

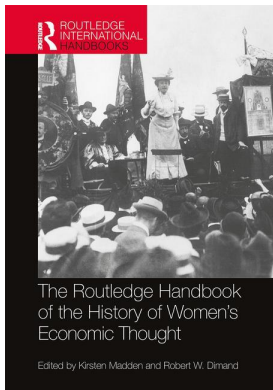
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WOMEN'S NEOCLASSICAL MODELS OF MARRIAGE, 1972–2015

Shoshana Grossbard with a comment by Charlotte Phelps

Introduction

In 1972 Charlotte Phelps published “Is the household obsolete?” in the *Papers and Proceedings* of the prestigious *American Economic Review*. This densely written seven-page article presents the foundations of a theory of couple formation and of in-couple individual allocation of resources and distribution of goods. It is a pioneering contribution that predates Gary Becker’s (1973) much better known economic theory of marriage. So far Phelps’ original ideas on marriage have not been expressed in mathematical terms. Given that such terms became the norm in economic theories of marriage, I am hereby presenting a formalized version of the core ideas in Phelps (1972) in the hope that this formalization might help scholars appreciate this early economic analysis of marriage.

Phelps’ theory of marriage is then compared to Becker’s and my own. It is thanks to the similarity in our theoretical approaches that I have developed an appreciation for Phelps’ pioneering contribution. Some of the major similarities and differences between the three theories of marriage are presented. Two major implications of Phelps’ theory are that women’s choice to become housewives is not necessarily going to hurt them and that in-couple negotiations about who does what in the household are of great consequence. I also summarize some of my own economic theory of marriage, with emphasis on exchanges of work for money across the members of a couple.

Phelps (1972) was not cited in Becker’s writings on marriage (1973, 1981) or in later economic models of marriage such as Manser and Brown (1980), McElroy and Horney (1981), Apps and Rees (1988), or Chiappori (1988). I have not cited her either, as I only recently became acquainted with her contribution to the economic modeling of marriage. The chapter concludes by calling for more recognition for Phelps’ status as a pioneer in household economics. In particular, Phelps (1972) deserves credit for being a pioneer in modeling household production as an individual decision in need of coordination with other household members’ decisions.

The next section offers relevant background information about Charlotte Phelps and me. The third section offers a more formal version of Phelps’ marriage model. The following section compares her theory to that of Becker and to mine. Policy implications can be found in the fifth section, followed by conclusions. In the final section, Phelps summarizes some of her more recent work.

Biographical background

Charlotte De Monte Phelps was born in 1933 and raised in New Jersey.¹ She began her undergraduate training in 1951 at Radcliffe College, shifting from an initial interest in government into economics. Her undergraduate training included a course on economic theory offered by Wassily Leontief. After earning her bachelor's degree, Phelps pursued graduate work in economics at Yale. She studied international trade under the direction of Tom Schelling and monetary policy under James Tobin. Tobin pointed the way to her dissertation topic concerning the impact of tightening credit on municipal capital expenditures and the municipal bond market. She earned her Ph.D. in 1961 and published a paper on her dissertation topic in the *American Economic Review* (Phelps 1969).

At Yale, Charlotte met and married Edmund (Ned) Phelps. As she recalls it, Yale "had an 'unwritten?' rule to prevent nepotism," so when Ned received his instructorship at Yale, she received an appointment to work on the development of an index of economic articles that later became the *Journal of Economic Literature*. She also commuted to teach at Connecticut College for a year during this time, but left because her "idea of what a 'good wife' should do and commuting didn't match." She then received a research appointment from Tjalling Koopmans, Director of the Cowles Foundation for Research in Economics at Yale, and worked with Ned on a paper that was published in the *Review of Economics and Statistics* (Phelps and Phelps 1966).

Ned Phelps received an appointment at the rank of professor with the University of Pennsylvania and the couple moved to Philadelphia in 1966. Limiting her search for positions to the area, Charlotte's research background attracted an offer from Temple University, which appointed her at the rank of instructor. Soon after, the couple divorced. Decades later in 2006, Ned Phelps was awarded the Nobel Prize in economics.

