

Louézek, Marek

Article

An economic approach to marriage

Journal of Applied Economics

Provided in Cooperation with:

University of CEMA, Buenos Aires

Suggested Citation: Louézek, Marek (2022) : An economic approach to marriage, Journal of Applied Economics, ISSN 1667-6726, Taylor & Francis, Abingdon, Vol. 25, Iss. 1, pp. 300-315, <https://doi.org/10.1080/15140326.2022.2034469>

This Version is available at:

<https://hdl.handle.net/10419/314164>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>



An economic approach to marriage

Marek Louzek

To cite this article: Marek Louzek (2022) An economic approach to marriage, Journal of Applied Economics, 25:1, 300-315, DOI: [10.1080/15140326.2022.2034469](https://doi.org/10.1080/15140326.2022.2034469)

To link to this article: <https://doi.org/10.1080/15140326.2022.2034469>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 30 Mar 2022.



Submit your article to this journal [↗](#)



Article views: 9207



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 2 View citing articles [↗](#)

An economic approach to marriage

Marek Louzek 

Faculty of Economics, Prague University of Economics and Business, Prague 3, Czech Republic

ABSTRACT

The purpose of this paper is to outline an economic approach to marriage. The first part contains an introduction to the economics of a family. The second part analyses the marriage market. The third part discusses the division of household chores in a household. The fourth part examines marriage as a cooperative or non-cooperative game. The fifth part deals with the dilemma between monogamy and polygamy on marriage markets. The sixth part confronts the economics of marriage with the findings of sociobiology.

ARTICLE HISTORY

Received 1 September 2020
Accepted 24 January 2022

KEYWORDS



Marriage; divorce;
monogamy; polygamy;
sociobiology

1. Introduction

The fate of each person is unique. In spite of that, we can find regularly repeating patterns in human lives. We can find them even in how people meet, how they decide to spend their lives together, whether they will have children, what the arrangement of relationships in a household will be like and, ultimately, whether they will remain together. Human actions in these areas have biological roots but they are also significantly influenced by the economic environment (Baumeister, Reynolds, Winegard, Vohs 2017).

The economic analysis of marriage is interesting in that it does not regard money as the sole currency. People give their time, emotions, care and commitments, the value of which is decided by their status, wealth, education, intelligence and, understandably, beauty, too. The people of today are fascinated by beauty. We can exchange beauty for additional income, which allows us to increase our standard of living, or for non-financial matters such as friendly colleagues or a pleasant work environment (Hamermesh, 2011). The paper aims to outline the theoretical fundamentals of the economics of marriage based on a selective survey of the literature.

When economists speak about a market, they do not claim that people calculate benefits and haggle like in a marketplace. Or they at least do not do so consciously. Rather, the point is that they have a tendency to act in such way so as to achieve what they want while expending as little effort or other costs as possible. After all, economists also take into account that the objective can be to satisfy not only one's own needs but perhaps the needs of another family member. All this means a rational pursuit of an interest (Bryant, 1990).

CONTACT Marek Louzek  louzek@post.cz  Faculty of Economics Prague University of Economics and Business W. Churchill Sq 4 130 00 Prague 3 Czech Republic

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The first insights into marriage and family can be found in the works of classical economists. While Adam Smith deals relatively little with sex and marriage in *Wealth of Nations* ([1776] 1952) and *The Theory of Moral Sentiments* ([1759] 1966), he celebrates the virtues of family life. Smith's own vision of marriage and family life attaches paramount importance to feelings of mutual affection. Links of mutual assistance exist between wife and husband, parents and sons, relatives (Nerozzi, Nuti 2011).

Another classical economist, Thomas Malthus (1970), based his perspective on the knowledge that a person, though gifted with reason, was unable to escape the effects of the laws of nature. A person wants to eat and make love. There are two impulses: food and reproduction. Above all, food is essential for a person. The love affair between the two sexes is also strong enough to work at all times. Although food supply grows as productivity increases, the population is growing even faster.

The economic theory of marriage was introduced by the ground-breaking contribution of Gary Becker ([1981] 1991), a Nobel Prize winner for economics, and was elaborated on by a number of other renowned economists. Since that time, the economics of marriage has been fruitfully applied not only to the decision-making on whom to marry, when to divorce or how many children to have but also to questions such as when monogamy or polygamy will probably develop.

We can find the rudiments of the economics of marriage as early as Margaret Reid (1934), an American economist. A household consists of people living under a shared roof. The production that this group carries out for its own members can be regarded as the production of the household. The goods that are produced can be tangible or intangible. These can be various goods, such as cakes or clothes, or services, such as tutoring or babysitting.

The assumption that people are coldly calculating in such matters as love, sex and marriage appears to be somewhat indecent or at least unusual at first sight. In spite of that, it makes sense (Schultz, 1974). Economics covers much more than money and commerce: it is a science about rational human behaviour based on the assumption that individuals fulfil their desires and preferences in various areas. And family is naturally one of those areas (Kvasnicka & Bethmann, 2011).

From an economic perspective, marriage is a partnership with the purpose of joint production and joint consumption. However, consumption and production are more loosely defined to include goods and services such as companionship and children. Indeed, the production and rearing of children are most frequently recognized as being the roles to be fulfilled by a family. But marriage also yields other important benefits, both economic and emotional (Browning, Chiappori, Weiss 2014).

