Article 1

July 1986

Compensation for Loss of Household Services

Euston Quah

Compensation for Loss of Household Services

COMPENSATION FOR LOSS OF HOUSEHOLD SERVICES

By Euston Quah*

I. INTRODUCTION

In cases of personal injury resulting in the loss to a household of an individual who produces non-monetary income, there is a need to assess damages, just as in cases resulting in the loss of money income. Household services are a large component of non-monetary income. The money value of services in the home constitutes an appropriate item of damages. This gives rise to an issue of valuation: how is one to measure the value of lost household services? The aim of this paper is to examine several of the methods used in valuing household services in order to determine whether these methods are consistent with the legal principle behind compensation in tort. It is shown that the most commonly used method of calculating compensation, the replacement cost method, is unsatisfactory and may lead to significant biases. The paper presents a simple economic model of home production, which illustrates the most appropriate measure of compensation. The paper emphasizes that, although household production has been studied extensively, a serious question regarding the appropriate measure of compensation remains.

II. THE JURISPRUDENCE AND THE LEGAL RULE OF COMPENSATION

In Canada, the right to sue for damages for the loss of household services was established by the Supreme Court in 1885 in *St. Lawrence and Ottawa Railway Co.* v. *Lett.*[1] In that case, Chief Justice Ritcher said:

---

[1] (1885), 11 S.C.R. 422 (S.C.C.). The language of the judgement unnecessarily restricts the principle to the loss of a mother or wife. Gender is irrelevant to the issue. "While the *Lett* case dealt with the loss of a mother, there is absolutely no reason, in principle, not to apply its reasoning in the case of father." *Recent Developments in the Law of Damages* (Toronto: Law Society of Upper Canada, Department of Continuing Education, November 1975) at 39.

> I cannot think [that] the injury ... ought to be confined to a pecuniary interest in a sense so limited as only to embrace loss of money or property, but that, as in the case of a husband in reference to the loss of a wife, so, in the case of children, the loss of a mother may involve many things which may be regarded as of a pecuniary character. . . .[2]
>
> I must confess myself at a loss to understand how it can be said that the care and management of a household ... and [the] bringing up by a worthy loving mother of a family of children is not a substantial benefit to the husband and children; or how it can be said that the loss of such a wife and mother is not a substantial injury but merely sentimental, is, to my mind, incomprehensible. . . .[3]
>
> The evidence in this case shows that the husband was receiving benefits and advantages from the services of his wife capable of pecuniary computation, and had such reasonable expectation of pecuniary benefit from the continuance of such services by the continuance of the wife's life as would entitle him to damages. . . .[4]

The case thus established the principle that surviving family members are entitled to compensation for the loss of household services previously performed by the deceased person. In such cases,[5] the surviving family suffers a loss of household production resulting in a decrement in their economic welfare. It is this *welfare loss* that is compensated by an award of damages.

In the past, the common law did not allow surviving family members to sue for any losses. All claims died with the victim; but since then, the right of survivors to sue for damages has been granted by legislation.[6] Recovery for the loss of household production will fall under a 'loss to survivors' approach.[7] Compensation based on a 'loss to survivors' approach is more sensible because it assesses the loss from the perspective of the household — it recognizes the loss of non-monetary income that the household originally enjoyed and would have continued to enjoy if the victim had not died. The courts recognize that this loss of welfare is similar to the loss of welfare arising from the inability, through death

---

[2] *Ibid.* at 426.

[3] *Ibid.* at 435.

[4] *Ibid.* at 436.

[5] See, for example, *Vana v. Tosta* (1967), [1968] S.C.R. 71, 66 D.L.R. (2d) 97; and *Ponyicky v. Sawayama* (1943), [1943] S.C.R. 197, 2 D.L.R. 545.

[6] See, for example, *An Act for Compensating the Families of Persons Killed by Accidents, 1846* (U.K.), 9 Vic., c. 93; *An Act to Revise the Family Law Reform Act,* R.S.O. 1986, c. 4, s. 61(1); *Family Compensation Act,* R.S.B.C. 1979, c. 120, ss 2-3(1).

[7] J. Fleming, Jr., "Damages in Accident Cases" (1956) 41 Cornell L.Q. 582 at 611-14. The alternative, called the "loss to estate" approach, analyses the loss from the perspective of the victim. This approach suffers from substantial problems: (1) the problem in attempting to value a human life, with the victim's representative demanding infinite compensation; and (2) in cases of instantaneous death where the victim suffered no pain, had no history of labour force participation, and not showed no signs of entering the labour force in the future, the loss could go uncompensated.

or injury, of a family member to earn money income. The rationale for compensation and the measure for damage awards should therefore be one and the same.

