Arranged Marriages, Assortative Mating and Achievement in Japan

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ABSTRACT

Arranged marriage continues to be a significant feature of the modern Japanese family structure. In this paper, we examine three different aspects of arranged marriage, using data from the 16th round of the Mainichi Survey of Fertility and Family Planning conducted in 1981. First, we analyze how the match between the characteristics of spouses is influenced by type of marriage. Second, we examine the occupational achievements of husbands and the fertility achievements of wives in free market and arranged marriages. Third, we make an analysis of patterns of continuing extended family control over couples joined by arranged and free market marriages.

The analyses developed in this paper reveal that there exist significant differences in the pattern of assortative mating in arranged and free market marriages. It has also been found that women in arranged marriages receive higher returns on schooling with respect to occupational status and income than do men in free market marriages. We have also found that although women in arranged marriages not only have somewhat more children than those in free market marriages, they reach their reproductive goals more swiftly. In addition, this study has shown that arranged marriages clearly contribute to the persistence of the extended family through the institution of patrilocal residence.

I. Introduction

In every society, behavior is organized by social institutions and, typically, organized to enhance the predictability of human conduct. Social institutions often involve arrangements designed to get some people to do something for other specific people or for larger collectivities that they might otherwise do differently or not do at all. Requesting conformity is one thing; securing it is another and social institutions often contain an element of coercion, if not the outright threat of force. They restrict free market behavior and, unless sanctions are available, there is no way the codes of conduct prescribed by institutional norms can be enforced.

Arranged marriages are a common feature of family units and kinship organizations found in many parts of the world; they are a way in which kinship and family groups attempt to manage and control their reproductive output. Since offspring ultimately increase the reproductive capacity of family units, arranged marriages can be thought of as a mechanism for exchanging excess reproductive capacity for other scarce resources. These may take the form of brideprices or only implicit guarantees of social and economic support, perhaps in old age, by newly acquired affines. When a dowry is paid, rather than a brideprice received, then a kinship unit is basically capitalizing on its own reproductive machinery. In this case, the offspring of the newly-formed marriage will presumably contribute to the well-being and security of the larger kinship unit which has distributed wealth to gain reproductive capacity.

Arranged marriage continues to be a significant feature of the modern Japanese family structure. Although the relative incidence of arranged marriage is on the decline, the practice remains quite common. Comparison of the characteristics and outputs of arranged and free market marriages provides a case study of how social institutions constrain behavior. In this paper, we examine three different aspects of arranged marriage. First, we look at how the match between the characteristics of spouses--assortative mating--is influenced by type of marriage. Second, we briefly examine the occupational achievements of husbands and the fertility achievements of wives in free market and arranged marriages. Finally, we look at patterns of continuing extended family control over couples joined by arranged and free

market marriages.

The data available to us were collected in the spring of 1981; these data form the 16th round of a series of surveys on fertility and family planning sponsored by the Mainichi Newspapers. The first survey was conducted in 1950 and, excepting a three year hiatus between 1952 and 1955, new inquiries have been launched biannually. The present study contains 3078 currently married women of childbearing age. The sample is representive of the target population and was selected using a stratified, multistage procedure. The details of the sampling procedure are available elsewhere and are similar to those employed in previous surveys in this series (see, e.g., Population Problems Research Council, 1978).

II. Characteristics of Arranged and Free Market Marriages

Some basic data on the educational backgrounds, family sizes of origin, and ages of husbands and wives joined by arranged and free market marriages are shown in Table 1. As evidence of the trend toward a relatively lower incidence of arranged marriages, the data in Table 1 show that couples joined by free market marriages are younger than those with arranged marriages. Wives in free market marriages are, on the average, about three years younger than their counterparts in arranged marriages. The corresponding age differential for husbands, however, is four and one-half years. Consequently, while husbands are, on the average, older than their wives in both arranged and free market marriages, the differential is wider among those in arranged marriages by over a year on the average. This is exactly the pattern one would expect to find if families are loathe to dispense with their excess reproductive capacity unless they are quite certain its support is guaranteed by newly acquired affines. Older men, even by a year, are somewhat more likely to have stable and established careers and, hence, would be rather more attractive parties to arranged marriages.

Data bearing on the educational attainment of husbands and wives were coded as a series of educational steps. The codes are as follows: 0, if husband or wife attended only an old primary school or a new primary and junior high school; 1, if an old junior high school or a new senior high school was attended; 2, if husband or wife

Table 1. Characteristics of Spouses, by Type of Marriage, for Married Japanese Women of Childbearing Age, 1981

Characteristics	Arranged Marriages	Free Market Marriages
	Means	
Education of Wife (= E_W)	0.809	0.946
Education of Husband (= E_H)	1.048	1.240
Age of Wife (= A_W)	38.7	35.5
Age of Husband (= A_H)	42.5	38.0
Wife's Number of Siblings (= S_W)	4.47	4.30
Husband's Number of Siblings (= S_H)	4.76	4.41
	Standard Deviations	
Education of Wife	0.771	0.766
Education of Husband	1.037	1.026
Age of Wife	6.73	7.21
Age of Husband	7.07	7.76
Wife's Number of Siblings	2.12	2.03
Husband's Number of Siblings	2.12	2.10
	Minimum Number of Case	
	1290	1724

attended a junior college or a new or old system technical or commercial college, and 3, if a new or old system university was attended.

