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*Family Theory: Economic Theory of Marriage and Divorce*

Y. Weiss
Tel Aviv University, Israel

**Abstract**
This article summarizes the economic approach to marriage and divorce. The economic gains from marriage arise from sharing and coordination. Durable and mutual care help to support efficient outcomes. The gains from marriage and their division influence the decisions to marry and to stay married. Competition in the marriage market determines who will marry whom and the division of the gains. Complementary marital traits leads to a positive assortative mating. Frictions and search explain why, in any given moment in time, part of the population is single and why individuals enter into imperfect unions that dissolve when a better match is found or an unanticipated shock occurs.

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B13 morality (Austin 1954, p. 112). The second sense of morality is found to be indicative of changes of state and not part of the basis of law.



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# Family Theory: Economic Theory of Marriage and Divorce

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From an economic point of view, marriage is a voluntary partnership for the purpose of joint production and joint consumption. As such, it is comparable to other economic organizations that aim to maximize some private gains, but are subject to market discipline. This article describes the working of the marriage market, as a feedback system in which the aggregate divorce and marriage rates influence and are influenced by individual choices, and explains the features of this market that have led to the sharp increase in marital turnover.

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## *1. The Gains from Marriage*

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The economic analysis of the family naturally begins with the gains from marriage. These gains are a major determinant of the decision to form a new union or to break an existing relationship. The main economic advantages of being married, rather than being single, are as follows.

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(a) *Children*. Although children can be produced and raised outside the family, the family has a substantial advantage in carrying out these activities. There are two inter-related factors that cause this advantage: by nature, parents care about their own children and, because of this mutual interest, it is more efficient that the parents themselves determine the expenditure on their children. Because children are viewed as a public good by their parents, an efficient allocation of family resources between public and private uses requires some coordination between the parents. If the parents live separately, as either single or remarried, the noncustodian parent loses control of child expenditures and is less likely to contribute. In addition, lack of contact may reduce the parent's benefits from the children's 'quality' (i.e., their well being and success).

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(b) *Division of labor*. Family members coordinate their work activities to exploit comparative advantage and increasing returns. For instance, one partner works in the market while the other works at home. This pattern is economically efficient if the partners have different market wages or different productivity at home. Such differences may be inherent or, more likely, acquired through investment in skills. Investment in human capital is more profitable the higher its rate of utilization. This type of increasing returns leads to specialization that can, in principle, create mutual gains through redistribution.

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(c) *Sharing*. There are collective (nonrival) goods that can be jointly consumed by both partners: for example, child quality, common leisure activities, housing expenditures, and shared information. The share of such public goods in family expenditures can

B4 be substantial. Lazear and Michael 1980 estimate that two single individuals can almost double their purchasing power by forming a union.

(d) *Credit and investment*. Married partners often sx0040
engage in implicit loans that facilitate investment activities. For example, one partner works when the other is in school, expecting to share in the future gains from the investment. Similarly, parents often finance the schooling of their children, in part in the anticipation of old-age support. Such internal transfers can support investments that are mutually beneficial and would not be carried out because of market imperfections.

(e) *Risk pooling*. A family can spread the risks of sx0045
idiosyncratic shocks to individual members. For example, one partner can work when the other is sick or unemployed. The family jointly accumulates precautionary savings that can serve *either* member in case of need.

There is plenty of evidence for division of labor sx0050
within families. Typically, husbands work more in the market than do their wives. In addition, married men work longer hours in the market and have substantially higher wages than unmarried men. Similarly, married women have lower wages and work more at home than unmarried women. This division of labor is influenced by the higher market wages of males, which are reinforced by their higher participation in the labor market. Somewhat surprisingly, the evidence for mutual insurance is not easy to come by. In particular, an employed person is generally *more* likely to have an employed spouse than an unemployed person, suggesting that common factors affect the unemployment of both spouses.