Judicial decisions attempt to measure this welfare loss in a manner consistent with the purpose of tort law. Tort law enables a victim who has been wronged to seek redress from the tort-feasor for the losses suffered. The purpose of tort law is to restore an injured party to the same level of welfare that he or she enjoyed before being injured. In a well-known statement of law, Lord Blackburn said that

> where any injury is to be compensated by damages, in settling the sum of money to be given . . . you should as nearly as possible get at that sum of money which will put the person who has been injured . . . in the same position as he would have been in if he had not sustained the wrong. . . .[8]

Similarly, eminent scholars of law have always maintained that the rule of compensation is to restore the original position of the victim — *restitutio in integrum* — so far as it can be done. For example, Professor James Fleming Jr. wrote that

> [t]he principle of compensation is a natural enough corollary of the fault principle. If [the] defendant is a wrongdoer and he is to pay damages to an innocent plaintiff, it seems eminently fair that these damages should (at least) put the plaintiff, as nearly as may be, in the same position he would have been in if the defendant's wrong had not injured him.[9]

Professor Neil Komesar argues that this rule necessarily encompasses a loss of household services:

> Should the destruction of the driver and loss of his or her services be treated differently?
>   These chattels are inputs into the household processes which produce the ultimate pleasure and well-being of the household. The loss to the household is the decrease in its ability to produce the same state of welfare associated with the original state of these chattels.[10]

In sum, the legal rule of compensation is to award an amount that would leave the injured party in the same position as if the accident had not occurred. This rule of compensation can best be applied with the aid of economic theory. Stated in economic terms, the rule calls for an award of damages that would restore the welfare of the injured party to its original level.

---

[8] *Livingstone* v. *Rawyards Coal Company* (1880), 5 App. Cas. 25, 42 L.T. 335 (H.L.).

[9] *Supra*, note 7 at 583.

[10] N.K. Komesar, "Toward a General Theory of Personal Injury Loss" (1974) 3 J. Leg. Stud. 457 at 466.

It is, perhaps, disappointing to observe that this rule of compensation is not always properly applied. This may be due to the considerable difficulty of applying the rule accurately. However, a more fundamental cause is a conceptual misperception regarding the actual loss. Existing methods of measuring welfare loss, such as the replacement cost method, opportunity cost method, or other variants, do not measure the loss in a manner consistent with the principle behind compensation in tort.

III. CURRENT LEGAL METHODS OF CALCULATING COMPENSATION

Measurements for legal purposes of the loss to a household resulting from the death or injury of a person providing household services essentially borrow from the economic literature on the valuation of household production. The law generally follows one of three approaches. The replacement cost approach, by far the most common, measures the cost of replacing the services provided by the deceased to the household.[11] Less frequently, courts resort to the opportunity cost approach, which measures the wages foregone by the decedent while performing household services.[12] Occasionally, reliance is also placed upon valuations by jurors and testimony by so-called expert witnesses.[13]

A. *The Replacement Cost Approach*

Canadian and American courts have consistently adopted the replacement cost method in order to value lost household services. There are two variations of the replacement cost method. The first, known as the itemized services approach, applies the market wage rate for comparable services to the average amount of time devoted to different household services. The total value of household production is then taken to be the sum of the hours devoted to meal preparation multiplied by the market wage rate of a cook; the hours devoted to cleaning multiplied by the market wage rate of a cleaning lady; and the respective hours taken up by other tasks, each multiplied by the wages commanded by

---

[11] See, for example, H. Rosen, "The Monetary Value of a Housewife: A Replacement Cost Approach" (1974) 33 Am. J. Econ. & Soc. 65 at 68; C.S. Pyun, "The Monetary Value of a Housewife: An Economic Analysis for Use in Litigation" (1969) 28 Am. J. Econ. & Soc. 271; Statistics Canada, Office of the Senior Advisor on Integration, *Estimating the Value of Household Work in Canada, 1971* by O. Hawrylyshyn (Ottawa: Ministry of Industry, Trade and Commerce, 1978).

[12] See, for example, Komesar, *supra*, note 10; F.J. Pottick, "Tort Damages for the Injured Homemaker: Opportunity Cost or Replacement Cost" (1978) 50 U. Col. L. Rev. 59; R.A. Posner, *Economic Analysis of Law* (Toronto: Little, Brown, 1977) c. 7.

