THE END OF ECONOMICS,

OR, IS UTILITARIANISM FINISHED?

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Princeton University, 127 Corwin Hall, 15 April 2002

Summary. According to Lionel Robbins' classic definition, "Economics is the science which studies human behavior as a relationship between ends and scarce means that have alternate uses." Yet most modern economists assume that economic choice involves only the means and not to the ends of human action. The reason seems to be that most modern economists are ignorant of the history of their own discipline before Adam Smith or Jeremy Bentham. Leading economists like Gary Becker attempt to explain all human behavior, including love and hate, as a maximization of "utility." But historically and logically, an adequate description of economic choice has always required both a ranking of persons as ends and a ranking of scarce goods as means. What is missing from modern economics is an adequate description of the ranking of persons as ends. This is reflected in the absence of a satisfactory microeconomic explanation (for example, within the household) as to how goods are distributed to their final users, and in an overemphasis at the political level on an "individualistic social welfare function," by which policymakers are purported to add up the preferences of a society of selfish individuals and determine all distribution from the government downwards, as if the nation or the world were one large household. As this "hole" in economic theory is recognized, an army of "neo-scholastic" economists will find full employment for the first few decades of the 21st Century, busily rewriting the Utilitarian "economic approach to human behavior" that dominated the last three decades of the 20th Century.

The attached paper contains two sections that attempt to convey the flavor of my book-in-progress, provisionally titled, *God and Money: How to Think About Economics.*[1] For reasons that will become apparent, I find it necessary to combine historical, theoretical, and empirical approaches. The first, longer section is from a part of the book called "Personal Economy." In it, I show that current economic theory cannot fully explain the everyday activities of a typical mother, and put forward an updated version of the traditional economic meanings of love and hate. In the book, the second, shorter section follows (and recapitulates in more technical form) "A Brief History of Economics," which attempts to make sense of the whole sweep of the history of economic analysis from Aristotle to the present. This part may be skipped by those not interested in either the history of economic theory or modern economic technique.

[1] I am especially grateful to Herman Belz, Matthew Berke, Thomas D'Andrea, Lewis Lehrman, Charles Lohr, G.A. Mackenzie, Lawrence Mead, and Mark Mueller for helpful comments on various drafts.

3 Personal Economy: The Providence of Rational Animals

3.1 Mother's Milk: The Materfamilias and the Art of Life

The best way to learn economics, thought Philip Wicksteed, is to consider the daily activities of a typical mother. We've already seen that the word "economics" means "household management." And who better understands how to manage a household than a mother? It wouldn't do to begin with a typical father, because most of a father's daily activity is at once too specialized and too far removed from its ultimate purpose to be understood easily.[2] Even in households not run by a mother, household affairs are something that "every member of every family is more or less keenly interested in," so it furnishes us with a "common ground, the exploration of which demands no special or technical information."[3]

This is why Wicksteed's *Common Sense of Political Economy,* though now all but forgotten by economists, remains the best introduction to the meaning of modern economics by any of the economists who played a central role in forming it. Most economists, and perhaps most mothers, are under the impression that mothers need to learn from economists, not vice versa. This mistake underlies half of all serious errors in economic theory. (The rest are due to the ignorance of most economists about the 2,100-year history of their discipline before Adam Smith.) The job of the economist is not to *tell* the mother what to do, but to *understand* what she is doing. And the only way to learn this is to sit at her feet and watch.

Wicksteed's *Common Sense* therefore begins with examples from the life of a typical English mother, *circa* 1910. We find her first shopping: weighing the advantages of new potatoes against old potatoes, the purchase of a piano against a bicycle (which will take her to piano recitals, among many other uses), whether to serve cod or chicken to her guests (in light of the couple's social standing, the fact that all the women guests know the prices of cod and chicken, and their aspirations that the children will learn to speak French), and all of these against an urgent appeal to alleviate a famine in India. Then we observe her at home as she combines her market purchases with her own most important resources—her time and attention—in the combinations which will be most valuable to her family. Finally, we watch her distribute the household's goods to the users she had in mind from the beginning: whether serving the milk and potatoes to family or guests, or distributing her time and attention among family members, an outside job, unpaid volunteer service, reading great literature or worship.

Today's American mother spends much less time preparing food, more time in the labor market, and more time transporting family members from place to place in the family "wagon" than her British or American counterpart of a century earlier. Her family's budget can purchase a much larger quantity, a higher quality, and a much larger variety, of goods and services. The particular

[2] This remains largely true, despite considerable social change since Wicksteed's day.

[3] Philip H. Wicksteed, *The Common Sense of Political Economy*, edited with an introduction by Lionel Robbins, Routledge & Kegan Paul, London, 1933 [1910], 18.

objects of choice are therefore somewhat different: she and her husband would be considering the purchase of a minivan in the same light the couple of a century earlier viewed a bicycle, for example. And much of the food is at least partially prepared, to save on the mother's time: the 24 hours in a day are one thing that has not increased, though the mother and other members of her family can expect to live 20 or 25 years longer. But even before allowing for these changes in income, "household technology," and longevity, Wicksteed's examples from the early 20th century remain perfectly intelligible to an American mother of the early 21st century. And they illustrate exactly the same lessons about life and economics.

"Her doings in the market-place and her doings at home are … parts of one continuous process of administration of resources, guided by the same fundamental principle; and it is the home problem that dominates the market problem and gives it its ultimate meaning," says Wicksteed. The fundamental principle is that in all cases, "She is trying to make everything go as far as it will, or, in other words, serve the most important purpose that it can. She will consider that she has been successful if, in the end, no want which she has left unsatisfied appears, in her deliberate judgment, to have really been more important than some other want to which she attended in place of it. Otherwise there has been waste somewhere, for money, milk, potatoes, or attention has been applied to one purpose when they might better have been applied to another."[4]

Yet, when we turn to even the simplest of her daily tasks, we discover that the modern economist cannot fully explain what the mother is doing. Consider this example offered by Wicksteed: how the mother distributes the use of a single good, milk, which has alternate uses. "In the usual routine, milk may be wanted for the baby, for the other children, for a pudding, for tea or coffee, and for the cat,"[5] notes Wicksteed. The quantity of milk on hand begins with the amount she purchased in the supermarket (or in Wicksteed's day, from the daily delivery wagon), which was based on her expectation of its various uses and the price she found in the market. Normally, the baby gets to drink until she is full, before any milk goes to the older children. The older children's cups in turn ordinarily take precedence over milk for the adults' daily tea or coffee; and milk for the adults' coffee or tea normally takes precedence over an occasional pudding or a saucerful as a treat for the family cat.

What, exactly, is the mother doing here? Not for some 70 pages after presenting and discussing this interesting problem does Wicksteed reveal that, in his opinion, the problem crosses the line of what he considers Pure Economics: "The widest definition of the scope of Economics would confine their scope to things that can be regarded as in some sense exchangeable, and capable of being transferred according to order and agreement. No one would regard the principles upon which I balance the claims of devotion [to God] against those of friendship, or of either against the indulgence of my aesthetic appetites, as within the range of economic science."[6] And the mother's activity is clearly a

[4] Ibid., 20.
[5] Ibid., 88.
[6] Ibid., 160.

combination of the two: “For instance, the housewife’s administration of her stores amongst different claimants at home is not a series of acts of exchange, but is a series of acts relating to exchangeable things.” This leads to an enlightening discussion of what Wicksteed calls an “economic relation” (to which we will return after trying to figure out what the mother is doing)—but not a complete explanation of the mother’s actions. The important point is that Wicksteed has flagged to our attention that the mother, by dealing simultaneously with exchangeable things and with persons she loves, is doing something which cannot be reduced to a series of exchanges.

Paul Samuelson, considering a similar problem half a century later, shrinks from giving an explanation of what the mother is doing. The only theory he offers concerns what “must be a family of adults, or at least of very unusual children.”[7] Even in that case, Samuelson says, there can be no straightforward explanation of what the mother is doing. He contents himself with trying to prove that the family can be treated as if it were a single consuming unit.

In the past few decades, economist Gary Becker claims to have explained what the mother is doing. Becker says she is always doing basically one thing: maximizing the “utility” to herself of various “commodities,” among which she includes her children. Becker’s explanation amounts to saying that everyone (even an “altruist”) treats other persons as things providing him- or herself with “utility.” But he never really explains what “utility” is, and as we will see, Becker cannot fully explain exactly how the mother administers the milk.

Augustine’s explanation. If we consider her more closely, we realize that the mother is always doing two things at the same time, not one: she is simultaneously *ranking persons as ends*, and she is *ranking things as means*. To understand how she does this, we need to turn to St. Augustine, who might with justice be called the co-founder of economics (along with Aristotle). For it was St. Augustine, as a matter of historical fact, who first described how every human person uses two decision-making tools to integrate his or her economic decisions about scarce means with moral decisions about their ends or ultimate goals.

Augustine’s explanation of economic value begins with the broader question of “goods” and “values” in general. So it is of interest not only to the economist or historian of economics, but also to anyone trying to understand the role that economic choice does or should play in his or her own life. Augustine begins by taking a sort of inventory of everything that can be known, and which therefore can be a possible object of value. Everything is obviously a thing, “for what is not a thing is nothing at all.”[8] We humans are ourselves among those things. Our intellect is what enables us to know what a thing is. And considering things in themselves, we recognize a kind of “scale of being,” ascending from inanimate objects to plants to animals to humans to God. Everything’s intrinsic value is simply its degree of *be*-ing. Whatever exists, insofar as it exists, is good, in exactly that degree.

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[7] Paul A. Samuelson, “Social Indifference Curves,” *The Quarterly Journal of Economics*, Vol. 70, No. 1 (February 1956), 1-22; 10.

[8] *De doctrina christiana*, I, 2. Augustine also notes that some things are signs, that is, things which are used to indicate something else; but here he is considering things in themselves.

But if we consider a thing in relation to ourselves, we consider it potentially as something to attain (or avoid): as an object of the will. In this light, a thing is viewed either as an end or a means to an end. An end is said to be "enjoyed," and a means is said to be "used." But which things are ends and which are means? What should we enjoy and what should we use? This requires us to rank things, not according to their intrinsic value, but their value *to us*. Yet we are not forced to choose one thing over another, even if we recognize that either its intrinsic or its moral value is higher. We can choose rightly or wrongly, whether measured by others or by our own understanding. That's what we mean by "free will."

By mentioning intellect and free will, we express an important factual distinction among things. Some things are endowed with intellect and free will—these we call "persons"—and some are not. All humans are persons, since humans are "rational animals," as Aristotle put it, and "made in the image and likeness of God," as the Bible puts it. Humans are, as far as we know, the only animals that are persons. Other animals are like us in having sense, imagination, memory, affections, desires and aversions, and the ability to calculate means—but not in possessing intellect. Animals therefore also have choice, but not free choice: they can choose their means, but not their ends; because the ends are already determined by natural inclination. Only persons can choose their ends as well as their means. But if all humans are persons, not all persons are human: notably God, whose existence we know both by reason reflecting on experience[9] and by divine revelation.

All this indicates that in human action, says Augustine, persons ought to be considered as ends, and other things as means. This is true, both as a description of, and a prescription for, human action. The Two Great Commandments—"You shall love God with all your heart, soul and mind," and "You shall love your neighbor as yourself"[10]—agree with the "scale of being" that we find in reality. They are therefore in accord with reason. No commandment, "You shall love yourself," is necessary, says Augustine, because this is taken for granted: everyone loves himself by nature. The whole problem is to love ourselves "ordinately," that is, while observing the proper ranking of ultimate moral goods.

But what sets Augustine apart as the co-founder of economics is not his prescription, but his description. Others had said—and would, like Emmanuel Kant, say after him—that persons *ought* to be treated as ends and not merely as means. Not only Jewish prophets and Christian Apostles, but also Confucian sages and Greek and Roman philosophers, had argued before Augustine, and would argue long after him, about what humans *ought* to hold as their *summum bonum*, or highest good. What sets Augustine apart as an analyst is his observation that every human *does*, in fact, always act with some person as the ultimate end, even if that person is only him- or herself. A miser is said to love money as his highest good, notes Augustine—yet he still parts with it to buy bread to continue living. Augustine does not, however, jump to the empirically

[9] See discussion in "Divine Economy" above.
[10] Deuteronomy 6:5 and Leviticus 19: 18; Matthew 22:37-39.

false conclusion that every human acts *solely* for him- or herself. That is precisely what each person is free to decide.

After making this point, Augustine immediately goes on to make another important observation: our ranking of both ends and means is necessarily affected by the fact of scarcity. What does it mean, he asks, to say that "you shall love your neighbor as yourself"? Since loving a person means willing him some good, the kind of love is conditioned by the person loved and the kind of good we will to him. Plato and Aristotle had distinguished between goods of the soul (such as knowledge of truth, or moral virtue), goods of the body (such as health, beauty or physical excellence), and external goods (such as wealth). They noted that external goods should be subordinated to goods of the body, and goods of the body and external goods to goods of the soul. We should therefore want all, but especially the higher, goods, both for ourselves and for those persons we love.

But Augustine adds that what "loving others equally" means depends on whether or not the good which we will to them is "diminished by being shared with others."[11] If the good is not scarce, then no problem arises. But when it comes to distributing our scarce goods, it is impossible to share equally with everyone, and therefore in practice we cannot rank all persons equally with ourselves. We'll return later to this crucial insight and to its implications for moral choices.