The paper is structured as follows. The first part contains an introduction to the economics of a family. The second part analyses the marriage market. The third part discusses the division of household chores in a household. The fourth part examines marriage as a cooperative or non-cooperative game. The fifth part deals with the dilemma between monogamy and polygamy on marriage markets. The sixth part confronts the economics of marriage with the findings of sociobiology.

2. Marriage market

Why do people actually enter into marriage? According to what do they decide whether they will marry or not? Why do some people marry and some do not? Economists speak about a marriage market. It is, of course, a certain metaphor, but it has an analytical value and it has its meaning for describing some interesting circumstances of why people join their lives together. It is not a coincidence that the term “marriage market” also penetrated into other disciplines of science (Qian & Lichter, 2018).

The basic tenet of an economic approach to marriage is that when people decide to marry, have a child or get a divorce, they try to maximise their utility rationally by comparing the costs and benefits. Therefore, besides the classic markets for consumer or capital goods or labour markets, there are also marriage markets where demand for and supply of marriage meet (Dupuy & Galichon, 2014).

The marriage market evolves over time and economic factors play an important role in this evolution. The first commodity or service produced in marriage is sex and love. If we regard sex as a “service” brought by marriage, then it seems to be obvious that one of the reasons why people marry is the effort to obtain this service at a lower cost in comparison with the cost at which they obtain it when they are single (Adshade, 2013).

Market activities and transactions among selfish individuals were indeed traditionally the main fields of economics. But at the same time, economists developed a method for examining non-market activities and situations where preferences are altruistic in the sense that the decision-maker achieves satisfaction from the happiness or well-being of others. Moreover, market activities and the workings of markets cannot be fully understood without a clear picture of how families and other households work (Cigno, 1994).

Formerly, the time of commencement of regular sexual life exactly concurred with the time of entering marriage. Regular sex without marriage did not come into question much, although it may sound incredible today (Symons, 1979). Sexual intercourse before marriage, society’s tolerance for it and its legitimacy expanded in the West after World War II. Previous cultural norms did not permit unmarried people to have sexual lives (although this is more true of the middle classes than the very poor or the very rich).

Economic models explain why some people postpone marriage until a higher age. Circumstances change in the course of a life so a person does not “go for it” until it is more advantageous to marry than to remain single (Becker [1981] 1991). This can be determined, for instance, by a decrease of the number of opportunities to satisfy one’s needs outside marriage. Or by the fact that when a person realises that they have only a few years left to conceive a child, the relative value of having a child increases accordingly.

In the marriage market, explicit price mechanisms are seldom observed. Nevertheless, it is possible to use a market framework to analyse the assignment of partners and the sharing of the gains from marriage. The main insight of this method is that the choice to form and maintain a particular union is influenced by a whole range of opportunities and not only by the merits of the specific match (Browning, Chiappori, Weiss 2014).

There can be several reasons why “two is better than one”: 1. The sharing of goods in joint possession. For example, both partners can enjoy their children in an equal manner, share identical information, and use the same home; 2. The division of labor to exploit comparative advantage and increasing returns to scale. For example, one of the partners

works at home and the other works in the market; 3. Marriage as a form of insurance. For example, one of the partners works when the other is ill or jobless; 4. Coordinating child care (Browning, Chiappori, Weiss 2014).

The more important children are in a society, especially children born of a marriage, the more marriages and the less divorces there are. Men for whom children are important are usually willing to offer more resources to their women than men who do not care about children. The women's demand for a man's resources also depends on the demand for children. A woman does not have to be a "gold digger" in order to understand that a greater amount of a man's resources provides her with a greater amount of means for taking care of her offspring (Dawkins, 2011).

On the marriage market, everyone offers their assets and tries to get a partner with the best possible qualities (Del Boca & Flinn, 2014). In this context, we must mention that these are both absolute qualities (such as the amount of income or prestige) and relative qualities. Even the fact that a partner is of the same race, from the same social stratum or practices the same religion has its value that can be appraised. This is also indicated by the fact that mixed marriages face a higher risk of divorce (Pollak, 1985).

It is natural that people who marry have similar social and psychological properties. When choosing a partner, people prefer people of the same race, social stratum and religion. Homogeneous marriages are statistically more successful. When a Jewish man marries a Protestant woman, the probability of their divorce is higher than in a marriage between a Jewish man and an atheist woman, and the latter marriage is less durable than a marriage between a Jewish man and a Jewish woman (Peters, 1986).

More attractive men marry more attractive women and vice versa (Becker [1981] 1991). Economics also offers a theoretical model of the procedure for selecting a partner and is even able to include factors such as romantic infatuation in this model. If people prefer a partner from the same group too strongly (or are even commanded to do so), separate marriage markets may form (Drewianka, Meder 2020). However, even on such markets, people choose each other.

Physical appearance is of fundamental importance on a marriage market (Fan, 2014). A certain standard of beauty emerged as an evolutionary advantage in reproduction and has become a social norm. Beauty is a luxurious commodity, similar to expensive purses or top brand cars. The individual marginal utility of the physical appearance of a partner is high especially at the beginning of a relationship, while it decreases over time and personality may become more important later on.

Let us assume that there are N men and N women, each of whom has a notion of the attractiveness of all members of the opposite gender. How can they be paired off (based on the assumption of monogamy)? As economists, we will try to answer this question by looking at the equilibrium, i.e., a situation, in which no individual is able or willing to exchange their marriage partner for someone else. Analytically, the problem is no different from a search for business partners or employees and employers. Since an individual obtains utility by cooperating with another individual of the opposite sex, we can regard the problem of pairing off as a cooperative game (Cigno, 1994).

