Marriage: Past, Present, Future?

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Abstract

1 Introduction

Today, more than one third of children are born to unmarried mothers in a number of Western Countries.¹ Evidently, activities formerly confined to the realms of marriage are no longer so. Does marriage have a future or is it condemned to the scrap heap of history? And does it matter? Arguably, to answer such questions we need to have a grasp on what marriage is.

To that end, I will discuss legal and biological aspects of family formation – two factors which have been given curiously little attention in family economics, a field hugely influenced by Becker’s work, starting with his (1973) “A Theory of Marriage.” However, despite its title, the paper abstracted from marriage itself by treating formal and informal unions alike

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¹For instance, the U.S., Canada, the U.K., Ireland, France, and the Nordic countries.

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which incidentally brings it closer to how biologists view “marriage markets”). Becker [1973]:815 wrote ‘...“marriage” simply means that they share the same household.’ Becker presented an essentially symmetric theory of household production, where gains from specialization in home and market production respectively motivated the union. Key to his theory was the notion of household production: household members produce a commodity that is “...not marketable or transferable among households, although they may be transferable among members of the same household ... [for example] quality of meals, the quality and quantity of children, prestige, recreation, companionship, love and health status” Becker [1973]:816.²

Arguably, of the examples on the list, only children qualify as “not marketable or transferable among households.” There are clearly markets for meals, recreation, and health. Prestige, companionship and love may not be market supplied, but it is unclear how they relate to marriage (or cohabitation).

But how does marriage enter the equation? The mechanism is paternity presumption – a little known but universal feature of marriage. By paternity presumption a man is considered the legal father of children borne by his wife. Paternity presumption applies to all known marriages, whether indissoluble or time-limited, irrespective of the number of concurrent spouses (men or women) thus joined, and biological plausibility. There are no market substitutes that approximates marriage in terms of providing children for men. While adoption may be a market alternative,³ transactions costs are

²Other functions of marriage that have been noted is its role as a partnership that provides insurance, and works as a commitment and signalling devise.
³Perhaps deliberately kept so lest encouraging trade in children.
high and it rarely secures a biological child.

Other than not being marketable, children have several interesting features. From a biological perspective, children are public goods to their parents. Or, to use the words of Eric Charnov, everybody has exactly one mother and one father. One parent’s reproductive success is embodied in an offspring who by necessity also carries the other parent’s genes. Thus, as vehicles for parental genes, children are non-excludable and non-rivalry (to the two parents concerned). Successful cloning of humans could change that. However, considering scientific and ethical hurdles, cloning is likely to remain a remote prospect for the foreseeable future.

In addition to being public goods to their parents, children provide other services that are of a perfectly private good nature. For instance, a child carries on the family name. It may be its mother’s, its father’s, or some combination of both. Children provide other psychic benefits that may depend on physical and legal custody. Children can also provided economic benefits to their owners, primarily labor in the case of sons and bride-price in the case of daughters. Clearly, these are examples of children as private goods. Who benefits depends on who “owns” the child and what such ownership entails.

Children are also the product of sex, the relevance for economics has been given relatively short shrift. Robert Solow allegedly said: “Another difference between Milton [Friedman] and myself is that everything reminds Milton of the money supply. Well, everything reminds me of sex, but I keep it out of the paper.”

To evolutionary biologists, on the other hand, reproduction, and thus sex, conditions a range of behavior, many of which would either fall under
family formation or labor market behavior if observed for our own species. For other animal species, it seems that important facets of social behavior, for example: courting behavior, family formation (or its absence), division of labor between the sexes, dominance patterns between and within the sexes, are remarkably well accounted for by the maximization problem of leaving as many descendants as possible subject to biological and ecological constraints. Among biological constraints one might include whether the species house male and female reproductive functions in the same or in separate individuals; the amount of total parental investments needed to bring offspring to maturity; and whether fertilization is internal or external. Ecological factors would essentially translate as the economic environment facing a population. Whether insights gained from evolutionary biology carry over to our own species is an open question. But at least a priori, the case could be made for it to have some relevance for matters related to reproduction such as marriage and attendant gender roles.⁴