[13] Pottick, *ibid.*

people who hire themselves out to do those sorts of jobs. Proponents of this method argued that, although some household tasks do not have close market substitutes, most do, and approximations can usually be made for the rest.

The second variation, known as the substitute-homemaker approach, evaluates what it would cost to replace all household services by hiring a single housekeeper. Rather than assuming that different tasks would be done by cooks, babysitters, accountants, chauffeurs, commercial cleaning services, and the like, who, it is sometimes argued, would demand premium wages to work the intermittent hours of most household production; this approach makes the more realistic assumption that all of the work would be done by a single individual. With either variation of the replacement cost method, the court will determine the appropriate time period over which the replacement would be required, taking into account mitigating factors such as the potential for remarriage, probabilities of divorce, and life expectancies.

There are a number of conceptual and practical problems associated with either variation of the replacement cost method. Both versions mistakenly assume that quality and efficiency are invariant; the market wage rate may therefore either over or underestimate the actual value of the household services provided.[14] However, a more serious objection to the use of replacement wages is that these sums will almost certainly overstate how much households are willing to pay for, and thus how much they value, the time devoted to these services at the margin. If households were required to pay the going wage for the performance of household services, their consumption of these services would be greatly reduced.

It should also be pointed out that many household services do not require the associated degree of education or skill of a market equivalent and that few homemakers would spend the same amount of time at the job as the first variation of the replacement cost method would seem to indicate. The result is that, more often than not, a figure based on these methods is inflated. The fact that households rejected these market replacements in the first place would seem to indicate that either households find the differences in efficiency and quality wanting or that the price of market replacements is too high relative to the households' perception of their value.

---

[14] E. Quah, "Persistent Problems in Measuring Household Production" (1986) 45 Am. J. Econ. & Soc. 235.

B. *The Opportunity Cost Approach*

The opportunity cost method measures the value of household production in terms of the wages foregone when time is given to producing household services rather than earning money income from paid employment outside the home. The presumption is that time is allocated to household production rather than to earning money income because the household values the benefits from household production more than the money that could have been earned outside the home. The opportunity cost is thus a measure, arguably a lower-bound measure, of the value of household production. However, with the occasional exception of British courts, the idea of valuing a household's welfare from household production in terms of foregone wages has not been accepted.

There are a number of practical problems that may arise in the application of this measure. For instance, the assessment of the wage rate foregone is complicated if the deceased person did not sell any of his or her services in the labour market. This problem is particularly acute with deceased persons who had been out of the employment market for a long time and had little in the way of marketable skills.

Another problem concerns the institutional constraints dictating the length of work weeks (such as forty or forty-four hours per week), thereby introducing a large element of 'lumpiness' into the options facing individuals. Because of this, it is uncertain how many of the hours devoted to household production are valued more than the outside hourly wage and how many are not. The courts therefore consider the measurement of potential money contribution to the household to be overly speculative and are unwilling to accept such a probabilistic estimate.

Furthermore, the approach is criticized because it implies that a more highly educated person is a better spouse or parent and that, as such, the household should be awarded greater damages for their loss. It may be that the amount of foregone money income has no correlation to the quality of household production.

A more serious problem is that the measure derived does not reflect the amount of welfare derived from household production. Although the method may reveal the opportunity cost of the time spent in home production, it does not reveal the amount of welfare that the household derives from such production; the latter is the amount of total benefits less total opportunity costs. This is the net-value measure of household production. Since the rule of compensation is to restore lost welfare, damage awards based on the opportunity cost method will be inaccurate. Whatever other reasons the courts may have for rejecting the opportunity cost method of compensation are reinforced by this discrepancy between opportunity cost and the net value of household production.

C.   *Other Variations: Claims of Household's, Jury Assessments, and the Use of Expert Witnesses*

Seldom will courts accept testimony from the family and friends of the deceased regarding their valuation of the loss of household production.[15] This method of compensation is rarely accepted and strongly discouraged because of the inherent unreliability of such testimony and its prejudicial effect on the jury.

Similarly, it is uncommon to allow the jury to determine the amount of compensation necessary to restore the welfare originally enjoyed by the household.[16] This method, known as 'presumption', assumes that housework has value and that jury members, having had experience in performing housework, would be in the best position to assess that value. The method is purely speculative — like jury assessments of compensation for pain and suffering. It offers no convincing justification for the accuracy of the assessment of the welfare loss.