If the ratings of the members of the opposite sex were only based on a single aspect such as beauty, the situation would be simple. Everyone will agree that it is better to be more beautiful than less beautiful. If we assume that m_1 is more beautiful than m_2 and m_2 is more beautiful than m_3 , and similarly that f_1 is more beautiful than f_2 and f_2 is more

beautiful than f_3 , it is clear that the most handsome boy will marry the most beautiful girl; the second most handsome boy will marry the second beautiful girl and so forth. (Baumeister, Reynolds, Winegard, Vohs 2017).

If the attractiveness of a person depends on other characteristics (wealth, appearance, personality, etc.) and all members of the same sex have the same preferences regarding the opposite sex, the selection will still be based on a similar principle. In that case, it would still be true that the most desirable boy will marry the most desirable girl, etc., with the difference being that “the most desirable” does not necessarily mean the most beautiful (Cigno, 1994).

Beauty is one of the aspects of human attractiveness. Other aspects include status, wealth, education or intelligence. When people enter into marriage, they exchange all their known qualities. Although there is not a single standard of beauty, people tend to perceive it similarly. For example, people will agree that younger people are usually more attractive than older people. In different society and periods, there has been a remarkable consensus about what constitutes human beauty (Hamermesh, 2011).

If there are N women and H men in a society, then the potential combination of their possible pairing off can be expressed by the following matrix:

$$\begin{matrix} M_1 \\ \\ \\ M_H \end{matrix} \begin{bmatrix} F_1 & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & F_N \\ Z_{11} & Z_{12} & Z_{13} & Z_{13} & Z_{1N} & & & \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & & \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & & \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & & \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & & \\ Z_{H1} & Z_{H2} & Z_{H3} & Z_{H3} & Z_{HN} & & & \end{bmatrix}$$

If $N < H$, there are more men than women in the society. If $N > H$, there are more women than men in the society. A higher percentage of men than women in population results in a higher incidence of marriage among women because higher competition among men results in a greater number of women successfully marrying. A higher number of women in a society conversely results in a higher incidence of marriage among men because the excess supply of brides enables a higher number of men, even the less attractive ones, to marry (Becker [1981] 1991).

Although our paper deals primarily with the standard marriage market between men and women, its principles are universal and can be extended to same-sex marriages. Richard Posner (1992) applies his economic theory of sexuality to same-sex unions. Some people may prefer minority sexual practices and family relationships and will find a match in a competitive market.

A number of people ask whether romantic considerations play a role in an economic analysis or whether “love” is too emotional or irrational to be meaningfully grasped by an economic approach. Although marriage based on love is less important in other societies than in the contemporary Western societies, marriage based on love shouldn’t be ignored. Love and other emotions enter into the utility function of an individual (Fan, 2014).

M_i loves F_j , if her well-being is included in his utility function and if M_i appreciates emotional and physical contact with her. Clearly, M_i can benefit from marriage with F_j because it could have a more favourable effect on her well-being and, in turn, on his

utility because the commodities based on contact with F_j can be produced more cheaply if they are officially paired off than when M_i must seek unpermitted relationship with F_j . Even if F_j is “selfish” and does not fully reciprocate the love from M_i , she can benefit from a union with someone who loves her because the transfers towards her are more generous (Becker [1981] 1991).

During most of the history of the Western world, importance was attached to formal marriage (Kvasnicka & Bethmann, 2011). However, since the mid-20th century, the traditional institution of matrimony has been weakened, as indicated by the trends in Scandinavia and the United States of America as well as in Central Europe and South America. The phenomenon of informal unions has reached the most visible proportions in Honduras or Guatemala where people cohabit more often than they marry.

The main difference between the two types of unions – classic marriage and “shacking up” – is the ceremonial solemnization of marriage with the participation of the engaged couple as well as friends, parents, relatives, government officials or church clergy. Such public recognition strengthens the mutual commitment and reduces the probability of later separation. Formal marriage increases the cost of divorce, thereby supporting marital stability. For the participants, this means a higher motivation to invest into the relationship (Rasul, 2006).

Marriage markets are significantly influenced by the ratio of males to females in a population (sex ratio) (Bulte, Tu, List 2015). A situation, in which the sex ratio is strictly equal (50:50) is rather exceptional. Usually, there are larger or smaller deviations from this ideal balance. For example, after a war, when fewer men return from the frontline, there is scarcity of bridegrooms on the market and surplus of brides. Even in times of peace, there are considerable disproportions (for example, 120 boys are born for 100 girls in China at present), which has major consequences for the working of marriage markets (Chen, Zhang 2019).

A higher ratio of men to women thus results in the fact that much fewer women will remain unmarried, women will get better husbands, a larger portion of family budget is spent for the benefit of women and divorces occur less often. However, if the sex ratio is reverse, it does not mean that men can rejoice because such situation is conducive to introduction of polygamy (Grossbard-Schechtman, 1993).

An economic approach to marriage in fact does not deny that human decision-making on choosing a partner is also influenced by romantic, cultural or religious factors. Analysis of marriage markets is relevant to the extent to which people are not completely unique, and there is a degree to which they are interchangeable. Economics can offer an analytical framework compatible with the findings of anthropology, biology, demography or sociology.