Aristotle had pointed out that every community, large or small, necessarily has a principle of "distributive justice": a rule for dividing among its members the common good which is the point of the association.[12] This rule differs according to the kind of community that it is, but the principle of distribution always depends on the relative ranking of persons in the community. A political community will have a rule or "distribution function" for its common goods that depends on its constitution. A democracy will assume some kind of equality of shares, while a monarchy or oligarchy will give disproportionate shares to the monarch or some privileged elite. A business partnership will have a "distribution function" in which shares in the profits are typically proportional to the capital contributions of the partners. And each household will have a "distribution function" for allocating its goods to its members according to its own internal rules.

However, Augustine goes farther, by observing that every person, by virtue of being a person and therefore having interdependent relations with others, also has a "distribution function," which determines how the person allocates his scarce goods between himself and others. The principle of distributive justice in any community is independent of the transactions between individual members. But in the case of a person, the principle of distributive justice is identical with the person's ranking of other persons relative to him- or herself: that is, his love of the other person. We might call this the "Good Samaritan principle," because it operates whether or not the person expects to

[11] *On Christian Doctrine*, I, 1.
[12] *Ethics*, V, 3.

receive any current or future benefit from the persons to whom he allocates the use of his goods.[13] We'll consider later on what this means in practice.

Augustine had worked all this out and written it around 396 A.D., shortly after becoming bishop of Hippo. But in writing *City of God*, a sort of history of the human race, which he began in 410, Augustine had to develop a further analytical refinement, which economists now call the "utility function." Talking about ends and means, "enjoyment" and "use," becomes difficult when we are trying to describe the actions of men who obey the moral laws as well as of those who don't. What the good man seeks as his end to "enjoy", the bad man "uses" as his means. Moreover, the terminology becomes confusing whenever an act involves a good which is an end under one aspect and a means under another. For example, one's body and mental skills are an integral part of his person, and yet for analytical purposes the person must be said to "use" this "human capital," for example, to earn wages to pay for other goods, such as food, which are necessary to sustain the person—whether himself or someone else—who is the end he is said to "enjoy." And this person who is the purpose of one action may love other persons or intend as his highest end the enjoyment of God, still another person (or, in the Christian understanding, persons). A more general terminology was therefore necessary, and such a terminology is exactly what one needs to relate the personal scales of preference to market prices.[14] Utility, explained Augustine, is simply the value of something, not in itself, but viewed as a means to some other end intended by the evaluating person. For example, Augustine noted, the intrinsic value of a live mouse—a sentient being—is obviously higher than that of a plant; yet most of us prefer to have loaves of bread (made from dead plants) rather than live mice in the house.[15]

What Augustine has done, then, is to scale or rank everything in the universe in three ways. The first is the "scale of being," which includes everything, ranked by its degree of being or intrinsic value. The second is the ultimate moral scale, on which each person selects and ranks the ultimate ends or purposes of action; and these ends consist entirely of persons (always including, but not limited to, the person doing the ranking). The third is the scale of utility, by which each person chooses and ranks the means to attain the ends chosen in his ultimate moral scale. And Augustine has explained that the rankings of both ends and means will be affected by the fact of scarcity.

Let's apply Augustine's insight to explain what the mother is doing in distributing goods like milk to her family. We'll break the explanation into two parts, starting with her ranking of means, like milk, before considering her ranking of persons as ends. For the first part, we can draw on Wicksteed's lucid discussion.

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[13] It might with equal justice be called the "Robinson Crusoe principle," since Crusoe allocated part of his time every day to the worship of God, and because he saved Friday from death before he had any idea whether Friday would ever be of any use to him. But "Robinson Crusoe" has traditionally been used by economists as an example of an isolated individual, or, after Friday's arrival, of exchange between two identical individuals, perhaps because too few economists have read the book.

[14] When a market is in equilibrium, as we will see, the scales of preference *for exchangeable goods* will be identical for every person in the community *who possesses any of the goods*.

[15] *City of God*, Book XI, Chapter 16.

The mother's choice of means. The mother is forced to choose among different goods because of their scarcity: each good has a cost, and her budget of money, time and other resources is limited. But this raises a fundamental question: how can she value various objects that are so intrinsically different? She has a problem of comparing apples and oranges, so to speak, on a massive scale. How can the mother decide how much of the family's resources to allocate toward food, a piano, the children's French lessons or Indian famine relief? She does this, not by focusing on the qualities in which the various goods and services differ, but on the quantitative respect in which they are similar: namely, their ability to satisfy human needs or wants. This is what we always have to do when we choose between one scarce good and another. Wicksteed calls this common something a good's "significance." The term most commonly used by economists, which we saw was first used in this sense by St. Augustine, is "utility." But because "utility" was given a peculiar meaning in the 19th Century by the Utilitarian philosopher Jeremy Bentham—the satisfaction of pleasure, or "hedonism"—several other names have been used or proposed from time to time: "desiredness," "ophelimity" (which means the same as "desiredness," but the root word is Greek instead of Latin), or "wantability." What matters is not the precise terminology but the meaning.

Moreover, the significance of any given amount of a good depends on how much of the good we already possess. In valuing goods we are always considering how our well-being would be affected by adding or subtracting one unit more or less to what we already own. Wicksteed called this a good's "differential" significance (modern economists usually call it "marginal" utility), for two reasons. First, in human terms, we are always asking ourselves, what difference does this decision make? Second, mathematically speaking, the value of one good in terms of another depends on the "first differences," or rates of change, of the significances of the total stocks of the two goods.

A large part of what the mother is doing, then, is comparing the "differential significances" or "marginal utilities" of goods: whether of the same good in different uses, or of different goods in the same use, or of different goods in different uses. "We may conceive of a general 'scale of preferences' or 'relative scale of estimates' on which all objects of desire or pursuit (positive or negative) find their place, and which registers the terms on which they would be accepted as equivalents or preferred one to the other."[16] Such comparisons are necessary whenever we choose among limited alternatives, whether or not exchange is involved.

But there is also a common or "communal" scale of preferences, which is reflected in the market prices of exchangeable goods. These market prices reflect the evaluations of all the individual persons united in a system of exchange. But the common scale of preferences is ordinarily beyond the significant influence of any single person or other economic agent. We'll consider later on how the personal preferences are transformed into this common scale.

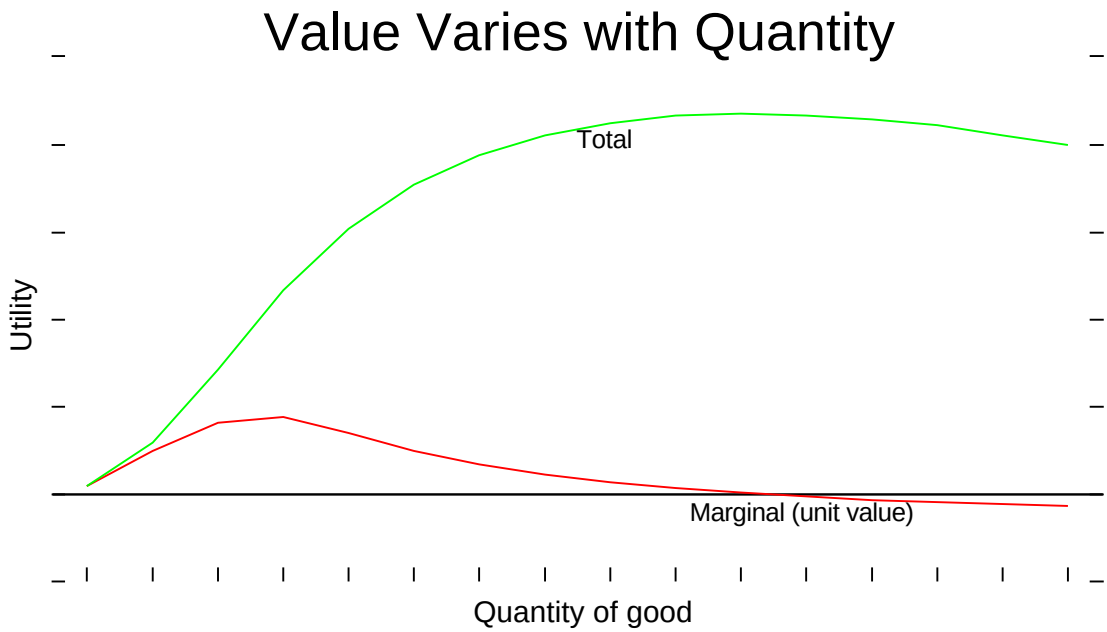
[16] Ibid., 33.

In every case, what matters is the relative value of different goods on the scale, not their absolute values. If the market prices of all goods were multiplied or divided by 10 or 100 or 1000, it would make no difference, as long as the price of each good in terms of every other remained unchanged. But when there are many goods, and their relative prices are constantly changing, it's easier to compare the values of different goods against that of some familiar common good, namely money. What always matters is that a quart of milk had the same significance or market price as 18 eggs or 7/16ths of a box of crackers yesterday, and as 13-1/2 eggs or 35/64ths of a box of crackers today. But most of us find it easier to remember the price of each good in terms of money: that milk was 99 cents a quart yesterday and $1.29 today, eggs $1.49 a dozen yesterday and $1.19 today, and crackers $3.59 a box yesterday and $2.99 today. (At least, this is easier as long as the value of the monetary unit remains more constant than the value of any other individual good. When it doesn't, as in a hyperinflation, people switch to a different standard. We'll consider the principles of money under "Political Economy.")

The mother also learns to think, not in terms of absolute quantities of goods, but in terms of their *rates* of use or supply: not just so many quarts of milk in the abstract, but so many quarts *per day, week, month*, etc.. Otherwise, how could she weigh the purchase of two quarts of milk at $1.29 a quart with a new piano that costs $5,000? If the piano will last 10 years with constant use, the piano's cost, spread out over 3,652 days, is about $1.37 per day. Thus at current prices the family's daily cost of owning a new piano is a little more than buying a third daily quart of milk for the next 10 years. Or put another way, at current prices and rates of use, the cost of the piano is about the same as 5-1/2 years' worth of milk for her family. (Of course, in both cases, there are other related costs, such as refrigeration for the milk, and maintaining the proper atmosphere and tuning for the piano. The daily cost of the piano may turn out to be less than $1.37 if the piano can be sold for something at the end of its useful life. If she judges that the family would use a piano for less than its useful life, she may consider renting the piano for a shorter period—usually at a higher daily rate—rather than buying it outright. Finally, alternate uses of the money today always include investing it to increase the future buying power of the money. We'll consider these complications in their proper place.)

In all her economic decisions about scarce means, the mother is constantly applying two fundamental principles. The first is what Wicksteed calls the "declining marginal significance" of scarce goods. We said that the significance of any given amount of a good depends on how much of the good we already possess, and that in valuing goods we are always considering the difference made by one unit added to or subtracted from what we own. *Declining* marginal significance means that each additional unit adds to one's well-being, but not by as much as the previous unit. The value of a glassful of milk depends not only on whether you like milk, but also on how long it's been since you last drank any. If you've just had two glasses, the value of a third glass will be lower than if you haven't had any since yesterday. This is why a baby, when she is hungry, drinks the first half of the bottle of milk more eagerly than the second

half, until at some point she is full. If she drinks too much she may wish she had had less. Too much of a “good” can turn into a “bad.” In that case, the total significance does not merely rise at a slower rate, but actually falls. But when the baby feels better and gets hungry again, the milk turns back into a “good.”



I said that as the quantity of a scarce good increases, its marginal significance declines “after a certain point.” Before that point, it’s quite possible for the marginal significance of a good to increase with its quantity. I ran into an example not long ago, when I was called upon to adjudicate a lunchtime dispute between our 16-year-old son and 13-year-old daughter over the last can of Healthy Choice Hearty Chicken Soup®. I should explain that because no water is added, one can of soup equals either one large bowl or two small bowls. My daughter argued that the only fair thing to do was to split the soup into two small bowls, but my son insisted vehemently that this was not as fair as flipping a coin for the whole can—or even that no one should get the soup. I dismissed this last alternative, since I suspected that it involved the calculation of getting all the soup when his sister wasn’t around. (The choice was not between soup and nothing at all for lunch, but rather between soup and something else—say, a sandwich—that neither valued as highly.) The key fact was that to my son, a 50-percent chance of a full can of soup was more valuable than the certainty of half a can. This meant that the second half of a large bowl of soup was more important to him than the first half; while for my (smaller) daughter, the first half was more important than the second. They couldn’t agree because she faced declining marginal significance of soup, but he faced increasing marginal significance of soup. But the marginal significance of soup for my son must

decline after the first can, because he never consumes more than one can when more is available.[17]