The data at hand reveal that both husbands and wives in free market marriages are better-educated than their counterparts in arranged marriages. Japanese women still lag behind Japanese men in their educational attainment, so women in both types of marriages are less well-educated on the average than their husbands. The differential between the educational attainment of husbands and wives is about

the same in both arranged and free market marriages.

Information bearing upon the numbers of siblings of husbands and wives reveals few differences. Those in free market marriages come from somewhat smaller families, but the difference amounts to only about one-fifth of a sibling. In sum, couples married by arrangement tend to be somewhat older and less well educated than couples who contracted free market marriages. However, neither of these differences is massive and there is little difference at all in the sizes of couples families of origin in arranged and free market marriages.

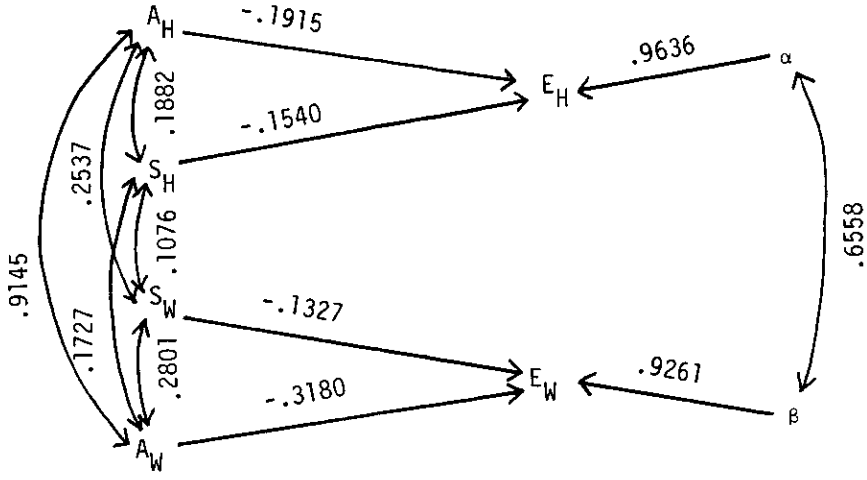
III. Patterns of Assortative Mating

Among the things which can be controlled in arranged marriages are the characteristics of brides and grooms. Inappropriate suitors and unworthy women can be rejected for a better mate. In free market marriages, of course, there is nothing to prevent men and women from taking spouses which do not meet their families' approval. However, one should remember that the arranged marriage continues to be a significant element in the Japanese family structure. Those contracting marriage on the basis of free market romances may well act as if their marriage were arranged, bowing to family conceptions of appropriate mates. Consequently, differences in patterns of assortative mating observed in arranged and in free market marriages may not be pronounced, although they should be indicative of how the winds are blowing.

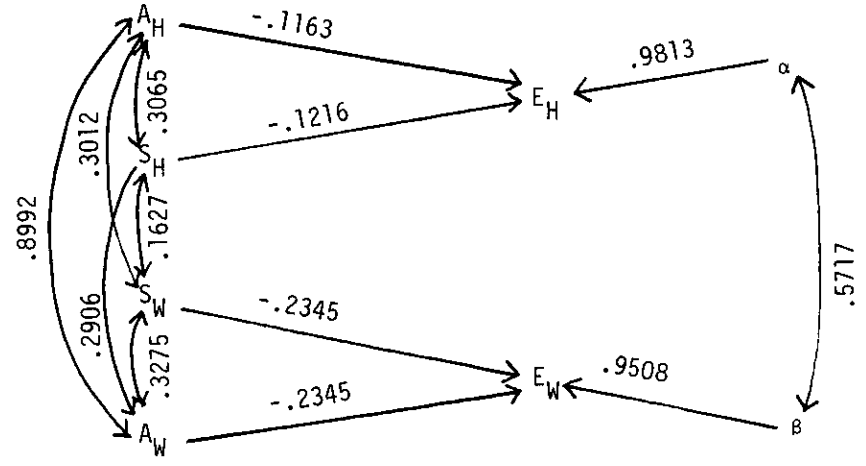
The basic data on assortative mating in arranged and free market marriages are displayed in Figure 1 in the form of two path diagrams. These causal models simply take assortative mating with respect to age and number of siblings as given, and allow the educational attainments of husbands and wives to be determined by their own age and size of family of origin. Assortative mating with respect to education is, then, assessed as a residual association: the extent to which that part of a husband's education is not explained by his age and size of family of origin must be correlated with that part of his wife's educational attainment which is not explained by her age and size of family of origin in order for the gross level of assortative mating (with respect to education), to have occurred.