3. Division of household chores

However, marriage is not only about love and sex but also about a shared household. How is the price of household chores determined? Do housewives receive some kind of compensation for their work? When do families decide to take care of their households on their own and when do they hire help? Even here, the economics of marriage offers a meaningful model.

The model is based on the assumption that partners can specialise in certain chores or they can provide some kind of material or financial compensation to each other for doing chores. Traditionally, it was presumed that the woman is the homemaker; nevertheless, the same model can also be used for a relationship in which the man takes care of the household, while the woman earns money. However, it applies in every case that the higher someone's value on the marriage market is, the higher the price of them doing chores is.

If the man had to spend a huge amount of energy and ingenuity to get the woman, he will most likely have to "buy" her work in their household for a higher price. Constant negotiations, in which each of them will try to improve their conditions, will then be taking place in the marriage (Pollak, 2019). And external circumstances can also play their role. For example, if the wife receives an offer of a better paid job, she can demand a higher price for chores and she and her husband can arrive at the conclusion that it will pay off to hire help.

The production of a household has one advantage, which, in many cases, makes up for the higher costs of production: the commodity is produced on the site of consumption by the group, for whose purposes it is intended. As a consequence, there are no costs of transport, storage and sale of the finished product incurred, and there is no waste resulting from overproduction caused by separation of the producer and the consumer (Reid, 1934).

When family income is spent, one of the first questions to consider is whether the commodity should be produced or purchased. Wishes generally exceed the income. If this is so, it is not possible to buy all the commodities that the family wishes to have. The family must decide which needs are more important. If some commodities are purchased, others must be omitted. The same dollar cannot be used twice (Reid, 1934).

In order to emphasise the connection between work and marriage, Grossbard-Schechtman (1993) analyses marriage using the neoclassical model of labour. She regards marriage as exchange of household chores, i.e., chores offered by the current wife or a potential wife. Examples of household chores include cooking, taking care of children, advice, sex, emotional support or gardening. A household chore is characterised by the fact that it is carried out over a relatively long period of time.

Transactions take place on interconnected markets – the markets for the work of husbands and wives, both in employment and marriage. Individuals spend their time on four types of activities: a professional job, household chores, other activities and leisure. Both categories of work may – although need not – be enjoyed by the worker. All activities contribute positively to the utility of an individual. Individuals have the following utility functions:

$$U_i = U_i(l_i, h_i, a_i, s_i, x_i),$$

where i are men and women; l indicates the time earmarked for the professional job (labour); h is a household chore; a is other activities; s is leisure and x indicates commercial goods.

All individuals interested in the demand for or supply of household chores influence the market wages for such work. Unlike salary, the compensation for household chores is not directly observable. A husband can provide a part of his income to his wife as the compensation for household chores. The wife thus receives a quasi-income for her work in the marriage and uses this income to buy goods and services (Grossbard-Schechtman, 1993).

In a monogamous society, a couple will enter into a marriage if a man demands the amount of household chores, which a woman wants to offer for equilibrium wages w_f^* and w_m^* and if a woman demands such an amount of work offered by a man. Personal affection can be easily incorporated into the theory by using a higher demand curve indicating a higher demand for a household chore done by a special person (or by shifting the supply curve of such person to the right) (Del Boca & Flinn, 2014).

If external conditions change, this can result not only in changes in the income redistribution between spouses but also in new professional or matrimonial unions. A married woman may suddenly find out that better job opportunities than the ones in the past are now available to her and in addition to a new professional contract, she can also demand a new marital contract, which would reduce her supply of household chores, and also create the opportunity for her to use the additional income to hire substitutes for household chores or for her husband (Grossbard-Schechtman, 1993).

An individual's quasi-wage w_i^* may be different from the market equilibrium quasi-wage w^* originating from the marriage market. The higher w_f^* is in relation to w_m^* , the higher the well-being of the wife is in comparison to the well-being of the husband. Therefore, on a long-term basis, attractive women consume a larger part of the income of the household (and the husband) than the less attractive ones. Whoever earns less money will specialise in household chores in accordance with the law of comparative advantage.

The interesting consequence of the economics of marriage is that the decision to work is based on a comparison between w and w^* . For a person who has a chance of getting a low wage or, conversely, a high quasi-wage within a marriage, it can be quite rational not to be professionally active and to be involved in the family. For a person whose wage w is higher than the quasi-wage w^* , it will conversely be more advantageous to work more in a regular job (Grossbard-Schechtman, 1993).

In most societies, including the Western ones, most husbands offer their wives some kind of material or financial compensation for the activities that women perform in a household (this phenomenon is diminishing with the advancement of emancipation). According to the economics of marriage, the value of this financial compensation grows along with the value on the marriage market. The more attractive women are, the higher financial compensation they receive as wives and the higher the value of their leisure time is (Pollak, 2019).

4. Marriage – a cooperative or non-cooperative game?

Divorce is one of the most difficult life-changing decisions. Just as there is entry into marriage (a wedding), there is also exit from marriage (a divorce). How do people decide whether to remain in a marriage or whether to proceed to get a divorce? Does marriage resemble a cooperative game or a non-cooperative game? Which people tend to divorce more, the rich or the poor? The more educated or the less educated? How does government policy influence the divorce rate?

It will probably come as no surprise to the reader that a divorce occurs when the benefits of a divorce exceed the benefits of remaining in a marriage (Stark, Sczygielski 2019). But what should be regarded as the benefits of a divorce? Although an alimony or

a greater amount of free time can be a benefit, the possibility to get a new partner plays an absolutely key role. This is why it is necessary to include the costs of seeking out a new partner in the assessment of the situation (Hutchens, 1978).

