

The analysis includes five variables: husband's marital history (m), wife's marital history (M)<sup>16</sup>, husband's education (e), wife's education (E), and year of marriage (Y). The five variables are dummy coded. Marital history consists of two categories: never married prior to this marriage (omitted) and once divorced prior to this marriage. Education consists of four categories: some high school (below 12 years of education, omitted), high school (12 years of education), some college (13-15 years of education), and college graduate (16 or more years of education). Year of marriage between 1970 and 1988 consists of six groups: 1970-1972

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<sup>16</sup> These marital history variables are constructed from two variables: husband's and wife's order of the current marriage and their previous marital status.

(omitted), 1973-1975, 1976-1978, 1979-1981, 1982-1984, and 1985-1988.<sup>17</sup> A frequency table has a total of 384 cells (2 x 2 x 4 x 4 x 6).

Six models are presented, all of which are specified in Appendix A. Model 1, a baseline model constructed after some preliminary regressions, includes 15 sets of terms. Model 2 adds the spousal marital history interaction term, mM (m=husband's marital history, M=wife's marital history), to Model 1. Model 2 tests whether, on average for all years, there is a tendency for couples to be homogamous or heterogamous in marital history, net of the effect of relative group size, and controlling for spousal education and age. Model 3 adjusts for differences in marital history match patterns by each spouse's educational level with two terms, emM (e=husband's education) and EmM (E=wife's education). In Model 4, I add a term (mMY) to Model 3 to test whether marital history match patterns have shifted over historical time. If this addition of an interaction term between marital history and year (Model 4) did not improve the fit, a linear constraint is imposed on mMY to gain some parsimony (Model 5) to further assess model fit. In Model 6, I allow marital history match patterns to vary across spousal educational match categories, and vice versa, by adding mMeE to Model 4.<sup>18</sup> If the fit of Model 6 is not better than that of Model 4, then it is one evidence contrary to the theory of social exchange. The lack of model improvement would suggest that patterns of educational assortative mating, including the extent of educational hypergamy for wives, do not differ by spousal marital history matching. The social exchange perspective, in contrast, implies that the extent of educationally hypergamous matches for wives differ by spousal marital history match.

Model comparison alone, however, does not provide adequate means to test the specific hypotheses that: a) the likelihood of homogamy is higher than the likelihood of intermarriage, net of the influence of relative group size and controlling for spousal education and age; b) the relative likelihood of homogamy declined over historical time; and c) when in intermarriage, wives' level of educational hypergamy is above (when the wife is never married) or below (when the wife is divorced) the level expected from educational composition. To test these hypotheses more directly, a model selected from Models 1-6 is used to estimate log odds ratios and wives' relative educational hypergamy ratios.

Odds ratios are calculated to indicate the likelihood for the never married and the divorced to be homogamous relative to heterogamous with respect to marital history. Odds ratios are the odds that a never married person marries another never married person divided by the odds that a never married person marries a divorced person. This measure is symmetric and is equivalent to the odds that a divorced person marries a divorced person divided by the odds that a divorced person marries a never married person (Kalmijn 1991). Odds ratios are invariant of composition, making it a measure useful to partial out the effect of relative group size on spousal marital history matching patterns (see Powers and Xie 2000). Log odds ratios, rather than odds ratios, are used for interpretive convenience—when there is no underlying tendency for couples to be homogamous, then the odds ratios would be 1 and the log odds ratios would be 0. Log odds ratios with a positive sign would suggest a tendency toward marital history homogamy, and log odds ratios with a negative value would suggest a tendency toward marital history intermarriage.

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<sup>17</sup> The last year interval (1985-1988) is four, rather than three, years. The estimates change very little when excluding 1988 from the most recent year category.

<sup>18</sup> If results show that Model 5 is a better model than Model 3 (i.e., with the use of a linear constraint, there is evidence of a shift in the tendency for couples to sort on marital history), then I also test whether model fit improves with the addition of mMeE term to Model 5.

