Shifting Influences of Education and Children on Divorce Risks Over Historical Time in Japan and the U.S., 1946-1999

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Hiromi Ono

University of Michigan

Institute for Social Research

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Abstract

The industrial growth hypothesis posits that two disruptive influences on marriage emerge and increase in magnitude over historical time in an industrialized country: a) spouses' lower education; and b) raising children. For the Japanese case, however, the need for modifications to the hypothesis is anticipated. I apply discrete time event history regressions to marriages formed between 1946 and 1999 from the Japanese General Social Survey and the Panel Study of Income Dynamics. The American and Japanese samples yield partial support for the industrial growth hypothesis and the modified hypothesis, respectively. Specifically, among the American couples, the magnitude of the effect of husband's education has increased for the more recent marriage cohorts. The youngest child's age older than 5 raises the risk of divorce, but the magnitude of this effect has remained stable over historical time. Among the Japanese couples, the marriage-disruptive influence of a lower level of wife's education is present, but has not changed in magnitude. The marriage disruptive effect of the youngest child reaching ages 6-12 and 18+ (as opposed to the child being age 0-5) increased substantially for the later marriage cohort relative to the earlier marriage cohort.

The shift from status attainment based on ascription to that based on achievement with industrial growth has been one of the central themes in social stratification research (e.g., Blau and Duncan 1967; Featherman and Hauser 1978; See Matras 1980 for review). Some scholars have investigated the implications of this shift in the status attainment process for contemporary families (e.g., Goode 1963; Kalmijn 1991; Mare 1991; Smits, Ultee, and Lammers 1998; South 2002). They have found that the shift in mating preferences reflect the changes in the status attainment process.

Little is known about how shifts in the status attainment process are reflected in the changing determinants of marital dissolution over historical time. Theoretically, technological innovation that drives industrial growth over historical time could shift the determinants of marital dissolution in two ways. First, according to Goode (1963), spouses in the lowest strata of a society experience the greatest level of marital strain. This is so because, in order to gain social and economic status to make ends meet, lower status families need to put marital cohesion at risk (e.g., the husband moves to another place to find a job). Stratification researchers (e.g., Blau and Duncan 1964) argue that lower socioeconomic status is increasingly determined by the lower achieved status of an individual, as measured by spousal education, rather than the lower status of the parents, as measured by parental education of an individual. If so, the determinants of marital dissolution should also reflect this shift from ascription to achievement. Second, with technological innovation over historical time, raising children may become a strain on the marriage. Alwin (1984) argues that, in part to meet labor market demands, parents raise children to be increasingly independent of their parents and less obedient. This change should make raising children, who are joint investments of the spouses (Becker 1981),

more stressful to the marriage. I refer to these two predictions as the industrial growth hypothesis.

Much of the industrial growth hypothesis is built on findings from the U.S. and other Western industrialized countries. However, the socioeconomic and cultural background of a society may alter how shifts in the influences of socioeconomic position and child-rearing on divorce risks take place over historical time in another industrialized country. In the case of Japan, where ascriptive dimensions remain influential (Morgan and Hirosima 1983) on status attainment (Ishida 1989), the influence of parental status may continue to be present. Some researchers note that the status attainment process has changed little after World War II in Japan, at least until the mid 1990s (Hara and Seiyama 1999; Imada 2000). As a result, the direct effect of spousal education, and the indirect effect of parental education, on marital dissolution may have remained similar across marriage cohorts between 1946 and 1999. In addition, Japan has experienced rapid economic growth and technological advancement in a relatively short amount of time (Jorgenson, Kuroda, Sakuramoto, and Yoshioka 1986). As a result, the increase in the strain of raising children on the marriage may be particularly visible among Japanese marriages relative to American marriages.

In this study, I investigate the shifting influences of spousal socioeconomic status, as measured by husband's and wife's education, and the age of the youngest child on married couples' divorce risks over historical time in Japan and the United States, 1946-1999. I focus on education in particular because stratification researchers have shown that it is the primary factor that contributes to the reproduction of stratification across generations (Hout 2003). I use age of the youngest child to index the marital strain of

"children growing up." I apply discrete-time event history regressions to data from the Japanese General Social Survey, 2001 and 2002, and the Panel Study of Income Dynamics. This is one of the first empirical study of the *determinants* of contemporary Japanese divorce (see Anzo 2003 for exception). Much about Japanese divorce patterns remain unknown. A Japan-U.S. comparison is of particular interest because both countries are currently wealthy industrialized countries with similar per capita income (Norris and Inglehart 2000). However, Japan has experienced an unusually rapid industrial growth relative to other industrialized countries, including the U.S.

How socioeconomic status and children are linked to marital dissolution and whether the link is increasing over historical time among industrialized countries would inform if poverty and marital dissolution are inevitably and increasingly linked among industrialized countries. This link has been of central concern to policy makers in the U.S. If results from both Japanese and American marriages support the industrial growth hypothesis, then they would suggest that the increasing poverty-divorce link extends beyond the U.S. If, however, the modified hypothesis is supported, then results would suggest that it is not necessarily the case that industrial growth strengthens the link between poverty and divorce. In the case of Japan, strains of raising dependent children may be of growing policy concern.

Background

The industrial growth hypothesis posits shifts in two types of influences on the risk of marital dissolution: spouses' socioeconomic status and raising children. Parental status

becomes of relevance as an indirect influence on the risk of marital dissolution through the spouses' socioeconomic status.

Component 1: Shifting influence of couples' status on divorce.

The industrial growth hypothesis suggests that spouses' longer years of schooling should increasingly discourage marital dissolution over historical time. Goode (1963) argues that those most vulnerable to changes in the status attainment process is the socially and economically disadvantaged in a society--they are situated in a social position where they need to sacrifice the well-being of their marriage to help improve their educational status to make ends meet. For this reason, the determinants of divorce is expected to resemble the determinants of status attainment.

One of the central determinants of status attainment is individuals' education. Treiman (1970), for example, argues that industrial growth induces the increase in the demand for educated workers as the production process becomes increasingly technologically advanced. Employers place an increasing value on education, and less value on family characteristics. As a result, the status attainment process becomes increasingly determined by individuals' achieved characteristics (e.g., individuals' own education) rather than ascriptive characteristics (e.g., parents' education).

Social exchange theory implies that, given that husbands are more frequently the primary breadwinners, the effect of husband's education is more likely to reflect the shift in the status attainment process than the effect of wife's education (see Becker, Landes and Michael 1977; Oppenheimer 1997).[1] Generally, previous studies of marital

[1] There is inconsistency in the findings when SES is measured by wives' income (e.g., Greenstein, 1995). Also, additional issues become of consideration when analyzing income as an index of socioeconomic

dissolution report that spouses with lower levels of education are more likely to experience marital dissolution, with more consistent findings when using husband's education than when using wife's education (e.g., South and Spitze, 1985).

The shift in the effect of education on the risk of divorce over historical time has been investigated, but has provided mixed evidence. Martin and Bumpass (1989) find that women's education is becoming more influential in suppressing the risk of marital dissolution over historical time. Teachman (2002) and South (2001) find little evidence of a shift in the effect of wife's or husband's education over historical period, as indexed by marriage cohort and period, respectively.[2]

The effect of parental socioeconomic status, as measured by education, on couples' divorce is expected to be indirect, but weakening in its influence. When present, a higher level of parental education is likely to increase the level of a spouse's education, which in turn reduces the risk of divorce. Social exchange theory suggests that father's education is more likely to reflect the expected parental socioeconomic status effect than mother's education (Becker, Landes and Michael 1977; Oppenheimer 1997). However, because status attainment process is becoming more universalistic and less particularistic (Treiman 1970), the indirect effect of parental status on divorce risks should be diminishing over historical time. If any direct effect of parental education were to exist,

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status, such as endogeneity (Johnson and Skinner 1986). Education is less prone to criticism of reverse causality because the majority of individuals complete their education prior to entering their first marriage (Ono 1999).

[2] South and Spitze (1986) and Morgan and Rindfuss (1985) find the differential effect of education across marital duration. For wives' education, South (2001) finds that the impact wives' higher educational level is weaker during the later years of marriage than the earlier years of marriage. South argues that this pattern reflects the fact that, in the early durations of marriage, gender is displayed more frequently than in later durations of marriage. He states that better educated women "may hesitate to leverage their resources to strike a better marital bargain" (p. 231). However, others find little evidence that the effect of education across marital duration (Heaton et al. 1985; White and Booth 1991; See South 2001 for review). The non-proportionality of the effect of education is investigated in this paper to the extent that data make possible.

it is likely to capture the contribution of parental education to factors that are not related to status attainment, such as more liberal attitudes toward divorce. This direct effect may be more likely to be captured by the mother's education--she is more likely to be the primary caregiver of the child than her husband. This effect of mother's education may begin to disappear as educated mothers become less of an unusual group (South 2001). No study in the U.S. today notes the presence of an impact of parental socioeconomic status on the chance that couples dissolve their marriage (Smock et al 1999; Wolfinger 2000).

Component 2: Shifting influence of raising children on divorce

The second component of the industrial growth hypothesis is that raising children is becoming increasingly disruptive to marriage over historical time. Alwin (e.g., 1984) argues that the changing labor requirements with industrial growth, particularly those induced by technological advancement, encourage parents to raise their children to be more independent and less obedient. He (1988; 1990) argues that the driving force behind this change in parenting practice is that societies are becoming increasingly complex with technological development. Secularization may also contribute to the increasing independence and decreasing obedience of children.