In 1971 Barbara Bergmann invited Phelps to participate in a symposium on women and work at the ASSA meetings in New Orleans, which led to her 1972 article that is at the core of this chapter.

I studied at the University of Chicago in the 1970s, specializing in the economics of marriage. Gary Becker (Nobel Prize in economics 1992) served as the principal advisor on my doctoral thesis about the economics of polygamy in Nigeria. Another Chicago Nobel Prize winner, T. W. Schultz, had consulted in Nigeria and made those data available to me. Before completing my dissertation I published an article in *Current Anthropology* that included a simple version of my theory offering an economic analysis of markets for wife-services and an application to polygamy in Nigeria (Grossbard 1976). Based on consultations with anthropologist Ronald Cohen, a specialist on the Kanuris of Nigeria, it became clear to me that in the city of Maiduguri, Nigeria, wives were mostly employees of their husbands who owned the living quarters and kept custody of children in case of divorce. The idea that husbands employ wives in household production became central to my first theory of marriage. Switching to an application to Western societies where both men and women engage in household production and have property rights to household resources I expanded my theory to include spouses working for each other's benefit in childcare and other household production services. This led to a 1984 article in *Economic Journal*, my 2015 book *The Marriage Motive* and many articles and books on the economics of marriage in-between.

Charlotte and I first met at a 1986 meeting of the Society for the Advancement of Behavioral Economics (SABE). We presented at the same session on family economics and discussed each other's work. Then and later, at the many points where our paths crossed, she was immersed in her work integrating economic analysis with personality tests (see Phelps' comments in the final section of this chapter, and also, Phelps 1988, 1991; Phelps and Ambady 2002). She mentioned her 1972 article, but I did not read it carefully until recently.

Formalizing Phelps' analysis

According to Phelps:

household formation can be explained by making certain assumptions about human behavior: (1) that each person wants to maximize his or her own happiness [utility], (2) . . . a person's happiness varies directly with own *ability* to give and receive *love* and with own level of self-respect, and (3) that the level of a person's happiness is greater if he or she lives in a household that fulfills the conditions of household equilibrium than if he or she lives alone or in a household that is in a state of disequilibrium.

Phelps 1972, pp. 168–169; emphasis added

Utility function and constraints

Phelps does not specify a utility function, but a Phelps-consistent utility function can be obtained based on these and some further assumptions that Phelps makes. She states that a person's happiness varies directly with own ability to give and receive love. If giving love is an activity, not a gift of material goods, giving love (mentioned in assumption 2) can be interpreted as spending time supplying loving care to others, and deriving utility from receiving a partner's love (also mentioned in assumption 2) can be interpreted as deriving satisfaction from the time the partner spends supplying loving care to the individual. In the spirit of Phelps' theory I thus replace the first part of assumption 2 with the following two assumptions: (a) utility varies as a function of *time* spent on giving love and of the loving care that the partner bestows and is received by the individual, and (b) *ability* to love is a parameter that may cause positive shifts in the corresponding utility function:

$$U_i = U_i(\text{love}_{ij}, \text{love}_{ji}),$$

where individual i is the self, j is a (potential) partner, Love_{ij} is loving and caring time that individual i supplies to partner j and love_{ji} is love that i receives when partner j devotes time to care for the individual. The more the individual and the partner are able to love, the more individual i will be satisfied. Furthermore, Phelps states that utility depends on self-respect, implying that

$$(1) \quad U_i = U_i(\text{love}_{ij}, \text{love}_{ji}, \text{selfrespect}_i)$$

According to Phelps self-respect is a function of:

- (i) the ability to perform services competently in exchange for payment; i.e., the ability to demonstrate work competence; (ii) the ability to provide oneself with a desired standard of living (food, clothing, shelter, entertainment); (iii) the ability to choose the kinds of work and leisure activities, the timing of these activities, and the linkage to the companionship of other people which will maximize individual satisfaction, and (iv) the belief in own intrinsic worth.