The log odds ratios are calculated by first estimating the coefficients of mM in each year category. The coefficient of mM is the log odds ratios of homogamy versus intermarriage. If Model 6 were used, where I interact spousal marital history matching with spousal educational matching, I would obtain a coefficient for mM in each of the 16 (4X4) educational match categories within each year category using the following terms: mM, emM, EmM, eEmM, and mMY. These log odds ratios would be presented as: a) a weighted average across the 16 spousal educational match categories within a year category (this average summarizes the ratios specific to the 16 educational match categories into one ratio); and b) the log odds ratios specific to each of the 16 spousal educational match categories. If, between 1970 and 1988, these two forms of log odds ratios are larger than zero regardless of the (sub)sample used, then I would conclude that there is an underlying tendency for married couples to be homogamous with respect to marital history. In addition, if I find that the log odds ratios declined between 1970 and 1988, regardless of spousal educational matching and age, then I have evidence that the tendency for couples to be homogamous with respect to marital history is diminishing.

I also calculate relative educational hypergamy ratios (Kalmijn 1993; Qian 1997), which measure the extent to which wives are hypergamous below or above the level expected from educational composition.<sup>19</sup> Relative educational hypergamy ratios of the wives are ratios of two educational hypergamy ratios, those based on observed frequency (used in the numerator), and those based on expected frequency estimated from a quasi-symmetry model (used in the denominator). In a quasi-symmetry model, the interaction term between husband's and wife's education is constrained to be equal in the off-diagonal cells that are symmetric across the diagonal (Qian 1997).<sup>20</sup> As a result, any tendency toward wives' educational hypergamy or hypogamy present in the frequencies predicted from a quasi-symmetry model would be due to the influence of educational composition rather than the influences of the underlying tendency for wives to marry up or down. With an index that divides the observed hypergamy ratio with the hypergamy ratio obtained from the quasi-symmetry model, I can assess whether wives who intermarry have levels of hypergamy above or below that expected from educational composition.<sup>21</sup>

Appendix B contains the percentages of marital history homogamy and intermarriage among couples who married between 1970 and 1995. The figure shows that: a) the percentage of intermarriage is substantially lower than the percentage of homogamy among the never married but is not substantially different among the ever divorced; and b) the percentage of intermarriage increased steadily between 1970 and 1995. The level of intermarriage and its trend over historical time indicated by the percentages in Appendix B are influenced by relative group size as well as differences in the educational levels and ages of the never married and the divorced. The next section presents the results in log odds ratios that are net of such influences. It also presents the wives' relative educational hypergamy ratios to test for possible stratification between the never married and the divorced.

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<sup>19</sup> Hypergamy ratios are the frequency of hypergamy divided by the frequency of hypogamy.

<sup>20</sup> In this paper, the quasi-symmetry model is estimated by applying constraints to the best model out of the six models. The interaction term between husband's and wife's education (eE) in the quasi-symmetry specification would have 6 dummy variables rather than 9 dummy variables.

<sup>21</sup> In particular, social exchange—and concomitant social stratification between the divorced and the never-married—would be indicated by a relative hypergamy ratio below 1 among divorced women who marry never-married men or a relative hypergamy ratio above 1 among never-married women who marry divorced men.

## RESULTS

Table 1 contains results from fitting the six log-linear models to the whole sample and the six age-specific subsamples. The cells in the table with the lowest BIC values are shaded to mark the best model for each (sub)sample. The results indicate that the addition of the term capturing spouses' underlying tendency to be homogamous or heterogamous (mM) to Model 1 improves model fit in Model 2. Regardless of the sample, compared to the chi-square ( $G^2$ ) statistics and BIC values of Model 1, those of Model 2 are smaller by approximately 1,000 or more. These results suggest that there is a statistically significant association between the husband's and the wife's marital histories among the never married and the divorced, net of the influence of their relative group size, controlling for spousal education and age.

Results on model fit from the pooled sample and the age specific subsamples also suggest that there was a statistically significant shift in the homogamous tendency of the never married and the divorced between 1970 and 1988. When age is not controlled, model fit improves in Model 4 (relative to Model 3) with the inclusion of the interaction term between spousal marital history matching and year of marriage (mMY). When controlling for age with the use of the subsamples, the same conclusion generally holds: model fit improves by adding mMY as dummy variables (Model 4) or with a linear constraint (Model 5). An exception is found in the youngest age group (age 23-24), where even with the use of a linear constraint on year (Model 5), little improvement in model fit is observed relative to Model 3. This suggests that there was not a major change in the odds ratios over the years in this age group.