The most striking thing revealed by Figure 1 below is the overall

Figure 1. Assortative Mating in Arranged and Free Market Marriages, Married Japanese Women of Childbearing Age



Model A: Arranged Marriages



Model B: Free Market Marriages

similarity between patterns of assortative mating in arranged and free market marriages. Both groups exhibit massive assortative mating with respect to age, but the large association between the ages of husbands and wives is built up for the most part through the succession of marital cohorts: it is not the correlation between the ages of persons marrying at the same point in time. There is also appreciable assortative mating with respect to education in both arranged and free market marriages, even after the expected negative associations of age and number of siblings with education and assortative mating with respect to size of family of origin and age have been taken into account. Neither arranged nor free market marriages exhibit much assortative mating with respect to size of family of origin and both exhibit modest and positive associations between all pairs of variables involving age of husband or age of wife, on the one hand, and number of wife's siblings or number of husband's siblings, on the other hand. The overall similarity in the pattern of assortative mating observed in arranged and free market marriages is, therefore, striking. Whether or not this may be ascribed to the fact that free market marital choices are governed in part by family pressures which parallel the family consideration operative in arranged marriages cannot be ascertained with the data available to us. Such a possibility does, however, seem quite likely.

While one would go seriously awry if one failed to notice the appreciable similarity in patterns of assortative mating in arranged and free market marriages in Japan, one should also note that there are some differences in the two patterns. A good point of departure is assortative mating with respect to size of family of origin. (The following discussion is couched in terms of number of siblings, because that is the variable available to us. The Japanese family is patrilineal and male-dominated; the discussion ought to be couched in terms of numbers of brothers, rather than numbers of siblings. However, the relevant data are not available; if they were, the findings would most likely be more dramatic.)

In Japan, there is a strong presumption that sons will care for their elderly parents. Consider the position of a small family attempting to arrange a marriage for a daughter; such a family generally will have relatively few sons to take care of its needs during retirement and, therefore, the situation of male affines is

highly relevant. A son-in-law who, himself, comes from a small family is apt to be in the position of having to care for both his consanguines and his affines during their old age. By way of contrast, a son-in-law who comes from a large family is likely to have brothers who can share the burden of caring for his own parents and, therefore, allocate more of his time and resources to the care of his in-laws. Thus, for a small family marrying a daughter, there is, ceteris paribus, little advantage in acquiring a son-in-law who likewise comes from a small family. The same argument holds true for a small family arranging marriages for its few sons: if they take brides from small families, their resources are more likely to be divided between their consanguines and their affines in their respective old age. The pressure is, then, for offspring from smaller families to marry into larger families. The payoff is one way, but then large families have less to lose if some of their offspring marry into small families; indeed, by contracting such marriages, they may be able to secure compensating advantages.

The upshot of the above remarks is that there are pressures in systems of arranged marriages toward negative assortative mating with respect to size of family of origin. It is unlikely that the correlation in the whole population would ever turn negative or, for that matter, even go to zero, since other factors such as the ecological accessibility and economic resources of different sized families tend to make the association positive. However, the level of assortative mating with respect to the size of family of origin ought to be less in arranged than in free market marriages: it is, but the difference is not great. In arranged marriages, the common variance of spouse's family of origin size is about 1.2 percent; in free market marriages, it is twice as large--about 2.6 percent. (The difference may seem small, but it is still statistically significant at the .07 level with a one-tailed test.)

We may also note that the association between husband's age and the number of his siblings is rather less for those contracting arranged marriages than for those in free market marriages. In arranged marriages, these variables share about 3.5 percent of their variances; for free market marriages, the figure is well over twice as large at 9.4 percent. (The difference is significant at the .01 level, with a two-tailed test.) In arranged marriages, both older men

--whose careers are more likely secure and stable--and men from larger families are valuable assets to be acquired. However, these two traits, owing to secular changes in sizes of completed families, tend to be positively correlated. The difference in the order of magnitude of this correlation in arranged and free market marriages means that the relative number of older men from small families and younger men from large families is greater in arranged than in free market marriages. This suggests a kind of trade-off in arranged marriages between a man's age and his size of family of origin: to get a somewhat more established suitor for your daughter, you have to take one from a smaller family and, to acquire a large group of affines (and higher likelihood that your son-in-law can contribute to your support in old age), you have to take a less established suitor.