Phelps 1972, p. 170; Arabic numbers have been replaced with Roman numbers

It follows from (i) that a person derives self-respect from time working in exchange for payment, presumably in the labor force, implying that $\text{Selfrespect}_i = R_i(l_i)$ where l denotes labor, and

from (ii) that self-respect can be derived from goods purchased in the commercial sector (x), i.e. function R can be expanded to $Selfrespect_i = R_i(l_i, x_i)$. Furthermore, according to assumption (iii) self-respect is partially based on choice of leisure activities, implying that self-respect is also derived from leisure time which I denote by s and thus:²

$$(2) \quad Selfrespect_i = R_i(l_i, x_i, s_i)$$

Using Becker's (1965, 1973) production function terminology, equation 2 can be viewed as the function describing how 'self-respect' is produced. The *ability* to work, to obtain goods that the person values and to optimally choose leisure activities can be modeled as parameters that cause shifts in the production function of self-respect.³

Phelps does not explicitly present budget or time constraints, but she specifies that *individuals*, not couples, make decisions regarding time allocation. In contrast, in Becker's (1973) theory of marriage and his (1965) theory of allocation of time he assumes that when individuals are in-couple *couples* make time-allocation decisions. This implies that he assumes a time constraint containing the total time available to both members of a couple.

It can also be inferred from Phelps' (1972) that the budget constraint is an individual constraint. She writes: "In a market economy there are two ways people show they value one another's services: by monetary rewards and by the psychic reward of approval" (p. 170). She thus recognizes monetary rewards, i.e. wages, in the case of labor. More on approval is found on p. 171:

Approval is a psychic reward itself. It is personal. For approval to be a valuable means of payment it must be given by a person or persons to whom the worker wants to demonstrate competence. It must be given by a person whom the worker thinks is a good judge of the level of performance in the worker's chosen field of work.

Approval from others thus contributes to the utility generated by time at work, l .

According to Phelps the budget constraint will depend on an individual's gender and labor force status. Phelps explicitly writes about women becoming housewives, in which case they get monetary rewards for 'work' in household production of benefit to the spouse (and perhaps other household members). However, on p. 171 Phelps is more gender-neutral:

If a person fails to achieve his or her targeted goal in terms of money income, and if the person is accustomed to providing the desired standard of living by earning money income, . . . such a person may seek compensation by performing services for others in exchange for approval either inside or outside the household or by lowering the desired standard of living. If one has satisfied the other requirements for self-respect, one will allocate time between the two kinds of work so that the marginal utility per unit of each currency is equal.

This suggests that individuals (presumably men or women) can work part time in loving care and translate approval from their spouse into monetary income.

It can be assumed that Phelps' budget constraint contains all sources of individual income (including earnings from work in the labor force and from supplying loving care) on one side and all uses of that income on the other side (including possible payments to a partner who gives love to the individual).

Optimization and matching

Phelps' third element of self-respect is "the ability to choose the kinds of work and leisure activities, and the timing of these activities, and the linkage to the companionship of other people which will maximize individual satisfaction." "The ability to choose between various kinds of work and leisure" can be interpreted as a process of individual rational choice whereby individuals maximize their own utility function subject to individual budget and time constraints. Phelps does not offer details on this maximization process. She suggests what an individual equilibrium would entail: individual (not household) consumption and "one will allocate time between the two kinds of work so that the marginal utility per unit of each currency is equal" (1972, p. 171).

As for the second part in element (iii), "the linkage to the companionship of other people which will maximize individual satisfaction," it describes a matching process by which individuals match their preferred levels of given and received love.

It is now easier to understand Phelps' assumption (3) stated above and at the onset of her article: "the level of a person's happiness is greater if he or she lives in a household that fulfills the conditions of household equilibrium than if he or she lives alone or in a household that is in a state of disequilibrium" (Phelps 1972, pp. 168–169). Phelps thus has an *individual allocative equilibrium*, based on individual maximization and individual willingness to engage in certain activities and purchases, and a household or *couple equilibrium* interpreted as a match by which given and received love correspond and neither of the individuals will want to leave the couple. Furthermore, Phelps also writes about "all households being in equilibrium": "If all people behaved rationally . . . and if all were aware of the conditions necessary for the formation of an equilibrium household, initially all households would be in equilibrium" (p. 169).