The use of economists, home economists, actuaries, and statisticians — the so-called expert witnesses — to provide testimony regarding the valuation question has and continues to become increasingly common in tort actions.[17] Mr. Justice Dickson, as he then was, said in *Lewis* v. *Todd* that

> the award of damages is not simply an exercise in mathematics which a Judge indulges in, leading to a 'correct' global figure. The evidence of actuaries and economists is of value in arriving at a fair and just result. . . . If the Courts are to apply basic principles of the law of damages, and seek to achieve a reasonable approximation to pecuniary *restitutio in integrum* expert assistance is vital.[18]

Similarly, in *Merrill* v. *United Air Lines Inc.*, the Court stated: "As knowledge becomes more professionalized, specialists will more frequently be called upon as expert witnesses. This is the judicial by-product of an age of pervasive technology and expanding social sciences."[19] The

---

15 Pottick, *supra*, note 12.

16 *Ibid.*

17 In the past, expert testimony was not readily accepted, and some courts have held it in error to admit such testimony on the theory that the determination of the value is a matter of common knowledge and experience that should be left to the judge and jury. Other courts have taken the view that expert testimony is too controversial, since the courts will have to determine which expert testimony to follow. For instance, is the testimony from an economist more relevant and correct than the testimonies of home economists and directors of employment agencies? On this, see C.J. Peck & W.J. Hopkins, "Economics and Impaired Earning Capacity in Personal Injury Cases" (1969) 44 Wash. L. Rev. 351.

18 (1980), [1980] 2 S.C.R. 694 at 708, 115 D.L.R. (3d) 257 at 267.

19 177 F. Supp. 704, 705 (S.D.N.Y. 1959), cited in L.M. O'Connor & R.E. Miller, "The Economist-Statistician: A Source of Expert Guidance in Determining Damages" (1972) 48 Notre Dame Law. 354 at 357.

point is made succinctly by Professors Leo O'Connor and Robert Miller: "One purpose of using an economist-statistician is to assist a court and jury in determining the true economic losses sustained. . . . The economist-statistician's opinion stands or falls not on the resultant dollar computations but on the convincing explanation of the basis for his calculations."[20]

Expert testimony may aid a court in arriving at a fair and appropriate amount for compensation, but the conceptual basis upon which the calculations depend are quite often in error. The error lies in the use of methods which are inappropriate for measurements of welfare and welfare changes. For example, in *Franco* v. *Woolfe*,[21] one of the expert witnesses, Oli Hawrylyshyn, a professor of economics at Queen's University, testified that the value of household production is an imputed replacement cost estimate for the country's gross national product. Apart from the problems discussed earlier with the replacement cost method, this approach makes a serious error in failing to distinguish between the objective of measuring the gross national product and the objective of measuring household welfare. Procedures appropriate for the former are not necessarily appropriate for the latter. The method suggested by Hawrylyshyn is therefore inappropriate.

IV. VALUATION AND COMPENSATION CONSISTENT WITH ECONOMIC THEORY

The problem with valuing household production is that it occurs outside the market; it is not purchased and, hence, there are no prices to indicate the value of such outputs at the margin. Valuations are therefore dependent on indirect measures of value. The fact that household production is an extra-market activity does not imply that the goods and services produced are valueless. Households clearly value them and demonstrate this by their willingness to give up other goods and services in order to enjoy the benefits of household production.

The issue is not whether household production has value or not, but rather the appropriate method of valuation. The appropriate method will in turn depend critically on the purpose of the valuation: whether it is for national income accounting, matrimonial property settlements, or valuation for compensation. This question of purpose has been seriously neglected by most researchers. Depending on the purpose of valuation, the appropriate measure would involve marginal, total, or net valuation.[22]

---

[20] O'Connor & Miller, *ibid* at 357.

[21] (1976) 69 D.L.R. (3d), 501 6 O.R. (2d) 277 (Ont. C.A.).

[22] See Quah, *supra*, note 14.

Thus, if the valuation is for national income accounting, then, in order to be consistent with the measurements of marketed outputs, market prices, or the values at the margin, are the appropriate measure. On the other hand, if the purpose of measurement is compensation for welfare loss, as it is in tort litigation, then it is the measurement of net value that is appropriate — for the objective of compensation is to return the injured party to its original welfare position, enjoyed prior to the accident.

Household production is usually seen to be of great importance to the welfare of households — even essential, given that food requires preparation, children (if there are any) require care, and some minimal level of cleanliness is necessary in order to maintain physical well-being. Household production is, after all, the creation of goods and services by household members for their own benefit. Yet, although households undoubtedly receive a benefit from household production, the amount of benefit will likely decline as production increases. There are diminishing welfare returns from household production. Households will cease to produce household services at the point at which the benefit from the last hour of production just equals the opportunity cost of production. At this point, the welfare returns from any further production would be outweighed by the opportunity costs; but up until this point, the benefits exceed costs.