Alwin's argument implies that the distress of raising older children for parents should increase with technologically advancement in a country. With technological change, parental human capital may increasingly become "outdated" for use by the children. Hence parental authority structure based on this human capital transfer across generations may become increasingly undermined over historical time. This social change may

produce strain between parents and (older) school age children. The argument also implies that the increase in the disruptiveness of raising older children should be particularly visible in countries that are experiencing more rapid technological advancement.[3]

In most western industrialized countries, the empirical pattern has been that the older the youngest child gets, the higher the risk of marital dissolution (Andersson 1997; Lutz, Wils and Nieminen 1991; Waite and Lillard 1991). In the U.S., the risk of divorce seems to peak when the child is in their teens (Waite and Lillard 1991). However, little is known about the historical shift in the influence of children's age on the risk of marital dissolution.

Modification of the industrial growth hypothesis for Japan

Most of the previous findings on status attainment and determinants of divorce are built on the case of the U.S. and Western European countries. However, for application to Japan, two modification of the industrial growth hypothesis may be needed in response to the potential stability of the status attainment process and the relatively rapid rate of technological growth in Japan.

First, the status attainment process in Japan may not have changed substantially across cohorts in post-World War II Japan. Studies of intergenerational social mobility

[3] Older children are thought to cause stress in marriage in other ways as well, by reducing the satisfaction of being married. Pubertal maturation is associated with increases in parent-child distance, adolescent autonomy and parent-child conflict (Steinberg and Silverberg 1987). The adolescent's increasingly adult appearance may provoke parental concern and disappointment regarding their own and their spouse's physical appearance and diminishing youthfulness (see Silverberg 1986). Such conflicts and emotional distress may reduce the "gains to marriage," part of which is joint investment in children, as children grow up. As kids grow up, divorce also becomes more feasible (because the mother could work and support the kids), especially as they enter school. These influences of raising older children should be fairly constant over historical time.

indicate the stability of relative mobility rates in Japan throughout most of the 1900s (Seki and Moriyama 1999; Imada 2000). If any change in the process has taken place, it only appeared in the mid-1990s (Imada 2000; Seki and Moriyama 1999). The stability of the intergenerational mobility process in Japan is *not* observed in Australia, which has become increasing open (Jones, Kojima and Marks 1994). Evidence is also available that the effect of the son's education and the effect of father's occupational prestige on son's occupational prestige of his first job changed little between 1920 and 1970 in Japan (Ono 1991). In contrast, Featherman and Hauser (1978) find that the influence of father's education on son's educational and occupational attainment is weakening in the United States. Hence the influences of spousal education and parental education on divorce risks may not have changed much in Japan even if they may have changed in the U.S.

Although historical shifts in the determinants of divorce may not be present in Japan, parental education may be more salient in Japan than in the U.S. In Japan, more substantial (indirect) influence of parental status may be observed than in the U.S. Morgan and Hirosima (1983) note that the extended family system fits in nicely into the modern Japanese society. Ishida (1990) shows that the relative influence of an individual's education on status attainment are weaker in Japan than in the U.S. He finds that about twice as much of the variance in the level of income is explained by characteristics of the family of origin (which includes family income, father's education, mother's education, urban background, farm origin, father's occupation, and sibling) relative to individuals' education in Japan. In contrast, about the same percentage of the variance is explained by social background and individuals' education in the U.S. These

studies indirectly suggest the potentially persistent influence of parental status on spousal socioeconomic status, and hence on marital dissolution, in Japan.

Second, the increasingly disruptive influence of raising older children may be more visible in Japan than in the U.S. in the time period studied. Japan has experienced an unusually rapid productivity growth (See Figure 1.A). With the exception of the period of World War II, Japan's industrial growth, as measured by electricity production, was more rapid than that in the U.S. (See Figures 1.B.i and 1.B.ii). In addition, other studies also report that technological change has taken place more rapidly in Japan than in the U.S. For example, Jorgenson, Sakuramoto, Yoshioka and Kuroda (1990) find that of the 28 industries analyzed in Japan and the United States, technological changes are more rapid in 22 industries in Japan than in the U.S. and those in 6 industries are more rapid in the US than in Japan. If rapid technological change is one of the underlying reasons that raising children become disruptive to marriage, then the increasingly marriage-disruptive influence of raising children should be more visible in Japan than in the U.S.

**********Figure 1.A, 1.B.i and 1.B.ii about here**********

Institutional conditions in Japan may also alter the effect of the age of the youngest child on divorce risks among Japanese marriages for recent marriage cohorts. In particular, rather than divorce risks increasing when the child becomes a teenager as was reported in the U.S. (Waite and Lillard 1991), they may decline when the child becomes a teenager in Japan. Japanese children begin to prepare toward high school and college entrance examinations (*jyuken*) around that age. The outcome of these entrance examinations heavily determines the future economic status of a Japanese youth (Hara and Seiyama 1999). The majority of Japanese students are now attending high school—

in 1995, only 16% of Japanese men in 40-49 years of age reported junior high as their highest degree attained. It is hence likely that average Japanese parents build substantial pent-up demand for divorce while the child is in preparation for high school and college entrance examinations. The pent-up demand is realized only when the youngest child reaches college age.

Table 1 summarizes the hypothesized effects of spousal education and the age of the youngest child based on the industrial growth hypothesis and its modified version for Japan. The major difference between the modified version of the industrial growth hypothesis for Japan and the original version that the effect of spousal education is not expected to change substantially. Also, the indirect effect of father's education (operates indirectly through the effect of spousal education) is not expected to weaken significantly over historical time in Japan. Furthermore, the effect of the older age of the youngest child is expected to increase at a larger rate in Japan than in the U.S.

**********Table 1 about here**********

Divorce in Japan and the United States.

U.S. divorce rates had been on a long term rise since the late 1800s (Preston and McDonald 1979; Ruggles 1997) until the recent years (Goldstein 1999). However, they indicated a slight decline in the 1990s (See Figure 2.A). In Japan, however, crude divorce rates were on a long-term *decline* in the first half of the 20th century (with the exception of the post-WWII divorce boom). The trend in the rates have reversed and started increasing only around the mid-1960s (See Figure 2.B). The crude divorce rates in Japan today is similar to those in European countries. In 1998, the crude divorce rates

of Japan was similar to that of Holland (See Figure 2.C) and was higher than that of Romania. U.S. still has one of the highest crude divorce rates in the world (United Nations 1999).

**********Figures 2.A and 2.B about here**********

On the legal side, in the U.S., divorce was granted on a fault basis until the mid-1980s in many states. According to Weitzman and Dixon (1989), starting in the late seventeenth century, legal separations were granted in England as a divorce-like decree. Matters of marital conflicts at that time were handled by the church, and obtaining divorce was not available as an option. When divorce jurisdiction was transferred to the English civil courts in 1875, fault grounds were established as an alternative avenue to obtain divorce. In the 1960s, U.S. legal reformers attempted to change the law to reflect the social reality that marriages end for reasons other than a spouse's fault (Weitzman 1985). As a result, grounds such as "irretrievable breakdown" and "incompatibility" were established, first employed by California in 1970.

Divorce in Japan was governed by informal rules and practices prior to the Meiji era. It was initiated by the husband's family with a letter sent to the wife called *mikudari han* (Iwai 1995). No "reason for divorce" was necessary for the husband's family to write this letter. Divorce did not become part of the civil law—where couples needed to be married and divorced by law--until 1898. Some scholars (e.g., Iwai 1995) suggest that the centralization and formalization of marriage and divorce have reduced divorce rates in Japan. Japanese divorces today are granted almost exclusively by mutual consent.

Data and Methods

I test the industrial growth hypothesis and its modified version with public use panel data sets from Japan (Japanese General Social Survey, or JGSS, 2000 and 2001) and the United States (Panel Study of Income Dynamics, or PSID, 2001). Although large U.S. data sets with marital histories of women are available (e.g., June Current Population Survey), they do not include marital histories of men. Also, they only contain the education of the current husband (as opposed to the first husband). Thus, if I were to use these data, I would not be able to estimate the changing effect of husband's education over historical time.

The *Japanese General Social Survey* is an annual cross-sectional survey of a national representative non-overlapping sample of adult men and women (i.e., age 20 and older). It is conducted by a joint effort of the Osaka University of Commerce and the Institute of Social Science, University of Tokyo. It provides information essential for understanding household structure, occupational mobility, political attitudes, family values, religion, and leisure activities. A cross-section of approximately 5,000 individuals are interviewed each year. The JGSS is the only public use data set available in Japan with more than 100 cases of divorce for analysis. The number of married persons in the two sample years is 4,358. The number of cases experiencing divorce among them is 320. Data from the 2002 JGSS will be publicly available in April, 2004. At that point, additional cases of divorce (approximately 150 more anticipated) will be added.

The *Panel Study of Income Dynamics*, a longitudinal panel survey with a national representative sample of individuals and households, has been conducted by the Survey Research Center of the University of Michigan. It was designed to examine economic,

social, and demographic changes in the family over time, and had been following up individuals and families annually between 1968 and 1997. The head of the household was generally the respondent who answered questions about family members. Begun with 5,500 households, the PSID sample has increased as the children of baseline families established their own households ("split off" families). The PSID is generally used for panel analysis but also contains a retrospective component that can be used for historical analysis. The retrospective data are updated as new information from the panel data collection becomes available. It is one of the few data collected from a national representative sample that contain information on individuals' reports of marital dissolution after 1995 at this moment. In the PSID, 2452 first marriages of non-white persons in year 2000 who are known to have been married for the first marriage. Of these couples, 949 reported a first divorce. Individuals 18-75 are included in the analysis.