Because educational opportunities have been expanding rapidly in Japan, it is not surprising that age is inversely related to educational attainment among husbands and wives in both arranged and free market marriages. A common finding in analyses of socioeconomic attainment is that the number of siblings is inversely related to achievement, especially educational achievement (see, e.g., Duncan 1967). That such is the case in Japan is, therefore, also not surprising. The magnitude of impact of sibling numbers upon educational attainment appears to be much the same for husbands as for wives and much the same for those in arranged and free market marriages. This does not, however, prove to be the case for the impact of age on educational attainment. For both husbands and wives in arranged marriages, the path coefficients are about 40 percent larger than those observed for their counterparts in free market marriages. (These differences are statistically significant at .01 level with a two-tailed test.) Since the relationship between age and education is weaker among husbands and wives in free market marriages, there are relatively more free market than arranged marriages involving older men and women with high levels of education and younger men and women with lower levels of education. That those who depart from the educational "norms" of their cohort should wind up in free market marriages is not especially surprising: they have already demonstrated a certain amount of immunity from social expectations by educationally over- or under-achieving relative to other members of their cohort. This difference in the characteristics of those

entering arranged and free market marriages is, of course, far from perfect, but it is a statistically significant tendency.

One would surely expect arranged marriages to exhibit matchmaking patterns which enable affines to fit easily into the activity patterns of their newly acquired extended families. For example, a university graduate is not likely to find him- or herself comfortable with the habits and tastes of those who have not progressed beyond junior high school and vice versa. Consequently, one would expect to find relatively more assortative mating with respect to education in arranged marriages than in free market marriages. One does: in arranged marriages, husbands and wives share 43.3 percent of their variance in educational attainment, while in free market marriages the figure stands at 32.9 percent, roughly one quarter less. (The difference is statistically significant at the .01 level with a two-tailed test.) Adjusting the gross differences in assortative mating with respect to education for assortative mating with respect to number of siblings and age barely changes the result. Thus, the educational compatibility of husbands and wives is somewhat greater in arranged than in free market marriages.

There is one further difference in arranged and free market marriages worth noting, but that one is obscured by the path analysis in Figure 1. That a husband's education is affected by his age and the number of his siblings is just common sense. However, it does not make any causal sense to let a husband's education be affected by either his wife's age or by his wife's number of siblings and vice versa. Consequently, in the causal analysis, the paths from wife's age and siblings to husband's education and those from husband's age and siblings to wife's education are set equal to zero. This means that the path analysis will not necessarily reproduce the correlations involving these variables. For example, the model implies that the correlation expected between wife's education and husband's age in arranged marriages is given by

$$\hat{r}_{E_W A_H} = p_{E_W A_W} r_{A_W A_H} + p_{E_W S_W} r_{S_W A_H} = (-.3180)(.9145)$$

$$+ (-.1327)(.2537) = -.3245.$$

The actual correlation is -.3398, which is acceptably close in our judgment.

The remaining expected correlations involving the education of one spouse and the age or number of siblings of the other may be computed in a similar way. They, along with the actual correlations, are reported in Table 2. As can be seen, the correlations involving th education of one spouse and the age of the other are reproduced fairly well by the model in the cases of both arranged and free market marriages. To be sure, these correlations are lower among those with free market marriages. However, since the model reproduces them fairly well, these differences can be traced to differences between assortative mating in free market and arranged marriages which we have already discussed.

The situation with respect to the correlations involving the education of one spouse and the number of siblings of the other is, however, another matter. We find, for example, that the expected association between husband's education and wife's siblings is -.0548 in free market marriages. The actual correlation is -.1565, so the expected correlation falls short, in absolute magnitude, of the actual

Table 2. Actual and Expected Correlations Between Husband's Education and Wife's Background Characteristics and Vice Versa, for Arranged and Free Market Marriages

Second Variable	Arranged Marriages		Free Market Marriages	
	Actual	Expected	Actual	Expected
	Correlation of Husband's Education With			
Wife's Age	-.2489	-.2017	-.1536	-.1399
Wife's Siblings	-.1759	-.0652	-.1565	-.0548
	Correlation of Wife's Education With			
Husband's Age	-.3398	-.3245	-.2732	-.2529
Husband's Siblings	-.2106	-.0692	-.1431	-.0909

correlation by a non-trivial amount. The same is true for all other associations, in both arranged and free market marriages, involving the education of one spouse and the number of siblings of the other. The meaning of this shortfall is quite clear: assortative mating with respect to number of siblings and age does not suffice to account for the inverse association between the size of family or origin of one spouse and the educational level of the other. Beyond positive assortative mating with respect to age, education, and number of siblings, there is an independent pattern of mating in which well educated grooms and brides avoid mates with large families. This is true for both arranged and free market marriages. However, this pattern of avoidance is especially pronounced for wives in arranged marriages, where the discrepancy between the actual and expected correlation of husband's number of siblings and wife's education is -.1414. In free market marriages, the same discrepancy is only about one-third as large, amounting to -.0522.

As we observed above, ceteris paribus it is advantageous for the offspring of small families to marry into large families. The main reason for this stems from the fact that the support of one spouse's family will be shared among multiple offspring while that of the other spouse's family will be shared among a few. Thus, a relatively greater share of the resources of the spouse from the larger family potentially can be turned to support in old age the kin of the spouse from the smaller family. These tables can, however, be turned when the spouse from the smaller family brings greater resources to the marriage; well-educated women marrying into large families may well find themselves in a position of having to support their husbands and his extended kin if she is to maintain a life style to which she is accustomed. In any case, the present data support the view that education and large groups of affinal kin do not mix in the marriage market. Through the institution of arranged marriage, this pattern of disassociation becomes even more pronounced for well-educated women.