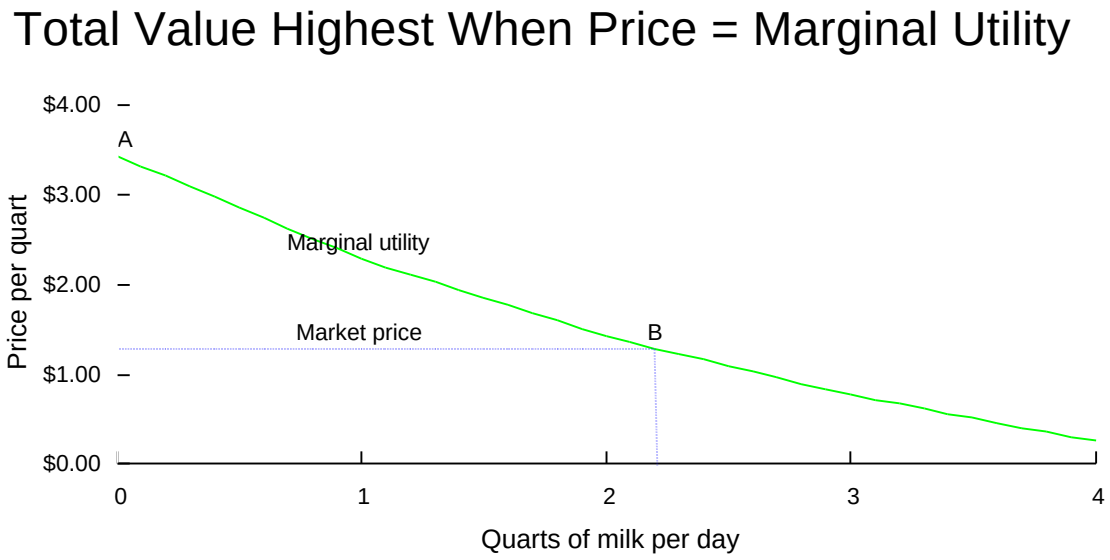
When considering a single good in different uses, like milk, the mother applies the rule of declining marginal significances by satisfying the most urgent need first. Let's return to the simple example with which we started. We recall that the baby gets to drink until she is full, before any milk goes to the older children. The older children's cups in turn ordinarily take precedence over milk for the adults' tea or coffee; and milk for the adults' daily coffee or tea normally takes precedence over an occasional pudding or a saucerful as a treat for the family cat. The baby receives her milk before the older children because her need is judged more urgent, which means that more milk is necessary to reduce its marginal significance to any given level. The older children's need for milk comes next in significance, which means that it takes less milk to reduce its urgency to the same level, as judged by the mother, as the baby's after drinking the larger amount. And so on, down to the cat. That these priorities are not absolute becomes clear if the quantity available for all uses should change—say, because half the milk spoils, or if an unexpected use should arise. If the baby can drink other liquids like juice, or if water can be mixed with baby formula, there is the possibility of using a little less milk for the baby, and so leaving at least some for the older children. Or if there is no spoilage but the mother's friend should unexpectedly drop by for tea or coffee, or wish to borrow a cup for a recipe, there is no great harm in giving the older children cups of milk that are slightly less full that day and serving them more of other food or liquids. The cat may receive extra dry food and affection, but no milk. Or even the milk for mixing in the adults' beverages may give way if, say, the cat suddenly turns up after a week's absence.

But here we must recall our earlier discussion. The mother is always doing two things, not one thing: she is weighing persons as ends and things as means. She is not merely considering the marginal significance of milk: she is effectively multiplying the marginal significance of milk times what might be called the "marginal significance of the person." We'll consider the latter calculation below.

The other basic principle the mother constantly follows with respect to means is matching the marginal significance of each good with the terms on which it is offered—that is, with its price, broadly understood. She goes shopping with a list that is a first approximation, based on the uses to which she expects to put her purchases and the prices she expects to pay for them. But what she actually does buy will be affected by the prices she actually finds in the market. If the prices of the items are substantially higher or lower than she had expected, she may change her plans on the spot, deciding to satisfy more or less urgent needs, depending on the price. If she found that she could procure only a single cupful of milk a day (say, because of a delivery truck drivers' strike), she might pay 79 cents for it (the equivalent of $3.15 a quart or $12.60 a gallon), so that at

[17] I ruled that the soup must be shared, which they did equally. In retrospect, I might have asked how they felt about splitting the soup unequally; but that would have involved a dangerous precedent of seeming to rank the persons unequally, and it would have involved more of my time and energy than I was willing to part with at the moment.

least the baby could have enough milk for one feeding a day. If only one quart per day were available, she might be willing to pay, say, $2.30 for it, and it might suffice for the baby's daily feedings, smallish glasses for the older children, and a couple of teaspoonsful for the adults' tea or coffee. She would pay, say, $1.43 for a second quart per day, in order to give all the children full portions, use in the adults' tea or coffee, and also in the adults' breakfast cereals. And if she found milk on sale for 75 cents a quart she might buy a third quart a day, to give the children chocolate milk for their snacks, a daily treat for the cat, and to make some cakes or puddings. She might accept a fourth quart a day if it were free, but the danger is that it would spoil before a sensible use could be found. Let's say the actual price of milk today is $1.29 a quart. She buys two quarts, because the marginal significance of the second quart in all her family's uses ($1.43) slightly exceeds the market price, but the marginal significance of a third quart would be only 77 cents. So instead of paying $1.29 for a third quart of milk, she buys something else—say, a first head of lettuce—the value of which she judges to be greater than that of a third quart of milk. Notice that at $1.29 for both quarts of milk, the total cost she pays for milk is less than its total significance to her family (which started at $3.15 a quart for the first cupful, and declined to $1.43 a quart for the last ounce of the second quart).



"Milk is administered at home, then, exactly as money is administered in the market-place. The principle in both cases is to bring the marginal significance of small units into equilibrium, at whatever point they are applied; and if a thimbleful of milk has been applied at any one point when it would have met a more important want if applied at another, there has been a failure in the administration of resources, and the administratrix will recognize it by saying, 'I wish I had thought of that, and I would have saved a drop of milk for it.'"[18] As Wicksteed had

[18] Ibid., 87-88.

said earlier, she wants to make everything go as far as it can, which means minimizing the waste of resources.

Our apparently simple example turned out to contain more complications than first appeared. Though we ostensibly considered a single good with different uses, we had to refer a number of times to the importance of other goods, used either as substitutes (juice or baby formula) or complements (tea, coffee, chocolate syrup, pudding and cake mix) to milk. Therefore, the marginal significance of milk turned out to depend not only on the quantity of milk, but also on the quantities of many other goods—and potentially of all other goods valued by the members of the household. The mother has all of these in the back of her mind when she goes shopping.

We saw that when there is one good, its total significance or utility in all uses is greatest when its marginal significance or utility is the same for every different use. When there is more than one good, the total significance or utility of all the goods is greatest when the ratio of their marginal significances is equal to the ratio of their prices. That is, if the price of one good is twice as high as another, the total significance of both goods is greatest when the marginal significance of the more expensive good is twice as high as that of the cheaper good. If the prices are “given,” as for example in a supermarket, the mother adjusts the marginal significances of the goods by altering the quantities of goods in her family’s possession. With declining marginal significance, adding to the quantity reduces the marginal significance, while reducing the quantity increases the marginal significance.

The same principles govern our choices, not only when purchasing and consuming, but also when producing and selling goods. A consumer of milk can normally increase the marginal significance of milk to himself by buying and consuming less of it in a given period, and reduce its marginal significance by buying and consuming more of it. But the same transaction is having the opposite effect on the seller. While decreasing the marginal significance of milk to the buyer, it is increasing the marginal significance of milk to the seller. And for someone who both produces and consumes a commodity, the same principle governs whether and how much to buy or sell.

To see how the two are related, suppose that our mother’s family lived on a dairy farm. This means that her family sets out deliberately to produce far more milk than it can possibly consume, on the expectation that they will be able to sell most of the surplus to others, for whom milk stands higher in their scales of preference than it does on the scale of the producing family. Just as the mother will buy milk only if its marginal significance to her family equals or exceeds the market price, the family producing milk will sell it only if the market price exceeds the marginal significance for the family’s own use. They sell the commodity they value less, in order to purchase other things of which the marginal significance stands higher in their scale of preferences. Thus both the quantity of the milk that they sell, and the quantity that they keep for their own use, are a single continuous function of the changing marginal significance to the family of milk relative to the market price. “But what about the ‘supply curve’ that usually figures as a determinant of price, co-ordinate with the demand curve?” asked Wicksteed.

"I say it boldly and baldly: There is no such thing. When we are speaking of a marketable commodity, what is usually called the supply curve is in reality the demand curve of those who possess the commodity; for it shows the exact place which every successive unit of the commodity holds in their relative scale of estimates. . . . The separating out of this portion of the demand curve and reversing it in the diagram is a process which has its meaning and its legitimate function, . . . but is wholly irrelevant to the determination of price."[19] Of course, a change in the price today may cause the producer to increase or reduce production of the good, in which case the quantity on hand may be higher or lower tomorrow. But at every moment it remains true that there are two basic economic facts for each good: the quantities owned by and the marginal significances for each potential consumer and producer.

It is normally the case in a "perfect" or "competitive" market that no single consumer or producer can significantly affect the price of a commodity. But every individual purchaser or seller does affect the market price in a competitive market, if only unnoticeably. This is why all consumers together, and all producers together, are able to affect the price noticeably. The process of all the parties adjusting their holdings of the goods exchanged in light of prevailing market prices is what makes the market as a whole tend towards "equilibrium"—a state in which everyone in the community *who owns some of the goods exchanged* shares exactly the same relative preferences. If that point were ever achieved, exchange would cease, because no one could further improve his or her position. But because human needs are dynamic (everyone gets hungry again sooner or later), most markets never reach that point, but are always tending toward it.

Very few households nowadays produce milk as well as consuming it. But nearly every household both produces and consumes the most widely used economic good in any economy: labor services. In doing so, they are in the same position as the dairy family that both produces and consumes milk. They can either sell their services in the labor market to earn a wage or salary, or apply them directly to various uses within the household. The share of their total labor services that they sell in the market, and the share that they will consume directly, are both related to the marginal significance of the services to the family, compared with their market "price": the wage or salary. The household will consume directly those services of which the marginal significance to the family exceeds the market price, and sell those services of which the market price exceeds the marginal significance to the family. (In families with young children and/or in which the husband can earn a significantly higher salary or wage than the wife, it is typically the case that the father earns the bulk of the family's outside income and the mother provides the bulk of adult services directly to the family. But in households in which the wife's salary-earning ability more nearly equals or exceeds the husband's, and especially in which there are no young

[19] Philip H. Wicksteed, "The Scope and Method of Political Economy in the Light of the 'Marginal Theory of Value and Distribution,'" *The Economic Journal* Vol. XXIV No. 93, London, March 1914, 1-23. Presidential address to Section F of the British Association, Birmingham, 1913. Reprinted in *The Common Sense of Political Economy*, Vol. II, 772-796; 785.

children or other dependents to care for, the wife's labor force participation will approach or exceed that of the husband.)

Originally, all businesses were conducted within a family household. This meant that early households produced both people and things. The business firm is a later offshoot of the household that specializes in producing goods or services. When the father or mother go to work in a business firm, they join in the process of producing or distributing such goods or services, the sale of which brings revenues, out of which labor compensation to employees as well as property income to creditors and shareholders are paid. But the household remains a producing unit in economic terms: it specializes in "producing" and sustaining people, who (besides higher things) provide all the labor services in the economy. Yet to perform this function, the household must also produce some "intermediate" products, which are then used to produce or sustain or develop the persons.

The mother of 100 years ago spent more time preparing meals, cleaning house and laundering clothes, and much less time in school, in the labor market or transporting family members from place to place, than her modern counterpart. As increased longevity and more education have raised women's labor-market earnings, rising earnings have in turn increased the typical family's demand for pre-cooked foods, washing and drying machines, automobiles, microwave ovens and similar products, which can economise on the mother's time. But even today, the mother normally does not take the groceries home from the supermarket and dump them on the table. She still treats the groceries as "intermediate goods" for producing more "immediate goods" that her family consumes, though she devotes less time to the preparation.

When producing more "immediate" goods such as a family meal, the mother undertakes a process of production combining human and nonhuman resources, just like the business firm. What economists call a "production function" the mother calls a "recipe." For example, a special dinner may consist of roast beef cooked with carrots and onions, served with mashed potatoes and gravy. The beef has to be seasoned, cooked, sliced and served. The raw carrots, onions and potatoes have to be pared before cooking. In doing all this, the mother is still weighing marginal significances, but now she is considering the marginal significances of the elements that go into producing a good, not just the marginal significance of the good itself. Preparing the mashed potatoes requires some person's time and certain tools. Both the time of the person and the tools contribute something to the final result. Each contributes a service which, though qualitatively different, can within certain limits be quantitatively substituted for the other. If the mother is preparing the potatoes, she normally might use a peeler to remove the skin, a knife to slice the potato and a masher to mash them. If she has only one of the three tools, she can accomplish the same task only by working longer at it (and then she may not be satisfied with the result). On the other hand, if she has several of each kind of tool, the process may not go much if at all faster, since she can only use one tool at a time—unless perhaps she can enlist the help of the older children. In other words, just as the marginal significance of a good consumed declines as its quantity rises, the mother finds

"diminishing returns" in production from increasing the quantity of one productive factor while holding the others constant.

If nothing else, our discussion so far should increase our respect for the mother, whose daily routine involves solving a large number of such problems, for any one of which an economist would require a set of simultaneous differential equations involving dozens or even hundreds of variables to describe. Yet we have not yet learned the most important lesson the mother had to teach. The ultimate "good" at which she is aiming is not something that is consumed, but rather the persons who do the consuming.

The economic meaning of love. Modern economists are schooled to explain everything in terms of utility, including human love and hate. For example, when Kenneth Arrow considered the nature of "altruism," he posed three interpretations, all based on utility.

> (1) The welfare of each individual will depend both on his own satisfaction and one the satisfaction obtained by others. We here have in mind a positive relation, one of altruism rather than envy.
> (2) The welfare of each individual depends not only on the utilities of himself and others but also on his contributions to the utilities of others.
> (3) Each individual is, in some ultimate sense, motivated by purely egoistic satisfaction derived from the goods accruing to him, but there is an implicit social contract such that each performs his duties for the other in a way calculated to enhance the satisfaction of all.[20]

The only difference among these three explanations is what *kind* of utility is supposed to explain altruism—the satisfaction at *perceiving* others' satisfaction, the satisfaction at *contributing to* others' satisfaction, or the satisfaction of feeling more secure in one's own possessions as the result of pursuing "enlightened self-interest." Arrow added, "This classification is not exhaustive, or even exclusive"; but he did not suggest that there is an explanation based on any principle other than utility.