Comparing Phelps (1972) to two other economic theories of marriage

Phelps (1972) is now compared to two other economic theories of marriage: Becker (1973) and Grossbard-Shechtman (1984) [hereafter GS]. All three theories aim at explaining both couple formation and allocation of resources within couples.

Comparing Phelps (1972) and Becker (1973)

Phelps' (1972) article innovated research in the economics of marriage in the sense that its publication predates Becker (1973). The two theories both:

- 1 Assume individual maximization of utility and a comparison of utility if married versus utility while single. Individuals rationally decide to either form a couple or leave one as a function of the relative costs and benefits of marriage and its alternatives.
- 2 Assume that individuals derive utility from private consumption, including 'goods' produced at home. In Becker's theory these goods are household-produced 'commodities' denoted by *Z* and individuals compare what they can obtain as singles to the portion of the 'commodities' (potentially) produced in a marriage (as part of a *household* maximization subject to *household* time and budget constraints).
- 3 Address issues of allocation of time to household production and individual in-couple consumption.
- 4 View marriage as a contract.
- 5 Use the concept of equilibrium.

- 6 Assume that unmeasurable individual utility is a function of something else that is unmeasurable: self-respect in the case of Phelps and individual access to commodities in the case of Becker. In Becker (1973) individual utility is derived from individual access to commodities; in turn commodities are produced with household production functions.

However, the theories also differ on the following points:

- 1' Becker's theory includes formal models and clearly stated testable predictions.
- 2' Becker's theory assumes that households produce as if they were one unit. As in his theory of allocation of time (Becker 1965), Becker (1973) assumes that *couples* make time-allocation decisions and that a time constraint contains the total time available to both members of a couple. In that sense Phelps stands out from all the then-available economic literature on time allocation influenced by the *New Home Economics* pioneered by Becker (1960) and Jacob Mincer (1962, 1963):

The theoretical and empirical literature dealing with labor force participation rates and the allocation of unpaid time among activities uses the terms *household production* and *household consumption*. See Gary Becker [1965], W. G. Bowen and T. A. Finegan [1969], Glen Cain [1966], James Heckman [1971], and John Owen [1969].

And importantly, Phelps continues that she does not use these terms because she believes that “the household is a social organization for individuals who engage in some activities with members inside the group and other activities with members outside the group” (Phelps, p. 172, footnote 13; the dates of the publications have been added to the original).⁴ Phelps pioneered by introducing the concept of a household as an institution in which two individuals agree contractually on the allocation of their time. Phelps' individuals make their own decisions regarding production, even if they prefer to be part of a couple and coordinate their decisions with their partner.

- 3' Time uses central to Phelps' theory are not considered by Becker: loving care given to the partner and received from the partner. In part, the absence of such concept in Becker's theory is a corollary of his assumption that 'households' allocate time.
- 4' In her theory Phelps also recognizes that there can be exchanges of loving care by one partner for financial benefits offered by the other partner.
- 5' Even though both theories include the concept of marriage as an *agreement* or contract between two individuals, the need for agreement and coordination in Becker (1973) is not as encompassing as it is in Phelps (1972) since Becker assumes households organize production as a blended decision-making unit, not as separate individuals. In Phelps two individuals continuously remain two independent decision-makers, also at the production stage. Hence the value of agreements regarding household production.

Comparing Phelps (1972) and Grossbard-Shechtman (1984) [GS]

This section first presents the GS model and then compares it with Phelps (1972) and Becker (1973). My theory of marriage was recently tightened in Grossbard (2015).