In this section we have seen that patterns of assortative mating are broadly similar in Japanese arranged and free market marriages. There are, however, some detectable differences in the specific details of assortative mating in these two types of marriage. In arranged marriages, the bride's kinship unit exchanges its excess reproductive capacity for resources that are valuable to the family

as a collectivity. Such family considerations doubtless operate as informal and sometimes not so informal pressures in free market marriage patterns as well. However, the results in hand indicate that the impact of such family calculations is less pronounced and significantly less pronounced in several features of free market romances. But that, then, is just what the free market is all about: freedom from choices imposed upon one's behavior by institutional arrangements rather than market forces.

IV. Patterns of Achievement in Arranged Marriages

In systems of arranged marriage where neolocality or patrilocality is the rule, two main things exchanged are reproductive capacity and relief from the burden of supporting daughters. In arranging marriages for their daughters, families want to be particularly careful in selecting suitors who can, in fact, support them. To some extent, of course, they may actually involve themselves in the careers of their son-in-laws, providing them with opportunities and some tangible aid when possible. The honor of the groom's family is also at stake in arranged marriages and, to some extent, a husband's consanguines will underwrite his ability to support his bride, if only to protect their own honor. While, in a family-oriented society like Japan, family support will not be entirely missing in free market marriages, one can reasonably expect that it will not be operative to the same extent that it is in cases of arranged marriages.

In a capitalist society like Japan, one cannot reasonably expect those with different types of marriages to receive any direct advantage or suffer any direct disadvantage by virtue of how they met and acquired their brides. Employers reward experience, training, and productivity, not the fact that a man has an arranged marriage or a free market bride. However, what we can expect is that family support systems will help those in arranged marriages to make the best in the marketplace of whatever talents and/or advantages they have. One form this can take is in greater occupational returns from schooling, a matter we can investigate with the data available to us.

The occupational data contained in the Mainichi surveys are rather coarsely classified into seven occupational groups which basically capture the distinction between white collar and blue collar

workers and then elaborate some differences within these two broad categories. To economize on space we wished to analyze these data wih regression techniques. Consequently, we developed a canonical scoring of the occupational categories, using husband's education and family income as criterion variables. (For a discussion of canonical scoring of occupations, see Klatzky and Hodge, 1971). The canonical scores were, for ease of interpretation, put on a scale from 0 to 100 and simply assigned to each husband's occupational category for purposes of the present analysis. The details of the derivation of the occupational scores are available elsewhere (Ogawa and Hodge, 1982) and will not be presented here. They are essentially socioeconomic status scores and the present analysis is roughly equivalent to assigning Duncan's SEI scale to major occupation groups in the United States (Duncan, 1961; also, see Hodge, Trieman and Rossi, 1966, for an example).

The regression relevant to the hypothesis at hand allows for a linear effect of husband's educational attainment (= E_H) on his occupational SES (= O_H), as well as an additive effect for a dummy variable taking on the value 1 if the husband's marriage was arranged and the value 0 otherwise. This dummy variable (= M) for arranged marriage is then allowed to interact with educational attainment. The crucial variable is the interaction (= E_HM), since our basic hypothesis is that it will be significant and positive, indicating that those in arranged marriages are able to get more educational mileage out of their education than are those in free market marriages. This is consistent with the view that 1) those in arranged marriages either receive aid from their extended families in securing posts consistent with their training, talent, and experience or 2) that they are selected in the matchmaking hypothesis because they have already shown signs of making the most of their resources and, hence, are good candidates to provide stable homes for their brides. (Our data do not allow us to separate these two possibilities, but both lead one to postulate the same interaction between education and arranged marriage.) Finally, husband's age (= A_H) is added to the regression as a control variable.

The regression specified in the foregoing paragraph is as follows:

$$\hat{O}_H = \underset{(3.426)}{18.93} + \underset{(0.771)}{15.71}(E_H) - \underset{(1.85)}{5.27}(M) + \underset{(1.17)}{2.63}\,(E_H M) + \underset{(0.081)}{0.262}(A_H).$$

As can be seen from the standard errors of the coefficients, which are reported beneath the estimated values of the coefficients, all of the variables are significant by any conventional criterion. The coefficient of determination associated with the regression is .2302. The results are largely those expected. Those from arranged marriages with little or no schooling do achieve occupational levels lower than those with free market marriages, a point which can be readily seen by setting $E_H = 0$ and interpreting the significant coefficient of the dummy variable for arranged marriages in the above equation. But while those in arranged marriages with little or no schooling start out lower, those with arranged marriages who continued in school receive a greater increment in occupational status for completing each educational step, a point evident from the predicted and significant positive coefficient of the interaction between arranged marriage and husband's educational attainment.