The market for sex, in particular, changed dramatically with the introduction of the oral contraceptive in the 1960s, and its subsequent availability to unmarried women (some ten years later). No longer did men need to marry or pay a prostitute in order to have sex (with a woman). As a direct consequence, women could no longer count on male material support, and had to rely more on their own labor market achievements for social and economic status. Thus, a lower equilibrium price for sex (paid by men to

⁴Many cases of misplaced anthropomorphism (the practice of giving animals human qualities) has been the result of generalizations based on superficial observations of the species at hand. Examples include doves as symbols of harmonious co-existence, or lions as epitomizing male superiority.
women, further elaborated on later in the paper) may have manifested itself in lower marriage rates and, for men, cheaper marriages (mediated through divorce law reforms). Moreover, women’s increased reliance on own earnings may have prompted political demand for labor market reforms ranging from the removal of overt sex-discrimination to the introduction of more women or family friendly policies.

The market for children has seen less dramatic changes. All Western countries have worked towards reducing the legal differences between children born in- and out-of-wedlock. Thus, legal fatherhood is no longer the preserve of married men. However, the decline in marriage mirrors a development whereby children increasingly are raised without the direct support of a male. The causes behind the decline of the traditional family has been a hotly debated issue. The social science literature has focussed on lower male ability to be bread winners (decline in well-paid blue-collar jobs), and greater female economic emancipation (through own earnings, income support, or publicly provided private services). The former emphasizes men falling short of some absolute standard of eligibility, and the latter women’s raising the bar for eligibility. To this can be added that, as mentioned, from a biological perspective, children may be considered public goods to their parents, which raises the prospect of free-riding. This was discussed already by Maynard Smith [1977], and his arguments are well worth revisiting.

The paper proceeds as follows. Section 2 discusses the marriage institution, with particular focus on paternity presumption and some implications thereof. Section 3 discusses biological aspects of children, their being the result of sexual reproduction and, relatedly, their being public goods to their
parents. Section 4 concludes by briefly discussing contraceptives, labor market gender gaps, changes to gender roles and other developments.

2 Marriage and Paternity Presumption

Fatherhood is “indirect, hypothetical and inferential” Bertrand Russell (1929) quipped. To this can be added that, absent marriage, fatherhood is also unknown.

2.1 Men Obtain Children

As mentioned, everybody has exactly one mother and one father. But who are they? By default, only one parent is known: the mother. Who is the father? In case the mother is married, the answer is simple: her husband. This is known as paternity presumption, and it is a legal aspect that is universal and unique to marriage. In case the mother is not married, paternity is unknown until established.\(^5\) In addition to establishing paternity, marriage gives the husband custodial rights. In the Western world, these rights are otherwise vested with the child’s mother.

Paternity as a legal construct predicated on marriage is illustrated in the following examples. Until 1969, (West) German family law held that “an illegitimate child and its father are not deemed to be related,” Glendon [1996]. Moreover, Muslim (and other) family law forbids the marriage of a man to his daughter. However, the following question has been debated: can

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\(^5\)Whether a man can claim paternity differs from jurisdiction to jurisdiction. In Sweden, a man cannot pursue a positive paternity suit.
a man marry a daughter by a mistress? Legal schools differ in their answer,\(^6\) suffice it to note that this is a genuine question that follows logically from defining fatherhood as flowing uniquely from marriage.\(^7\)

The extent to which unmarried fathers can achieve a legal status similar to that enjoyed by married fathers differs between countries. However, any parental rights for men are conditional on paternity establishment. Moreover, custodial rights do not follow from paternity establishment.\(^8\) Germany and Iceland represent extremes. Germany, until December 1997, did not allow unmarried fathers custodial rights, a fact that may have contributed to the relatively low rate of out-of-wedlock fertility. Arguably, the ability to mimic marriage would reduce the incentives to marry and, incidentally, the German out-of-wedlock fertility rate jumped 4.3 percentage points (from 17.9 to 22.2

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\(^6\)Yes – Shafi’is; No – Hanafi, Hanbali, Maliki, El Alami [1992]:28.