As we have seen, the notion that calculations of utility explain all human action is also at the heart of Becker's "economic approach to human behavior." By reducing all human behavior to utility, Becker 's approach requires that each person treat other persons for economic purposes only as objects, much the way the mother regards the milk. He argues that people get married or have children "because they expect to increase their utility." He says that "if more is voluntarily spent on one child than on another, it is because the parents obtain additional utility from the additional expenditure. . ."[21] As some of Becker's students put it, the mother "extracts utility from the number of her children (n) and the quality, or well-being (z), of each one of them."[22] According to Becker, one has a "taste" for

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[20] Kenneth J. Arrow, "Gifts and Exchanges," *Philosophy and Public Affairs*, Volume I, Issue 4 (Summer 1972), 343-362; 348. Arrow thanked philosopher Thomas Nagel for the formulation.
[21] Gary S. Becker, "An Economic Analysis of Fertility," *Demographic and Economic Change in Developed Countries*, Princeton University Press for the National Bureau of Economic Research, 1960, reprinted in *The Economic Approach to Human Behavior*, 173.
[22] Assaf Razin and Efraim Sadka, *Population Economics*, The MIT Press, 1995, 14.

children, not totally unlike the witch in *Hansel and Gretel*. He recognizes that there is "altruism" within a household, but explains it as a case of Arrow's (1) or (2): the satisfaction of either perceiving or contributing to the satisfaction of others.[23]

Even some economists who rebel at the notion of reducing all human relations to relations of utility accept that this is what economic theory in fact teaches.[24] And economists of a Utilitarian or Positivist stripe argue that no alternate explanation is even logically possible.[25] But all this only emphasizes the general ignorance of economists about the history of their own discipline. But the notion that all human relationships are reducible to utility is not taught by economic theory, only by certain economists. The explanation simply doesn't cover the facts.

Consider the mother's apportionment of milk. Does the baby get first claim on the milk because the mother derives more "utility" at the moment from the baby—say, has warmer feelings towards it—than the other children? Only the mother can tell us, but it is more likely that she loves the children more or less equally (there's the ranking of persons), but judges the urgency of the baby's need for a marginal thimbleful of milk and a marginal minute of the mother's time to be higher than that of the older children (there's the ranking of means). Of course, the older children were once that young and required the mother's care in the same way, just as the mother's mother had to care for her as a baby. So let's consider their needs over a lifetime. This doesn't remove the difficulty of trying to explain love as a matter of utility. The average boy/man eats considerably more than the average girl/woman over their lifetimes. Apart from any difference in activities, this is simply the result of the fact that the average man weighs more than the average woman, and therefore requires more food to maintain his body weight. If the cost of food and other costs like education were equal for both sexes, then the lifetime cost of raising a boy must be higher than the cost of raising a girl. If so, does this mean that the parents gain more utility from boys than from girls? Are boys of higher "quality" than girls? Or are girls are more "productive" of utility per dollar spent than boys? (If that were so, why wouldn't parents spend more on girls?) Becker's approach can't tell us.

And what about the cat? Does the mother apportion the least amount of milk to the cat because she loves the cat least? Or does she love the cat as much as the children, but judges its needs to be the least urgent? Or does she recognize that the cat sees the marginal utility of milk as high, but ranks the cat lower than the other members of the household? Normally it's the last explanation. There are of course people who mistake their pets for persons.

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[23] Moreover, Becker writes, "Many economists, including myself, have excessively relied on altruism to tie together the interests of family members." Gary S. Becker, "The Economic Way of Looking at Life," revised version of Nobel Lecture, delivered December 9, 1992, in Stockholm, Sweden, originally published in *Journal of Political Economy*, 101, No. 3 (June 1993), 385-409; reprinted in Becker, *Accounting for Tastes*, 139-161; 154.

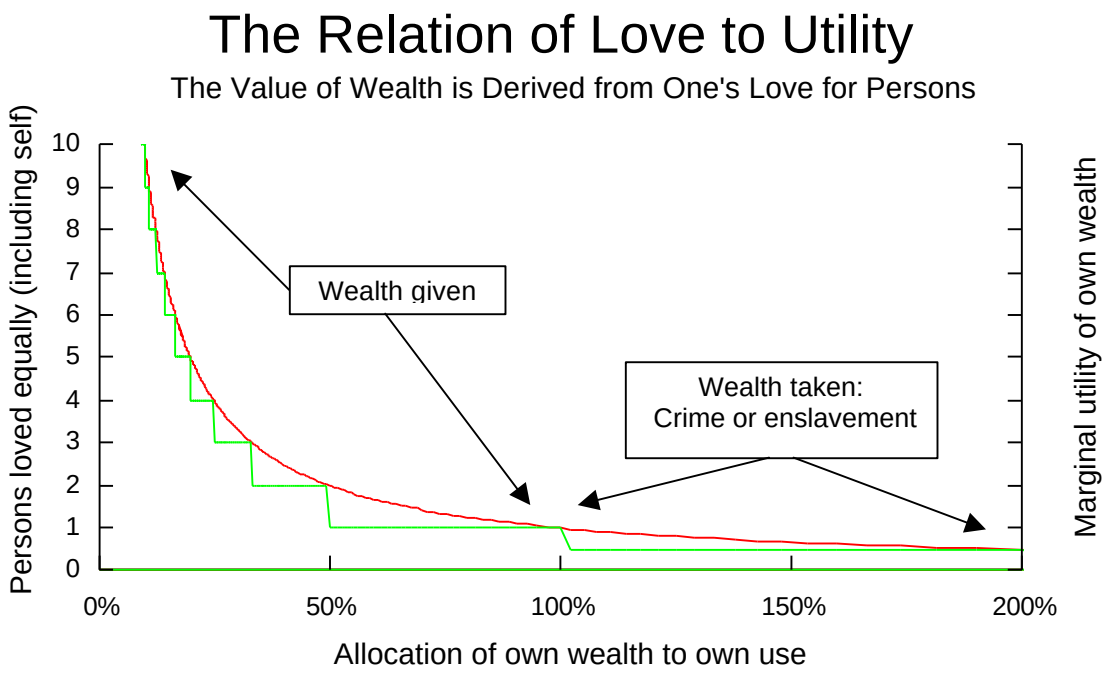
[24] "Economic theory focuses on people as hedonists who want to maximize pleasure and minimize pain." Charles K. Wilber, "Can a Christian Be an Economist?" http://www.nd.edu/~cwilber/pub/recent/acexrist.html, 7.

[25] Lawrence Boland, "On the Futility of Criticizing the Neo-classical Maximization Hypothesis," *American Economic Review*, 71, 5 (December 1981), 1031-1036.

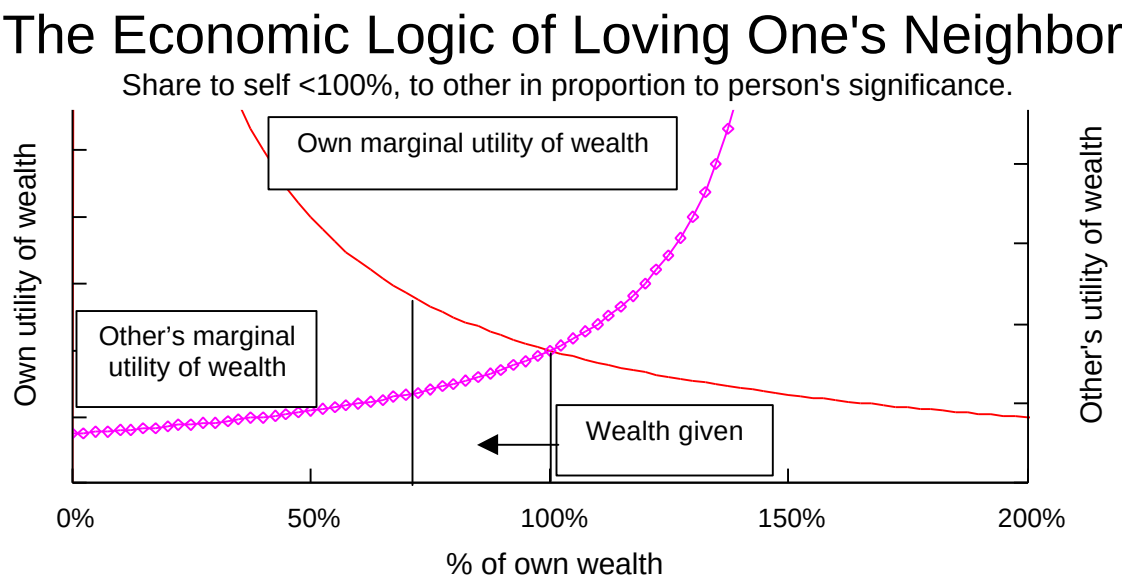
We've all heard of the oddball widow who leaves her estate to her pet Puffy. (And as we will see, philosopher Peter Singer, who shares the same Utilitarian philosophy with Becker, considers many nonhuman animals to be persons.) But the usual case is that the parents don't believe that the persons already in the household can afford to divide their scarce goods more or less equally with another person, and the mother feeds a cat rather than another child because the cat costs far less to maintain than a child (the cat won't be attending college). The marginal significance of the saucer of milk may be relatively high to the cat, but the sharply lower upkeep of the cat relative to a human is of the same order of magnitude as the cat's sharply lower relative importance in the household compared with the human persons. Puffy is a good old cat, and will be sorely missed when she is gone; but in a sane household, she ranks considerably below the humans (though above the plants).

In contrast to Becker's "economic approach to human behavior," the main tradition of economic theory has always been based on Augustine's "human approach to economic behavior." The logic of economic theory is quite clear that love cannot be based on utility, for the simple reason that utility is derived from love. To love a person for his or her own sake is precisely to treat him or her as an end; and it is only because there is such an end that the means selected to serve that end (like milk or college tuition) have any value. To say that love is based on utility is therefore incurably circular.

In economic theory, human love is essentially neither an emotion nor a weighing of utilities (though these may also be present) but a weighing of persons. If I weigh another person as equal to myself, and the needs and preferences of that person are similar to mine, then I give him or her the use of half of what I have: it's that simple. If I weigh several people as equal to myself, I divide my property or income equally among all such persons including myself. (If the needs or preferences of the persons differ from mine, I weight—that is, multiply—the marginal significance of the goods by the relative significance of the person.) In other words, loving someone does not increase one's utility. Rather, our estimate of other persons' importance, relative to our own, determines how much we are willing to *lower* our own utility to love them. The relative weight of the self versus other persons is described in each person's "distribution function."



Rather than an exchange, love is best described in economic theory as a gift, or voluntary "transfer payment"—that is, a distribution out of one's resources *not* made in compensation for useful services rendered. The size of the transfer payment is determined by the resources of the distributor and the relative importance of the recipient in the eyes of the distributor. With declining marginal utility of wealth, the gift raises the total but lowers the marginal utility of wealth on the part of the recipient, while lowering the total but raising the marginal utility of wealth to the donor. We can describe the simultaneous effect on both persons by reversing the scale of wealth for one person, so that the final units of wealth for both persons abut each other:



Note: utility of different persons is incommensurable; units normalized before gift.

We have no grounds for assuming that the utility of the gift to the recipient equals the loss of utility it represents to the giver, because there is no common absolute unit of utility in which to express them. (In the chart, we have "normalized" the units of each person to the same scale before the transfer, but we might have chosen to do so after the transfer: the choice is arbitrary.)

Likewise, mutual love (as it is ideally in marriage) is not essentially an exchange of utilities, though of course a mixture of gift and exchange is possible. Mutual love is best viewed as a simultaneous pair of gifts or voluntary transfer payments, of which there is no reason to believe that any equality in gifts should apply—except in the special case in which the resources of each person and their respective estimates of the importance of the other person happen to be exactly identical. But even in this case, the utility of the two gifts for their recipients cannot be assumed to be equal.

Objectively speaking, love always involves sacrifice, regardless of how the person loving *feels* about it: she may be happy or sad, willing or resentful, or all of these alternatively. The love is expressed by what she does, not what she feels. And it is probably more often the case than not, that the feelings follow the doing, not vice versa.