Marriage can be grasped as a cooperative game or a non-cooperative game. In game theory, a cooperative game is considered to be a situation in which players agree and proceed in a concerted manner. Conversely, a non-cooperative game is played in a way where everyone pursuits their own interest, tries to estimate the actions of the other player and adapt to them, but it is not possible to reach an agreement (because, for example, trust was broken) (Peters, 1986).

Manser and Brown (1980), who examined decision-making in a household according to Nash's cooperative bargaining model, wrote pioneering papers on the theory of negotiation in a household. In this model, marriage is perceived as a static bilateral monopoly. A married couple can either remain married or divorce and live separately. Lundberg and Pollak (1994) propose an alternative negotiation model, where they argue that for a number of marriages the threat may not be the divorce but "a non-cooperative marriage".

A number of people with marital experience consider it to be improbable that couples would address disputes over common matters of their households under the pressure of the threat of divorce (van Schepingen, Leopold 2020). If one spouse proposes a solution to the dispute inside the household and the other partner does not agree, the expected result is not a divorce but instead harsh words or silent treatment until another, more acceptable offer is made.

A divorce is costly (Drewianka, Meder 2020). A divorce makes communication with children difficult. If there are children in the marriage, the costs of a divorce are higher, and therefore the probability that a divorce will occur is lower. It is similar with property. Division of property is costly; it is associated with enormous costs so it is not surprising that families with a lot of wealth divorce less often than poorer families.

But why do well educated people divorce less often than people with a lower level of education (Oreopoulos and Salvanes, 2011)? The answer that the more educated people own more assets provides only a partial explanation. In addition to that, the fact that people with a higher level of education usually marry at a later age so they have a longer time to choose their partners more carefully, also plays a role. Moreover, people with a higher level of education suffer less from instability of employment, which is another stressor for a marriage and therefore one of the causes of a divorce.

More beautiful women are more likely to divorce than women with an average appearance. This effect is more significant than the influence of a physical appearance on the probability of engagement, which suggests that attractive women are less willing to suffer in bad marriages because the costs of divorce are lower. The role of attractiveness in a new marriage is even greater for middle-aged women than for young women who are at the beginning of their romantic relationships (Fan, 2014).

Groeneveld, Tuma, and Hannan (1980) document that introduction of government transfers to single mothers discourages from work, reduces marriage rates and increases divorce rates. Moffitt (1992) informs of a number of econometric studies, which show that the supply of jobs is limited by government transfers. Duncan and Hoffman (1985) have shown that divorced or separated women re-married less often, if they were able to benefit from government programmes.

Divorced women receive a part of their income from their ex-husbands after the divorce – in the form of alimony, child support or a transfer of a part of the assets (cf. Weiss & Willis, 1993). The more attractive ones among them may have qualities, which are in demand on marriage markets so it can be fairly easy for these women to replace their previous marital contract by getting a divorce and re-marrying.

In traditional families, the excess supply of or demand for household chores is addressed by violence or threats (Pollak, 2019). If there are natural rigidities in quasi-wages w^* and the use of violence is limited in a family (or even punished by the state), fluctuation of income will then more likely translate into a higher divorce rate. A partner may blackmail his or her spouse who would be willing to pay a quasi-wage equal to the market price of the household chores plus the costs of a divorce.

If the husband is in love with his wife while this love is not fully reciprocated, the emotional costs are transferred to the quasi-wage w^* , which exceeds the market level. However, this indirectly transfers a part of the costs of a divorce to the wife who will now have great difficulties with compensating for these extra costs through income from another potential husband on the market. Certain specialisation in the mutually provided chores develops in a marriage, and therefore it is not so easy to leave a husband or a wife (Grossbard-Schechtman, 1993).

5. Monogamy versus polygamy

Economic analyses of households were examining mainly households consisting of one person and monogamous pairs and their children (Bergstrom, 1996). However, Becker ([1981] 1991) dedicates one whole chapter of his *A Treatise on the Family* to polygamous marriage markets, too. Although it may seem that Becker's discussion of polygamy is a brilliant exercise in economic exotics, study of non-monogamous relationships has a deep meaning. Not only is it fascinating to learn something about the workings of the institution of matrimony in other societies, but our own society is far from being universally monogamous and statistics indicate that this phenomenon is on the rise.

Willis (1973) shows that men choose between entering a monogamous marriage and the alternative option of not marrying and conceiving children with different women during their lifetime. Monogamous men are limited to one wife but they are able to achieve a more effective agreement with their wives regarding the care of children. Unmarried men are able to conceive children with any woman but the care given to the children from these relationships will be inferior.

It follows from the economics of marriage that men with a higher income can afford more wives. The probability that a woman will have to share her husband depends directly on the husband's income and education, that is, his social status (Becker [1981] 1991). Polygamy changes during the lifetime cycle. A husband has the tendency to have the highest number of wives (or lovers, as they are called in the West) when he is at the peak of his productivity.

Whether she shares her husband with other women depends on the woman's position in the marriage market. The higher her price is, the more likely it is that she will not be sharing her husband. This is also a logical consequence of what has been mentioned above – a more attractive woman will find other partners more easily, her costs of divorce

are lower, and therefore she does not have to put up with the position of being one of several women, or she can possibly demand compensation, as a result of which polygamy is substantially more costly for her husband.