Model 6 adds a term that accounts for differences in spousal educational matching by marriage order pairing (mMeE) to Model 4. In general, the inclusion of this term does not improve the fit of the model in the age specific subsamples--improvement is observed only in the pooled sample and the ages 31-32 subsample. Therefore, for the most part, I cannot conclude from the tests of model fit that educational assortative mating varies by spouses' marriage order pairing. Results from further analysis using educational hypergamy ratios are reported later in this section.

To address the specific hypotheses and to present the results in more interpretable forms, Model 6 is used<sup>22</sup> to estimate the log of the odds ratios, and their exponents. The log odds ratios of homogamy versus intermarriage of the never married and the divorced in the whole sample, using an average<sup>23</sup> across spousal educational match categories, are presented in Figure 2.A. The log odds ratios for all of the year categories are larger than zero throughout the years 1970 to 1988, indicating that the never married and the divorced are more likely to be homogamous than they are likely to be heterogamous with respect to marital history, net of the effect of the relative group size, controlling for spousal education. When converted to odds ratios (see Figure 2.B), the values show that marital history homogamy is at least 7 times more likely than is intermarriage throughout the years 1970 to 1988. The log odds ratios are still larger than zero in the 16 spousal educational match categories (see Appendix C.1). Even when controlling for age with the use of subsamples, the log-odds ratios are larger than zero in each year category (see Figures 2.C and 2.D), and in each educational match category within an age category (see

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<sup>22</sup> The tests of model fit in Table 1 suggest that Model 6 contains "redundant" terms for the age specific subsamples with the exception of ages 31-32. In other words, Model 6 is not the most parsimonious choice for most subsamples. However, Model 6 is used for all (sub)samples to gain comparability in the results.

<sup>23</sup> The cell weights used to calculate the average are obtained from a cross-tabulation between the husband's and the wife's education, using all marriages in all years.

Appendix C.2-C.7).<sup>24</sup> Together, these results show that the never married and the divorced tend to be homogamous with respect to marital history, net of the effect of relative group size and controlling for spousal education and age.

The results in Figure 2.A indicate that the relative likelihood of homogamy of the never married and the divorced declined between the early 1970s and the late 1980s. By the late 1980s, the odds of homogamy relative to that of intermarriage declined to approximately half of the level in the early 1970s, from approximately 14 to 7 (see Figure 2.B). In general, a decline is also observed in the log odds ratios when age is controlled (See Figure 2.C), but with an exception of couples with younger wives, age 23-28, in the 1980s. Overall, the relative odds of homogamy versus intermarriage declined from the range of 3 to 4.5 in the early 1970s to the range of 2-3 by the late 1980s (see Figure 2.D). For couples with wives ages 23-24, 25-26 and 27-28, the (log) odds ratios declined in the 1970s (to a minor extent in the 23-24 age group) but stabilized in the 1980s. For the 23-24 age group, even the decline in the 1970s is weak, as was indicated by the test of model fit. Despite these exceptions, the pooled and age specific results provide some support for the argument that the differentiation between the never married and the divorced has weakened over historical time.<sup>25</sup> A decline in the odds ratios did not disappear with the use of subsamples further divided by husband's relative age (not shown).

Using Model 6, I also calculate the wives' relative educational hypergamy ratios, which are plotted in Figures 3.A-D, using a lowess smoother (see Cleveland 1979), for the whole sample (3.A) and for couples with wives in three of the six age groups: ages 23-24 (3.B), 27-28 (3.C), and 31-32 (3.D).<sup>26</sup> The patterns observed in Figures 3.A-3.D do not support the argument that divorced persons exchange social status to marry never-married persons. None of the results show that previously divorced women married to never married men have educational hypergamy lower than expected from composition (i.e., less than one) or that previously never married women married to divorced men have hypergamy ratios higher than expected from composition (i.e., more than one). Therefore, no evidence is found that the never married and the divorced are hierarchically ordered groups.