The notion of consumer's surplus is that people value the aggregate of the goods that they purchase by some amount in excess of what they actually pay for them in market exchanges. This is to say, up until the last unit purchased — the marginal unit — consumers would be willing to pay an amount in excess, and often far in excess, of the market price. The difference between the cost and the benefit received from infra-marginal units allows consumers to enjoy a surplus from the exchange — they obtain something by paying only a portion of what they would be willing to sacrifice for it. This surplus amount is, to the consumer, a gain from the exchange; these gains are appropriately termed 'welfare measures in consumption'. Similarly, on the production side, the notion of producer's surplus is that producers would be willing to supply infra-marginal units of goods at less than market prices; but because all units are sold at the established market price, producers are said to gain from the exchange. These gains are appropriately termed 'welfare measures in production'.

Household production is peculiar because households themselves both produce and consume the goods and services. The measure of household welfare derived from home services is therefore the sum of the consumer and producer surpluses. This sum of economic surpluses is the net value measurement from household production. Since what is involved in the

death or injury of a person providing household services is the degree to which family welfare is affected, the appropriate measure for compensation is the amount required to restore the household's net value position to the level it was at prior to the accident.

Consider Figure 1, below, which shows the marginal benefit (MB) and marginal opportunity cost (MOC) curves (assumed here, for convenience, to be linear and continuous) of a given household.
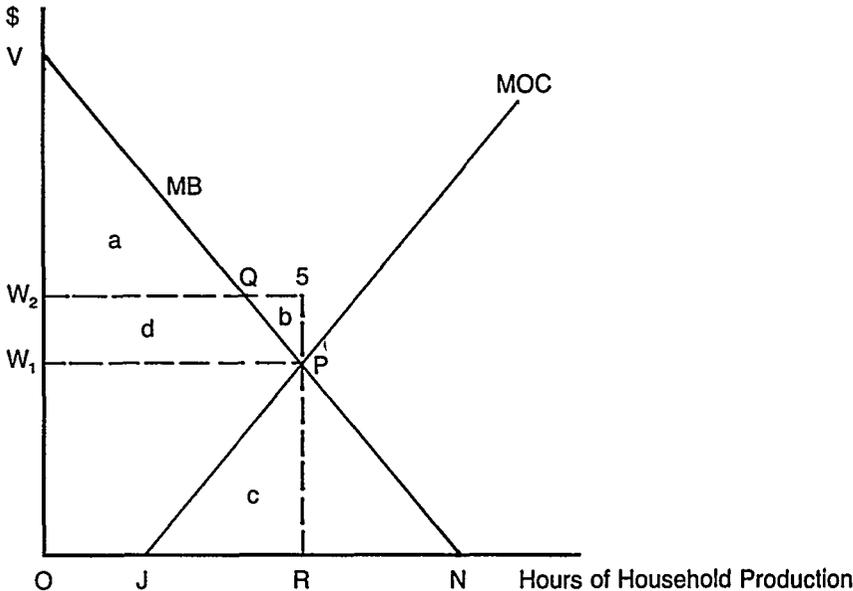
Figure 1

The declining marginal benefit indicates that, for most households, at least some level of household services are important, but successive quantities are less important. At point N, nothing could be gained by devoting an additional unit of time to household production. The marginal opportunity cost curve has a positive slope indicating that opportunity costs rise as more time is employed in household production. For most households, the marginal opportunity costs are likely to be relatively small for some limited allocations of time to household production and may even be zero or negative for some very small allocations of time (OJ); but marginal opportunity costs would probably increase with larger commitments. The rise in marginal opportunity costs occurs as members of the household with greater and greater potential earnings allocate their time to household production rather than money-producing activity. A household facing marginal costs and marginal benefits as indicated

in Figure 1 would devote OR hours to household production. For by devoting OR hours to home production, the welfare of the household is maximized. At this point, marginal opportunity costs are equal to W_1, and the replacement wage rate is equal to W_2.

The correct measure of a family's welfare in household production is, as argued earlier, the net-value measurement. In Figure 1, this is shown as the amount OVPJ. In contrast, the replacement cost measure will take OW_2SR to be the welfare estimate; this is an overestimation if $a < b + c$, or an underestimation if $a > b + c$, where $a = W_2VQ$, $b = QSP$, $c = JPR$, and $d = W_1W_2QP$. The opportunity cost measure will take OW_1PR to be the correct estimate; this is an overestimation if $c > d + a$, or an underestimation if $c < d + a$. The replacement cost measure exceeds the opportunity cost measure by the amount $d + b$.