The sample for analysis from each country is restricted to first marriage because the dissolution of second and higher-order marriages may involve different social processes from that of the first marriage (Sweet and Bumpass, 1987). For the purpose of comparison with the Japanese, only non-White marriages are included. The Japanese data do not contain retrospective information on income. Much of the income data in the PSID are not useful because they are asked in a panel format and are not available for the period prior to 1967.

Data on spousal education in the two data sets were inconsistently available and hence were not useful for the analysis of divorce in this study. In particular, if the PSID respondent married prior to the first wave (1968) and divorced prior to that wave, then no

educational information for the spouse is available. In the JGSS, no educational information is available for the previous wife even though available for the current wife. As a result, I analyze the effect of the husband's and wife's education by estimating the effect of the respondent's education for sex-specific subsamples.

The person sample is converted to person-year sample. The observational period is one calendar year. A marriage is dropped from continued observation after the year of divorce.

Dependent variable. Log-odds of divorce in calendar year t is the dependent variable. It is coded 1 if divorced in time interval t, and 0 otherwise. In the U.S., marital dissolution is typically indicated by separation rather than divorce because there is a notable difference in the timing from separation to divorce (Morgan and Rindfuss 1985). However, residential separation as an indication of marital dissolution in Japan is problematic for two reasons. First, many Japanese married couples live separately for reasons other than marital dissolution. *Tanshin funin* is a common practice, where the husband moves to another city in response to company demands while the wife and children remain in the same locale (Inaba 1991). Second, it is common for the wives to temporarily "return to the family of origin" (*jikka e modoru*) when spouses experience conflict, or if the wife needs parental support. Also, the use of divorce instead of separation is not likely to cause major biases among U.S. non-Hispanic whites. Table 2, calculated from the PSID, presents the duration from separation to divorce for non-Hispanic whites and African Americans. Large difference in the timing from separation to divorce is observed among African Americans, but not much of a gap is present for non-Hispanic whites.

**********Table 2 about here**********

Covariates. The covariates of interest in this study is *education of the respondent, education of his or her mother and father, and the age of the youngest child*. These covariates will be interacted with marriage cohort to assess whether their effects have changed in magnitude for the more recent marriage cohorts relative to the older marriage cohorts.

Years of education is the total number of years of schooling attained at the time of the interview. It provides a similar educational measure across countries. This measure of education is created for the respondent, the respondent's mother, and the respondent's father.[4]

Age of the youngest child is used to capture the marital strains of raising older children among industrialized countries. It has 5 categories: "no children," "0-4," "5-12," "13-17," "18+" and is a time varying covariate. If a parent has an additional child in a given year, the age of the youngest child returns to 0. The stresses of raising older children have been found to appear when children enter their teenage years in the U.S. (Waite and Lillard 1991).

The presence of children is often reported to suppress the risk of divorce (Andersson 1997; Lutz, Wils and Nieminen 1991; Thornton 1977; Waite and Lillard 1991). However, when accounting for the reverse effect of divorce risks on the number of children, the only children who have suppressive impacts on marriage are those who are very young (Waite and Lillard 1991). Parents may prevent themselves from divorce when kids are young because they invest more time when the kids are younger (Sandberg

[4] The influence of spouses' major occupational groupings of their first jobs were also examined to further investigate the influence of socioeconomic disadvantage. No statistically significant effect of having a professional/managerial job was found for either cohort in both country net of the influence of education.

and Hofferth 2001). Divorce is also less feasible when children are very young (Huber and Spitze 1980).

Number of children in year t-1 or t-3 is time varying and is included as a linear term. A larger number of children may make divorce more difficult for parents by: a) making single parenthood more financially costly for the mothers; and b) making divorce psychological costly for fathers, who typically do not have the custody of the children.

In addition, *duration from first birth to first marriage* is included as a set of dummies: "birth prior to first marriage," "0-11 years" and "12+ years." It captures delay in having children (if ever) in anticipation of divorce. This variable helps gain control over the association between increased divorce risks and delayed childbearing. Delayed child-bearing is expected to increase the risk of divorce.

Age at marriage is included as a linear term. Later age at marriage measures maturity. Morgan and Rindfuss (1985) and South and Spitze (1986) argue that age at marriage is a proxy for emotional and social maturity and, therefore, is crucial for establishing and maintaining personal relationships.

Current duration of marriage in years is included in the regressions as discrete categories, rather than as a continuous variable, because representing the nonlinear effect of duration with a continuous function did not provide a good fit. After some exploratory analysis, I grouped duration into six categories: 0-1 (omitted), 2-9, 12-15, 10-20, and 21-23, and 24+.

Marriage cohort. Marriage cohorts are grouped into two:1946-1970 and 1971-1999. The aggregation of the cohorts reflect the scarcity of divorce in the Japanese data set. Estimation was attempted by further subdividing the 1946-1970 marriage cohorts into

two. However, due to the rarity of divorce among the Japanese couples, estimation of the equation was not possible. Finer cohort divisions can be made once more data become available. In addition to the grouped cohorts, year of marriage is included to capture annual cohort variations in the risk of divorce.

On theoretical and empirical grounds, I mark historical time with marriage cohort rather than period. Educational attainment for the majority of spouses is completed by the time that couples enter marriage (Ono 1999)—hence, it is presumably a characteristic that does not vary across period, but vary across marriage cohorts. A possible reason to use period rather than marriage cohort is to account for the effect of technological change and secularization. However, theoretically, the influence of technological change, at least in its theoretically relevant aspect, should be captured for by the effect of the age of the youngest child.

Analytical strategy. Discrete-time event-history regressions are used to estimate the effects of spousal and parental education and the age of the youngest child. In these models, multiple observations are used to calculate the likelihood function, allowing a researcher to estimate the conditional probability of an event occurring at time t, given that the event has not occurred prior to time t.

The main regression is applied to male and female respondents separately. When all covariates are included, it has the following form:

$$log\left(\frac{P_{i,t}}{1-P_{i,t}}\right) = \alpha + \beta(Re\,duc_i) + \chi(Feduc_i) + \phi(Meduc_i) + \psi(Ycage_{i,t-1}) + \tau(Mcohort_i)$$
$$+ \kappa(Re\,duc_i) * (Mcohort_i) + \vartheta(Feduc_i) * (Mcohort_i) + \varsigma(Meduc_i) * (Mcohort_i)$$
$$+ \upsilon(Ycage_{i,t-1}) * (Mcohort) + \sum_{l=1} \omega_k X_{i,t-1} + \sum_{l=1} \omega_k Z_i + e_i$$

where $p_{i,t}$ is the probability that divorce is observed in the year interval for respondent i at

time t. Reduc, Feduc, and Meduc are education of the respondent, the father, and the mother, respectively. Mcohort is the grouped marriage cohorts. Both education and marriage cohort are time invariant covariates. Several interaction terms are included to capture the possible change in the effect of educational attainment on the risk of divorce: these are Reduc*Mcohort, Feduc*Mcohort and Meduc*Mcohort. Ycagei,t-1 is the age of the youngest child for respondent i at time t-1. It is a time varying covariate. Ycage*Mcohort is the interaction term between the age of the youngest child and marriage cohort. X_{it-1} are the remaining time varying covariates and Zi s are the remaining time invariant covariates.

Modified versions of this equation are applied to subsamples from each country to further investigate the effects of education and the age of the youngest child on the risk of marital dissolution. Specifically, with the Japanese sample, I test the potential of the indirect influences of parental education. With the U.S. sample, I test whether the effect of education differs across marital durations (South 2001).

Table 3 displays the means and standard deviations of the covariates for the person-periods. Japanese husbands and wives have spent a fewer number of years in school than American husbands and wives, respectively. Intergenerational change in years of education is more than 3 years in Japan, while the change in the U.S. is about 2.5 years. The average number of children in both countries are similar, but the average age at marriage among wives is later in Japan than in the U.S.

**********Table 3 about here**********

Figure 4 contains the probability that a couple divorces conditional on staying married to the beginning of the duration interval for three marriage cohorts, 1945-1964,

1965-1974, and 1975-1999 across marital duration using the JGSS and the PSID. Relatively little changes in the likelihood of divorce has taken place in the U.S for the more recent two marriage cohorts, 1965-1974 and 1975-1999. The increase in the likelihood of divorce in the US between 1945-1964 and 1965-1999 is primarily observed in the first 20 years of marriage. Among the Japanese, in contrast, the likelihood of divorce increases at all durations, but particularly in the earlier (first 15 years) and the middle durations (20-25). A popular assumption for this duration pattern of divorce among Japanese couples who have been married for a while has been the availability of retirement funds. Wives can leave their husbands once retirement funds become available after building pent-up demand for divorce over a long period of time (e.g., Kojima 2003). However, these statistics indicate that duration 20-25 is earlier than when most married couples reach retirement age in Japan (age 65). The next section presents results from the event history analysis.

**********Figures 3.A and 3.B about here**********

Results

Table 3 contains results from the event history models applied to the Japanese and American samples. Results in Column 1 are from the Japanese male respondents. Results in Column 2 are from the Japanese female respondents. Results in Column 3 are again from Japanese wives, but from a regression that excludes wives' education. In Column 3, I test the indirect effect of parental education among Japanese marriages. Columns 4 and 5 are equivalent to Columns 1 and 2--I apply the regressions to the U.S.

data instead of the Japanese data. Column 6 contains results from a test of whether the effect of wife's education is present in earlier marital durations in the U.S.

Results from the Japanese sample better support the modified hypothesis than the industrial growth hypothesis, and results from the U.S. sample only partly support the industrial growth hypothesis. *Education.* Results in Column 1 indicate that the effect of husband's education is non-significant for both the early an later marriage cohorts. However, wife's educational attainment has a statistically significant effect on the risk of divorce in Japan (see Column 2). And this effect did not change statistically significantly for the two marriage cohorts.