\(^7\)While a theoretical possibility, the issue of whether a biological mother could marry her son is of less practical importance. First, legal and biological motherhood have been more closely linked. Second, because of limited fecundity of women, most women would be past child bearing ages when their sons come of age. Third, because mothers are more likely to be present during a child’s infancy than fathers, incest aversion is likely to be stronger in the case of a potential mother-son pairing than a father-daughter pairing, see the Westermarck hypothesis [Wolf 1995].

\(^8\)Recently both Sweden and the U.K. have considered bundling paternity establishment with custodial rights. However, such rights hinge on paternity being established in the first place and in Sweden the proposed law change was turned down for fear that it might prompt unmarried women to withhold information about the father’s identity. In the U.S., a man may get a court order for a DNA test to prove paternity. However, this does not guarantee parental rights. For instance, the natural father’s consent may not be required for an adoption, see, e.g., The Supreme court of North Carolina, No. 250A00, full text at http://pub.bna.com/fl/2000250.htm.
percent) in the two years following the reform. Iceland is the only country, to date, where unmarried but co-residing parents share custodial rights by default. At almost 60% of births, Iceland also has the highest out-of-wedlock fertility rate in the OECD.

Men can also become legal custodians via adoption. However, adoptions are cumbersome for married couples, and are presumably no less so for unmarried men.9

**Children but not Sex**  Presumably, the husband would like to be not only the legal but also the biological father of children borne by his wife, which alone may be a reason for marriage to guarantee the husband sexual access to his wife. Rape in marriage has only recently been recognized, and as a U.S. senator observed, “But if you can’t rape your wife, who can you rape?”10 Recognition of rape in marriage is interesting since it is another example of how legal rights and obligations that used to be implied by marriage have recently been removed. While a husband still has the default rights to paternity of the children his wife bears, marriage need not grant him the right to sex.

One of the earliest countries to recognize rape in marriage was the U.K. where the following statement stood until 1991: “The husband cannot be guilty of a rape committed by himself upon his lawful wife, for by their

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9Adoptions in the Western world is a relatively recent phenomenon. For instance, in England, adoption was only recognized as a legal procedure in 1926 [Douglas 2001] and in Sweden in 1918. Traditional Muslim law does not allow adoption [Pearl and Menski 1998]:408.

10Attributed to Senator Bob Wilson, Democrat, California, 1979, see Freeman [1981].
mutual matrimonial consent and contract, the wife hath given up herself in this kind unto her husband, which she cannot retract.” Chief Justice Sir Matthew Hale (1609-1676).\textsuperscript{11} Many countries still do not recognize marital rape.

\textbf{Consent and Ownership} The mere fact that mothers are more readily identifiable than fathers does not necessarily imply that women are also the default owners of their children. In many African and Asian cultures, the child of an unmarried woman belonged to her father (the child’s maternal grand-father). Incidentally, consent in marriage was not individual (with the bride) but parental (specifically, the father of the bride). Individual consent has been in place since the Middle Ages in Europe, when it was made a necessary condition for marriage by the Catholic Church. This can be contrasted with most non-Western family law or custom according to which parental consent (at least for the woman) was a prerequisite until the 1950s, if not still [Goode 1970].\textsuperscript{12}

\section*{2.2 Men Pay for Marriage}

Since men obtain children in marriage, and this is by far the most convenient way for a man to obtain fatherhood, we would expect men to pay for marriage. Who the recipient is seems to vary with agency: the bride herself

\begin{itemize}
\item \textsuperscript{11}Published posthumously in 1736.
\item \textsuperscript{12}Individual consent is considered a human right according the Universal Declaration of Human Rights, 1948, Article 16, paragraph 2: Marriage shall be entered into only with the free and full consent of the intending spouses. Many Middle Eastern and African countries have not yet signed.
\end{itemize}
is she can contract herself in marriage, or her father in the case of parental consent.