Assuming that the family member who normally provides all of the household services is killed or completely disabled by an accident and that no other household member can perform the services due to other constraints, then it is clear from Figure 1 that OR hours of previously performed household services are lost. The household's marginal cost curve is, in effect, vertical and equal to OV. The amount of compensation required is simply OVPJ — the amount of net benefits lost. The amount OVPJ, when paid to the family, returns their level of welfare to the level enjoyed before the accident.

This same analysis can be put in terms of indifference curve diagrams. In Figure 2, the household is shown originally at an optimum position Z_0 — receiving M_1 dollars in market income and spending H_1 hours on household production — with the household's utility maximized at level U^0. If, as a result of the accident, no hours of household production can be performed, the household will be at point M_1, maximizing the amount of money income produced and received. Corresponding to this point M_1 is a lower welfare or utility level, U^{0-1}. The minimum compensation sum (called the compensating variation in income) required in order to restore the household to its original level of utility is given by the vertical distance M_1M_2 (point M_2 lies on the same household indifference curve as point Z_0). Thus, M_1M_2 is the minimum sum necessary to leave the household's total net benefits, or net value, from household production unchanged. The compensation sum M_1M_2 is, therefore, equal to the amount OVPJ in Figure 1.[23]

---

[23] It is assumed here that there are no income effects so that the indifference curves U^0 and U^{0-1} are vertically parallel and the demand curve VN in Figure 1 is Hicksian.
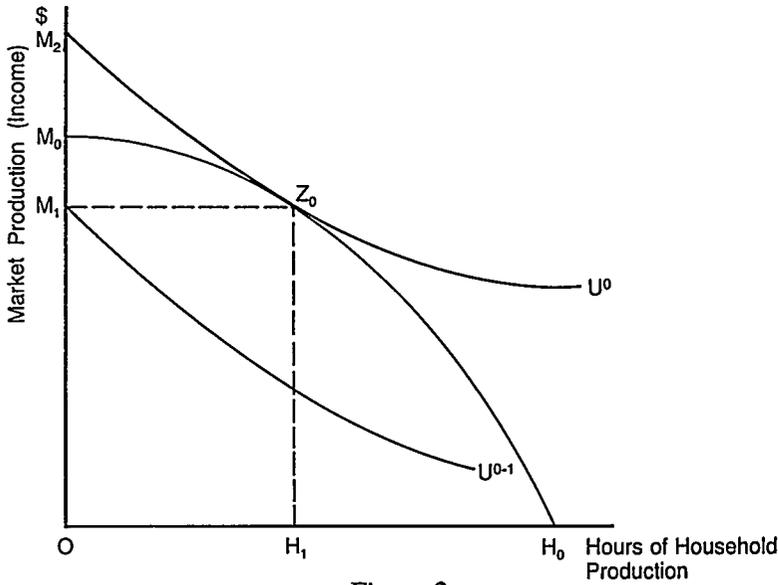
Figure 2

As argued earlier, the replacement cost method is unreliable; it will probably lead to an overestimation of the welfare loss from household production because it ignores changes in welfare. An illustration of such an overcompensation is provided in Figure 2a.
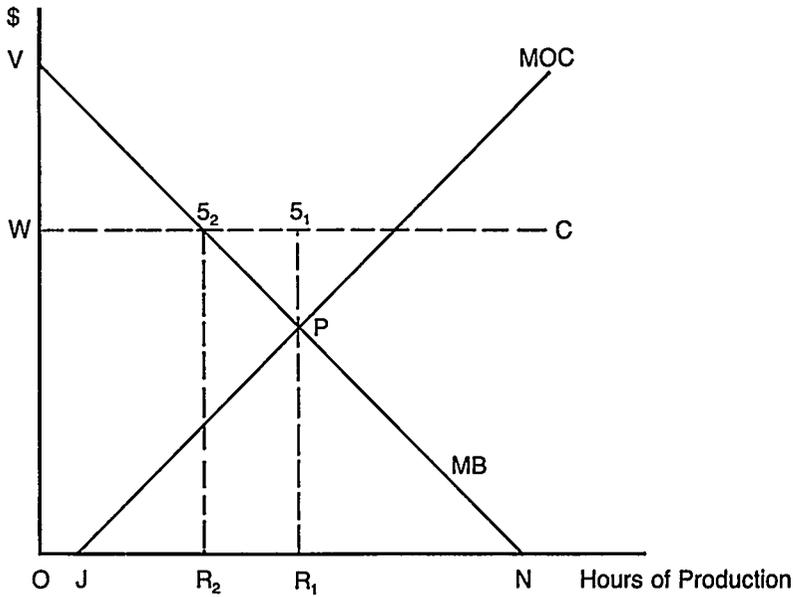