Among American husbands, the effect of husband's education is not statistically significant for the earlier marriage cohorts. But for the more recent marriage cohorts, it becomes statistically significant and suppresses the risk of divorce (see Column 4).[5] Thus, the educational component of the industrial growth hypothesis is supported by the U.S. data. The effect of American wives' education is absent when the model is applied to the full sample (Column 5) or the subset of marriages within the first 10 years of marriage (Column 6).

**********Table 3 about here**********

Little evidence of a direct or indirect effect of parental education for the earlier and later marriage cohorts (and hence no evidence of a decline of it) is found among the American respondents. However, a couple of effects of parental education are found among Japanese respondents. First, the wife's father's education has an indirect effect through wife's education on the risk of divorce. The results in Column 3 indicate that a

[5] For a subset of couples (heads and wives who were in their first marriage after 1968), it is possible to include both spouses' education in the same equation. The conclusion remains the same when including the spouse's education in the equation.

higher level of wife's father's education suppresses the risk of divorce when excluding wife's education from the equation. In a separate equation predicting wife's education, both mother's education and father's education significantly increases the level of the wife's education (not shown). When predicting wife's education with the wife's father's education and the wife's mother's education, the coefficient of wife's father's education and that of wife's mother's education are .243 and .330, respectively. These results indicate that the marriage suppressive effect of father's higher level of education is transmitted to the couple through the wife's educational level. For the U.S., equivalent models were applied but yielded no evidence of direct or indirect effects of parental education (not shown).

Second, mother's education has a direct and statistically significantly effect on the risk of divorce but only for the earlier marriage cohorts. For those cohorts, the higher level of mother's education increased the risk of divorce. This result is consistent with the argument that educated mothers in Japan was a relatively select group of mothers prior to 1970. They may have socialized their daughter to be more open minded about divorce.

Age of the youngest child. Consistent with the modified industrial growth hypothesis, among the Japanese respondents, the presence of a youngest child older than age 18 statistically significantly increases the risk of divorce, but only for the more recent marriage cohorts. Although the marriage-disruptive effect of having a child older than age 5 is present among American couples, it has not changed substantially between the two cohorts.[6] Thus, there is some evidence consistent with the argument that the

[6] U.S. findings here on the effect of the age of children differs from the results indicated in Waite and Lillard (1991)—they find that the disruptive effect of children becomes visible at age 13. This difference

industrial growth and technological advancement is making parenting more stressful to the marriage in Japan more rapidly so than in the U.S.

Figures 4.A and B plot the coefficient of the age of the youngest child estimated from the Japanese and American samples, respectively. The plots contain the coefficient estimates for four groups: husbands are in the early cohort, wives are the early cohorts, husbands are in later cohorts, and wives are in later cohorts. The lines take the average of the coefficients obtained from husbands and wives for the earlier and later cohorts. The plot more clearly demonstrates that, in the Japanese case, when the youngest child becomes age 18, Japanese couples are highly likely to dissolve their marriage among the more recent marriage cohorts. However, this effect was absent for the earlier marriage cohorts. In fact, for the earlier marriage cohorts, the youngest child becoming age 18 suppressed the risk of divorce.

Among both Japanese and American couples, the disruptive effect of the older age of the youngest child increases when the youngest child enters school at age 6 relative to when the child is between age 0 and 5. In both countries, couples who have children age 6-12 are approximately 2.7 (exponent of 1) times more likely to experience divorce than are couples whose youngest child is between age 0-5. As indicated in Appendix A, the marriage disruptive effect of having a youngest child age 6-12 (as opposed to age 0-5) was also statistically significant for the later cohorts.

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in results may reflect two differences. First, family income is included in their regressions, but excluded from the regression here. Waite and Lillard find a marriage-disruptive effect of having family income in the bottom quartile of the income range. Those with low income may tend to obtain a divorce even when the child is younger, possibly because they are more vulnerable to the strain of raising children. Second, this study includes sample members other than head/wife while their study only includes head/wife pairs. Non-head couples are most likely living with other adults in the household and hence may be able to obtain a divorce even when children are younger.

Among American couples, the magnitude of the coefficient remains stable after the youngest child reaches age 5. However, among the Japanese couples, the risk of divorce dips to near zero when the child is between age 13-17, then increases by a large amount when the child reaches age 18. Compared to couples whose youngest child is between age 0 and 5, couples whose youngest child is 18 or older are 13 (exponent of 2.6) times more likely to experience divorce. The effect when the age of the youngest child is 18 or older is large enough that it may be a compensation effect for the suppressed risk of divorce when the youngest child is between age 13 and 17.

**********Figure 4.A and B about here **********

Table 3 summarizes the results in a format consistent with Table 1. Overall, the industrial growth hypothesis in its original and modified form are only partly supported in each country. For the U.S., the shifting influence of husband's education yielded partial support for the industrial growth thesis. However, U.S. results related to the age of the youngest child and parental education were not consistent with the industrial growth hypothesis. The modified industrial growth hypothesis received some support among Japanese marriages. Specifically, the divorce suppressive effects of wife' education (and indirectly the wife's fathers' education), the similar magnitude of these effects across marriage cohorts, and the increasing influence of the age of the youngest child were consistent with the modified industrial growth hypothesis. However, the modified industrial growth hypothesis was not well supported in predicting the influence of husband's education among Japanese couples.

**********Table 3 about here**********

Discussion and Conclusion

I investigated whether the influences of education and the age of the youngest child on the risk of divorce have shifted over historical time in Japan and the U.S. These are two countries that are similarly wealthy, but differ in the rate at which they experienced industrial growth in the 20th century.

Among American marriages, there is evidence of the shifting influence of husband's educational attainment, while among Japanese marriages, there is evidence of the shifting influence of raising children. The findings provided support for the industrial growth hypothesis with respect to the prediction on the effect of husband's education in the U.S. Specifically, the magnitude of the effect of the husband's educational attainment on divorce risks increased substantially. However, parental education did not have a direct or indirect effect on the risk of divorce in both the earlier and later cohorts. In addition, the prediction related to the effect of the age of the youngest child was not supported in the U.S. Among American couples, the disruptive effect of the age of the youngest child older than age 5 remained stable for the two groups of marriage cohorts.

The modified industrialization hypothesis was partly supported in Japan. In particular, a higher level the wife's education significantly suppressed the risk of divorce. There was also an indirect effect of the wife's father's education, which suppressed the couple's risk of divorce by increasing the level of the wife's education. Both of these effects did not change statistically significantly over historical time. The effect of the youngest child reaching age 18 was substantially larger for the later marriage cohort compared to the earlier marriage cohort. However, contrary to expectation, little effect of

the husband's education (and little indirect effect of his parents' education) is found in Japan.

I find some variation in the profile of the effect of the age of the youngest child between Japan and the U.S. In the Japanese case, there was a dip in the risk during the children's teenage years, up to when the child is age 18. The dip may reflect the fact that substantial human capital investment in the Japanese school system takes place in junior high and high school in preparation for entrance examinations. Japan, more than the U.S., is a country in which entrance examinations heavily determine the career attainment of individuals (Hara and Sekiguchi 1999)—the college entrance process is characterized as "examination hell" where young persons study long hours and are immersed in constant and extreme competition (Sakamoto 1995). Although the stratification process that places a premium on college entrance is being modified (Arai 2003), it is unlikely to change drastically in the near future.

Why is the indirect effect of parental education on divorce risks absent in the U.S.? Even in the U.S., parental education is known to increase the educational attainment of the children (Featherman and Hauser 1978; Ishida 1989). One possible explanation is that only the achieved, rather than the ascribed, part of husband's educational attainment helps keep the marriage together in the U.S. Those who achieved a higher level of education without the help of the parents may also be able to achieve longer lasting marriages.

The results suggest that marriages in the two countries may be affected by industrial growth in contrasting ways. The poverty-divorce link seems to be increasing over historical time in the U.S. In the U.S., the link between socioeconomic disadvantage, as

measured by the husband's lower educational level, and marital dissolution have strengthened over historical time. In contrast, the poverty-divorce link induced by spousal socioeconomic status is more stable over historical time in Japan though is notable. There is a statistically significant effect of wife's education on the risk of divorce for both groups of marriage cohorts. Because selection into divorce of wives on lower education would worsen the economic consequences of divorce for women and children, this determinant of divorce is of policy concern. However, the fact that parents build a pent-up demand for divorce while their children are younger than age 18 in Japan should reduce the negative economic consequences of divorce for women and children. At the same time, the pent-up demand for divorce while children are younger seems to be increasing over time in Japan and deserves attention.

The newly emerging marriage disruptive effect of raising children in Japan has major implications for marital fertility decline in the country. With its increasingly aging population, the Japanese government is concerned that little social security will be available to support the retired population (Ministry of Health, Labor and Welfare 1998). For this reason, fertility decline has been one of the central policy issues for in Japan (*shoshika*). If couples experience marital strains from child rearing, they have reduced incentives to have children. Even though Japan has achieved wealth through rapid industrial growth, it seems to be experiencing related costs in the family, a unit that produces and reproduces human capital.

A couple of additional questions arise form the findings of this study. First, why hasn't industrial growth increased the impact of raising older children on the risk of divorce in the U.S.? It is possible that there is a threshold growth rate that produces

intergenerational strain-- the U.S. growth rate may have been below the threshold point, while the Japanese growth rate may have been above that point. Second, why wasn't there a substantial effect of husband's education in Japan? There may be mechanisms that buffer the disruptive influence of husband's lower socioeconomic status on marriage in Japan (e.g., universal kin support). Results imply that shifts in the status attainment process are somewhat reflected in the shifts in the determinants of divorce. But unique intervening processes that arise from the country's background may strengthen or weaken particular types of influences in a country.