The hypothesis just advanced and confirmed with respect to the relationship between educational attainment and occupational status in arranged and free market marriages can be extended to income as well. The crucial hypothesis is again the same: those in arranged marriages will exhibit greater income returns on schooling than those in free market marriages. This expected interaction could be brought about either by the exercise of extended family influence to help sons and sons-in-law acquire posts fitting to their educational backgrounds or by the selection of suitors in the matchmaking process who have already shown that they are likely to make the most out of their educational resources.

Unfortunately, the 16th Mainichi Survey does not contain data on individual earnings. The only income measure available is family income, so we have of necessity used it instead of individual earnings. The data on family income were grouped into 10 categories, which we scored at their midpoints, with the exception of two open-ended lower categories, less than 2 million yen, were scored 1.0; the open-ended upper category, more than 10 million yen, was scored 12.5. The regression of family income in millions of yen (= I) on the variables already related to husband's occupational status, if given, by:

$$I = \underset{(.213)}{0.4353} + \underset{(.0477)}{.4814}(E_H) - \underset{(.1168)}{.5012}(M) + \underset{(.0764)}{.2321}(E_H M) + \underset{(.0051)}{.0781}(A_H).$$

The standard errors of the coefficients are reported beneath their estimated values; all the estimated coefficients are more than twice as large as their standard errors. The coefficient of determination associated with this regression is .1291, a very modest value which doubtless reflects in part the fact that family income rather than individual earnings is the dependent variable. It probably also reflects the fact that data on family income collected from wives in Japan doubtless contain appreciable errors. Nonetheless, all the coefficients are significant by any conventional criteria and, as can be seen, the results are exactly parallel to those obtained in the analysis of husband's occupational status. Thus, with respect to both occupational status and income, those in arranged marriages are able to squeeze greater returns out of the completion of each additional educational step. In sum, the limited evidence we have on achievement and type of marriage is consistent with the view that the men selected in arranged marriages are likely to be stable providers: at least relative to those in free market marriages, they appear to make more out of their educational resources.

V. Reproductive Attitudes and Behavior in Arranged Marriages

In the previous section we demonstrated that half of the exchange of resources in arranged marriages is effective: brides and families in such marriages do obtain grooms that are able to capitalize upon their resources to a greater extent than the husbands of wives in free market marriages. However, an arranged marriage is a two-way exchange and the other half involves the quality of the reproductive machinery received by the groom and his family. The hypotheses bearing upon this half of the exchange are obvious: women in arranged marriages will have more children and exhibit more favorable attitudes and behavior toward childbearing than those in free market marriages.

We begin the analysis of reproductive attitudes and behavior in arranged and free market marriages by looking at the relationship between the number of children a woman would ideally want (an attitude), and the number of living children she actually has (a behav-

ioral outcome.) In the materials available to us, the number of living children a woman has and the number of children she would ideally like to have are known to us. We juxtaposed these two variables and created a new one, viz., the difference between them. For present purposes, we have simply dichotomized the new variable according to whether a woman has fewer living children than she wants or has a number of living children equal to or greater than the number she wants. (Very few women in modern Japan have more children than they want. According to the measure just described, 3 percent of currently married women have more children than they ideally wanted; 53 percent have just the number they want; 30 percent have one less child than they want; and 14 percent have two or fewer children than they ideally would like to have. Given this distribution, it seemed reasonable to dichotomize it according to whether a woman has fewer children than she wants or not. It should also be noted that, in general, one can expect few women to have more children than they want, for the simple reason that simultaneity must exist between the number of children a woman wants and the number she has.)

If the reproductive goods exchanged in arranged marriages are of higher quality than those acquired in free market marriages, women in arranged marriages ought to be more likely to have a number of children equal to or greater than the number she wants. Unconditionally, this is true. Table 3 shows the relationship between type of marriage and the number of living children relative to the number of children wanted, controlling for current contraceptive use. As can be readily seen by inspection of the table, the odds that a woman has as many as or more children than she wants are higher in arranged than in free market marriages. (Among current contraceptors, the chi-square between type of marriage and achievement of reproductive wants is 6.8; for current noncontraceptors, it is 44.2. Both values are significant at the .01 level.) Evidently, the reproductive goods acquired through arranged marriages are of sound quality; the women in such marriages are more likely than women in free market marriages to have the number of children equal to or exceeding the number they state they ideally want.