Figure 2a

The household originally provides itself with OR_1 hours of household production and enjoys a level of net benefits, or welfare, equal to $OVPJ$. Assume that after an accident OR_1 hours of previously performed services are lost. The household's marginal cost curve becomes vertical and equal to OV. However, if the lost household services can be replaced by hired help at wage rate W, then the household's marginal cost curve becomes OWC. Given this new marginal cost curve, the household will buy OR_2 hours of household production from a replacement. In doing so, the household reaps a surplus of WVS_2. This surplus is the welfare production after the accident. Because the household originally enjoyed a much larger welfare equal to $OVPJ$, the household suffers a welfare loss equal to $OVPJ-WVS_2$, or OWS_2PJ. Therefore, the amount of compensation required to restore the household to its original welfare is OWS_2PJ. The replacement value approach will, however, ignore the reduction in the number of hours of household production demanded by the same household following the accident and will estimate the change in welfare, or welfare loss, as being equal to OWS_1R_1. This results in an overcompensation by the amount $S_2S_1P + PJR_1$.

Consider a more realistic example in which some household production is possible following the disability or death of a family member who normally provides these services. Some of the household services will now be performed by other household members with higher marginal opportunity costs for each hour of services performed. This is illustrated in Figures 3 and 4.

Figure 3

Prior to the accident, the household enjoys a level of net benefits equal to OVPJ with OR_1 hours of household production (Figure 3). After the accident, the marginal cost curve is steeper (MC_2), indicating higher opportunity costs for every hour spent on household production — the result of some other household member with greater earnings potential having to perform some of these services. Household production would decrease. This is reflected in the reduction in total hours worked at home from OR_1 to OR_2. The net value from having OR_2 amount of household production is OVYJ. The loss in welfare is thus OVPJ-OVYJ, or JYP. This area, JYP, represents the amount, or value, of the loss in household production arising from wrongful death. It is the compensation required to restore the welfare of the household to its original level, OVPJ.

In Figure 4, the household's initial level of welfare is shown to be U^0, with H_1 hours of household production. After the accident, the household's transformation frontier curve shifts downwards and to the left, indicating the lower maximum amounts of both household production and market income that the household can now expect to receive. This is shown as a shift from M_0H_0 to M_3H_3. With new marginal cost (MC_1 to MC_2 in Figure 3), the household now optimizes its welfare with H_4 hours of household production such that $H_4 < H_1$; but with H_4 hours of household production, the household enjoys a lower level of welfare, U^{0-1}. As before, the amount of compensation required to restore the household to its original level of welfare is the vertical distance M_1M_2. Alternatively, since the indifference curves are vertically parallel, the household, by producing H_4 hours of household services after the accident, would require CZ_1 (equal to M_1M_2) amount of compensation in order to increase its current utility level, U^{0-1}, to U^0, the original level.
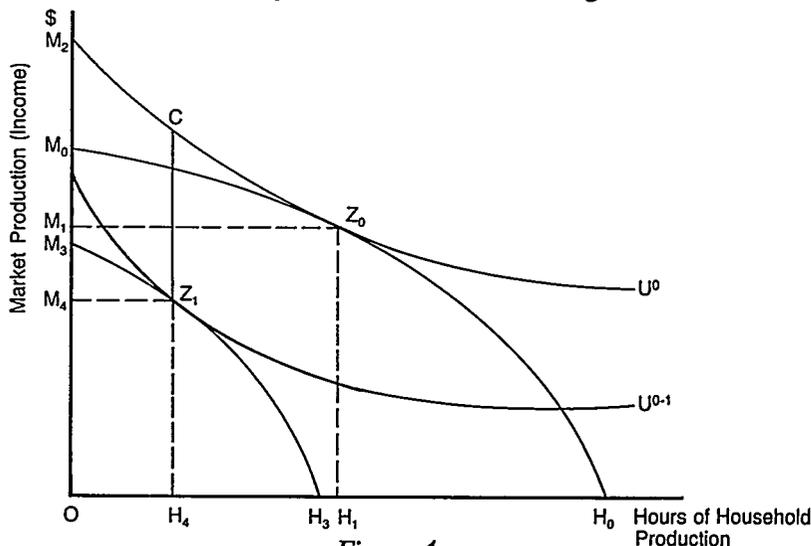