This study is limited by data availability. In particular, only two groups of marriage cohorts could be used to index historical time due to the small number of divorced persons in Japan. Also, the number of divorces were still too small in the Japanese sample to closely investigate the variations in the effects of husbands' and wives' education over marital duration in Japan. In addition, only one of the spouses' educational status could be included in the regression because incomplete educational data were available for the previous spouse.

Despite these limitations, this study sheds light on the transitions in the determinants of marital dissolution in two industrialized countries. Although the influence of socioeconomic status (e.g., South 2001) has received much focus of marital dissolution studies in the U.S. the influence of raising children should also receive attention in countries experiencing rapid industrial growth.

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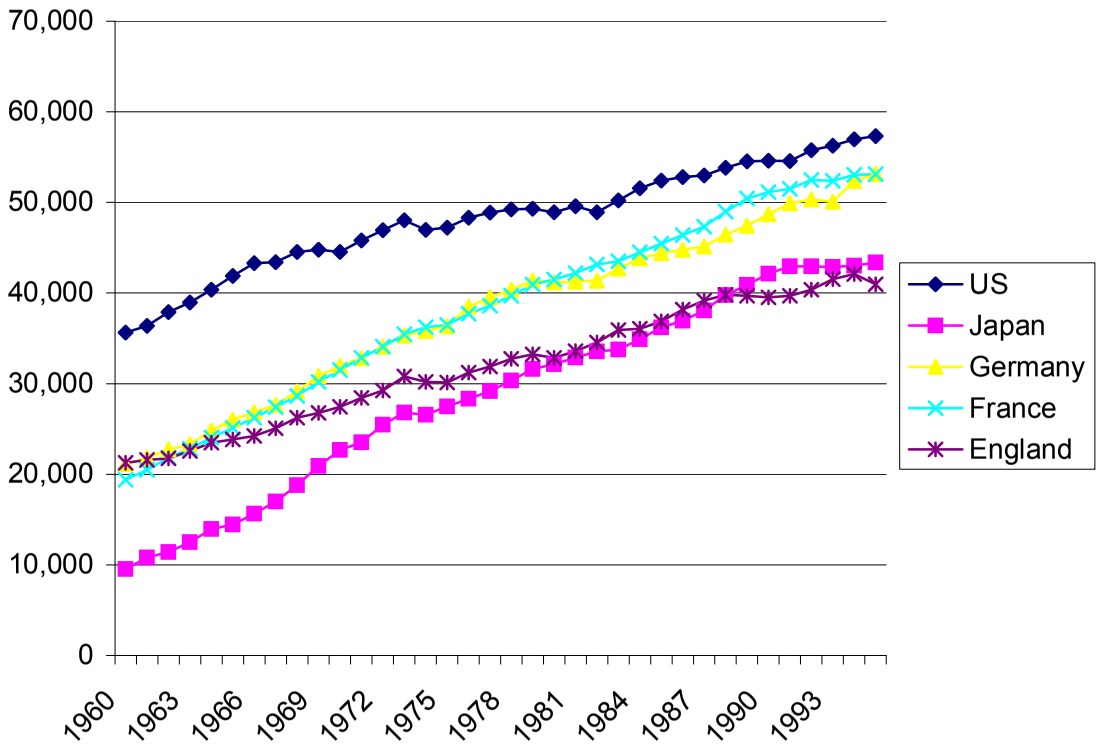
Figure 1.A. Gross Domestic Product (GDP) per capita employed person, Japan, US, Germany, France, and England, 1960-1995



Source: National Science Board 2000

Figure 1.B.i. Industrial production (electricity) in the US and Japan, 1920-1980, in log scale

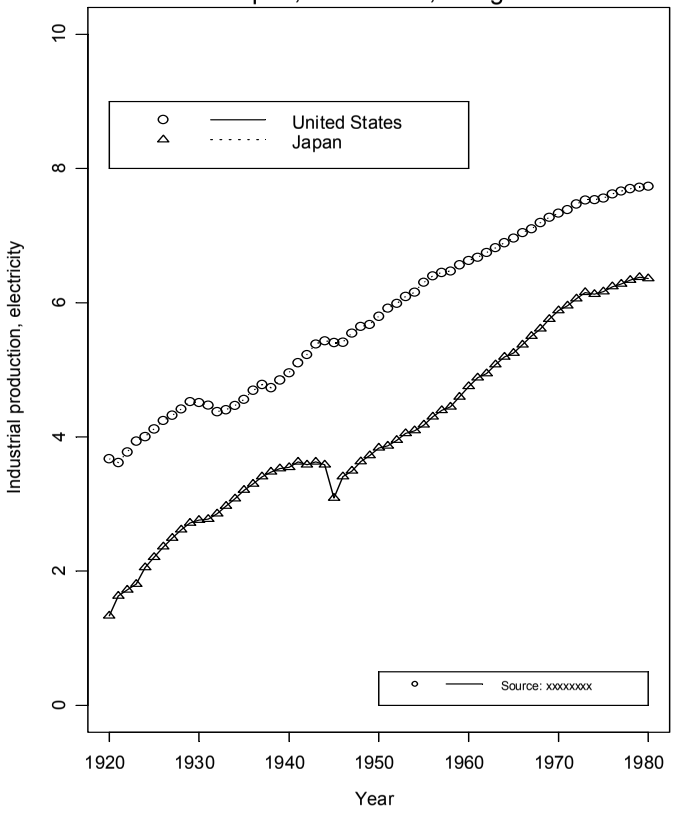
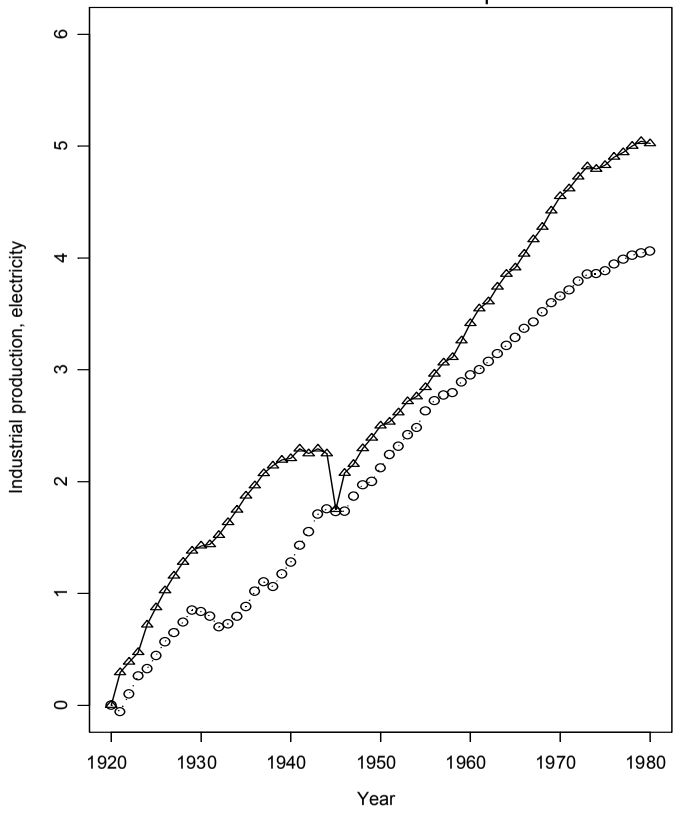


Figure 1.B.ii. Figure 1.B.i, 1920 value subtracted to shift the intercepts



Source: Liesner 1987.

TABLE 1. THE INDUSTRIAL GROWTH HYPOTHESIS AND ITS MODIFICATION

	Industrial growth hypothesis (U.S. or Japan)			Modified hypothesis for Japan		
Covariate	Older Cohorts (1)	Recent Cohorts (2)	(1) vs. (2)	Older Cohorts (1)	Recent Cohorts (2)	(1) vs. (2)
Spousal education	Husband –	Husband -	1<2	Husband -	Husband -	1=2
	Wife -	Wife -	1<2	Wife -	Wife -	1=2
Parental education (indirectly through spousal education)	Father -	Father -	1>2	Father -	-	1=2
	Mother -	0	1>2	Mother -	0	1>2
Older age of the youngest child	+	+	1<2	+	+	1<2[a]

[a] The interaction between marriage cohort and age of the youngest child larger in Japan than U.S.

TABLE 2. MEAN DURATION OF SEPARATION IN YEARS BY RACE AND AGE AT MOST RECENT OBSERVATION OF COUPLES WITH WOMEN BORN BEFORE 1965: PANEL STUDY OF INCOME DYNAMICS, 1968-1997.