If a model's goal is to lead to testable implications there is little to gain from modeling unmeasurable utility as a function of unmeasurable Z 's.⁵ This inspired me to assume instead that individual utility varies with the measurable inputs—time and commercial goods—that enter into the production of what individuals consume. More specifically, in GS individuals maximize the following utility function:

$$(3) \quad U_i = U_i(h_{ij}, s_i, l_i, x_i)$$

where h denotes time performing activities that benefit a partner and that I call ‘*Work-in-Household*’ (WiHo; Grossbard 2015). WiHo could be any activity that the individual can perform for the partner’s benefit. h_{ij} is WiHo time the individual devotes to a partner and h_{ji} is WiHo time that a partner devotes to benefit the individual.⁶

Individual optimization in GS involves maximizing utility function 3 subject to a time and a budget constraint. Starting in Grossbard (1976), well before I first became acquainted with Phelps’ work, I have also assumed that when it comes to production at home individuals allocate their own resources even if they are married.⁷

An individual’s budget constraint in GS is based on the assumption that there are given prices for own and partner’s WiHo. Ignoring non-work income an individual budget constraint is

$$(4) \quad w l_i + \gamma_i h_i = p x_i + \gamma_i h_j$$

where w stands for wage and γ stands for the price of Work-in-Household benefiting a partner.⁸ This constraint endogenizes the labor force participation decision and the decision to be part of a couple, by recognizing that both men and women could possibly work in the labor force as well as in WiHo (Work-in-Household production for the benefit of their spouse).

Optimization leads to first order conditions from which GS derives individual willingness to allocate time and money to various uses. More specifically, GS obtains individual supplies of WiHo benefiting spouses (and children) and time that can be classified as leisure (benefits the self only) as well as demands for acts of kindness and loving care (WiHo) that a spouse performs for the benefit of the individual.

Couples are formed and remain together if both the amount of WiHo demanded from the other corresponds to the amount of WiHo she or he supplies and the amount of WiHo that the individual supplies corresponds to what the other has a demand for. This implies a variety of possible contracts between partners, married or not. A traditional housewife/husband agreement of the type discussed explicitly by Phelps (1972) and alluded to in Becker (1973) is just one such contract.

The theory shares points 1 to 5 listed above with Becker (1973) and Phelps (1972). As is the case with Becker (1973), but not with Phelps (1972), GS includes a formal model leading to first order equilibrium conditions and testable predictions.

Point 6 shared by Phelps (1972) and Becker (1973) is that they assume that utility (an unmeasurable entity) is a function of a second unmeasurable entity: commodities produced with a household production function in Becker (1973) and a self-respect function in Phelps (1972). This is not the case in GS.

Like Phelps (1972), and in contrast to Becker (1973), GS does not feature ‘*household production*.’ From start to finish individuals are independent decision-makers and allocate their own time (see Grossbard 2011), even if they are in couple and take their partner’s preferences and constraints into account.⁹ GS replaces Becker’s (1973) combined household time constraint with an individual time constraint. For example, I assume that even when in couple a person has a time budget of 24 hours per day (in contrast to Becker’s couple’s total time of 48 hours per day). Individual time use is restricted to work, WiHo, and leisure.

The following are points that my GS model shares with Phelps (1972) but not with Becker (1973):

- As stated in point 2’ above, Phelps assumes that *individuals* make time-allocation decisions, even when in couple. So does GS. In contrast, Becker (1973) assumes *couples* allocate time and other resources toward household production.