If the sex ratio of men to women is one, monogamy is seemingly advantageous. No man will be able to offer his second wife as much as the same man can offer his first wife (Wright, 1995). In spite of that, the introduction of polygamy favours most women, who can choose between the position of being the only woman of a less successful man and the position of being one of multiple women of a successful man. The reason is that a man who is rich significantly above average may be able to give his second or third wife a higher quasi-wage than the quasi-wage received by this woman from the first and less successful husband.

The most dramatic illustration of the influence of the sex ratio of men to women in the population on polygamy is Paraguay in the 19th century (Grossbard-Schechtman, 1993). After a big war with the neighbouring countries, there was scarcity of bridegrooms in the country (men accounted merely for 13 % of the population of Paraguay), which lead the government to permit polygamy temporarily. The opposite situation – a deficit of brides – occurs relatively less often and, historically, there have only been a few societies that practiced polyandry.

The more unequal the distribution of productivity among men in the society is, the more likely it is that polygamy will develop. In societies prohibiting polygamy, positive pairing-off will be more frequent, in which men marry women who have approximately the same income and level of education. The more important children are, the more likely a society is to experience polygamy. The lower the incomes of women, the higher the probability that a society will introduce polygamy (Becker [1981] 1991).

Although polygamous societies are predominantly traditional, the probability of a divorce is higher in such societies than in Western monogamous societies. Cohen (1971) showed that polygamous marriages are more likely to end in a divorce than monogamous ones. In families with two wives, a divorce with the younger woman is more likely, while in families with three wives, the probability of a divorce with the oldest one is the highest.

While in the USA and Europe, the age difference between a bride and a bridegroom is approximately two years, the average difference in Arab countries is seven years and, in some African polygamous societies, up to ten years. In general, women of any age in polygamous societies are more often married than in monogamous societies. The ones who are most opposed to polygamy are educated women who benefit from pairing-off in monogamous societies.

Anthropologists have found out that a marriage and a family are the rule in all cultures. However, it is also true that the overwhelming majority of contemporary or past societies permitted men to have more than one wife: a total of 980 out of the 1,154 cultures, the data on which were available to David Symons (1979), were polygamous. On the contrary, women were permitted to have multiple husbands only in 6 societies. And only in the rest of them, strict monogamy was the norm.

Robert Wright (1995) confirms the theory that polygamy is more advantageous for the majority of women and poses the question: How is it at all possible that monogamy evolved in Western patriarchal societies, if polygamy should be more advantageous for men according to general notions? Due to human nature, monogamy is a direct

expression of equality among men. It is not a coincidence that Christianity, which spread monogamy politically as well as culturally, often addressed its message to poor men without political power (Wright, 1995).

Although most people in the West might not choose a life in a polygamous society, polygamy is actually unofficially practiced in Western societies. Many women accept or even prefer the role of a lover or a mistress to the more devoted care provided by a less important man, or possibly to remaining without a man at all. Moreover, repeated monogamy – a series of marriages and divorces – has similar consequences for the workings of a marriage market as polygamy (Wright, 1995).

6. Findings of sociobiology

The economics of marriage can be fruitfully confronted with the findings of sociobiology. Sociobiology is a discipline, which combines biology and sociology and tries to explain social phenomena with biological factors. Among the best known sociobiologists are Edward Wilson (*On Human Nature*, 2000) or Richard Dawkins (*The Selfish Gene*, 2011) who tries to explain pairing as a process of obtaining a genetically suitable match.

Although most economists acknowledge that economic analysis fundamentally enriched all the other academic disciplines, economists are surprisingly restrained in their acknowledgement that reading anthropology, biology, history, psychology or sociology is important for good economic analysis. Since there is an intimate connection between reproduction and family, it should not come as a surprise that the theory of evolutionary biology has fundamental implications for family economics (Cox, 2007).

Biologists define the “kinship coefficient” between two individuals as a probability that a randomly selected gene from one of these individuals and the corresponding gene of the other individual comes from a shared ancestor. There is a kinship coefficient of one half between a parent and a child and it is one half for siblings born to the same parents as well; the coefficient between a grandchild and a grandparent is one quarter and it is one quarter between an uncle and a child as well.

It has become a common practice among biologists and evolutionary psychologists to predict the behaviour of animals using a cost-benefit analysis based on what is referred to as Hamilton’s rule (Hamilton, 1964). Hamilton’s rule says that when an opportunity to gain benefit B from another animal presents itself to an animal, the animal will take advantage of the opportunity only when and if $Br > C$, where r is the kinship coefficient between them and C is the cost of the altruistic behaviour.

Hamilton’s theory of family relatedness is central to modern studies of animal behaviour and plays a major role in understanding the cooperative behaviour among animals, the conflict between parents and offsprings, parental investments and the sexual strategies of females and males. Biologists have found a number of examples where individuals routinely carry out actions, which reduce the probability of their survival but increase the probability of the survival of their relatives (Bergstrom, 1996).

Hamilton’s rule predicts that under otherwise identical conditions, the closer the genetic similarity is, the stronger family altruism will be (Cox, 2007). The evidence for this finding can be found in a number of instances, for example, in manifested grief, which will be more intensive in the event of a loss of an identical twin where the kinship

coefficient is 1.0, as opposed to the event of a loss of a normal sibling, where the kinship coefficient is 0.5. The desire to leave inheritance is manifested primarily towards children and less so towards more distant relatives.