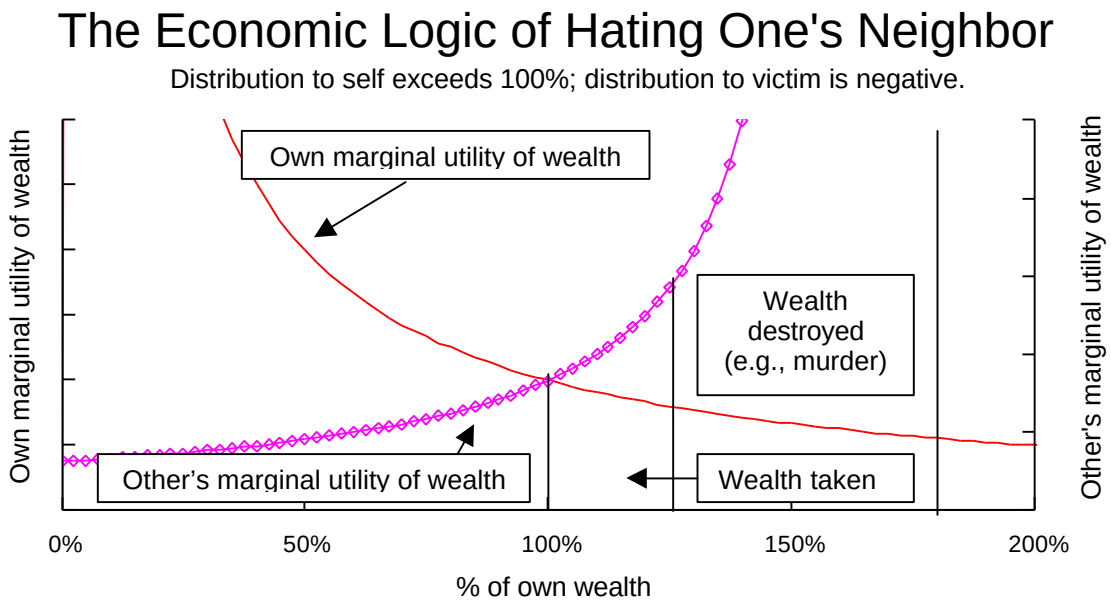
The economic meaning of hate. Just as modern economists have tended to explain love in terms of utility, many have tried to explain crime and other antisocial behavior in terms of utility. Gary Becker was also the leader in expounding this theory.[26] Becker based his analysis of crime on the neoclassical analysis of "external diseconomies"—that is, costs which are not fully borne by the person who creates them, of which air and water pollution are among the

[26] Gary S. Becker, "Crime and Punishment: An Economic Approach," Journal of Political Economy 76, no. 2 (March/April 1968), 169-217; reprinted in Gary S. Becker, *The Economic Approach to Human Behavior*, University of Chicago Press, 1976, 39-85.

most common examples. But the effort serves mainly to show the weakness in the neoclassical analysis of "externalities," not the strength of analyzing crime in terms of utility.

According to Becker, "a person commits an offense if the expected utility to him exceeds the utility he could get by using his time and resources at other activities. Some persons become 'criminals,' therefore, not because their basic motivations differ from that of other persons, but because their benefits and costs differ."[27] Also, according to Becker, "there is a function relating the number of offenses by any person to his probability of conviction, to his punishment if convicted, and to other variables, such as the income available to him in legal and other illegal activities, the frequency of nuisance arrests, and his willingness to commit an illegal act."[28] Becker's entire discussion, like that of most of the literature, centers on the probabilities and magnitudes of gain and punishment, not the "willingness to commit an illegal act." This willingness, he and Stigler later argued, is actually the same for everyone; all that differs from person to person are the relative costs and benefits of crime.

In fact, the willingness to commit an illegal act differs from person to person and for the same person from time to time. This willingness can only be described with the "distribution function."



Like love, crime is not explainable solely in terms of utility. Most people do not commit crimes, even though doing so would increase their wealth (after allowing for the probability of punishment), thus raising the expected total utility of their wealth. To argue that most people must receive utility from *not* committing

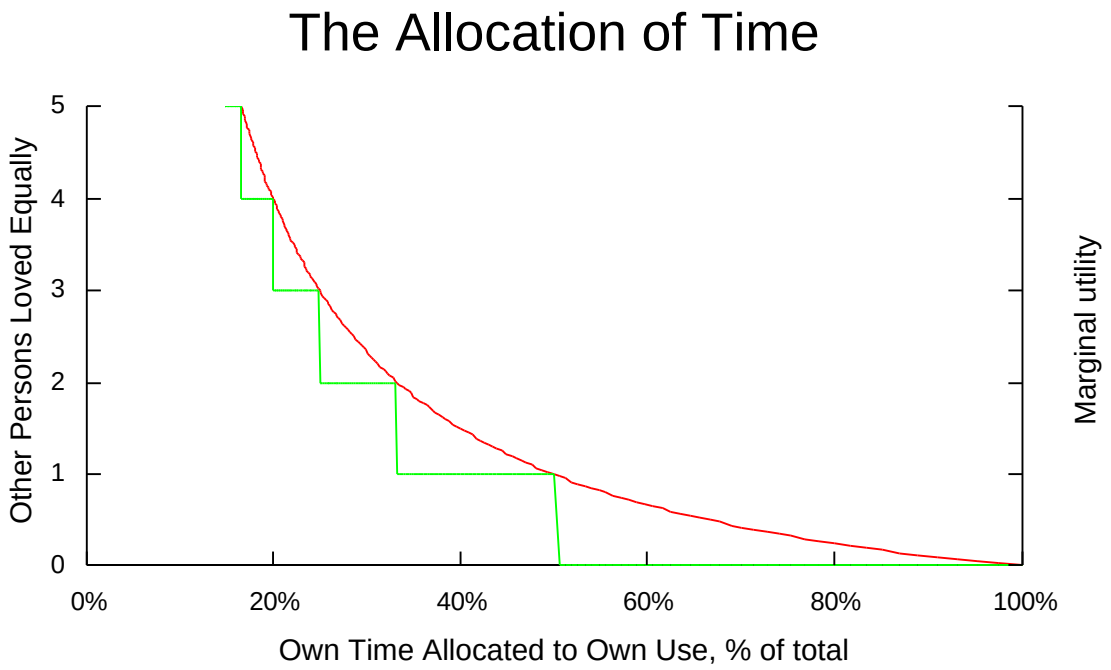
[27] Ibid., 46.
[28] Ibid., 47.

crimes reduces the theory to a tautology; it is unscientific, because it renders the theory unfalsifiable.

Crime, or any other kind of subjugation, is the reverse of love. Rather than a gift or voluntary transfer payment given, it is an involuntary transfer payment exacted. In both cases, the motivation of the transfer depends essentially on a weighing of persons, not a weighing of utilities. In gifts (voluntary transfers), the significance of the other person is either positive (for someone who receives a gift) or zero (for someone who doesn't). In the case of a crime, the criminal gives himself a positive and the victim a negative significance. If I take what belongs to you against your will, I am giving myself a positive significance in a distribution that exceeds 100% of my own resources, and giving you a negative significance in the "distribution." I may take something from you, or I may destroy something belonging to you. Just as loving one other person half as much as oneself is mathematically equivalent to loving one-and-a-half persons equally, increasing one's wealth by half through stealing from another persons is mathematically equivalent to loving "two-thirds of a person" equally with oneself. But the number of persons loved equally is always greater than zero, because one always loves oneself.

Theory of the allocation of time. The most important economic choice that anyone faces is how to allocate his or her time among alternate uses; or, more precisely, how to apply his or her abilities during successive periods from the current moment through the rest of his or her life. Becker formally began his "economic approach to human behavior" with a theory of the allocation of time, of which all subsequent developments in his theory were extensions. Our analysis suggests that the theory of the allocation of time must be rewritten, to recognize that the ends for which economic action is undertaken are best described as the persons listed in the distribution function, not the commodities listed in the utility function.

We have seen that the exchangeable wealth actually used by a person may be less or more than he owns, depending on his relationships to other persons. If he loves other persons in an economic sense, he uses less wealth than he disposes of, because he either gives away or allows the use by others of part of his wealth; if he hates other persons in an economic sense, he takes or destroys what belongs to them, thus giving himself a positive share and the others a negative share in the distribution. Everyone's own human wealth, however, is not alienable, in the sense that we are always physically present even when it is used by others. Therefore, one voluntarily allocates one's own time between use by oneself and by others in proportion to the relative significance of the persons. Someone who loves only himself allocates 100% of his own time to his own use. Someone who loves one other person equally with himself allocates half his time to his own use and the other half to the other person. Someone who loves one other person half as much as himself will devote two-thirds of his time to his own use and the other third to the other person; this is equivalent to loving 1-1/2 persons equally with himself. And where more than one other person is involved, one's time is allocated among all persons in proportion to the relative or marginal significance of each person:



Note that as the share of time devoted to other persons rises, the value of each minute or hour devoted to oneself rises. This is why everyone's ability to love other persons by devoting time to them is limited.

The other persons may be physically present or absent. For example, a parent who earns a living to support his family is effectively devoting part of his time to his children even while in the labor market, just as much as the other parent who may stay home in their physical presence. How the parents' time is allocated between the household and market economies is a second-order decision, which follows from the first-order choice of whom to love and how much. One also devotes time to an absent person when writing a letter to that person, for example. And the persons to whom one devotes one's time may not be living humans: one can devote time to God, for example (in prayer or worship) or to a deceased relative. To treat such time as if devoted to the self would not explain either the motivation or the fact of the behavior.

The inalienability of one's "human capital" also has consequences for antisocial behavior. Theft or enslavement may permit one to use more disposable wealth than one owns. But even such acts require some of one's own time. Therefore, the time devoted to committing crimes against others (or against oneself, as with suicide) is a subset of time devoted to the self.

The implications of scarcity for moral choices. We noted that St. Augustine's insight is crucial in understanding the implications of scarcity for moral choice. What does it mean, he asks, to "love your neighbor as yourself"? Loving someone means willing that person some good. What this involves

depends crucially on whether the good involved is “diminished by being shared with others”[29]—that is, scarce.

Though all goods with a material dimension are finite, some are normally so abundant (for example, fresh air at the earth’s surface) that we loosely speak of them as “free.” But we realize that this is not literally the case, when we consider exactly what is involved in providing sufficient air to astronauts in outer space, to divers or submariners under the sea, or to miners far below the earth’s surface. Even at the earth’s surface, fresh air can be diminished by pollution. To be literally free, a good would have to be infinite. As a Christian, Augustine could conceive of infinite goods such as the love of God or eternal happiness. And he argued that all men can and should love each other equally in wishing other persons such goods. But Augustine also pointed out that we cannot actually give others such a good, only wish it for them. Moral philosophers have traditionally called this kind of love *benevolence*, or “goodwill.” If love is taken to mean actually sharing one’s scarce goods (which include one’s time and affections) to that person, Augustine says that it is flatly impossible to love every other human equally. Moral philosophers have traditionally called this kind of love *beneficence*, or “doing good.”

Augustine’s sensible position is that no one is morally obliged to do what is impossible. Therefore, loving your neighbor as yourself cannot mean doing good equally to everyone. “Since you cannot do good to all, you are to pay special regard to those who, by the accidents of time, or place, or circumstance, are brought into closer connection with you.”[30] Differential calculus would not be invented for some 1200 years, but Augustine expresses the idea of “declining marginal significance” by posing the problem of an indivisible good: “Suppose you had a great deal of some commodity, and felt bound to give it away to somebody who had none, and that it could not be given to more than one person; if two persons presented themselves, neither of whom had either from need or relationship a greater claim on you than the other, you could do nothing fairer than choose by lot to which you would give what could not be given to both. Just so among men: since you cannot consult for the good of them all, you must take the matter as decided for you by a sort of lot, according as each man happens for the time being to be more closely connected with you.”[31]

Thus Augustine puts the fact of scarcity squarely at the center of moral decision-making. And all the scholastic “economists” followed him. For example, Thomas Aquinas, after noting that the word "neighbor" denotes the reason for loving—“because they are nigh to us, both as to the natural image of God, and as to the capacity for glory"—concludes, "The mode of love is indicated in the words *as thyself*. This does not mean that a man must love his neighbor equally as himself, but in like manner as himself."[32]

By way of illustration, consider the famous story of the Good Samaritan, the classic case of “loving one’s neighbor as oneself.”[33] On the road from

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[29] *On Christian Doctrine*, I, 1.
[30] *On Christian Doctrine*, I, 28.
[31] Ibid.
[32] *Summa Theologiae* II-II Q44 A7.
[33] Luke 10:29-37.

Jerusalem to Jericho, a Samaritan came upon a Jew beaten by robbers and left for dead. A priest and a Levite—that is, two religious officials of the same faith and nationality as the beaten man—had already seen the man and passed him by. A Samaritan in the 1st Century A.D. had roughly the same relation to a Jew as a Palestinian Arab does to a modern Israeli, or a member of Afghanistan's Taliban to a modern American. Yet the Samaritan stopped, treated the man's wounds as best he could, and transported him to an inn. We are told that the Samaritan paid about two days' wages in cash to the innkeeper to look after the victim, and promised to pay any further costs on his return. He must have lost at least another half-day's wages stopping to help. The decision cost him at least half a week's wages, or 1 percent of his annual income, on the spot. For someone earning $50,000 a year, that would be equivalent to handing out at least $500 in cash for a stranger. The Good Samaritan loved his neighbor "as himself" in the sense that, unlike those who passed by, he treated him *as a person* like himself. But the gift represented half his income for a week, not for a year or for the rest of his life. He loved his neighbor as himself, but not equally with himself. (I imagine the Good Samaritan's wife, when he returned home, saying: "You gave what!? To whom?!")

The reduction of all human action to calculations of utility defines all forms of Utilitarianism. But Utilitarians often disagree on questions of distribution. Right-wing Utilitarians tend to view the *status quo* distribution of wealth, whatever it may be, as somehow divinely ordained; as if it were wrong (or, in their terms, utility-diminishing) to try to help the less fortunate. As a technical matter, however, there is a unique equilibrium for every possible distribution of wealth or income.