Figure 4

In summary, the correct measure of the welfare that the household derives from having household production is the net value that accrues to the household. A reduction in net value resulting from a wrongful death causes a change in the welfare level of the household. This being the case, the measure of the reduction in welfare from household production is given by the amount of net value lost. In terms of welfare economics, such welfare changes are measured by the compensating variation income measure. The compensating variation is defined as that sum for which

$$W^*_2(Y_2, Z_2, \ldots) + CV_{12} = W^*_1(Y_1, Z_1, \ldots)$$

where W^*_1 and W^*_2 are the alternative states of welfare such that $W^*_2 < W^*_1$; Y_2 and Y_1 measure the market income of the household in the two alternative states; Z_1 and Z_2 represent vectors of household commodities in the two welfare states; and CV_{12} is the compensating variation income from welfare state 1 to welfare state 2. Since $W^*_2 < W^*_1$, CV_{12} would be positive, indicating that a sum is to be received by the household in order to restore its welfare to W^*_1.

V. CONCLUSION

The valuation of household production has always troubled the courts because, unlike market activities, which carry money remuneration, there is no comparable scale of value established for non-market activities. Methods of compensation such as the replacement cost or opportunity cost methods are flawed and may lead to significant biases. Given the increasing importance being attached to estimates of the quantity and economic value of household production in policy formation and in litigation, there would appear to be a need for appraisals that would yield accurate and appropriate valuations.

It is argued here that the appropriate measure (for the purpose of compensating the household seeking damages in tort) of economic welfare from household production is given by the total net value of the household's previous production. It has been established that this measure corresponds to the area that lies underneath the household's demand curve for household production and above its marginal cost curve (or supply curve) — subject to errors due to welfare effects over the range at issue. Thus, any change in welfare arising from the wrongful death of a person providing household services requires that this amount of lost net value be restored to the household. This amount, called the compensating variation, is of course difficult to estimate, but it is not impossible.

One possible technique of estimation, recently applied to household production, called the contingent evaluation method, asks respondents in a survey to indicate either a willingness to pay or compensation demanded for some hypothetical contingency.[24] The individual, in making his or her response, will evaluate the prospective sacrifices and gains in welfare resulting from the realization of each contingency. The contingent evaluation method, which is commonly used to reveal non-market values in the resource economics literature, appears to be successful in revealing the non-market value of household production.

A further problem arises when the total amount of household production lost, measured in time, is introduced into the analysis. Estimates of welfare derived from household production over some period of time must, of course, be applied to the amount of production time lost. If, for example, the use of the contingent evaluation method, or any other method, reveals that the estimated average net value from household production is $4.00 per hour and that the loss of household production from a wrongful death of a person providing household services is, say, five hours per week; then a weekly compensation sum of $20.00 ($4.00 × 5) is required to maintain the pre-tort level of household welfare. Of course, the total compensation sum should be reduced to the present cash value by using the appropriate discount formula taking into account the period over which compensation should be paid.

Note that the lost example made use of an estimated average of net value from household production. Strictly speaking, in theory, the correct amount of compensation for such cases involving welfare loss is given by the amount of total net value lost by *individual* households; but for practical purposes, the *average* of households' total net value would suffice. Just as courts have awarded compensation on the basis of the average value of the market replacement for household production, so the method advocated here awards compensation on the basis of the average total net value of such production. However, the method proposed here has a definite advantage over existing methods of estimating this loss in that this method is consistent with welfare theory, specifically the measurement of welfare changes. Welfare theory enables one to derive the measurement which best conforms to the stated judicial purpose of compensation. As E.J. Mishan puts it: "[I]t is more important to be measuring the right thing in a crude sort of way than to be measuring the wrong thing with impressive refinement."[25]

---

[24] E. Quah and J. Knetsch, "The Economic Value of Time Devoted to Household Production: An Alternate Measure Using the Household's Evaluation" (Simon Fraser University, 1982) [unpublished]; and E. Quah, "Valuing Family Household Production: A Contingent Evaluation Approach" (1987) 19 Applied Econ. 875.

[25] E.J. Mishan, "The ABC of Cost-Benefit" (1971) 101 Lloyds Bank Review 12 at 15.

The purpose of this paper has been to consider the appropriate measure for compensation for the loss of household services. It has been shown that the implementation of the legal rule of compensation can best be applied with the aid of economic theory. There will likely be a continuing interest in obtaining an accurate assessment of damages in wrongful death actions. This is an area where the joint contribution of lawyers and economists would be of benefit.

.