- Loving care of the partner is a time use found in Phelps but not in Becker (point 3' above). Phelps' 'love' and my 'WiHo' have a lot in common: they cover many of the same activities and Phelps recognizes that 'love' acts can be work. However, Phelps and GS also differ on this matter: Phelps tends to limit the 'work' aspect of giving love to the case of a housewife aspiring to "provide herself with her desired standard of living" whereas all loving care could possibly be part of WiHo. Phelps differentiates acts of love motivated by altruistic ideals—unconditional love—from those performed with the expectation of a reward in the form of money or approval (Phelps 1972, p. 171). In her view the former contribute to self-respect while the latter are detrimental to it. This difference between the two models can be clarified by some formalization. Consider a utility function that is obtained based on Phelps' assumptions after incorporating her self-respect function 2 into Phelps-based utility function 1, leading to $U_i = U_i(\text{love}_{ij}, \text{love}_{ji}, s_i, l_i, x_i)$. This Phelps-based function is very similar to equation 3 in GS. What Phelps writes is consistent with her assuming that the partial derivative of this utility equation as a function of loving care is positive in the case of unconditional love but negative in the case of love conditional on a reward. In contrast, I consider all loving care benefiting a spouse as 'work' regardless of gender and whether a person gets 'paid' for it or not. I assume that in equation 3 the partial derivative of utility according to WiHo time supplied is negative and therefore the more an individual engages in WiHo the higher the compensation he or she requires. At the same time some "Work-in-Household" might be motivated out of an idealistic loving disposition, in which case the supply of WiHo starts below the zero axis. This is the case of volunteer work.
- In contrast to Becker (1973), Phelps (1972) considers cases involving the exchange of loving care for financial benefits (point 4' above). GS also models possible exchanges of WiHo, which includes loving care, for financial benefits. However, Phelps limits such exchanges to the case of a housewife whereas GS also models in-couple monetary transfers that incentivize a spouse's supply of loving care/WiHo regardless of gender and employment status. GS does not constrain exchanges the way that Phelps does, for instance, here: "The conditions for household equilibrium can be fulfilled if and only if both members are aware that self-respect and love are complements and that the giving of love is unconditional" (Phelps 1972, p. 171).
- A corollary of point 2' is that according to Phelps (1972) marriage agreements or contracts need to deal not only with consumption and intra-household allocation of commercial goods (as is the case with Becker's theory) but also with coordination of allocation of time and other resources to household production (point 5' above). The same applies to GS. I agree with Phelps that such agreements could be complex and that it might be necessary to renegotiate them regularly: "How can a couple live together without feeling excessively constrained? By negotiating with one another. Life within a household or the experiences of a couple considering household formation may be viewed as a series of negotiations" (Phelps 1972, p. 172).

Policy implications

Becker's (1973) theory of marriage assumes that household production occurs but does not address the question of how households organize production. In contrast, Phelps (1972) and Grossbard-Shechtman (1984) view 'household production' as consisting of the voluntary productive activities of individual members of the household. Since most multi-person households consist of couples, Phelps (1972) emphasizes the need for agreements between the members of a couple regarding both production and distribution of what is produced. Many theories of marriage also recognize the need for in-couple negotiations, including Becker (1973), bargaining theories of marriage (e.g. Manser and Brown 1980, McElroy and Horney

1981, and McElroy 1990), Apps and Rees (1988), and Chiappori (1988). However, what they have in mind are negotiations regarding distribution and consumption in couples.

Negotiations are costly. Family institutions have originated, in part, to reduce negotiation costs and other transaction costs of the kind that are faced by productive firms. Firms and families are similar in that respect, as argued by Ben-Porath (1980) and Pollak (1985). Family institutions, including laws and norms regarding gender roles, often facilitate negotiations by spouses or partners by limiting the range of time-use agreements that are socially acceptable. Such social standards serve as a device to coordinate total work between men and women (Burda et al. 2013). Family formation, including couple formation, can be encouraged by such family institutions. Depending on the social context, societies will opt for different norms about gender roles. Two prominent sets of norms are traditional family norms (often called ‘patriarchal’, see Lamanna et al. 2014) and egalitarian norms. In societies with traditional family norms, women do more household work than men. These tend to be societies with very limited labor force participation of women. In some pre-industrial societies with almost non-existent labor force participation of women, as among the Kanuris of Nigeria in the 1970s, women assume the entire burden of household production (Cohen 1971).