## CONCLUSION

The main question asked in this study is whether there is an underlying tendency for the never married and the divorced to be homogamous, net of the effect of relative group size, controlling for spouses' education and age. I find evidence of this: throughout the period

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<sup>24</sup> The magnitude of the log odds ratios diminish once controlling for wife's age, suggesting that age forms a barrier against marital history intermarriage. When using the subsamples defined further by the three categories of husband's relative age, the magnitude of the homogamous tendency varies somewhat across these categories—however, the conclusions still hold that couples tend to be homogamous with respect to marital history.

<sup>25</sup> Based on some preliminary analysis, the rate of decline in the log-odds ratios of homogamy versus intermarriage is held constant across spousal educational matching. I investigated whether the rate of decline in the log odds ratios of marital history homogamy (as opposed to intermarriage) differed by spousal educational matching using the whole sample and the age specific subsamples. The results indicated that, in couples where both spouses have 16 or more years of education and the wives are in the early to mid-20s, the rate of decline in the log odds ratios was larger than those in other educational match categories. Otherwise, the rate of decline did not differ statistically significantly across spousal educational matching.

<sup>26</sup> The analysis of educational hypergamy ratios was also conducted with the remaining three age groups. Regardless of the age groups used, there was no evidence of wives' educational hypergamy in excess, or deficit, of the level expected from educational composition when couples intermarry. To save manuscript space, I present only the results for every other age group.

between 1970 and 1988, never married and once divorced persons are more likely to be homogamous than to intermarry. This finding is consistent with the argument that the preferences, rights, and obligations of many of the divorced to share resources with family members from the former marriage differentiate them from the never married. This difference produces a tendency toward marital history homogamy. Should marital history intermarriage take place, the sharing, which is reinforced by institutions (Gerstel 1987; Goode 1956; Hunt 1966), may yield spousal conflict over: a) expectations about maintaining social relations with an ex-partner; and b) contributions of resources to the coresiding family members. Distributional differences between the never married and the divorced may ultimately diminish marital productivity, reduce marital cohesion, and encourage the mating of the likes (Becker 1981).

Marital history homogamy among adults are likely to set up two distinct environments in which coresident children are raised. Specifically, compared to children coresiding with married parents in their first marriage, children coresiding with parents in their remarriage may receive relatively limited resources from the coresiding parents. Children rely heavily on investments from coresiding parents for their development. Economic (Becker 1981; Juster and Stafford 1991), sociological (Coleman 1988; McLanahan and Sandefur 1994; Thomson et al. 1994), and psychological (Eccles, Wigfield, and Schiefele 1997) theories suggest that children who receive a higher level of investment from parents in either money or time are better off psychologically (e.g., self-esteem and motivation), socially (e.g., educational achievement), and physiologically (e.g., health status and growth). Empirical studies suggest that children who reside with remarried parents receive fewer parental investments, on average, than do children who reside with parents in their first marriage (McLanahan and Sandefur 1994). This inequality in parental investment by marriage type fosters corresponding inequality in child well-being (e.g., Hofferth and Anderson 2001; McLanahan et al. 1994; Thomson et al. 1994). Inequalities among children that stem from parental marriage type exacerbate the already disadvantageous circumstances surrounding children of divorce that are induced by the relatively low socioeconomic status of the custodial parent and the lingering negative psychological impact of parental conflict (e.g., Cherlin, Furstenberg, Chase-Lansdale, Kiernan, Robins, Morrison, and Teitler 1991; Hoffman and Duncan 1988; Smock, Manning, and Gupta 1999; Weitzman 1985). Although existing programs focus on reallocating parental resources to non-resident children, they may also need to minimize the negative impact of this reallocation effort on the well-being of the children coresiding with remarried parents (Seltzer 1991).

Ties to the ex-spouse among the divorced may partly explain the higher rate of cohabitation among divorced persons than the rate among never married persons (Bachrach 1987; Bumpass and Sweet 1989). If a couple consists of a divorced person and a never married person, they may find that a marital union, in which spouses pool resources and make joint decisions (Treas 1993), involves too many stresses, institutional complexities, and ambiguities (Cherlin 1978), and opt for long-term cohabitation. Because the number of unmarried never married persons are larger than the number of unmarried divorced persons (Bachrach 1987, Table 2), cohabitation as a result of cross-marital history coupling may raise the rate of cohabitation disproportionately in the divorced compared to the never married. Although data limitations do not allow investigation of the extent to which cross-marital history coupling accounts for the difference in cohabitation rates in the never married and the divorced, this issue may be investigated with other data sets.