Race	Age 16-30	Age 31-50	Age 51+
All separated			
Whites	0.911 (SD=1.16, N=34)	1.150 (SD=1.64, N=1,205)	1.458 (SD=3.07, N=598)
African Americans	2.468 (SD=1.95, N=32)	3.888 (SD=4.95, N=741)	7.919 (SD=10.34, N=366)

Figure 2.A: U.S. Crude Divorce Rate (per 1000 population), 1940-1990

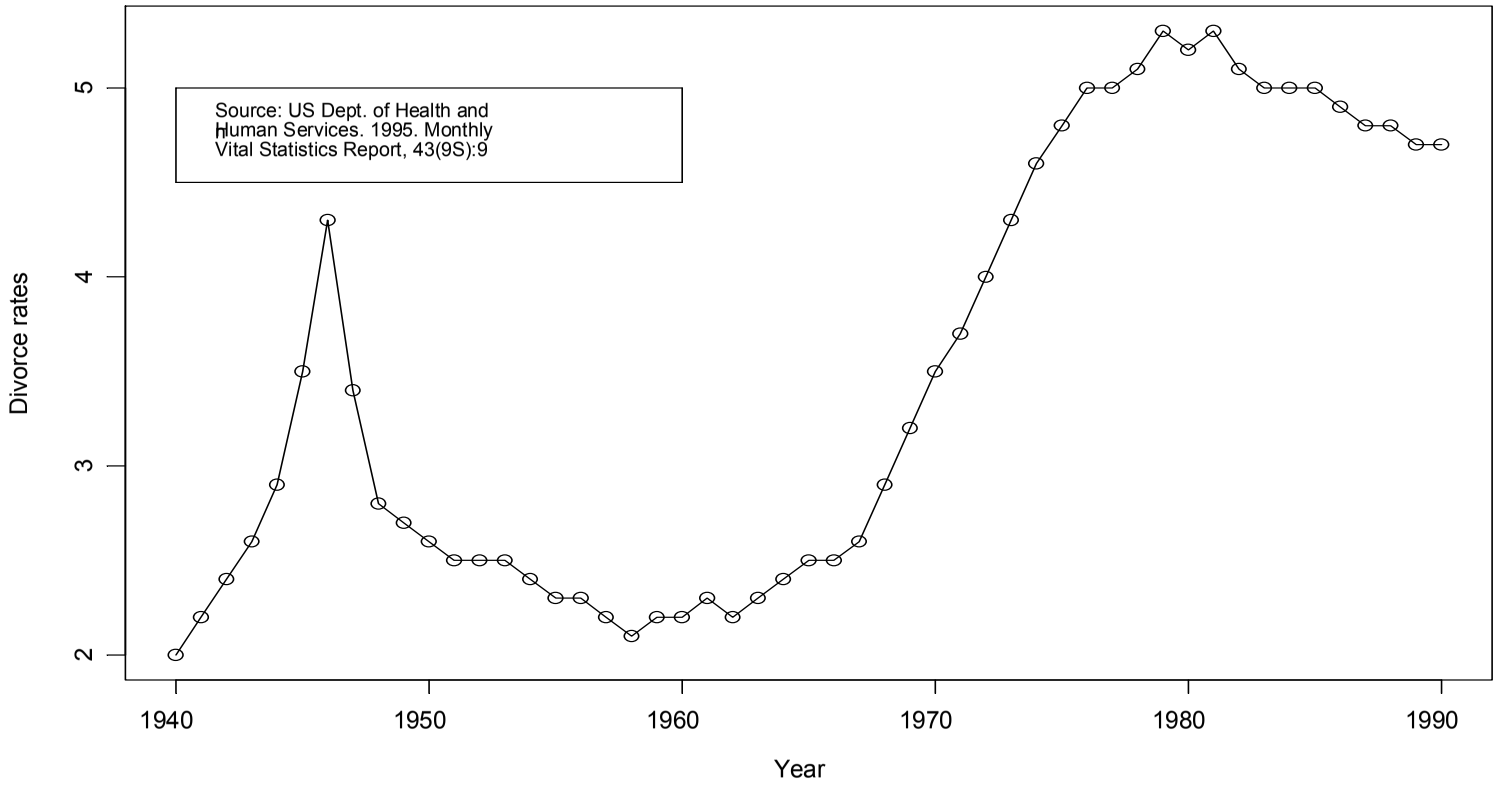
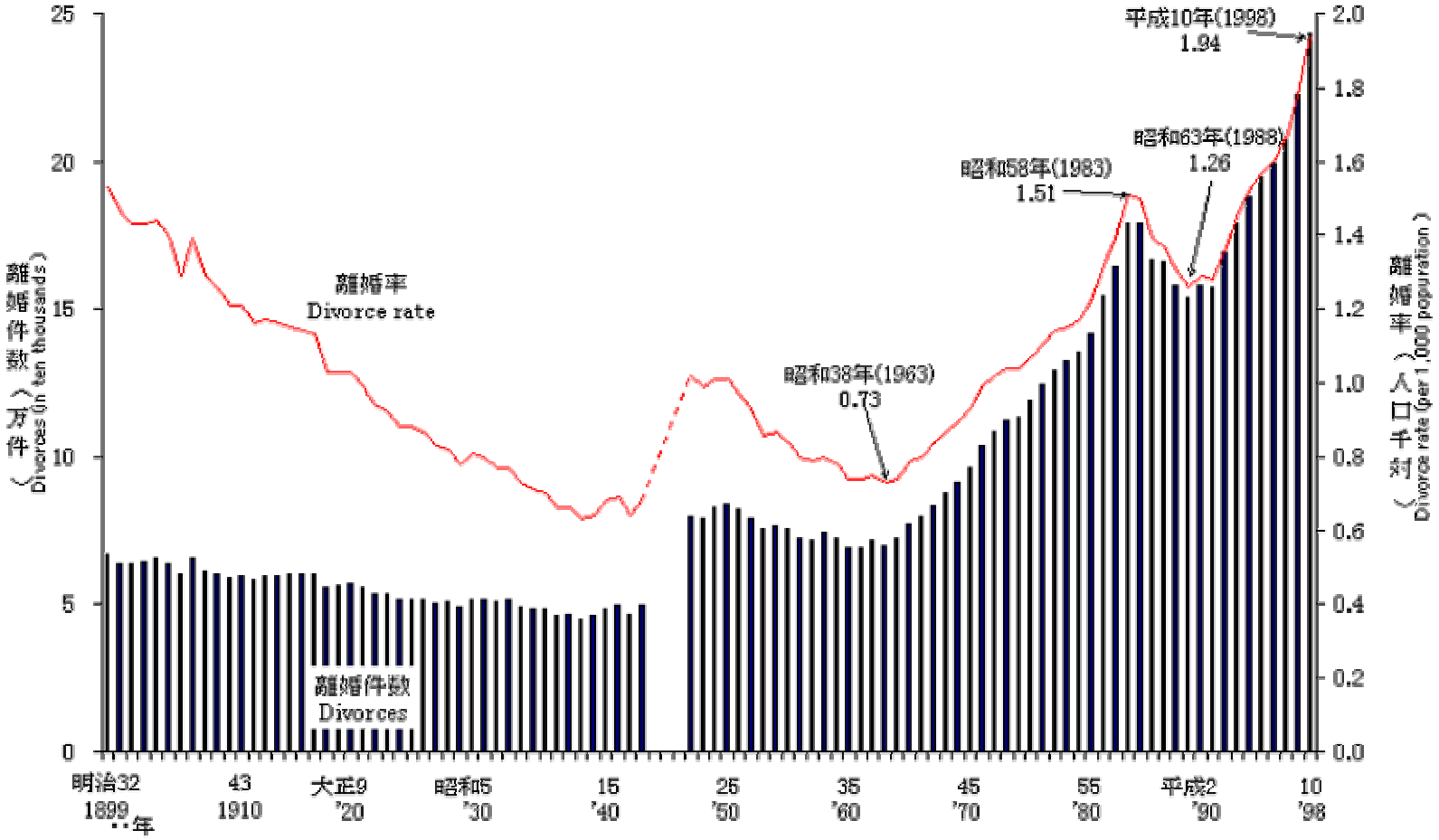
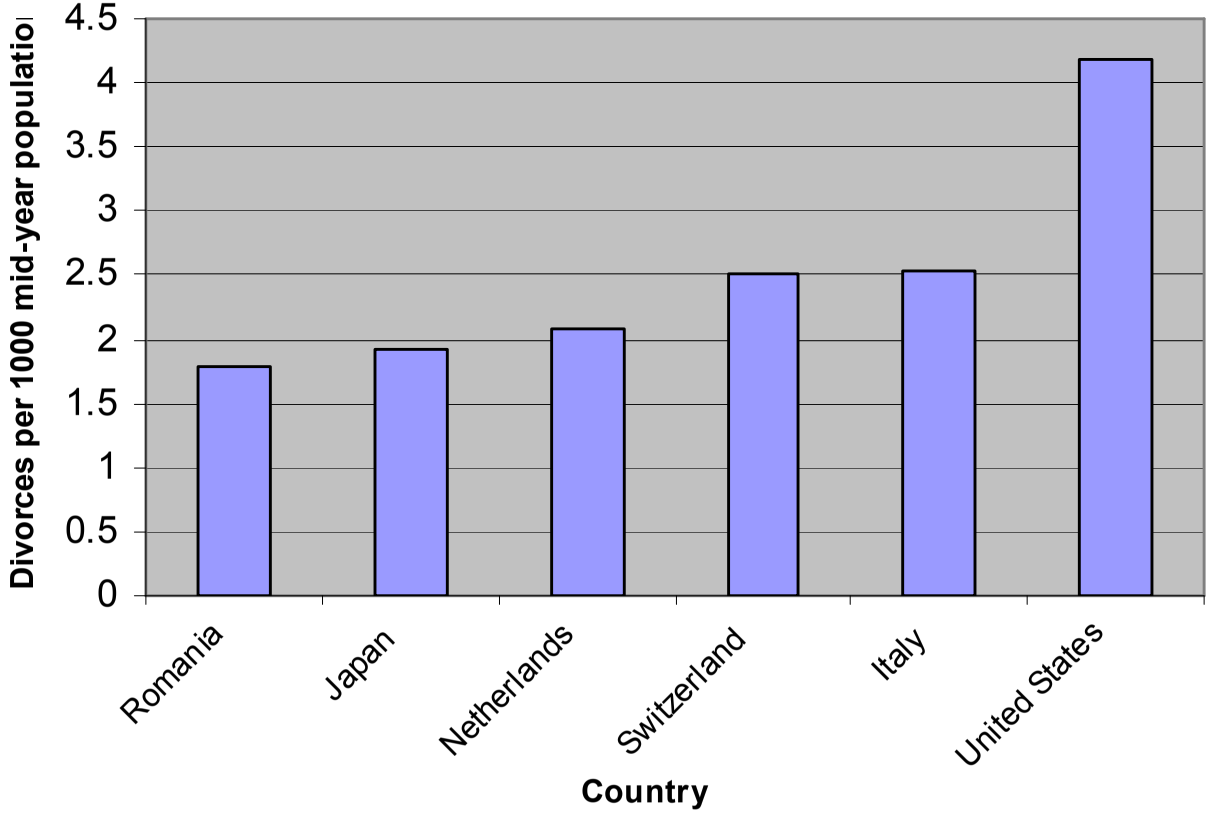


Figure 2.B. Crude Divorce Rates of Japan, 1899-1998



Source: Ministry of Health, Labor and Welfare. http://www1.mhlw.go.jp/toukei/rikon_8/repo1.html

Figure 2.C. Crude Divorce Rates of Selected European Countries, United States, and Japan



Source: United Nations 1999, pp. 550-552.