Payments for a bride is called bride-price if her father (or male kin) is the recipient [Goody 1973]). bride-price has been absent from individual consent regimes. Instead, the compensation may be implicit in the form of a higher standard of living. Western family law, at least until the 1970s, obligated the husband to support his wife, either according to his standing (the Napoleonic Code) or according to his own chosen standard of living (the U.S.) Glendon [1996]. While the husband as a provider is not limited to the Western world, note that the husband is not only obligated to support his wife, but needs to do so at a level commensurate with his own level of consumption or status. In contrast, Muslim family law implores a husband of several wives to treat them equally, but equality between the sexes is not required.

Lately, Western family law has moved towards gender neutral terminology, e.g., spouses have joint responsibility for the maintenance of the family. However, marriage establishes joint ownership of assets and which amounts to an implicit transfer to the financially weaker party.\footnote{Unless carved out by a pre-nuptial agreement. Such agreements are, however, not always enforced.} While this does not need to be the woman, the fact that women give up custodial rights in marriage suggests that they would only do so against a compensation. This would imply that in equilibrium, women “marry up,” i.e., they marry men who themselves or their families are socially or economically superior. Empirically, this is such a common phenomenon that it has a name: hypergamy.
Is marriage needed for payment? Napoleon famously concluded that “Concubines put themselves outside the law and the law has no interest in them” (quoted in Glendon (1996)).

Absent marriage, support of the financially weaker party is not unproblematic. Until the late 1970s and the landmark ruling of Marvin vs. Marvin (1976), such contracts were considered contracts for prostitution in the United States [Folberg 1980]. Sweden and France are countries that grant rights to cohabitators, but these are limited to the joint residence and thus excludes, for instance, financial assets and second homes.

Lower payment – Lesser paternal rights There are examples of societies in which different types of marriages regarding parental rights coexisted. It is noteworthy that in all, lower transfer of parental rights is associated with a lower payment for marriage.

Late imperial China had three types of marriage: ‘major’, ‘minor’, and uxorilocal [Wolf 1995]. In major and minor marriages, the children belonged to the husband’s family. They took his name, worshiped his ancestors, inherited his family, and resided with his parents. The difference between major and minor marriage lay in the way wives were obtained. In the major form,  

14Michelle Triola was awarded “palimony,” but not on the basis of six years of cohabitation, but on the ground that she had in effect been the common law wife of actor Lee Marvin, successfully convincing the California supreme court to treat her relationship with Marvin as an “implied agreement.”

However, as the “Man-in-the-house” Doctrine suggests, the poor were exempt from the demands of propriety, at least in the U.S. Until 1968, the presence of an adult male was sufficient ground for ineligibility for AFDC-Basic, and until 1970 cohabitor income counted towards household income for income tested programs.
the bride was obtained when a grown woman, while in the minor form, she was raised by her in-laws from an early age. In either case, the groom’s family paid for the bride. In uxorilocal marriages, the payment would be smaller, and so would the groom’s claims to the children be. In particular, the first sons would belong to the wife’s father and take his family name. It was considered an inferior form of marriage, which it arguably was from the husband’s perspective. Only men who otherwise could not afford to marry agreed to this type of marriage.

Africa provides further examples of the marriage payment correlating with paternal rights. Among the Birwana and Sumbwa in East Africa, a form of inferior marriage existed in which the couple elopes, and the man’s fatherhood may be recognized *ex post* with the payment on a *pro rata* basis, one bull for each boy and one cow for each girl, to the mother’s father (Bosch [1930], cited in Mair [1953]:62). The Nyamwezi of Tanzania and the Ijaw of Nigeria have marriage with or without bride-price. In the marriage with bride-price, the children belonged to the husband’s kin and inherited them. In marriages without bride-price, the children belonged to the mother’s kin, did not inherit the father, and the wife may also continue to live with her natal family Goody [1973]:16.