The family is not the only organization that fulfills these functions. Markets and government institutions compete with and complement the family in this regard. If all goods and work activities are marketable, there is no need to form marriages to enjoy increasing returns or to pool risks. Similarly, with good medical or unemployment insurance one does not need to rely on one's spouse. Generally, the role of the family sx0055
varies depending on market conditions and government policies. In addition, human partnerships need not be confined to couples of opposite sexes. One also observes 'extended families' of varying structures that sx0060
coordinate the activities of their members and provide self-insurance. The prevalence of male–female partnerships has to do with sexual attraction, which triggers some initial amount of blind trust and the production of children. These emotional and biological considerations are sufficient to bring into the family domain some activities that could be purchased in the market. Then, the accumulation of specific sx0065
'marital capital,' such as children and shared experience, increases the costs of separation and creates incentives for a lasting relationship. In this sense, there is an accumulative effect in which economic con-

siderations and investments reinforce the natural attachment.

The potential gains from marriage generally depend on the personal traits of the two partners. Some individual traits are complements, and the gains from marriage rise if the partners have similar endowments. For instance, similarity in tastes facilitates decision on collective goods, such as the education of the children. In other cases, the traits are substitutes, and gains from marriage rise if the partners have different traits. For instance, the gains from division of labor and from credit are higher when the wages or incomes of the partners differ. sx0070

## 2. *Family Decision Making* sx0075

The existence of potential gains from marriage is not sufficient to motivate marriage and to sustain it. Prospective mates need to form some notion as to whether families realize the potential gains and how they are divided. Because families consist of several members with potentially conflicting interests, there is a question as to how families reach decisions. The old notion that consensus leads to joint maximization of a common objective appears too narrow. However, because of their proximity and repeated interaction, it is plausible to assume that married partners reach some sort of agreement that specifies an *efficient* sx0080 allocation of resources and a *stable division rule*. These sx0085 two principles replace the principle of rationality in individual choices.

In a special case, referred to as *transferable utility*, it sx0090 is possible to separate the issues of efficiency and sx0095 distribution. This situation arises if there exists a commodity (say money) that, upon changing hands, shifts utilities between the partners at a fixed rate of exchange. In this case, the family decision process can be broken into two steps: first choose an action that maximizes a weighted sum of the individual utilities, then use money to divide the jointly maximal outcome. The basic idea is that the partners can agree on most aspects of their choice and restrict their bargaining to transfers of money, which do not detract from total resources. In general, the problems of efficiency and distribution are intertwined. The family can still be described as maximizing a weighted sum of the individual utilities, but the weights depend on the individual bargaining powers and any shift in the weights will affect the family choice. The bargaining power may depend on individual attributes, such as earning capacity, subjective factors such as impatience and risk aversion, and on market conditions, such as the sex ratio and availability of alternative mates.

Realization of the potential gains from marriage requires coordination between the two partners and durable relationship. Durable relationships are motivated by the long-term investment in children and the accumulation of marital capital, which is lost or

diminished in value if separation occurs. However, to induce the actions that generate the gains from marriage, it is necessary for the partners to exchange *commitments*. For instance, a young wife is unlikely to sx0100
support her husband by working while he is in medical school, if she expects him to leave her and marry a young nurse when he gets his degree. To some extent, emotional factors such as love and guilt replace formal commitments and facilitate efficient investments and effort levels. As an example, consider the role of an altruistic family head. Suppose that the head is given sx0105
control over family resources and can make transfers as the head sees fit. The only requirement for becoming a head is that they should care about *all* family members, willing to raise their income, whenever the total resources at their disposal rise. Under these conditions, selfish family members voluntarily act in the interest of the group. The reason is that any productive (destructive) action which increases (decreases) total family resources is rewarded by an increased (decreased) transfer from the family head
B1 (Becker 1991).