Women in arranged marriages are not only more likely than those in free market marriages to achieve or exceed their fertility goals, but, in addition, they appear to do so more quickly. Table 4 shows

Table 3. Children Relative to Wanted Children and Arranged Marriage, Controlling for Current Contraceptive Use, Married Japanese Women of Childbearing Age

Type of Marriage	Current Contraceptors		Current Non-Users	
	Too Few Children	Too Many or Just Enough	Too Few Children	Too Many or Just Enough
	Frequencies			
Arranged	242	426	220	287
Free Market	416	559	395	230
	Odds Too Many or Just Enough			
Arranged	1.760		1.305	
Free Market	1.343		0.582	

Table 4. Children Relative to Children Wanted by Type of Marriage and Marital Duration, Married Women of Childbearing Age

Marital Duration	Type of Marriage			
	Arranged		Free Market	
	Too Few Children	Too Many or Just Enough	Too Few Children	Too Many or Just Enough
	Frequencies			
Less Than 10 Years	213	138	469	271
10-19 Years	176	365	253	369
20-29 Years	92	245	111	173
	Odds Too Many or Just Enough			
Less Than 10 Years	.648		.578	
10-19 Years	2.074		1.458	
20-29 Years	2.663		1.559	

the relationship between children alive relative to children wanted and type of marriage, controlling for duration of marriage. Within each duration of marriage category, the odds that women in arranged marriages have too many or just enough children are greater than the corresponding odds among those in free market marriages. For those married less than ten years, the relationship is not significant (X^2 = 0.73, with one degree of freedom), but among those married 10-19 years and 20-29 years the relationship between type of marriage and achievement of fertility goals is significant (for those married 10-19 years, X^2 = 8.3; for those married 20-29 years, it is 9.8; both are significant at the .01 level, with one degree of freedom). Thus, since for each duration of marriage category, those in arranged marriages are more likely to have reached or exceeded their reproductive goals than are those in free market marriages, women in arranged marriages apparently reach their reproductive goals more swiftly. Also, we observe that the ratios of the odds that women in arranged and free market marriages have reached their reproductive goals are 1.12, 1.42, and 1.71 for those who have been married less than 10, 10-19, and 20-29 years, respectively. Thus, the gap in the relative numbers of women in arranged and free market marriages who have reached their reproductive goals appears to widen in the course of the family life cycle.

The reproductive capacity exchanged in arranged marriages would appear to be relatively sound in quality. As it turns out, not only do women in arranged marriages reach their reproductive goals sooner, they also have more children en route to those goals. Elsewhere we have analyzed a variety of factors affecting all children ever born to Japanese women of childbearing age. The results of the analysis are presented in another paper (Ogawa and Hodge, 1983) and will not be reproduced here. The main findings, relevant in the present context, is that the total number of children ever born is somewhat higher on the average among those in arranged than among those in free market marriages. This finding holds up even after controlling for husband's education, wife's education, wife's age, urban experience prior to marriage, premarital work experience, patrilocal residence at marriage, and number of children wanted. In general, then, it appears that the reproductive quality of the women in arranged marriages is superior, just as is the productive quality of the men. Love is

sacrificed, but the goods exchanged are superior in arranged marriages; if this were not true or, at least if it were not believed that there was a high probability of this occurring, one might naturally wonder how long the institution would survive.

VI. Arranged Marriage and the Persistence of the Extended Family

In two previous sections, we have shown that, even if love is sacrificed, the productive quality of the men and the reproductive quality of the women exchanged in arranged marriages tends to be higher than the productive and reproductive qualities of men and women joined in free market marriages. These findings are consistent, of course, with the continued persistence of the institution of arranged marriage in a modern society. Nonetheless, kin groups have little to gain from a system of arranged marriages if the couples so joined find exclusive love in marriage, go off to neolocal residences, and withdraw themselves from the extended kinship groups. In this section, we look at some differences between extended family ties and influences in arranged and free market marriages.

Maintenance of common residence patterns between parents and offspring is one clear indicator of the relative strength of the extended family. There is no doubt that arranged marriage and patrilocality of residence at marriage are associated in contemporary Japan. In arranged marriages, the odds that a couple will live with the groom's family at the time of their marriage are .873; for those contracting free market marriages, the odds are less than half as large, falling to .390. Table 5 shows the relationship between type of marriage and patrilocality of current residence. As can be seen by inspection of the table, those who began their marriages with patrilocal residency are much more likely still to be living with the husband's parents than are those who began their marriages with nonpatrilocal (typically, neolocal) living arrangements. Indeed, only about seven percent of the couples who began their marriages with nonpatrilocal residencies are currently living with the husband's parents. For all practical purposes, patrilocality of current residence and patrilocality of residence at marriage form a simple two item Guttman scale, in which those currently living in a patrilocal situation began their marriages similarly and the rest of the popula-

Table 5. Patrilocality of Residence in Arranged and Free Market Marriages, for Married Japanese Women of Childbearing Age

Type of Marriage	Patrilocality of Residence at Marriage			
	Patrilocal		Other	
	Current Residence Patrilocal	Current Residence Other	Current Residence Patrilocal	Current Residence Other
	Frequencies			
Arranged	382	169	26	605
Free Market	237	183	85	991
	Odds Current Residence Patrilocal			
Arranged	2.260		.0430	
Free Market	1.295		.0858	

tion is divided into those who did and those who did not begin their marriages in a patrilocal arrangement. (If one treats the two indicators of patrilocality as forming a little Guttman scale, its coefficient of reproducibility is .979; because the minimum marginal reproducibility is .682, the percentage improvement in the errors of prediction one makes with a knowledge of the scale, relative to the errors of prediction from a knowledge of the marginals alone, is 93.4. In subsequent analyses, we treat patrilocality as a single variable, since the two indicators of patrilocal residence come so close to forming a perfect Guttman scale.)