In pre-industrial Europe, the marriage of an heiress provides the closest example of lower payment for fewer parental rights. A daughter could become an heiress if there were no sons. If she married down, i.e. a man of lesser means or social standing than herself, the children would take her, not her husband’s, name [Goody 1983].
3 Reproduction

There are several reasons for bringing reproduction into the picture. One is that perhaps the most important change to gender relations in the last half century was the introduction of the oral contraceptive, which fundamentally changed the market for sex. Another reason is that children are, from a biological perspective, public goods to their parents. Neither contraceptives nor the public goods aspect to children may have mattered much if at the same time we had not achieved levels of prosperity that allow single parents to successfully raise children on their own or with public assistance.

3.1 Sex: Women Sell – Men Buy

It takes a man and a woman to produce a child, and, conveniently, men and women come in roughly equal numbers. This may lead one to conclude that no one side is systematically short on the partner market. However, if one side makes a substantially greater investment, then that changes. Trivers [1972] pointed to reasons for why it is typically the female side that is scarce, starting with the greater energy invested in the female sex cell compared to the male sex cell (by definition). Trivers elaborated on what is known as the Bateman principle – male reproductive success is limited by partner access, while female reproductive success is limited by resource availability – and noted that “females compete among themselves for such resources as food but not for members of the opposite sex, whereas males ultimately compete only for members of the opposite sex, all other forms of competition being important only insofar as they affect this ultimate competition.” Trivers
Thus, we would expect women to be sellers and men to be buyers on the
sex market. This, combined with the observation that the marriage market
has a similar structure, could have a powerful influence on men and women’s
behavior on the labor market, further discussed in Section 4.2.

3.2 Children as Public Goods – Free-Riding

Children are sometimes modelled as public goods to their parents. Sometimes
the public goods aspect is made contingent on the marital or residential
arrangements of the parents, e.g., Weiss and Willis [1985]. However, from a
genetic point of view, this property is independent of legal and residential
arrangements. Each parent shares 50% of the genes of the child, and the
success of the father’s genes is intrinsically linked to those of the mother’s,
since they are embodied in the same organism. The public good nature
of children to their parents may allow one parent to free-ride on the other
parent’s parental investment. The free-rider gains at the expense of the other
parent and possibly the offspring.

Since this is a biologically based argument, one would also expect the
problem to have arisen in other species, and it may be instructive to study
family formation when little can be assumed about legal sanctions. This

\[10^7\] Bateman studied five male and five female banana flies. On average, male and females
have equally many offspring, but he found the variance for males to be higher than for
females. Moreover, male reproductive success varied with the number of partners, while
other factors seemed to determine female reproductive success.

\[10^7\] Whether the potential for intra-genomic conflict has a bearing on family formation
remains to be explored.
and the next paragraph draw heavily on Maynard Smith [1977]. Generally speaking, it appears that species in which one parent can raise the offspring, only one parent does so. Who is left holding the baby seems to be largely determined by whether fertilization is internal or external. Since the female sex cell is heavier than the male sex cell (by definition), internal fertilization takes place in the mother (easier to transport male than female sex cells). The lag between fertilization and birth (or egg laying) means that the father can abandon earlier than the mother. Thus, among species with internal fertilization, if one parent abandons, it is typically the father. On the other hand, among species with external fertilization (in water), the female deposits her unfertilized eggs and then the male releases his sex cells. The reason for this sequencing might again be linked to the greater weight of the female sex cells. If the sequencing were the reverse, most of the male sex cell may have dispersed before the female sex cells were deposited. The upshot is that the female can leave the scene first. Between abandoning (or eating) the fertilized eggs or caring for them, the male may opt for the latter.18

The parent who can get away leaves the other parent to either invest or start all over again. The abandonment is successful if the parent left behind assumes the cost of raising the offspring. The greater the ability of a single parent to raise offspring, the greater the temptation to abandon. As described above, which parent abandons is likely to be determined by who can leave first. Such opportunism may be countered by demands for up-front payments, or lengthy courting periods. While the former has direct advantages, the latter may bring fewer tangible benefits. Still, it may be

18Described in, for instance, Dawkins [1989].
useful in that it exhausts the courting party, and thus makes abandonment less attractive. If the purpose is to mate again, long courting periods make such abandonment less likely. Moreover, if the male is not going to seek to re-partner, he might as well invest in his offspring by the first partner.