It is empirically testable whether families maximize a joint utility function, whether they act efficiently, and it is also possible to recover the sharing rule from observed family choices. Recent evidence shows that, holding total family income constant, an increase in the income of one member shifts the allocation of consumption goods in their favor. These findings reject the hypotheses that the family maximizes a joint objective, which would imply that within family, allocations are invariant under such redistribution of total resources, but are consistent with both cooperation and noncooperation. However, only cooperation sx0110
implies efficiency, which yields testable cross-equation restrictions on family demand. Based on data on consumption and work patterns within families, efficiency is not rejected, suggesting that co-
B2 operation is the relevant mode (Browning et al. 1994). In the context of uncertainty, however, efficiency has some further implications that are rejected. Efficient sx0115
risk sharing among linked individuals implies that, holding aggregate consumption constant, the consumption of each family member is independent of idiosyncratic shocks such as fall into unemployment or bad health. Stated differently, all individuals in the household are affected by a random shock to any individual income and their consumption levels move together. Because of lack of data on individual consumption, the tests of this hypothesis involve larger units, such as villages or extended families, and, at this level of aggregation, efficiency is rejected.

## 3. *Divorce and its Economic Consequences* sx0120

Divorce is motivated by two general considerations. First, because it takes time to find a suitable match, people may enter a relationship which they intend to

break in the future if a better match is met. Second, because of changing economic and emotional circumstances, the gains from marriage may dissipate. As time passes, new information on match quality and outside options is accumulated, and each partner decides whether to dissolve the partnership or to continue the marriage. In making this choice, partners must consider the expected value of each alternative, where the value of remaining married includes the option of later divorce, and the value of divorcing includes the option of later remarriage. Divorce occurs endogenously whenever one partner has an alternative option that the current spouse cannot, or is unwilling to, match by a redistribution of the gains from marriage.

The model outlined above yields several testable implications:

(a) It is the *unanticipated* changes in the characteristics of the partners or the quality of match which trigger divorce. It is clear that falling out of love can destroy the gains from the current marriage and cause divorce. It is less obvious how unanticipated changes in personal attributes, such as earning capacity, influence divorce, because they affect both the gains from the current marriage and the outside options. However the partners were matched, based on their traits as observed at the time of marriage, any unanticipated change reduces the gains from interaction. Thus, if the husband is unexpectedly wealthy, he will seek a better wife, and if he becomes unexpectedly poor, she will seek a better husband. Note that both positive and negative 'surprises' can disrupt the marriage. sx0125

(b) If the gains from marriage are substantial, small shocks will not lead to divorce. Therefore, the probability of divorce will be lower amongst couples who are well matched. Anticipating that, couples sort into marriage according to characteristics that are likely to enhance the stability of the marriage. In this respect, the decisions to marry and divorce are linked. sx0130

(c) By the same logic, costs of divorce mitigate the impact of unanticipated shocks on marital dissolution. The costs arise from loss of specific capital, such as information about the current spouse, and loss of coordination, especially with regard to child expenditures. There are also emotional and legal costs associated with the break up. sx0135

(d) Somewhat more controversial is the role of divorce laws, in particular whether the legal possibility unilaterally to walk away from a marriage influences the divorce rate. With transferable utility, such a change should only affect the shares in the gains from marriage or the decision to separate, because the partner who wishes to continue the marriage can compensate the one who wishes to leave by giving up part of the gains from the marriage. Conversely, the person who wants to leave can pay damages to the one left behind. In general, because the unexpected shock sx0140

differs between partners and because the options for compensations are limited, divorce is less likely if mutual consent is required.

These implications have been tested empirically. There is evidence that surprises matter. Specifically, an unexpected increase in the husband's earnings capacity reduces the divorce hazard, while an unexpected increase in the wife's earning capacity raises the divorce hazard. The important roles of search and costs of divorce are indicated by the findings that higher age at marriage and the presence of children stabilize the marriage. There is only weak evidence that divorce rates are higher in states where 'fault' is not a prerequisite for divorce. There is clear evidence that individuals sort into marriage based on their anticipation of divorce. Thus, couples with similar schooling attainments at the time of marriage are less likely to divorce, and individuals are more likely to marry if they have a similar amount of schooling. The same patterns hold for religion and ethnicity (Weiss 1997).