But there is also a brand of left-wing Utilitarianism that favors distributions of wealth that are, practically speaking, impossible. Such persons take absolute equality of wealth as the ideal when advocating the personal, social or political redistribution of income. And when it comes to political redistribution, they typically also view society Platonically as if it were one large household, ignoring the fact that a household differs from a nation, as Aristotle pointed out, "not merely in size but in kind."[34] But the error chiefly consists in ignoring the fact of scarcity

This view is widespread, but has been put in its purest form by the Australian philosopher Peter Singer. Singer has taken many controversial positions, but all of them, as far as I can see, rest on two simple claims. The first is that there is no essential difference between humans and other animals. Singer preaches a version of the Golden Rule in which one's neighbor is potentially not every other human but every other animal. I'll consider what personhood means for economic theory later, but most of the obvious objections to Singer's position on this have often been made. Singer makes a second claim, however, which, as far as I can tell, has never been challenged. The second claim is that the commandment to love your neighbor *as yourself* means loving everyone *equally*, even when scarce goods are involved. That is, we must ignore the fact of scarcity when making moral decisions.

[34] *Politics*, I, 1.

Though writing on the occasion of a famine in Bengal, Singer argued that the particular emergency or its precise causes are not the issue; rather "the whole way we look at moral issues—our moral conceptual scheme—needs to be altered."[35] Specifically, Singer argues, "Unfortunately for those who like to keep their moral responsibilities limited, instant communications and swift transportation have changed the situation. From the moral point of view, the development of the world into a 'global village' has made an important, though still unrecognized, difference to our moral situation."[36]

Whether Singer recognizes it or not, this is essentially an attack on Augustine. Singer is saying that "instant communications and swift transportation" invalidate Augustine's injunction to "pay special regard to those who, by the accidents of time, or place, or circumstance, are brought into closer connection with you." But this does not follow: the effect of modern communications is precisely to "bring others into closer connection with us." Singer ignores the reason Augustine actually gave for ranking persons unequally with ourselves: not our lesser information about those who are farther removed from us, but the fact of scarcity—"you cannot do good to all."

There are several causes of extreme need. Much depends on recognizing whether it is caused by natural disaster or similar misfortune beyond the control of those affected; by a failure to accept appropriate personal or family responsibility; or by a failure of political or social administration. The appropriate remedy will differ in each case. Moreover, it is necessary to recognize that economic resources, though scarce, are not fixed; and in particular, that the bulk of wealth in a modern economy is embodied in human beings, not inanimate objects. We will consider all these questions further under "Political Economy."

Singer correctly quotes Thomas Aquinas, who observes that "whatever a man has in super-abundance is owed, of natural right, to the poor for their sustenance."[37] In fact, Aquinas goes so far as to say that when there is no other remedy, taking another's property for one's own use to avoid death is not even stealing. This is because the conventions of private property do not take precedence over the fact that some wealth is necessary for everyone to live. But Singer does not note that Aquinas proceeds to raise the problem of scarcity: "Since, however, there are many who are in need, while it is impossible for all to be succored by means of the same thing, each one is entrusted with the stewardship of his own things, so that out of them he may come to the aid of those who are in need."

By ignoring the fact of scarcity, Singer goes far beyond Augustine or Aquinas to claim that absolute equality of incomes is morally required: "it follows that I and everyone else in similar circumstances ought to give as much as possible, that is, at least up to the point at which by giving more one would begin to cause serious suffering for oneself and one's dependents—perhaps even beyond this point to the point of marginal utility, at which by giving more one

[35] Peter Singer, "Famine, Affluence and Morality," Philosophy and Public Affairs (Spring 1972), Vol. 1, 229-243; reprinted in *Writings on an Ethical Life*, Ecco Press, New York, 2000; 106.
[36] Ibid., 108.
[37] *Summa Theologiae*, II-II, Q66A7.

would cause oneself and one's dependents as much suffering as one would prevent in Bengal."[38]

According to this logic, failing to help someone needier than oneself and actively harming that person are always morally equivalent. Singer writes, "for a utilitarian philosopher like myself—that is, one who judges whether acts are right are wrong by their consequences—if the upshot of the American's failure to donate the money is that one more kid dies on the streets of a Brazilian city, then it is, in some sense, just as bad as selling the kid to the organ peddlers."[39] But for those like Aquinas who recognize the force of Augustine's argument, the two are not always equivalent.[40] The major difference between the two is that Aquinas, unlike Singer, is always conscious of the moral implications of the fact of scarcity.

What would happen if you or I ignored St. Augustine, Thomas Aquinas, and common sense, and tried to share our scarce goods equally with everyone? There are about 6.3 billion people on the planet Earth. The American economy produced about $8.5 trillion worth of goods and services in 1999, or about $31,000 per capita. (Median family income for a four-person family in the same year was about $60,000: half of all four-person families had higher, and half lower incomes.) If one American with an income of $31,000 shared it equally, each person in the world (including himself) would receive $0.0000000049, or about five 10-millionths of a penny. He would starve to death. If all Americans did so, American per capita income would fall from $31,000 to about $1,350, or by about 96 percent. A large fraction of Americans would starve to death.

What if we tried to commandeer the whole world's resources to force equality of incomes? The world economy produced about $38 trillion worth of goods in 1999, measured in dollars of the same buying-power. Dividing this amount by 6.3 billion people would yield a per capita income of about $6,000, which would cut the average American's standard of living by about five-sixths (below the U.S. poverty level for a single adult, but slightly above it for larger households). Yet if we tried to liquidate even a fraction of that amount, it would be necessary first to undo the vast network of specialization and exchange of private property that makes such a high income possible. How might this be accomplished? As a first approximation, we would need to change the income tax code to apply a flat 100% marginal tax rate, except for a personal exemption of $1,350 or $6,000, depending on the scheme. That would be a simple, flat tax. But few would voluntarily earn more than this threshold, since they could not either use it themselves or share it with their loved ones. So most of the wealth

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[38] Peter Singer, "Famine, Affluence and Morality," Philosophy and Public Affairs (Spring 1972), Vol. 1, 229-243; reprinted in *Writings on an Ethical Life*, Ecco Press, New York, 2000; 109.

[39] Peter Singer, "The Singer Solution to World Poverty," *New York Times Magazine*, September 5, 1999; reprinted in *Writings on an Ethical Life*, Ecco Press, New York, 2000; 119.

[40] "Perfection for man consists in the love of God and of neighbor," Aquinas says. "For a man to love thus, he must do two things, namely, avoid evil and do good. Certain of the commandments [the Third and Fourth] prescribe good acts, while others forbid evil deeds. And we must know that to avoid evil is in our power; but we are incapable of doing good to everyone. Thus, St. Augustine says that we should love all, but we are not bound to do good to all. But among those to whom we are bound to do good are those in some way united to us." *The Catechetical Instructions of St. Thomas Aquinas*, Joseph F. Wagner, New York City, 1939; The Fourth Commandment.

wouldn't be there to distribute—and most of the people would not survive the attempt. This last fact is overlooked by those who ignore the difference in kind between a household and either a nation or the whole world.

Common sense and simple arithmetic tell us that St. Augustine was right: the number of human beings with whom it is possible to share one's scarce goods *equally* is limited to the fingers of two hands (or even one hand). For most people, substantially equal sharing is limited to their immediate relatives. But it need not be so. It would be entirely feasible for an otherwise unattached person with an average income to share it equally with five close friends, or with five strangers, rather than with five family members. People do it all the time: for example, when joining a religious community. Moreover, most of us can and do voluntarily contribute something to help those in need to whom we are not related. Christians are told that that their lives will be judged on this. "If you do good only to those who do good to you, what virtue is there in that? Even sinners do the same."[41] Most Americans also support organized social or political redistribution of income to the most needy. How much is the right amount? The general answer is, "More than you're doing right now." But because the capacity for such giving is always inherently limited, and differs by situation, how much is given, and to whom, are necessarily matters of personal and political judgment, not derivable from any *a priori* rule.

The scope of economics. "Altruism," understood as opposed to "egoism," is not the same as love, because love of self is always present with love for others, and is the source of the value of any goods used by anyone. The difference between a gift and an exchange is that in exchange, the ultimate ends or purposes of those involved in the exchange do not coincide, but the means they have chosen to pursue their respective ends do. As a result, both parties try to advance their own ends indirectly, by furthering the ends of the person with whom they are dealing. "The specific characteristic of an economic relation is not its 'egoism,' but its 'non-tuism,'" as Philip Wicksteed pithily put it—*tu* being Latin for "thou," as *ego* is for "I." "The economic relation does not exclude from my mind everyone but me, it potentially includes everyone but you."[42]

This is why Wicksteed argued that "The broadest conception of Economics includes all dealings with exchangeable things, but does not extend beyond them."[43] The ultimate ends of human action not only should not, but by their nature *cannot*, be exchanged. If a person is used or exchanged, the mere fact is proof that the person is not the end intended by the action. Though both gifts and exchanges are subject to scarcity, Wicksteed argued that exchanges and lie within the realm of pure economic theory, while gifts and distributions cross the bound into normative economics. "Aristotle's system of ethics and our reconstructed system of economics are twin applications of one identical principle or law."[44]

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[41] Luke 6:32.
[42] *The Common Sense of Political Economy*, 174.
[43] *The Common Sense of Political Economy*, 163.
[44] "The Scope and Method of Political Economy," 779-780.

Lionel Robbins was deeply impressed by Wicksteed's argument, but formulated the scope of economics more broadly: "Economics is seen to be a discussion not of the nature of certain kinds of behaviour arbitrarily separated off from all others, but of a certain aspect of behaviour viewed as a whole."[45] This led to Robbins' own classic and widely accepted definition: "Economics is the science which studies human behaviour as a relationship between ends and scarce means that have alternative uses."[46] Robbins makes clear that he has in mind Wicksteed's distinction between ends and means, though that distinction is not obvious in the definition.

Gary Becker begins by accepting Robbins' definition 45 years later, but without understanding the reference to "ends." He wonders why Robbins, "after an excellent discussion of what an economic problem is in the first chapter. . . basically restricts his analysis in later chapters to the market sector."[47] Becker says, "I have come to the position that the economic approach is a comprehensive one that is applicable to all human behavior."[48] By the "economic approach," we recall, Becker means the contention that all human action is based on utility.

Most economists following Becker's lead have therefore been trained to forget that in economic action humans always choose persons as ends as well goods as means. Thus a typical textbook opens with the statement, "Rationality is. . . a matter of means, not of ends. It is a relation of consistency between preferences, information and action."[49] The same textbook proceeds to misquote "Lionel Robbins' famous definition of economics as 'the science which studies the allocation of scarce resources which have alternate uses'"[50]—thus excising Robbins' mention of ends, and implicitly restricting human choice to means. The same textbook goes on to observe: "It seems that rats' responses to simple problems of consumer choice are similar to those of humans. If we are to claim that our choices are the product of our rationality, then we should be prepared to admit that rats are rational too."[51] This neatly illustrates the view of Bentham (and philosophers like Singer) that there is no essential difference between humans and other animals. And Becker argues that "We could apply the approach equally well to the division of labor, altruism, and other aspects of the family life of different species."[52]

It is unfortunate that Wicksteed never spelled out what he meant by saying that "Aristotle's system of ethics and our reconstructed system of economics are twin applications of one identical principle or law." For Becker asks, in effect, "If it's 'one identical principle or law,' why do we need more than one social

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[45] Introduction to *The Common Sense of Political Economy*, xxii; the wording originally appeared in an appreciation of Wicksteed in *Economica*, November 1930.
[46] Lionel Robbins, *An Essay on the Nature and Significance of Economic Science*, Second edition, revised and extended, 1935 [1932], 16.
[47] Gary S. Becker, *The Economic Approach to Human Behavior,* 6.
[48] Ibid., 8.
[49] Shaun Hargreaves Heap et al., *The Theory of Choice: A Critical Guide*, Blackwell Publishers, Oxford, 1992, vii.
[50] Ibid., viii.
[51] Ibid., 31.
[52] Gary S. Becker, "Families in Nonhuman Species," in *A Treatise on the Family*, enlarged edition, Harvard University Press, 1991 [1981], 307.

science? Why not reconstruct ethics and politics and all other social sciences from within economics as applications of the theory of marginal utility?" This is what George Stigler meant by calling economics "the imperial science."[53]

Our analysis shows that there are two things wrong with the approach. First, as a matter of pure economic theory, not all human action can be reduced to utility, or else utility itself would be unexplained. All human economic action involves a weighing of persons as well as objects, of ends as well as means. This must be expressed in economic theory by recognizing that exchanges and gifts differ in kind. Gifts cannot be reduced to implicit exchanges, or else they are no longer gifts. Second, economic theory has nothing to say about the appropriate weights to be attached to persons and things, other than to point out that scarcity must be taken into account. Moral philosophy has a great deal to say about the appropriate ranking of persons and things. What kinds of things ought to be exchanged, what it means to love one's neighbor in a given situation, and what exactly constitutes distributive justice in a given society, are questions the economist cannot answer. Far from being a vast new empire, economic theory always has been, and will always remain, a colony of moral philosophy.

Method of personalism vs. individualism. The scholastics (and "neo-scholastics" like Wicksteed) adopted Augustine's method of personalism, which recognizes the moral freedom and responsibility of each person to make free choices about both the ends and means of economic activity. The fact of personal interdependence is expressed above all by the fact that every person, like every community, has a distribution function. Utilitarian philosophy adopts a method of individualism, largely ignoring the fact of relationships among different persons and assuming that everyone has the peculiar kind of distribution function in which all goods are distributed to the self. For the same reason, Utilitarianism can treat a household or larger community only as if it were a single organism—not a "unity of order" arising from, and explainable by, the choices freely made by persons who recognize and act upon their interdependence.

The modern Utilitarians have therefore missed—as Philip Wicksteed did not—the most important lesson that the mother has to teach: *All human action, including economic activity, is done by persons and for persons*. Human economic activity is not ultimately done by "individuals" for "utility."