Norms regarding gender roles may also have influenced economic theories of marriage, especially when it comes to predictions and implications derived from theory. Becker’s (1973, 1981) theory of marriage has emphasized the implication that a traditional division of labor is optimal, an implication criticized e.g. by Barbara Bergmann (1995) and Frances Woolley (1996). It is not surprising that a male economist who had reached adulthood at a time when such division of labor prevailed used his theory to rationalize a traditional division of labor. In contrast Phelps, who had reached adulthood around the same time as Becker, never used her theory to offer a rationale for housewives’ specialization in household production. However, traditional households with housewives also play an important role in her theory. She takes their existence as given and discusses the Women’s Liberation Movement’s aspiration to eliminate what she calls the “dependency” of housewives (Phelps 1972, p. 171).

Younger generations, including younger economists of marriage residing in the U.S. such as Betsey Stevenson and Justin Wolfers (2008), have aspired to gender equality in household production (Lachman 2013). This could have influenced their economic theory of couple formation: they do not emphasize the ‘firm’ side of marriage or cohabitation; they see marriage as an institution that has shifted from being a forum for shared production to becoming one for shared consumption (Stevenson and Wolfers 2008). Instituting more egalitarianism in household production has also been a policy priority in the Nordic countries for many decades. This helps explain why Nordic countries were the first to institute parental leave policies for both mothers and fathers and Nordic scholars have written extensively about the effects of such policies (see Gupta et al. 2008). In societies where most educated women, including mothers, participate in the labor force, egalitarian norms regarding household production seem to encourage couple formation (Sevilla-Sanz 2010), especially in the case of highly educated women (Gimenez-Nadal et al. 2012).

A policy implication regarding household production that I have emphasized is the adoption of laws and norms that consider a wider range of time-use negotiations between spouses than the range considered by Phelps (1972). I find Phelps’ rationale for housewives’ devotion to household production excessively idealistic. One of the conclusions of Phelps’ analysis is that:

What the members of the Women’s Liberation Movement overlook is that many women regard their household activities primarily as acts of love; i.e., leisure activities by my definition. . . . the money income they receive is not conditional on earning approval. They suffer no loss of self-respect for the way they choose to occupy their time.

p. 171

While I agree with Phelps' point about the need to negotiate about "who does what" in the household I disagree with her when she writes "No currency, money or approval, can buy love" (p. 172). If she recognizes that housewives supply loving care in return for material benefits, why can't such exchange of love for money be generalized to couples where both spouses participate in the labor force? I would assume that an individual WiHo worker's overall self-respect and satisfaction would depend on how much she/he gets paid for their work. Providing more legal support to exchanges of loving care for money is a key to more fruitful negotiations among partners and potential partners. In turn, if mutually agreeable solutions can be found more easily, this could encourage household formation and lower the number of divorces and separations (Grossbard-Shechtman and Lemennicier 1999; Grossbard-Shechtman 2003b).

Conclusion

In 1972 Charlotte Phelps made an important contribution to the economic analysis of marriage by publishing an article that applies traditional tools of economic analysis to the subject of marriage, couple formation, as well as intra-household production, allocation, and distribution. Gary Becker's (1973) theory of marriage, based on many of the same assumptions, has received considerably more attention. It is hoped that this chapter will encourage scholars interested in the economics of marriage and the family to also read and cite Phelps' pioneering article.

The New Home Economics, under the leadership of Becker and Jacob Mincer, rightfully emphasized the importance of production in the household. However, they conceived such production as 'household production' as if the household is an integrated firm. Phelps (1972) deserves credit in calling for modeling of household production as individual decisions requiring coordination with other household members.

The analysis of production in the household as the result of individual decisions by multiple agents was pursued more systematically in Grossbard-Shechtman (1984) [GS], Grossbard (2015) and a number of my other articles. This approach has led to many testable implications, including predicted effects of fluctuations in sex ratio and compensating differentials in marriage.

Well-functioning families and households need to produce caring and other services for children and other dependants. The approach first presented by Charlotte Phelps and GS could strengthen families by contributing ideas on how to incentivize caring by household members and other forms of non-commercial production. They might help reverse a trend whereby educated young adults are avoiding having children and producing good nutrition and other important goods traditionally produced in households.