*De facto* monogamy is empirically equivalent to two (putative) parents caring for offspring and since the single parents are typically female, monogamy is highly correlated with male parental investment. This is perhaps one of the reasons for why it is a successful institution among our species (and our greater scope for “human capital” investments), despite the inefficiency introduced by quantity rationing (of wives), pointed out by, among others, Becker [1991]. Humans appear special in that different family arrangements prevail in different cultures.\(^{19}\) In other species, two-parent families only seem to be the norm when important for the raising of offspring to maturity. Birds are of particular interest. Among many bird species, the demands on the parents are high, either because conditions are extra-ordinarily harsh (as for Emperor penguins where one parent broods the egg by holding it between the feet and the lower abdomen, and the other parent fish)\(^{20}\) or because the chicks need to reach adult size before they can fly and provide for themselves (unless of course ground dwelling, e.g., Turkeys).

There are obvious parallels to human societies, and it has been suggested that monogamy restrictions are there to curb destructive rent seeking on the part of men. In the case of little paternal investment, there is little except

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\(^{19}\)Possibly the result of our ability to inhabit a wide range of habitats. For an overview, see e.g., Bergstrom [1996].

\(^{20}\)As a result, social conservatives in the U.S. have touted Emperor Penguins as role models. Perhaps someone should point out that Penguins live in Antarctica.

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genetic diversity that calls for monogamy (or something close to it). For males, this is a winner take all situation, and therefore risky and asocial behavior (such as male-to-male violence or property crime) can carry large rewards in terms of reproductive success. Thus, a reduced role for paternal investment may create an incentive structure where male effort is expanded on intra male competition rather than investments directly benefitting the offspring – a possible reason for the asocial behavior men without children have been credited with, see Akerlof [1998].

A difference between the economics and the biological literature is that while the rise in single parent families (and out-of-wedlock fertility) is sometimes attributed to women’s choosing to have children without men, e.g., Neal [2001], sometimes to men’s abandoning their partners, e.g., Akerlof, Yellen, and Katz [1996] in the economics literature, the biology literature would strongly suggest the latter. Since both mothers and fathers pass on their genes, both parents benefit from children, the only question is how the cost of raising them is divided. Welfare, widely construed, is one factor which allows men to free-ride, but obviously anything that makes it easier to raise a child as a single parent can result in more single mothers, including higher female earnings power. Thus, generally desirable features of modern societies may have contributed to the rise in single motherhood. The extent to which single motherhood also leads to poverty obviously varies across women. There is at least anecdotal evidence that well educated, professional, women in the U.S. not only deliberately chose single parenthood, but also prefer anonymous sperm banks to more traditional routes in order to avoid
paternity claims.\textsuperscript{21} The latter illustrate the potentially private goods aspect to children, a social, rather than a biological, feature but no less important.

Still, whether by choice or lack of such, the rise in single motherhood means that women increasingly are the direct providers for children. This of course does not mean that men do not provide, but arguably this is increasingly done indirectly through taxation and public spending on goods and services targeted to children. Perhaps unsurprisingly, election survey data reveal that men and women’s views on taxation and the role of the state have diverged with higher rates of “non-marriage,” see Edlund and Pande [2002] and Edlund, Haider, and Pande [2005]. Nowhere is this gender gap more evident than in the polarization of the far-left and the far-right parties in Europe. Both being populist, they attract blue-collar workers. But increasingly, the far-left, once a male blue-collar bastion, attracts women. Where did the men go? A surprising number end up at the opposite end of the political spectrum – the far-right with its promise of job protection through protectionism and curbs on immigration.\textsuperscript{22}

4 Discussion

Marriage transfers parental rights from mother to husband. It used to be the by far most convenient way through which men could obtain social fatherhood. While no other contract ensures paternity, paternity can today be


\textsuperscript{22}Le Pen’s Front National obtained 20 percent of male voters against 14 percent of women’s votes in the French national election, 21 April, 2002 [BBC news].
obtain otherwise, as long as the mother consents. This may be one reason for why marriage has declined. However, these legal changes may, in turn, be a response to lower male demand for marriage. Why would demand have fallen? And how have women responded?