Let's pause and summarize what we learned from observing the mother.

The first thing to observe is that we are not dealing with an individual, but with a person—that is, (whatever else this term might mean) someone with a number of relationships to others. She is somebody's wife (offstage at the moment), the mother of at least three other somebodies, and the mistress of a cat. She is someone's daughter, someone else's granddaughter (perhaps deceased but not forgotten), and possibly also someone's sister, aunt, cousin, or niece. She is someone's friend, and someone's neighbor. Part of the time, she is also someone's employee or manager or co-worker. She may be a room mother at her child's school, or manager of her child's soccer team. She is the customer of many businesses. Since she considers volunteer work, she may have some

[53] George J. Stigler, "The Imperial Science," *Memoirs of an Unregulated Economist*, Basic Books, New York, 1988, 191-205.

role in another community organization. Since she belongs to a church or other religious community, she presumably considers herself a daughter of God, but also may find herself on the education committee. The list, though perhaps exhausting, is far from exhaustive. Considering one woman, therefore, has uncovered a complex web of personal, social, and cultural relationships. And these in turn revealed a definite organization of the society in which she lives: a neighborhood of similar households, voluntary organizations and religious institutions, public or private schools, and presumably one or more levels of government, though we have not glimpsed them directly.

The chief fact of economic organization is that the woman lives with her husband and their children in a household. We note that the ownership of resources is mostly private: the mother and father presumably legally own all the property of the household, as well as their own human resources. But this ownership involves two distinct aspects: its disposition and its use. The parents own and dispose of all the property, but they themselves do not use all the property. Beyond their own use, they allocate a large part of the household's resources for the use of their children, each of whom has his or her own scale of preferences for goods, but does not yet contribute (much) to acquiring them. In addition, we saw that the couple chooses to contribute some part of their resources to persons or organizations outside the household. And we assume that they are required to pay taxes, which will be used either to purchase some public goods or transferred to members of some other household. Her husband brings home a money income, probably by working for a business firm (though possibly for a non-profit organization or government), and she also spends some time in the labor market, though usually not as much as her husband. Mostly with the proceeds from such employment (along with any property income or gifts received), they purchase things that have been produced and distributed by such business firms. She and her husband then combine these purchases with their own services for ultimate distribution and use by the various members of the family. And this final use, so far as we can tell by observation, is the ultimate purpose of their economic activity: it is last in the sequence of time, but first in the sense that everything has been planned and executed with this goal in mind. We have thus reached the "end of economics."

1 A Brief History of Economics

It's my strong impression that most historical study of economic theory is motivated either by a "Whig history" of economics, by the desire to associate with a "Whig history," or by the desire to attack such a view. A "Whig history," of course, views the past as a grand progress leading to the unsurpassable present—namely, ourselves. A typical example of Whig history in economics is the thesis that economics began with Adam Smith (or at the earliest with the English Mercantilists) and proceeded largely within a British tradition through David Ricardo, John Stuart Mill, Alfred Marshall and Arthur Pigou, before culminating in John Maynard Keynes; and that everyone else, before Smith, after Keynes, or in between, is to be interpreted in relation to this narrow tradition.[54] Examples of associating oneself with a Whig history are given by some of my fellow Catholics who, while rightly insisting the scholastic doctors of the Middle Ages held highly articulated economic theories, have depicted those doctors as proto-libertarians of an embryonic Austrian or the Chicago School of economics.[55] Perhaps the best example of "Whig anti-history" was given by Karl Polanyi who, out of revulsion against libertarian Whig histories, and under the influence of sociologist Max Weber's theories, maintained improbably that an irreversible mutation had occurred in human society at the start of the 19th century, which makes it impossible to discern principles of economic analysis which might be equally applied, even with appropriate allowances for social change, to 4th Century B.C. Athens, 13th Century Paris, 18th Century Scotland, and 21st Century America.[56] Polanyi's influence is notable on those historians who have argued that social analysis is entirely conditioned by the society in which it originates, and that trying to devise a theory applicable to such different settings is inevitably anachronistic. (This was not the opinion of the ancients they describe.) Each of these analyses is well worth reading and contains important elements not to be found elsewhere; but each is also unbalanced by the effort to interpret the past in terms of some theory peculiar to the present.

Rather than interpreting the past in terms of modern economic theory, I wish to do the reverse: begin with the historical facts, in order better to understand the present. And the most basic fact is that economic theory had been developing for 2,100 years before Adam Smith. In retracing the historical and logical "first things" of economic analysis, my purpose is only incidentally to puncture the pious Whiggish myth that Adam Smith was the founder of economics. I will argue that both the historical facts and economic logic suggest that there is a large hole in modern economic theory, one requiring a substantial revision. And I will suggest how that revision might be accomplished.

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[54] Marc Blaug [1962], *Economic Theory in Retrospect*, Fifth edition, Cambridge University Press, 1997; Todd G. Buchholz, *New Ideas From Dead Economists: An Introduction to Modern Economic Thought, with a Foreword by Martin Feldstein*, revised edition, Plume/Penguin, New York, 1999.

[55] Alejandro A. Chafuen, *Christians for Freedom: Late-Scholastic Economics,* Ignatius Press, San Francisco, 1986.

[56] Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time*, Beacon Press, Boston, 2001 [1944].

[Sections omitted]

1.1 A Reprise for Economists: What It Means In Plain Math

Alfred Marshall once gave another economist this excellent advice: “(1) Use mathematics as a shorthand language, rather than an engine of inquiry. (2) Keep to them till you have done. (3) Translate into English. (4) Then illustrate by examples that are important in real life. (5) Burn the mathematics. This I did often.”[57] Unfortunately, this approach has fallen into desuetude. Writings by economists nowadays are done primarily in mathematical form. A book with the innocent-sounding title, “A Treatise on the Family,” turns out to be filled with differential equations and algebraic matrices. “Burning the mathematics” would leave very little theory. As a result, many economists do not understand statements in English unless they have first been retranslated into mathematics.

Yet mathematics does serve a purpose in communicating ideas, when it can demonstrate whether an argument is logically complete, or highlight unsuspected assumptions that are implicitly being made. Therefore I offer this concise but more technical reprise of my “Brief History of Economics,” as shorthand for economists who wish to understand what I really meant in the historical narrative, and what bearing it might have on the work of a modern economist.

Though Adam Smith is popularly considered the founder of economics, economic theory had been developing for 2,100 years before him. As Joseph Schumpeter noted in his massive *History of Economic Analysis,* "The fact is that the *Wealth of Nations* does not contain a single *analytic* idea, principle or method that was entirely new in 1776."[58] It was the “scholastic doctors” of the Middle Ages, Schumpeter concluded, “who come nearer than does any other group to having been the 'founders' of scientific economics.”[59] From elements provided mostly by Aristotle and St. Augustine and united chiefly by St. Thomas Aquinas, the scholastics fashioned—in sometimes rudimentary but unmistakable form—all of the tools Smith found at hand when he wrote the *Wealth of Nations*. The sophistication of those tools advanced considerably in the centuries after Aquinas. But no basic element was added after the 5th Century A.D.

The scholastics recognized that there are three irreducible aspects inherent in all economic activity—the *evaluation*, *production*, and *final distribution* of economic goods. These three aspects are united under conditions of *equilibrium* (which the scholastics, following Aristotle, called “commutative justice,” or justice in exchange). The three manifest themselves at every economic level from a single person to the world economy. How might a modern economist describe the scholastic economic system as an integrated whole? Simply by using modern forms of the four basic economic tools they fashioned: the utility function, the production function, the conditions of equilibrium, and the distribution function.

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[57] Marshall to Bowley, 27th February 1906, in *Memorials of Alfred Marshall*, edited by A.C. Pigou, 427.
[58] Joseph Schumpeter, *History of Economic Analysis*, edited from manuscript by Elizabeth Boody Schumpeter, Oxford University Press, New York, 1954; 184.
[59] Schumpeter (1954), 97.

1. Value. That economic value is based on utility was hinted at by Aristotle.[60] But the theory of utility and the utility function were first explicitly described by St. Augustine.[61] What is "utility"? Many English-speaking economists of the late 19th and 20th Centuries, under the influence of Jeremy Bentham's Utilitarianism, tried to redefine utility as a *thing*, a quantum of physiological sensation, which they suppose to be the motive of all human action. But as Augustine was the first to explain, (at least for humans) utility is not a thing, but a *relation* between a person and a thing. Everything has an intrinsic value, noted Augustine, which is equal to its degree of actual being. What he called the "scale of being" ranges in ascending order all the way from inanimate objects to plants to animals to humans to God. Each thing's being, and therefore its intrinsic value, is utterly unaffected by any human's attitude toward it. It is what it is.

Utility, by contrast, is the value of any thing considered, not in itself, but as a means to some other end intended by the evaluating person. This is what causes humans to rearrange the things found in nature to produce more useful or attractive things. For example, Augustine noted, the intrinsic value of a live mouse—a sentient being—is obviously higher than that of a plant; yet most of us prefer to have loaves of bread (made from dead plants) rather than live mice in the house. He noted that relative scarcity also affects the order of this ranking.

As a moralist, Augustine argued that only persons ought to be treated as ends, and only lower things as pure means. But as a good analyst (and confessor) he noted that because humans have free choice, they do not always do as they ought. They are free to choose both ends and means. Therefore, a theory of economic value must describe the value relationship in a way that can be applied to both the good and the bad person. The similarity is that everyone finds utility only in real or imagined "goods" (not "bads"); and that the ultimate end or purpose from which utility is derived is always some person or persons. The difference lies in the order in which these ends and means are ranked. The good man treats persons as ends and only lower things as means, while the bad person may rank every person but himself as a means. In any case, to describe economic choices the economist logically requires both a ranking of ends and a ranking of means. The ranking of persons as ends will be described in the "distribution function." The ranking of means is described in the "utility function":

(1) $U_i = f(k_1,\ldots k_n, h_1,\ldots h_n)$ [utility function].

Equation (1) says that human person *i* finds value in the services of a class of nonhuman products, K, or in the useful qualities of human persons, which we will call H for "human capital." (Upper case denotes a stock of capital, and lower case a flow of capital services during some period.)

We should note that for both Aristotle and Augustine, useless things and persons are *superior* to useful things and persons: they are "use-less" because they are ends in themselves and not to be used for some other purpose. If a human person were nothing more than his or her human capital, he or she would not be human—that is, a rational animal—but only a clever animal. Though

[60] *Ethics*, V, 5.
[61] *City of God*, Book XI, Chapter 16.

people are products in one sense, the asymmetry between people and things is expressed in several ways: all utility is assigned to some person (products don't have a utility function); all goods are owned by persons; and the final purpose of economic goods is their use by persons. Economics is for man, not man for economics.

2. Production. The next requirement is a description of how valued goods are produced. The "production function" was outlined in Aristotle's theory of the household in the *Politics*.[62] Both human persons and the products they use, noted Aristotle, are "reproducible" (though in different senses). In Aristotle's day, both were products of the household. But over time the ancient household differentiated into (at least) two distinct entities: the business firm, which specializes in producing useful nonhuman goods, and the household, which specializes in "producing" and sustaining human persons (useful or not). Therefore we need a production function with two broad classes of factors, human and nonhuman, and two broad classes of product, human and nonhuman. The production function can be written in two parts, one for each kind of product:

(2a) $\delta K_j = f(k_{K1},\ldots k_{Kn},h_{K1},\ldots h_{Kn},K_{R1},\ldots K_{Rn})$ [production of nonhuman goods]

(2b) $\delta H_i = f(k_{H1},\ldots k_{Hn}, h_{H1},\ldots h_{Hn})$ [production of "human capital"].

Equation (2a) says that a new product δK_j is produced by combining the services of part of the existing stock of nonhuman capital (k_K), the services of the human capital employed in making such products (h_K), and a stock of raw materials (K_R). To use Aristotle's terminology,[63] raw materials provide the matter, while human and nonhuman capital services provide the form, of the product δK_j. Equation (2b) says that a new human person *i* or any increase in the human capital of an existing person *i*, δH_i, is produced by combining the useful services of existing humans with the services of nonhuman products described in (2a). Just as all utility U_i is attributed to some human person *i*, all human capital H_i is an integral part of some human person *i*. Both forms of the production function apply to both tangible and intangible forms of capital: tangible human capital (physical persons), intangible human capital (education, skills, health and mobility), tangible nonhuman capital (buildings and machines) and intangible nonhuman capital (research and development of technical knowledge).

3. Equilibrium. The next equation establishes the conditions for equilibrium between the market for goods and the market for the factors that produce them. That the compensation of factors of production in equilibrium is equal to their respective contributions to the value of the product was first suggested by Aristotle in the *Ethics*[64] (or at least, this is how Albert the Great, teacher of Thomas Aquinas, and all later scholastics read him):

(3) $y_i = \Sigma w h_i + \Sigma r k_i - T = \Sigma P_K \delta K + \Sigma P_H \delta H$ [equilibrium condition].

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[62] *Politics*, I, 4.

[63] Followed more than 2,000 years later by Richard Cantillon: "The Land is the Source or Matter from whence all Wealth is produced. The Labour of man is the Form which produces it. . ." *Essai sur la Nature du Commerce en General*, Augustus M. Kelley, New York, 1964 [1755], 3.

[64] *Ethics,* V, 5.