It is time to follow Phelps' lead and get away from the black box called 'household production.' Let us make potential producers in the household more aware of the value of their time and other resources and better able to assess what they need to get from their partners in return for their work benefiting partners. Phelps was right to put the emphasis on negotiations by men and women interested in contributing to all that is produced by couples and families. This could lead to better health and cognitive outcomes without the need for intense government intervention that often discourages cooperation between co-parents and between parents and children.

"Is the household obsolete?" A comment on Grossbard by Charlotte D. Phelps

Since many contemporary economists have revealed a preference for formalized models, I am grateful to Shoshana Grossbard for formalizing mine. However, an equally important question for any theory is whether it can be tested against alternative explanations of behavior. My main

contribution was to provide empirical tests of Becker's theory with measures of personality to represent 'tastes' that are held constant.

After the *AER* paper, I invested my time in reading literature on personality development and economic behavior. I became convinced that the effects of early childhood learning are revealed in Thematic Apperception Tests (TAT).¹⁰ I used a measure of altruism from the TAT that Becker approved.

I searched the literature on personality for theories and evidence related to my assertion that parents' love to their babies is a foundation for the babies' future happiness. I found a large literature on attachment theory that explains and documents connections between loving care in early childhood and economic outcomes in adulthood (see, for example, Bowlby, 1969, 1973, 1980, 1988).

I found materials that documented connections between early childhood socialization and adult economic outcomes in a thirty-six-year longitudinal study of Boston baby boomers conducted by Harvard psychologists (Sears et al. 1957; McClelland and Pilon 1983; Franz et al. 1991; McClelland and Franz 1992). Social interactions in their families in early childhood influenced their perceptions of opportunities for work and love. Mother-anxiety observed when their children were in kindergarten predicted lower levels of parenting satisfaction and work satisfaction thirty-six years later (Phelps 2005). Mother-infant warmth predicted parenting satisfaction.

I found two nationwide surveys of Americans' mental health (see, for example, Gurin et al. 1975) included TATs. I used data from them to test hypotheses in "A Theory of Social Interactions" (Becker 1974), to study personality differences in fertility (Phelps 1995), effects of parents' divorce on their children's economic outcomes (Phelps 1998), and connections between TAT motives and happiness (Phelps 2001). A finding from the last paper was that altruists tend to marry altruists and are happier than couples who bargain. A point relevant to Grossbard's research is that altruistic husbands reported they helped often with childcare.

Notes

- 1 The biographical notes for Phelps are based on her personal recollections.
- 2 The symbol s denotes leisure (corresponds roughly to 'time for self' in Grossbard-Shechtman (1984).
- 3 Some further elements of Phelps' self-respect are discussed below.
- 4 It is noteworthy that most of the economists that Phelps cites here were associated with the New Home Economics when or soon after it was developed at Columbia by Becker and Jacob Mincer, the two fathers of the New Home Economics (see Becker 2006): Becker was at Columbia while he published his theory of allocation of time; the basic model used by Glen Cain is that of Mincer 1962 (see Haber 1967); Heckman joined the Columbia labor workshop in 1970, the year after Becker left for Chicago; and Owen was a student of Becker and Mincer at Columbia.
- 5 As I learned from economist Yoram Ben-Porath in the 1970s.
- 6 WiHo was called 'spousal labor' in Grossbard-Shechtman (1984).
- 7 Charlotte Phelps and I first met in 1986. Soon after, she sent me the 1972 article discussed here.
- 8 In Grossbard-Shechtman (1984) I used the symbol w^* for the 'price' of WiHo (then called spousal labor). More about this price is found in Grossbard (2015).
- 9 Grossbard-Shechtman (2003a) also includes models with consumption of household public goods that are possibly produced jointly.
- 10 A Thematic Apperception Test (TAT) is a projective personality test in which a person composes stories about pictures of different situations. Psychologists score the stories for themes of achievement, power, and affiliation. See Smith et al. (1992) for copies of the pictures, the scoring manuals, and essays interpreting the manuals. Themes in the stories reveal motives hidden from conscious awareness. Coombs (1947) found that the TAT captured motives that were excluded from autobiographies, among them being the desire to be accepted and the desire to atone.

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