Sociobiologists carefully observed human sexual behaviour. For example Buss and Schmitt (1993) carried out an interesting psychological experiment: in a university campus, they had a female stranger approach men and, conversely, a male stranger approach women, with the stranger offering sex in both cases. The objective of the experiment was to find out how many people would accept such an offer.

The findings of the authors are neither overly shocking nor surprising: more than three quarters of men were willing to engage in intercourse when an unknown woman offered it, while none of the women approached by an unknown man accepted this offer. The authors claim that there is a difference between male and female sexual behaviour and that it is rooted in the essence of human nature itself.

George Williams (1966) explained that the potential sacrifice, which women must make, if they decide for an intercourse, is far greater than it is for a normal man. A woman faces the risk of becoming pregnant. And it is the woman who bears most of the costs associated with the birth and the raising of a child. Although the risk that a woman becomes pregnant can be reduced to a minimum today with the help of contraceptives, human nature evolved many thousand years ago in what is referred to as the hunter and gatherer society, and persists in the unconscious mind even today.

When Robert Trivers (1972) examined this problem, he replaced the term “sacrifice” used by Williams with the term “parental investment” and made the whole issue significantly more a matter of economics. The central idea remained simple: parental investments, which must be covered by an average woman for her offspring, are higher than what an ordinary man invests into his children. Consequently, women are more sexually restrained than men (Baumeister, Reynolds, Winegard, Vohs 2017).

David Symons (1979) proved that behaviour that is in line with the theory of parental investments is widespread. The author examined cultures both in the West and the East, cultures living without knowledge of writing as well as cultures in an industrial civilisation, and the conclusion was unequivocal: women choose their sexual partners more carefully than men who, conversely, find attractive the idea of having intercourse with as many female partners as possible.

7. Conclusion

The economics of marriage allows to analyse and predict human behaviour in such areas as marriage rate, divorce rate or division of household chores. It is based on the assumption that individuals strive to achieve their goals while making as little effort as possible and that this is also true for marriage, love and sex. On a marriage market, men and women supply and demand prestige, wealth, education, intelligence, devotion – and, naturally, beauty and sexual attractiveness.

Marriage can be grasped as a cooperative game or a non-cooperative game. In a marriage, negotiations take place between the spouses, in which each of them tries to obtain the best conditions for his or her life together in their household. If a couple

registers turbulence in their relationship, they may get divorced. Divorced women receive a part of the income from their ex-husband after a divorce – in the form of an alimony, child support or a transfer of a part of the assets.

The economics of marriage can be applied not only to Western monogamous societies but also to polygamous societies, which have represented the majority in human history. Wealthier men can afford more wives than poorer men. Polygamous marriage is associated with a greater power of a man within a marriage, the consequence of which is easier separation. Monogamy has probably evolved in Western societies as a result of the introduction of equality among men.

The economics of marriage were fundamentally influenced by evolutionary biology. Sociobiologists who have studied human sexual behaviour have found that there is a difference between male and female sexual behaviour and that it is rooted in the very essence of human nature. Women choose their sexual partners more carefully than men, who, on the contrary, find the idea of engaging with as many partners as possible appealing.

Acknowledgments

The article was published with the support of the Internal Grant Agency of the Prague University of Economics and Business, project registration number F5/9/2021.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributor

Marek Louzek is an associate professor at Prague University of Economics and Business and Czech Technical University in Prague. In years 2003-2013 he served as an analyst for the Centre for Economics and Politics in Prague and an advisor to the President of the Czech Republic. In years 2006-2017 he was an assistant professor, later an associate professor at Charles University in Prague, Faculty of Philosophy and Arts. He authored seven monographs and a number of treatises published domestically as well as abroad. His latest book is *The European Integration Crisis: An Economic Analysis* (Newcastle upon Tyne, Cambridge Scholars Publishing 2020, along with Lubos Smrcka). His articles have appeared in such journals as *The World Economy*, *Post-Communist Economies*, *American Journal of Economics and Sociology*, *Security Journal*, and others).

ORCID

Marek Louzek  <http://orcid.org/0000-0002-6268-8408>

References

- Adshade, M. (2013). *How economics influences sex and love*. San Francisco: Chronicle Books.
- Baumeister, R., Reynolds, T., Winegard, B., & Vohs, K. (2017). Competing for love: Applying sexual economics theory to mating contests. *Journal of Economic Psychology*, 63, 230–241.
- Becker, G. (1991). *A treatise on the family*. London, England - Cambridge, Massachusetts: Harvard University Press.