The costs of divorce are influenced by the post-divorce transfer of resources in the form of alimony and child support. It has been observed that divorced husbands, even if relatively well to do, fail to support their ex-wives and their children at the standard to which they were accustomed during marriage. Consequently, divorced women and children in their custody suffer a large decline in income. The possible explanations for this phenomenon are: lack of binding marriage contracts, the inability of noncustodial parents to monitor expenditures by the custodian, and loss of interest in the child by the noncustodian parent. In most cases, the wife obtains custody and controls the expenditure on children. This situation creates an *agency problem*, because out of every dollar transferred to the custodial wife with the intention of raising the welfare of the child, part is used for her own consumption. Because of this 'tax,' noncustodial fathers reduce their transfer, and consequently child quality is reduced. The assignment of custody to the wife is usually motivated by her comparative advantage in child care, but the agency problem implies that such a practice has shortcomings that are not easy to overcome, because the courts cannot verify within-household allocations.

The adequacy of transfers must be judged not only on the basis of the efficiency of allocation of family resources in the aftermath of divorce, but also on the basis of partners' options and expectations at the time of marriage. From the latter point of view, efficiency requires that the consumption levels during marriage and divorce are tied together. Courts do take into account these two broad considerations in awarding divorce settlements. These are usually based on post-divorce incomes and the accustomed consumption of the wife and children during marriage. However, the evidence suggests that actual transfers fall short of the

efficient level from both the *ex post* and *ex ante* points of view (Weiss 1997).

With deficient transfer mechanisms, the partners must better prepare for the event of divorce. One important instrument is the allocation of time within marriage. By investing in human capital, each partner can be less dependent on transfers in the event of divorce. However, such investments may detract from marital output. For instance, a wife who works is better defended against divorce but has less time to spend with children. Indeed, there is evidence that women tend to increase their investment in market work in anticipation of divorce. Thus, if the risk of divorce rises, children may suffer even before the marriage breaks.

## 4. *The Marriage Market*

Individuals in society have many potential partners. This situation creates competition over the potential gains from marriage. In modern societies, explicit price mechanisms are not observed. Nevertheless, the assignment of partners and the sharing of the gains from marriage can be analyzed within a market framework, because an undesired marriage can be avoided or replaced by a better one.

Any market solution is a particular assignment of males to females. The major questions of interest are: what types of matches are likely to form in equilibrium; for instance, would a class structure emerge where the rich marry the rich? What determines the rates of marital turnover and the proportions of married and single individuals in society? Does the marriage market operate efficiently and, if not, what type of intervention is required?

Matching models provide a starting point for such analysis. These models investigate the mapping from preferences over prospective matches into a *stable assignment* (Roth and Sotomayor 1990). Reflecting the assumption that marriage is voluntary, an assignment is said to be stable if no married person would rather be single and no two (married or unmarried) persons prefer to form a new union. To illustrate, assume that each male is endowed with a single trait, $m$, and each female is endowed with a single trait, $f$, which positively affects the gains from marriage, denoted by $z = g(m,?f?)$. Suppose, first, that $z$ is a public good that *both* partners can consume jointly. Then, the only stable assignment is that in which males with high $m$ marry females with high $f$, and, if there are more (less) eligible men than women, the men (women) with the lowest endowments remain unmarried, a positive *assortative mating*. However, if one assumes, instead, that $z$ can be divided between the two partners, a positive (negative) assortative mating occurs only if the two traits are complements (substitutes). Matching models refer to these two situations as nontransferable and transferable utility,

respectively. With transferable utility, a man with low *m* may obtain women with high *f* by giving up part of his private share in the gains from marriage. Complementarity (substitution) means that the two traits interact in such a way that the benefits from a woman with high *f* are higher (lower) for a male with high *m* than for a male with low *m*. The type of interaction in the gains from marriage determines the willingness to pay for the different attributes. An important lesson is that in a marriage market, with sufficient scope for compensation within marriage, the best man is not necessarily the one married to the best women, because, with negative interaction, either one of them can be bid away by the second best of the opposite sex (Becker 1991).