4.1 Contraceptives

Contraceptives separate reproductive and recreational sex in a way unknown to other species. While contraceptives have a long history, low cost, female controlled, contraceptives are a novelty. The oral contraceptive was FDA approved in 1960 and quickly gained widespread popularity. If, as argued earlier, women are the restricting side on the sex market, only a female controlled contraceptive is likely to have an impact on equilibrium outcomes. It is a telling coincidence that the so-called sexual revolution remained a fringe phenomenon in the 1960s, when the Pill was restricted to married women, and only entered the “mainstream” in the 1970s. The pill and abortion are two forms of contraceptives that have received attention by economists. They are sometimes lumped together, but there are reasons to treat them separately. First, the oral pill is a much easier to administer and raises fewer moral objections than abortion and thus uptake is likely to be greater. Second, only the Pill was truly a technological invention. Abortion were widely performed before the 1970s. What changed was its legal status, a process possibly reflecting a changing social climate brought on by the Pill. Their lumping together may be due to the fact that the social impact of the Pill did not kick in until it was made available to unmarried women, which roughly

\footnote{Rubber condoms have been around since the mid-19th century.}
coincided with the legalization of abortion.

What the Pill has done to the status of women is a debated issue. Goldin and Katz [2002] argued that the Pill allowed women to postpone child-bearing (and marriage) when it became available to unmarried women in the late 1960s, early 1970s, and thus allow those thus inclined to pursue professions that required long training. Their argument was that, before the Pill, women did not enter longer training programs because they would have to drop out if they fell pregnant. One may wonder, though, why did the increase in female enrollment in professional tracks not happen earlier. After all, a woman in the early 1960s could get married, get the Pill and pursue her training.

Chiappori and Oreffice [2005] argued that improvements in female controlled contraceptives raised women’s utility. This conclusion hinged crucially on there being more men than women on the marriage market and men’s wanting children (as opposed to just sex). Whether there are more men or women on the marriage market is a matter of much discussion. On the sex market, all evidence suggests that women are still short. Whether this carries over to the marriage market is less clear. A potential objection to their conclusion is that the availability of female controlled contraceptives may have reduced male demand for marriage, that is, shifted the situation from one in which women were short to one in which men are. This may result if demand for marriage was really only demand for sex, as argued in Akerlof, Yellen, and Katz [1996]. If men do not want children (and marriage is simply the price men pay for sex), in a world where women can prevent pregnancies by either being on the Pill or obtaining an abortion, children may become the responsibility of women only.
4.2 Wage and Earnings Gender Gaps

As argued above, there are several reasons why men would pay for sex and marriage. This has obvious implications for human capital investments of the genders and time allocated to market work.

Men earn more than women. The demands of reproduction may be an important reason: men need women, and women need resources. Thus, for instance, the fact that men are typically more motivated by money in career choice than women are can be understood as the outcome of female choice. Indeed, in partner choice, women are far more motivated by money than men as evidenced by popular culture, where reality-tv shows ask questions like “Who wants to marry a multi-millionaire?”\textsuperscript{24} Survey data have confirmed this pattern to be universal, see Buss [1994]. While it is commonplace to assert that women have to choose between family and work while men do not, the flip side of this is that women have two alternative sources of income available, while men do not. This could exert a powerful influence on labor market behavior such as education and career choice.