Figure 3.A. Conditional probability of divorce by marital duration, three cohorts, United States

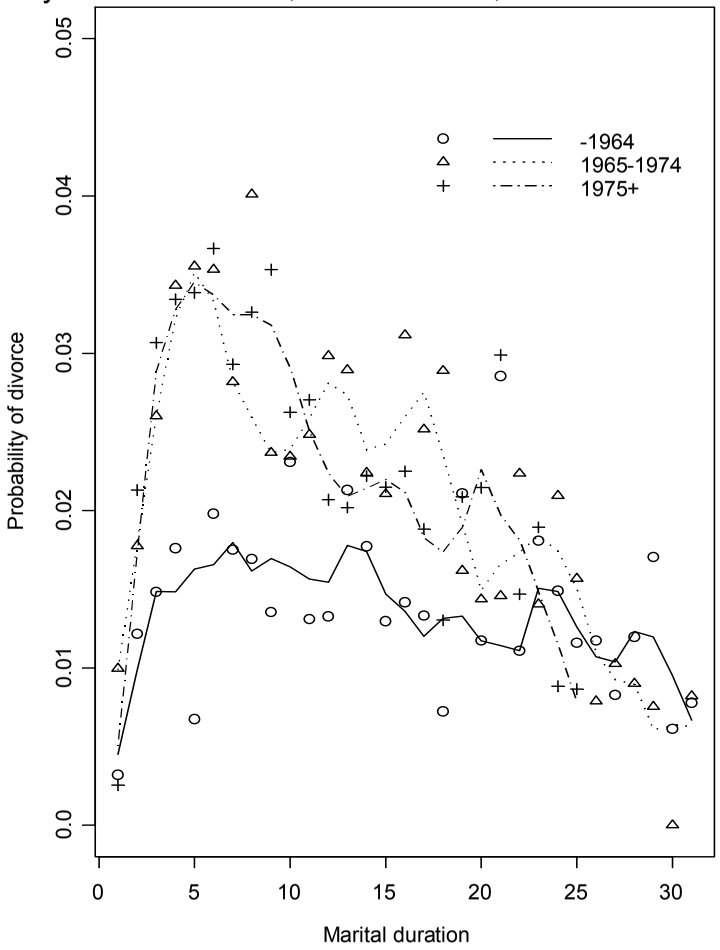


Figure 3.B. Conditional probability of divorce by marital duration, three cohorts, Japan

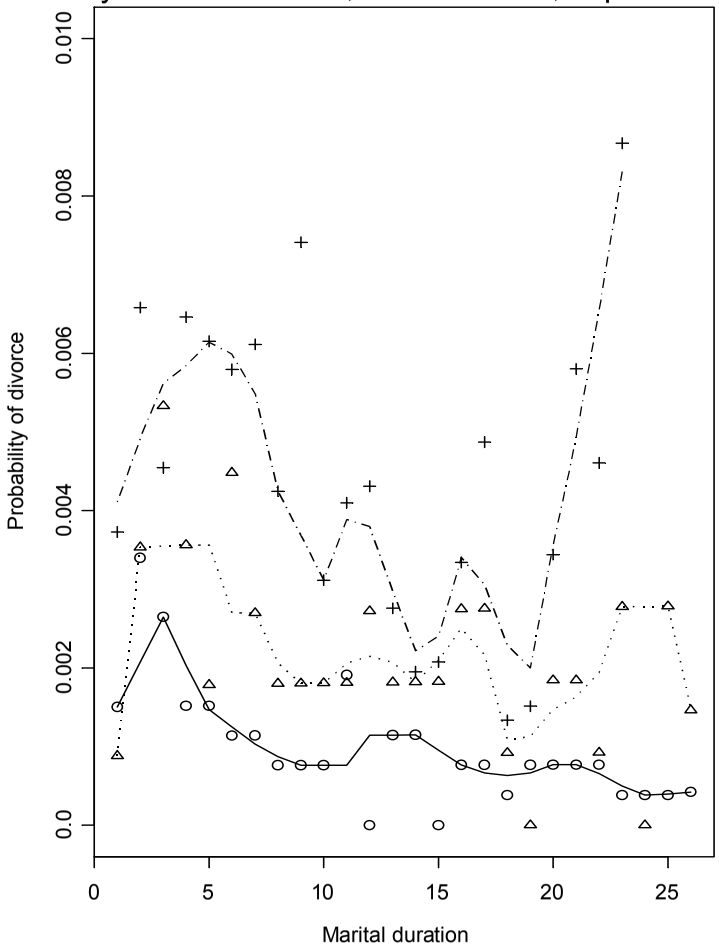


TABLE 3. MEANS OF THE VARIABLES INCLUDED IN THE ANALYSIS

	Husbands				Wives			
	Japan		U.S.		Japan		US	
Covariate	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Divorce	.0026	.050	.017	.127	.003	.054	.018	.135
Duration								
0-1	.076	.265	.089	.284	.076	.264	.092	.289
2-9	.288	.452	.322	.467	.287	.452	.327	.469
10-20	.339	.473	.334	.471	.334	.471	.334	.471
21+	.296	.456	.253	.435	.304	.459	.303	.459
Marriage Cohorts (year of marriage)								
Earlier (1946-1970)	.697	.459	.694	.460	.715	.451	.690	.462
Later (1971-1999)	.273	.445	.295	.456	.255	.436	.297	.457
Youngest Child's age								
No children	.141	.348	.141	.348	.084	.277	.197	.141
0-4	.315	.464	.315	.465	.263	.440	.318	.465
5-12	.276	.447	.276	.447	.254	.436	.288	.453
13-17	.112	.315	.112	.315	.132	.339	.109	.312
18+	.276	.308	.106	.308	.225	.418	.104	.305
# of children (linear)	2.040	1.418	2.042	1.418	1.920	.977	2.018	1.412
Age at marriage	26.731	3.303	23.051	3.482	26.731	3.303	20.954	3.285
Duration between first marriage and first birth								
Birth prior to marriage	.078	.269	.019	.137	.078	.269	.038	.191
0-11 years	.898	.301	.965	.182	.909	.287	.943	.231
12+ years	.012	.107	.015	.123	.012	.108	.018	.134
Education in years	11.532	2.907	13.722	2.536	11.532	2.907	13.709	2.463
Father's education in years	8.492	2.985	11.336	2.719	8.492	2.985	11.301	2.719
Mother's education in years	8.039	2.346	11.203	3.829	8.039	2.346	11.338	3.829
Total N (Person-years)	49314		25998		65056		27802	

Source: JGSS and PSID

TABLE 4. COEFFICIENT ESTIMATES FROM EQUATIONS PREDICTING COUPLES' LIKELIHOOD OF DIVORCING IN A GIVEN YEAR: JGSS AND PSID.