- Bergstrom, T. C. (1996). Economics in a family way. *Journal of Economic Literature*, 34, 1903–1934.
- Browning, M., Chiappori, P. A., & Weiss, Y. (2014). *Economics of the family*. New York: Cambridge University Press.
- Bryant, W. K. (1990). *The economic organization of the household*. Cambridge, New York and Melbourne: Cambridge University Press.
- Bulte, E., Tu, Q., & List, J. (2015). Battle of the Sexes: How Sex Ratios Affect Female Bargaining Power. *Economic Development and Cultural Change*, 64(1), 143–161.
- Buss, D., & Schmitt, D. P. (1993). Sexual strategies theory. A contextual evolutionary analysis of human mating. *Psychological Review*, 100(2), 204–232.
- Chen, R., & Zhang, L. (2019). Imbalance in China's Sex Ratio at Birth: A Review. *Journal of Economic Surveys*, 33(3), 1050–1069.
- Cigno, A. (1994). *Economics of the family*. Oxford: Clarendon Press.
- Cohen, R. (1971). *Dominance and defiance*. Washington: American Anthropological Association.
- Cox, D. (2007). Biological basics and the economics of the family. *Journal of Economic Perspectives*, 21(2), 91–108.
- Dawkins, R. (2011). *The selfish gene*. London: Folio Society.
- Del Boca, D., & Flinn, C. J. (2014). Household and the marriage market. *Journal of Economic Theory*, 150, 515–550.
- Drewianka, S., & Meder, M. (2020). Simultaneity and Selection in Financial Hardship and Divorce. *Review of Economics of the Household*, 18(4), 1245–1265.
- Duncan, G. J., & Hoffman, S. D. (1985). A Reconsideration of the Economic Consequences of Marital Dissolution. *Demography*, 22(4), 485–97.
- Dupuy, A., & Galichon, A. (2014). Personality traits and the marriage market. *The Journal of Political Economy*, 122(6), 1271–1319.
- Fan, S. (2014). *Vanity economics. An economic exploration of sex, marriage and family*. Cheltenham and Northampton, : Edward Elgar.
- Groeneveld, L. P., Tuma, N. B., & Hannan, M. T. (1980). The effect of negative income tax programs on marital dissolution. *Journal of Human Resources*, 15(4), 654–674.
- Grossbard-Schechtman, S. (1993). *On the economics of marriage*. Boulder - San Francisco - Oxford: Westview Press.
- Hamermesh, D. (2011). *Beauty pays. Why attractive people are more successful*. Princeton: Princeton University Press.
- Hamilton, W. (1964). The genetical evolution of social behavior, I, II. *Theoretical Biology*, 7(1), 1–52.
- Hutchens, R. M. (1978). Welfare, remarriage, and marital search. *American Economic Review*, 69, 369–379.
- Kvasnicka, M., & Bethmann, D. (2011). The institution of marriage. *Journal of Population Economics*, 24(3), 1005–1032.
- Lundberg, S., & Pollak, R. A. (1994). Noncooperative bargaining models of marriage. *American Economic Review*, 84(2), s. 132–137.
- Malthus, T. (1970). *Essay on the principle of population, or a view of its past and present effects on human happiness*. Harmondsworth: Penguin. J. Johnson 1803.
- Manser, M., & Brown, M. (1980). Marriage and household decision making. A bargaining analysis. *International Economic Review*, 21(1), 31–44.
- Moffitt, R. (1992). Incentive effects of the U.S. welfare system. *Journal of Economic Literature*, 30, 1–61.
- Nerozzi, S., & Nuti, P. (2011). Adam Smith and the Family. *History of Economic Ideas*, 19(2), 11–41.
- Oreopoulos, P., & Salvanes, K. G. (2011). Priceless: The Nonpecuniary Benefits of Schooling. *Journal of Economic Perspectives*, 25(1), 159–184.
- Peters, H. E. (1986). Marriage and divorce. Informational constraints and private contracting. *American Economic Review*, 76(3), 437–455.
- Pollak, R. A. (1985). A transaction cost approach to families and households. *Journal of Economic Literature*, 23(2), 581–609.
- Pollak, R. (2019). How bargaining in marriage drives marriage market equilibrium. *Journal of Labor Economics*, 37(1), 297–321.

- Posner, R. (1992). *Sex and reason: An economic theory of sexuality*. Cambridge, Mass., London: Harvard University Press.
- Qian, Z., & Lichter, D. T. (2018). Marriage markets and intermarriage: Exchange in first marriages and remarriages. *Demography*, 55(3), 849–875.
- Rasul, I. (2006). Marriage markets and divorce laws. *Journal of Law, Economics and Organization*, 22(1), 30–69.
- Reid, M. (1934). *Economics of household production*. New York – London: John Wiley & Sons.
- Schultz, T. W. (ed.). (1974). *Economics of the family*. Chicago: University of Chicago Press.
- Smith, A. (1952). *An inquiry into the nature and causes of the wealth of nations*. 1776. London: Encyclopedia Britannica.
- Smith, A. (1966). *The theory of moral sentiments*. 1759. New York: Augustus Kelley Publishers.
- Stark, O., & Szczygielski, K. (2019). The likelihood of divorce and divorce and the riskiness of financial decisions. *Journal of Demographical Economics*, 85(3), 209–229.
- Symons, D. (1979). *The evolution of human sexuality*. New York: Oxford University Press.
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man, 1871-1971* (pp. 136–179). Chicago: Aldine.
- Van Schepingen, M., & Leopold, T. (2020). Trajectories of Life Satisfaction Before, Upon, and After Divorce. *Journal of Personality & Social Psychology*, 119(6), 1444–1458.
- Weiss, Y., & Willis, R. J. (1993). Transfers among divorced couples. Evidence and interpretation. *Journal of Labor Economics*, 11(4), 629–680.
- Williams, G. C. (1966). *Adaptation and natural selection*. Princeton, N.J: Princeton University Press.
- Willis, R. (1973). A new approach to the economic theory of fertility behavior. *Journal of Political Economy*, 81(2, Part 2), 14–64.
- Wilson, E. O. (2000). *On human nature*. Cambridge, Mass: Harvard University Press.
- Wright, R. (1995). *The moral animal*. London: Little, Brown.