Today, there are few barriers to women’s wages to be at par with men’s. Few jobs require physical strength and most careers are open to women. This can be contrasted with a situation where most work required muscle strength. However, even women’s smaller size and lower muscle strength may be related to their ability to extract transfers from males, as proposed in Wooders and van den Berg [2001]. However, once in place, sexual di-morphism may result in women’s competing for bread-winners, as illustrate by the Empedid dance

\textsuperscript{24} Apparently a lot of women.
flies.\textsuperscript{25} They are a large group of predators where the female has lost its ability to hunt and are entirely reliant on male-borne “nuptial” gifts received during copulation. This reliance on males for resources results in female competition for providers (of protein) and females outdo each other in faking markers of fecundity [Funk and Tallamy 2000].\textsuperscript{26} Another insect that is of interest are the Katykids (grasshoppers). Among them, whether it is the male or the female sex which is limiting (in higher demand) depends on the food supply. When food is abundant, females are the limiting resource, when food is scarce, males are (males are providers). Thus, when males (on average) are worse at providing food, males become the scarce sex and thus the choosier ones. Whether there are parallels to our own species, e.g., women’s position in less developed and developed countries, is left as a speculation.

### 4.3 The New Man

A focus on children as public goods to their parents, and the concomitant free-riding problem offers a new interpretation to the changes in gender roles, in particular the greater emphasis women seem to place on time from their partners. Perhaps, lower ability to secure material compensation (no-fault divorce, etc.) from men has led women to demand contributions in the form of time. Of course, part of this may simply be the flip side of wanting to spend more time in the market when income from marriage is less secure or lower, as noted by Johnson and Skinner [1986]. However, there may be more

\textsuperscript{25}Wikipedia entry for sexual dimorphism: “...the systematic difference in form between individuals of different sex in the same species.” In particular, the fact that women are smaller and, even corrected for height, have less muscle mass than men.

\textsuperscript{26}In this case, inflated abdomens.
to it. By asking for paternal investment in terms of time rather than money, women may reduce the likelihood of being abandoned. One way of seeing this is that men may simply be exhausted from raising a first brood and thus see little reason to leave. Alternatively, one may note that since everybody has 24 hours a day, more emphasis on paternal time has a levelling effect on male quality. If men are alike (or as alike as women), monogamy may be a stable outcome.

Given that the man has higher market productivity than his partner (likely in equilibrium, as discussed above), this is a costly demand. Its inefficiency suggests a market failure. Today, the mechanisms that used to ensure women a share in the economic performance of men have largely been removed. Divorce is easily obtained. Alimony is often not awarded or enforced, and most support is tied to the immediate support of dependent children. Thus a woman with adult children may receive no compensation from a former spouse although her raising of children has substantially reduced her earnings capacity.

The to date perhaps most extreme example is the mandated “daddy month,” in effect in Sweden (and now proposed to be extended to five months) – one month of parental leave has to be taken by the father or is forfeited. However, this is a more wide phenomenon, across the Western world, women request men to do household chores to an extent unknown only a generation ago.
4.4 Odd Ends

I conclude with two observations illustrating the plasticity of the notion of fatherhood. While a mother needs to be a woman, it is unclear whether a father needs to be a man, for examples, see Edlund and Korn [2002]. And while the general trend is towards greater emphasis on biological links, the movement towards recognizing same-sex marriage goes in the opposite direction.

Marriage as male contraceptive  Today, biological paternity is given greater weight. Part of the reason no doubt lies in greater ability to establish biological paternity. Another factor, however, may be that better contraceptives mean that men do not need marriage to delineate paternity. If we allow for the possibility that men do not want children, or possibly only a few, marriage may also serve as a male contraceptive. Until recently, children borne by other women than a man’s wife were simply not his, a potentially convenient property.

Gay marriage  Same-sex marriage is a contentious issue that may go to the core of what is meant by marriage. Many countries now allow same-sex couples to register partnership. However, the term marriage is studiously avoided. A touchstone issue might be paternity presumption. If same-couples were allowed to marry, paternity presumption would need to apply. Some U.S. States allow same-sex couples to jointly adopt children and second-parent adoptions, widely used by same-sex couples to form families, were declared legal by the California Supreme Court in 2003.

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footing, and presumably extends paternity presumption to include same-sex partners. Appleton [2006] has argued that the law should only be applied to lesbian, not gay, couples. If so, this would be yet another example of the basic anonymity of the biological father and social fatherhood as a legal construct.

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