The process of matching in real life is characterized by scarcity of information about potential matches. The participants in the process must spend time and money to locate their best options. The realized distribution of matches and the division of the gains from each marriage are therefore determined in an equilibrium which is influenced by the costs of *search* and the search policies of other participants. The main ingredients of the search model are as follows. There is a random process that creates meetings between members of society of the opposite sex. When a meeting occurs, the partners adopt a reservation policy where the match is accepted only if it provides expected gains above some prespecified value. Otherwise, they depart and wait for the next meeting to occur (Mortensen 1988). Because meetings are random and sparse in time, those who actually meet and choose to marry enjoy a positive rent. An important issue is the division of these rents between the partners.

The literature mentions two considerations that determine the division of the gains from marriage: outside options, reflected in the value of continued search, and the self-enforcing allocation that would emerge if the marriage continued without agreement. Combining these two considerations, the sharing rule will be influenced by both the value of search as singles (outside the current match) and the value of continued search during the bargaining process, including the option of leaving when an outside offer (whose value exceeds the value of potential agreement) arrives. In this way, a link is created between the division of gains and the market conditions. For instance, if there is excess supply of women in a particular marriage market, the value of continued search by females is reduced and consequently their share in the gains from marriage declines.

With friction, there is still a tendency to positive (negative) assortative mating, based on the type of the interaction in traits. If the traits are complements, individuals of either sex with higher endowment will adopt a more selective reservation policy and will be matched, on the average, with a highly endowed person of the opposite sex. However, with sufficient

friction, it is possible also to have negative assortative mating under complementarity. The reason for this result is that, because of the low frequency of meetings, males with low *m* expect women with high *f* to accept them, and if the gains from such a match are large enough, they will reject all women with low *f* and wait until a high *f* arrives (Burdett and Cole 1999).

!QA1: This is spelt Coles in the bibliography. Which is correct?

Generally, one would expect negative sorting on wages and positive sorting on nonwage income, because the gains from division of labor are larger when wages differ, while the gains from sharing goods are larger when incomes are similar (Becker 1991). Empirical findings suggest positive sorting on both wage and nonwage income. In particular, there is a substantial correlation in the schooling achievements of partners to marriage. Similarity in schooling has opposing effects on the gains in marriage; it reduces the gaps in wages and thus the gains from the division of labor, but it also induces similarity in tastes, which facilitates the allocation of public goods. It seems that the latter effect is empirically more important. We should further note that meetings are not really random, and that unattached individuals select jobs, schools, and leisure activities so as to affect the chances of meeting a qualified person of the opposite sex.

Frictions and search explain why, in any given moment in time, part of the population is single, even though there are positive gains from marriage. The aggregate stock of unattached individuals is determined by the rates of entry and exit into marriage implied by the arrival rates of offers and the optimal reservation policies chosen by individuals. These decisions, in turn, depend on the aggregate proportion of singles, because if one meets an unattached person one is more likely to accept a new union than an attached person, who already has some positive rents. Therefore, the higher the proportion of singles, including divorcees, the higher the private expected gains from divorce. This type of reinforcement can lead to multiple equilibria, whereby both high and low aggregate divorce rates can be sustained through the induced change in the individual incentives to marry and divorce.