Two additional questions were asked in this study. First, is the differentiation between the never married and the divorced weakening in the process of marital pairing, as measured by

the decline in the homogamous tendency over historical time? The results suggest that, in general, the answer is “yes.” The general decline in the log odds ratios are consistent with the argument that, although the marital history groups continue to be distinct, they are becoming less so with: a) the assimilation of the never married to the divorced as the rate of cohabitation increases; b) the increased acceptance of divorce as part of everyday life (Thornton 1985); and c) the increased preference to match on spousal socioeconomic characteristics rather than on other qualities (Kalmijn 1991; Mare 1991). In the age-specific analysis, I find an exception to the decline in the level of marital history homogamy among couples with younger wives (i.e., age 23-28) between 1979 and 1988—for them in that period, the relative odds of homogamy remained constant. This result implies that, among the young in those years, the distinction between the never married and the divorced did not diminish. Consistent with this possibility, the level of cohabitation, which is a union type most commonly observed among the young (Thornton 1988), was nearly constant in the early to mid-1980s, even though it increased in the 1970s (Casper and Cohen 2000).

The second additional question asks: are the never married and the divorced groups ordered on a social hierarchy in the mating process? Because divorce was historically granted on a fault basis, the social standing of the divorced relative to the never married may have been compromised. As a result, the never married may treat the divorced as a lower status mate relative to a never married mate. The results suggest that, at least based on the indicator used in this study, the answer to this question is “no.” Between 1970 and 1988, no evidence is found that either divorced women have been less educationally hypergamous than expected from educational composition, or that never married women have been more hypergamous than expected from composition.

Data limitations did not allow me to empirically specify the processes behind the underlying tendency toward homogamy. For example, what type of ties from the former marriage contributes to the homogamous tendency? More analysis is needed in this direction to better understand the contributing processes. Such an analysis would help specify how the never married and the divorce (and first marriages and remarriages) are distinct. Also, to what extent does the homogamous tendency reflect the presence-absence of children? Unfortunately, the Vital Statistics data do not contain any information on parent status or parental ties maintained after a divorce due to the presence of children. Two findings suggest that presence-absence of children alone cannot explain the tendency toward homogamy found in this study. First, there was less of a tendency, at least in the late 1980s, toward homogamy in the older age group than in the younger age group. If the presence of children were the sole cause of the homogamous tendency, then marriages of older women should be more, rather than less, homogamous than are marriages of younger women. Second, the tendency for couples to be homogamous with respect to marital history declined consistently throughout the years 1970 to 1988 in the older (i.e., 29-30, 31-32, and 33-34) age groups despite the, at best, inconsistent decline in the percentage of childlessness among divorced women in these age groups between 1970 and 1990 (see footnote 9).

Although processes other than those involving children probably contribute to the homogamy of the never married and the divorced, those related to children probably also exist. Additional analysis is needed in this direction with an appropriate data set. Some child-related processes that encourage marital history homogamy may have no direct link to marital history. For example, non-parents, who are more likely to be never married than are divorced, may prefer to marry other non-parents in order to avoid drastic changes in their lifestyle associated with

taking on parenting responsibilities. However, other processes related to children that encourage marital history homogamy may be directly linked to having been in a former marriage. For example, through the process of joint investments in the well-being of their biological children (Treas 1993), parents may develop lasting ties to the children (e.g., Becker, Landes and Michael 1977) that persist into a remarriage, and hence yield a tendency toward marital history homogamy. Future analyses may focus on questions related to if and how children produce the homogamous tendency of the never married and the divorced.

Intermarriage is a valuable indicator of the presence of a group differentiation, such as that between the never married and the divorced. With the increasing demographic presence of the divorced in the population, the differentiation between the never married and the divorced and its distributional consequences through marital sorting deserve further attention.

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