Among those who did not begin their marriages with patrilocal residency, there is no association between type of marriage and current patrilocality of residence. However, among those who began their marriages by living with the husband's parents, the odds that those with arranged marriages are still living in a patrilocal situation are nearly twice as large as the same odds for those with free

market marriages (X^2 = 17.1, with one degree of freedom). Consequently, the maintenance of the extended family through patrilocal patterns of residence is clearly associated with arranged marriages.

Although the institution of arranged marriage clearly promotes the extended family by fostering patrilocality of marriage, that does not mean that it is also associated with increased control of the extended family over younger couples. In the 16th Mainichi Survey, women with at least one child were asked if their parents or their husband's parents had any effect on their decision to have their last child. Although relatively few women acknowledged any parental influence on such an important decision in the family formation process, the odds of parental influence occurring are markedly different for women with arranged and free market marriages. The odds of no parental influence on the decision to have her last child are 8.5 to 1 for women with arranged marriages; for those in free market marriages, the odds of no parental influence are at 15.6 to 1, nearly twice as large.

It seems likely that the influence of parents over a woman's decision to have a child would also be affected by patrilocality of residence, since women living with their in-laws will be open to daily and direct influence by them. Table 5 shows the relationship between parental influence in the decision to have the last child and both type of marriage and patrilocality. As can be seen from the odds in the bottom panel of the table, patrilocality affects parental influence in both arranged and free market marriages. The odds that the parents will have no influence on the decision to have the last child are lower for those women who have current patrilocal residences or had such a residence at the time of their marriage. (For arranged marriages, X^2 = 46.4; for free market marriages, X^2 = 3.93, which with two degrees of freedom is not significant. However, if we pool the data for those with patrilocal residence both currently and at marriage and the data for those with patrilocal residence either currently or at marriage, X^2 = 3.92, which is significant with one degree of freedom).

The data in Table 6 also indicates that the type of marriage continues to affect parental influence in the family formation process, even after patrilocality of residence is controlled. Among those living with the husband's family both currently and at marriage,

Table 6. Parental Influence on Last Birth, Patrilocality of Residence, and Type of Marriages, Married Japanese Women of Childbearing Age

Patrilocality of Current Residence and at Marriage	Type of Marriage			
	Arranged		Free Market	
	Parental Influence	No Parental Influence	Parental Influence	No Parental Influence
	Frequencies			
Now and Then	71	311	18	219
Now or Then	23	172	21	247
Neither	30	575	51	940
	Odds No Parental Influence			
Now and Then	4.380		12.167	
Now or Then	7.478		11.762	
Neither	19.167		18.431	

the odds that parents have no influence in the decision to have the last child are nearly three times larger for women with free market marriages than they are for those with arranged marriages (X^2 = 14.4, with one degree of freedom). The same relationship is observed for those who either had patrilocal residences at marriage or who currently have them, but it is not statistically significant (X^2 = 2.09, with one degree of freedom). There is no relationship between type of marriage and parental influence on the last child's birth among those who neither lived with the husband's parents at marriage nor currently live with them (X^2 = 0.03, with one degree of freedom). These limited data are, then, consistent with the view that arranged marriage promotes the extended family. It does so both by promoting patrilocality and through the greater influence exercised by the extended family over decisions taken by couples in arranged marriages.

VII. Summary and Conclusions

We began this paper by examining patterns of assortative mating in arranged and free market marriages. While there are striking similarities in the overall patterns, significant differences in detail nonetheless can be detected. These differences reflect the nature of the exchange system which governs arranged marriages, various tradeoffs which can be made between the characteristics of spouses, and the fact that arranged marriages are often initiated with patrilocality of residence.

Having looked at patterns of assortative mating, we turned to examine the productivity of men and reproductivity of women in such marriages. We found that men in arranged marriages receive higher returns on schooling with respect to occupational status and income than do men in free market marriages. We also found that women in arranged marriages not only have somewhat more children than those in free market marriages, but reach their reproductive goals more swiftly. On the average, then, the trade of excess reproductive capacity in arranged marriages for relief from the burden of its support, among other things, seems equitable. Men in such marriages appear on the average to do a little better in the labor market with the resources they have and the women in such marriages utilize their reproductive capacity somewhat more fully.

Finally, we examined the relationship between patrilocality, arranged marriages, and extended family influence in such marriages. Arranged marriages clearly contribute to the persistence of the extended family through the institution of patrilocal residence. In addition, couples in such marriages appear somewhat more subject to parental influence than are those in free market marriages. In sum, the institution of arranged marriage is still alive and healthy in contemporary Japan. Among the reasons for its continued prosperity are those documented in the present paper.

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