The time pattern of aggregate divorces is consistent with multiple equilibria. For instance, the divorce rate in the USA doubled during the decade between 1965 and 1975, standing at roughly 10 percent from 1940 to 1965 and at roughly 20 percent from 1975 to 1995, suggesting a switch from a low to a high equilibrium. Explanations for the timing of the change include the appearance of the contraceptive pill, break up of norms, and legal changes (Michael 1998). The main conceptual point, however, is that any change in exogenous factors, even a small one, can have marked impact on the aggregate divorce rate, because of the inherent reinforcements in marriage markets.

The marriage market determines not only the assignment of partners but also the division of re-

sources and activities within the family. As market conditions change, a shortage of suitable partners of a particular kind leads to an increase in their gains from marriage. For instance, there is evidence that an increase in the demand for men, created by faster population growth combined with the tendency of men to marry younger women (a marriage squeeze), has led to an increase of dowries in rural India. In sx0250
modern societies, up-front payments are rare and market forces are mostly revealed by the division of labor within families. The trend of rising female sx0255
participation in the labor force among married people is probably associated with a larger share that women can extract from marriage, following the rise in female wages. Additional information on the (expected) gains from marriage is contained in the decisions to enter marriage and to stay married. For instance, it has been observed that black women in the USA delay their sx0260
marriage and have children out of wedlock, because of
B9 a shortage of eligible black men (Willis 1999).

## 5. *Some Policy Issues* sx0265

Despite its firm roots in nature and its antiquity in human society, the future of the family institution has sx0270
been recently put into question. This was motivated by recent trends, common to all Western societies, of declining marriage rates, declining fertility, higher divorce rates, and a rise in alternative arrangements such as cohabitation, single-parent households, and single-mother families. Social observers view these trends with considerable alarm, especially because of the potential harm to children (more than one million children in the USA are involved in a divorce every year).

Although there is ample evidence that divorce reduces the welfare of single wives and of children with single or step-parents, this is only one part of the picture. Continuation of marriage under adverse conditions can have equally harmful results, although these are harder to identify. Broadly viewed, divorce is sx0275
a corrective mechanism that enables the replacement of bad matches by better ones. There is a risk that a better match will not be found, in which case the person who has divorced and the children are worse off. But rational agents take this consideration into account and can make financial arrangements to ensure that separations occur only if they improve the welfare of all parties. The issue, though, is whether the courts can enforce such binding contracts and the extent to which they should intervene.

Because meetings are random and uncoordinated, the search behavior and the decision whether to marry or divorce of each individual influence the marriage (and remarriage) prospects of all other members of society who are potential matches. Therefore, legal intervention must take into consideration the impact of the law not only on particular families but also on

the marriage market as a whole. These two considerations may be in conflict. As an illustration, consider an increase in the size, or the enforcement, of child-support payments. Holding the aggregate divorce and remarriage rates fixed, each family in isolation may be better off as a result of the additional insurance. However, the reduced propensity to divorce can have a negative effect on the remarriage prospects of those who have suffered a large negative shock to their quality of match and who wish to separate. Another externality that must be considered, and may operate in the opposite direction, is that the availability of alternative mates can reduce investments that are specific to the current match and detract from its quality. This is indeed the logic behind the laws and religious norms aimed at restricting divorce.

The observed changes in family arrangements are closely related to the dramatic changes in labor-market participation of women, and the associated technological advances in the workplace and in the home. Whatever the causal relationships, it is clear that these processes reinforce each other and generate complex dynamics. While the reduction in marriage has been fairly smooth, the changes in divorce appear discontinuous, suggesting search externalities and perhaps the breaking of norms in the processes governing divorce and remarriage. These abrupt changes cause a special adjustment problem that requires social and legal restructuring. However, the expected outcome for the early twenty-first century is that the marriage market will settle at a new equilibrium with higher marital turnover, reflecting the lower gains from marriage as the disparity in the market productivity of men and women gradually declines. Although reduced, the gains from marriage are unlikely to disappear and the family, in one form or another, will continue to have a major role.

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Y. Weiss