Covariate	Japan			US		
	Husbands (1)	Wives (2)	Wives (3)	Husbands (4)	Wives (5)	Wives Durations 0-9 (6)
Marriage Cohorts (year of marriage)						
Earlier (1940-1970)	----------	----------	----------	----------	----------	--------
Later (1971-1990)	4.151*	.059	.0502***	1.770	.238	-.509
	(1.819)	(.015)	(.0146)	(.991)	(1.136)	(1.539)
Education						
Education in years	.0890	-.153*	---------	-.019	-.019	-.123
	(.071)	(.071)		(.0274)	(.0390)	(.073)
Education in years X Cohort	-.179	.035	---------	-.169***	-.0452	-.0039
	(.103)	(.109)		(.0531)	(.058)	(.0924)
Mother's education in years	-.0004	.213***	.170***	.036	.0454	-.0695
	(.124)	(.073)	(.070)	(.030)	(.0438)	(.0826)
Mother's education in years X Cohort	.2247	-.180 [NS]	-.149	-.0054	-.102	.0180
	(.163)	(.111)	(.108)	(.0484)	(.0636)	(.1020)
Father's education in years	.0621	-.109	-.131*	-.00463	-.0608	.0488
	(.0917)	(.071)	(.108)	(.0246)	(.0411)	(.0801)
Father's education in years X Cohort	-.203	.102	.1080	.0171	.0624	-.0748
	(.132)	(.099)	(.0946)	(.0378)	(.0610)	(.0987)
Children						
Youngest child's age						
	1.642*	.780	.772	.570	.531	.408
No children	(.787)	(.541)	(.541)	(.322)	(.363)	(.307)
0-5	---------	---------		---------	---------	---------
6-12	.481	.057	.085	.899***	.916***	.684***
	(.709)	(.516)	(.511)	(.234)	(.246)	(.221)
13-17	.327	-.452	-1.183	1.135***	.765*	1.670**
	(.876)	(.744)	(.736)	(.297)	(.333)	(.633)
18+	-.760	-1.143	-1.183	1.235***	1.230***	1.902*
	(1.119)	(.846)	(.839)	(.357)	(.383)	(.894)
Cohort X Youngest child's age						
	-.999	-.774	-.788	.251	.130	---------
No children	(1.044)	(.806)	(.805)	(.445)	(.492)	
Youngest child age 0-4	---------	---------	---------	---------	---------	---------
Youngest child age 5-12	.607	.844	.820	.366	.100	---------
	(.905)	(.665)	(.665)	(.336)	(.338)	
Youngest child age 13-17	1.116	.641	.656	-.236	.299	---------
	(1.338)	(1.158)	(1.153)	(.510)	(.491)	
Youngest child age 18+	4.500***	2.587*	2.634*	-.507	.853	---------
	(1.557)	(1.203)	(1.295)	(.811)	(.639)	
# of children (linear)	-.063	-.227	-.324	-.0086	.1292	-.0632
	(.270)	(.186)	(.1782)	(.0694)	(.0647)	(.157)
# of children (linear) X Cohort	-.266	.121	.2125	-.273*	-.111	-----
	(.419)	(.290)	(.2850)	(.137)	(.125)	

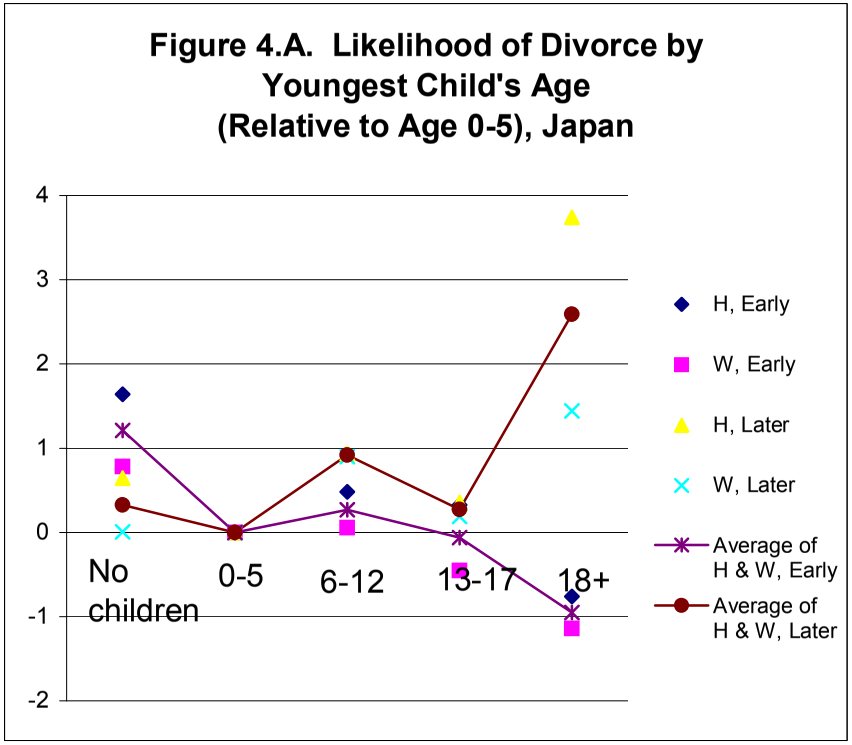
(Table 4 continued)

Duration between first marriage and first birth						
Birth prior to first marriage	-.691	.515	.530	1.290***	.645	1.302*
	(1.034)	(.544)	(.540)	(.442)	(.398)	(.782)
0-11 years	---------	---------	---------	---------	---------	---------
12+ years	1.290***	.554	.584	.111	.243	1.101
	(.685)	(.688)	(.669)	(.603)	(.602)	(.615)
Duration between first marriage and first birth X Cohort						
Birth prior to first marriage	1.232	-.550	-.537	-1.184*	.0362	-.822
	(1.245)	(1.172)	(1.167)	(.551)	(.459)	(.999)
0-14 years	---------	---------	---------	---------	---------	---------
15+ years	.836	1.888	1.733	.875	-2.796***	-.403
	(.994)	(1.069)	(1.066)	(.869)	(1.031)	(.974)
Marital Duration						
0-1	--------	--------		--------	--------	--------
2-9	.772	.852	.844	.401	.527	.754
	(.672)	(.565)	(.565)	(.343)	(.411)	(.412)
10-20	.807	.804	.836	.159	.125	--------
	(.877)	(.762)	(.757)	(.383)	(.451)	
21-23	.1.386	1.302	1.310	-.230	.208	--------
	(1.126)	(1.035)	(1.030)	(.478)	(.524)	
24+	.986	1.680	1.703	-.738	-.492	--------
	(1.178)	(1.016)	(1.010)	(.412)	(.485)	
Marital Duration X Cohort						
0-1	---------	----------	----------	----------	----------	----------
2-9	-.573	-.360	-.381	.754	1.529*	1.193
	(.880)	(.787)	(.787)	(.461)	(.620)	(.623)
10-20	-2.271	-.863	-.969	.416	1.491*	----------
	(1.271)	(1.043)	(1.039)	(.543	(.684)	
21-23	-4.221*	-.925	-1.017	.652	.963	----------
	(1.907)	(1.547)	(1.542)	(.803)	(.878)	
24+	-4.817*	-3.275	-3.386	1.634	.544	----------
	(1.996)	(1.855)	(1.849)	(.691)	(.9566)	
Age at first marriage	-.127***	-.097***	-.1038***	-.1227***	-.0738***	-.067*
	(.037)	(.035)	(.0356)	(.0197)	(.019)	(.026)
Year of marriage	-.0026	.0598***	.0488***	.030***	.038***	.036
	(.018)	(.015)	(.0127)	(.008)	(.0091)	(.013)
Intercept	-.783	-121.107	-103.263	-61.389***	-78.344	-73.513***
	(33.678)	(29.596)	(28.567)	(17.186)	***	(26.12)
					(17.999)	
Log Likelihood	-491.19	-828.142	-838.334	-1854.569	-1729.881	-698.217
Total N (Person-years)	47,046	61,920	61,920	24,734	17,368	7,4078

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. (two-tailed tests)

Sources: Japanese General Social Survey, 2000 and 2001 and the PSID, 2000.

Note: Standard errors are in parentheses. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. (two-tailed tests)



Source: JGSS and PSI

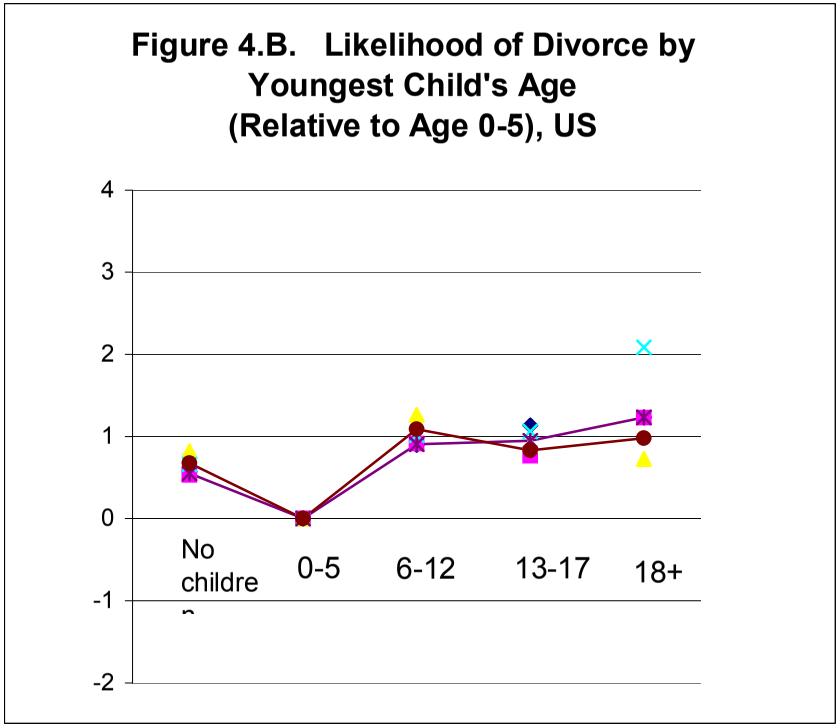


TABLE 5. SUMMARY OF RESULTS FROM THE TWO COUNTRIES

ACTUAL RESULTS						
	Japan			U.S.		
Covariate	Older Cohorts (1)	Recent Cohorts (2)	1 vs. 2	Older Cohorts (1)	Recent Cohorts (2)	1 vs. 2
Respondent's education	Husband 0 Wife -	Husband 0 Wife -	0 1=2	0 0	- 0	1<2 0
Parental education (either husband's or wife's)	Indirect effect of wife's father's education -	Indirect effect of wife's father's education -	1=2	Father 0	0	0
	Direct effect of wife's mother's education +	0	1>2	Mother 0	0	0
Age of the youngest child (relative to age 0-5)	0	Age 6-12 and 18+ more disruptive to marriage but not age 13-17	1<2	Age 6+ more disruptive to marriage	Age 6+ more disruptive to marriage	1=2