Equation (3) says that the flow of income y to person *i* in a given period consists of three items: labor compensation at w per unit, property compensation at r per unit, and net transfers paid, -T; and that in equilibrium this total income is equal to person *i*'s purchases of what is produced. At the highest level of aggregation (e.g., the world economy), all net transfers cancel, and total factor income equals the total value of product. H_K and H_H are aggregated into total human capital, H, and K_K, K_H, and K_R into total nonhuman capital, K. (We are not concerned here with whether labor or property compensation is received in money or consists in the direct use of capital services by the household.) Labor and property compensation should be interpreted as the gross return on human and nonhuman capital, respectively, including the costs of capital depreciation and maintenance. Transfer payments may be voluntary, T_G (gifts); political, T_P (taxes and government benefits[65]); or involuntary, T_N (losses to crime or, conceivably, enslavement). P_K and P_H are price indexes for nonhuman and human capital, respectively. Except in a slave-holding economy (such as ancient Greece or Rome, or America before 1865), P_H can be estimated, but is not a market price. Equation (3) is sometimes incorrectly called the "budget constraint," when assumptions are implicitly made about the distribution of income. Equation (3) represents the conditions for equilibrium or justice in exchange. The equality strictly holds only in the absence of monopoly and other hindrances to an effectively functioning market; the price determined under such conditions was once called the "just price."

4. Final distribution. To complete the system, we need to specify the final distribution[66] to persons of the total income described in equation (3). And since the initial distribution of wealth is the result of all earlier distributions of income, this requires us to specify the initial distribution of wealth. The distribution function was the joint work of Aristotle and Augustine. Aristotle noted that every community—whether a household, business partnership or government of a city-state or nation—necessarily has a principle for distributing its common goods among its members.[67] Augustine extended this by observing that every human person, by virtue of his natural interdependence with other human persons, also has a principle for allocating the use of his wealth between himself and other persons.[68] In all cases, the distribution of the use of wealth or income among persons expresses the relative importance that the distributor attributes to the persons:

(4) $c_i = f(D_1,\ldots D_n)y_i \equiv y_i D_i / \Sigma D$ [distribution function].

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[65] If taxes are levied on the incomes of producers, $T_P = \Sigma wh_i t + \Sigma rkt$, where t is the tax (or transfer) rate; if levied on goods purchased, $T_P = \Sigma P_K \delta Kt + \Sigma P_H \delta Ht$. In either case, Equation (3) implies that taxation or government benefits affect the level and composition of both output and income.

[66] Not to be confused with "distribution" in the sense often used by classical and neoclassical economists, to mean the *compensation* of factors of production, before any transfers of the use of wealth or income to persons who did not contribute directly to the production of wealth or income. Such compensation would be described by Equation (3) with the additional assumption T = 0.

[67] *Ethics*, V, 3.

[68] *On Christian Doctrine*, I, 28.

Equation (4) says that the use of economic resources by person *i* (c_i, for "consumption"[69]) will be distributed in proportion to the significance of that person, D_i, relative to the significance of all persons (ΣD) among whom the use of total income (y_i) is divided. This ($D_i/\Sigma D$) is the "geometric ratio" by which Aristotle distinguishes distributive justice from the "arithmetic ratio" of justice in exchange. Justice in exchange is an arithmetic equality because exchange involves "the equality of thing with thing,"[70] as Thomas Aquinas was later to put it. The principle of justice in distribution is geometric, or proportional, equality because its terms include both persons and things—and, as Aristotle notes, "we cannot get a single term to stand for both a person and a thing."[71] Goods are distributed among persons in proportion to the relative significance of the persons. The distribution function therefore describes what might be called the "marginal significance" of each person, a concept analogous to the marginal utility of goods, which is described in the utility function.

With the distribution function, we come to "the end of economics," in two senses. Only with final distribution is the formal statement of a unique equilibrium complete. And the distribution function is as close as an economist or policymaker can come to describing the ultimate ends or purposes of economic action.[72] The economist or policymaker cannot say whether these are the final ends intended or whether these in turn are means to some *summum bonum* or highest good intended by the acting person.

The utility and production functions and the conditions for equilibrium should be familiar to all economists. But most economists have never heard or thought about the distribution function as a separate function. Yet if we understand its logic, a large part of economic theory, including the "economic approach to human behavior," needs to be fundamentally revised. (For a further discussion of the distribution function, see below, "Personal Economy" [the first section of this paper] and "Political Economy".)

A Theory of Modern Economic Theory. The development of scholastic economic theory from Thomas Aquinas to the 18th Century consisted essentially of understanding each of the foregoing equations and beginning to work out their implications. But as noted already, no basic tool was added after the 5th Century A.D.

One simple way to understand the development of modern economic theory beginning with Adam Smith is to compare the presence or absence of the various basic functions we have described. Each school might be defined, apart from its development of any inherited function, by its loss or recovery of one of the basic functions:

[69] "Consumption" here is not understood as opposed to "saving," since today's saving merely displaces consumption from the present to the future.
[70] *Summa theologiae* II-II Q61A2.
[71] *Ethics*, V, 3.
[72] "Where your treasure is, there will your heart be also." Luke 12:34

Function:	Production	Utility	Distribution
Theory:			
Scholastic (1200-1776)	Yes	Yes	Yes
Classical (1776-1870)	Yes	No	No
Neoclassical (1870-)	Yes	Yes	No
Welfare economics (1910-)	Yes	Mixed: "social welfare function"	

In many respects, Adam Smith and his "classical" followers advanced the theory of production and the understanding of equilibrium. Unfortunately, it was Smith's ambition to do for moral philosophy what Isaac Newton had done for natural science: to reduce all phenomena to a single familiar principle such as gravity. This led Smith drastically to simplify the economic theory he had inherited, effectively collapsing the three functions into one.[73] In his *Theory of Moral Sentiments*, Smith rejected the scholastic theories of value and final distribution.[74] As a Stoic philosopher, it was Smith's belief that value and distribution are not the result of the conscious choices of humans but rather the inscrutable result of Providence, which engages humans in a "divine deception"[75] about the true value of things, for their own good. It was Smith's contention in the *Wealth of Nations* that, by replacing the Scholastic theory of value based on utility with a labor-input theory of value,[76] the theory of production would automatically explain value and distribution.

It was Schumpeter's opinion that this fatal choice retarded the progress of economic theory by about 80 years. (Schumpeter reasoned that if economists had started from Turgot's rather than Smith's synthesis of scholastic tools, they could have achieved in 20 years what actually took 100 years after the *Wealth of Nations* to accomplish.) The inadequacy of Smith's labor theory of value certainly accounts for most of the confusion in economics between 1776 and 1870, and was directly responsible for Karl Marx. Beginning in the 1870s, economists finally rejected the labor theory of value, reinvented a modernized theory of value based on utility, and by about 1910 had reintegrated it with the theory of production.

The third branch of scholastic economics (final distribution) was reconstituted soon thereafter in the form of "welfare economics." But welfare economics has remained contentious and confusing, largely because modern theory, rather than clearly distinguishing the utility and distribution functions, mixes them in an "individualistic social welfare function."

We might say as a first approximation, then, that classical economics retained the production function but mislaid the value and distribution functions; that neoclassical economics restored the utility function but not the distribution function; and that economics has been groping since 1910, not yet entirely successfully, toward reintegrating the distribution function.

Different assumptions, not theories. But if we consider the question more closely, we realize that, rather than speaking of different *theories*, we can

[73] For a more detailed discussion of Smith's philosophical world-view and how it shaped his economic theory, see "The Stoic Failure of Adam Smith" in Part 2 ("Divine Economy") below.
[74] Adam Smith (1976 [1759]), *The Theory of Moral Sentiments,* Oxford University Press, IV.1; 179-187.
[75] Ibid., 183.
[76] Book I, Chapters IV and V.

only speak of different *assumptions*. This is because all four equations together are always necessary uniquely to describe any economic state of events. What in practice distinguishes classical economics, neoclassical economics, various strains of welfare economics, or Gary Becker's "economic approach to human behavior," is whether all the variables actually vary—or whether some variables are implicitly replaced with constants.

Classical assumptions. *Value*. When Adam Smith rejected the utility theory of value in favor of a labor-input theory, it meant that he and his followers were leaving the utility function undefined. But given the number of other key variables that were replaced with constants at the same time, the practical result was that the utility function was *dictated to* humans, rather than being the expression or description of their free choices. This is how Smith's philosophical theory of a "divine deception," which supposedly fools most people (except a few Stoic sages like Smith) about the true value of things, was expressed in his economic theory.

Production. The notion that labor input determines market price has even superficial plausibility only if there is a single factor of production.[77] If more than one factor exists, the price ratio necessarily changes with the mix of factors. The only true *variable* in the classical production function, for practical purposes, was the size of the labor force. Other resources (land and raw materials), and the ratios of human and nonhuman capital per worker, were assumed fixed. This might be called the "Mouse Theory of Economics," because people were said to "breed like mice in a barn." Popularized by Thomas Malthus, the classical assumptions resulted in a supposed "Iron Law of [Unraisable] Wages," which earned economics the title of "the dismal science." If one starts by assuming that most wealth is fixed either absolutely or per capita, it's not difficult to "prove" that it's impossible to raise the standard of living of workers. But the classical assumptions were disproved by events, as other forms of wealth outpaced population growth, so that living standards rose substantially.

Distribution. According to Smith, the distribution of economic goods is determined, along with economic value, by divine providence. This meant that the distribution function, like the utility function, was left undefined. But in his discussion, Smith often implicitly assumes that the distribution function of each person takes the restricted form $D_i = \Sigma D$, so that $D_i/\Sigma D = 1$ (that is, all income received by the self is distributed to the self). Under this assumption, there are no transfers (T=0) in Equation (3).

Neoclassical assumptions. *Value*. Neoclassical economics rejected Smith's and Ricardo's labor theory of value, and restored the utility function to prominence. And for the first time, both value and production were routinely analyzed with the help of differential and integral calculus. This is the essence of the "marginal revolution" in economics.

[77] Even with the assumption of a single factor, as Wicksteed explained in response to Karl Marx, the labor theory of value mixes cause and effect: people don't value objects by the effort exerted in producing them; rather, they devote more labor to acquiring what is more valuable to them. See discussion of this point above in "A Brief History of Economics."

However, the first wave of English-speaking "neoclassical" economists were Utilitarians, which meant that they reinterpreted utility as an instinctive, animal craving for certain basic pleasures, a supposed absolute physiological *quantum* which could be aggregated and maximized. This might be called the "lump of utility" fallacy. We'll consider its implications in more detail below. Later economists recognized the unscientific nature of this assumption, and adopted (as economists before Bentham had always done) Augustine's original view of utility as a ranking, not a *quantum*: "ordinal" utility. However, followers of Jeremy Bentham have repeatedly sought to reinstate the notion of "cardinal" utility.

Production. The first concern of the neoclassical economists was to correct Smith's error about value, and this often took the form of assuming a fixed stock of goods to be valued. When the focus turned to production, the typical neoclassical assumptions were roughly the reverse of the classical set: population or population growth was taken as given, along with the stock of human capital per person and technology, while the stock of nonhuman capital was assumed to vary. (I call this the "Stork Theory of Economics" because people are apparently assumed to be brought by a large economic stork, not born and raised by the considerable effort and investment of families.) The neoclassical set of assumptions proved unable to explain most of the economic growth in modern industrial economies. Yet the neoclassical set of assumptions is still very much alive in Washington, D.C. When the labor force is assumed to be given, but not the nonhuman capital stock, taxation depresses investment in nonhuman but not in human capital. Not surprisingly, lobbyists for ownersr of nonhuman capital have adopted neoclassical assumptions to argue that investment in human capital (the bulk of "consumption") should be taxed while investment in nonhuman capital ("saving") should be tax-exempt.

Distribution. The common assumption about distribution in neoclassical theory is "individualist": the distribution function is ignored because the neoclassical economist, like Smith, implicitly assumes that all of an individual's goods will be allocated to him- or herself. Far from being the general case, this is merely the special case of a "distribution function" in which the rank of the self is positive and the rank of all other persons in the world is zero.

The peculiarities of the neoclassical set of assumptions become clearer when we consider their implications for the field of "welfare economics."

Assumptions of welfare economics. To economists used to waving such difficulties aside with Smith's "invisible hand," it came as a shock to realize that the utility and production functions, together with the achievement of market equilibrium, do not specify a *unique* market equilibrium. Instead, there are as many market equilibria as there are possible distributions of wealth and income.[78] That is, we can't know which goods will be demanded, and at what prices, until we know who will be in a position to demand them, and what their resources and preferences are. The assumption that everyone's preferences and resources are

[78] A typical definition of equilibrium is "Pareto optimality," the condition in which it is not possible to increase the utility of any one person without reducing the utility of someone else, as assessed by the persons affected.

identical is neither realistic nor helpful to policymakers, for whom problems arise precisely from the fact of differences in resources and preferences.

This discovery ought to have revealed the necessity of the distribution function. But "welfare economics" has been tied in knots by the failure clearly to distinguish the utility function from the distribution function. This confusion is compounded by the further assumption that the nature of relations within political society is essentially the same as that of a very large household.[79] Disproving this Platonic assumption is precisely the starting point of Aristotle's *Politics*.[80]

Nearly all welfare economists have implicitly assumed that all persons have the peculiar distribution function that distributes all income to the self. But some argue that wise policymakers (advised by economists) are supposed to know the utility schedules of every person in society, to be able to sum them up into a single utility super-function called the "individualistic social welfare function," and to deduce from it the appropriate distribution of income and wealth for everyone in society. The mistake stems from failing to recognize that all economic choice involves not one but two kinds of ranking: a ranking of goods, described by the utility function, and a ranking of persons, reflected in the distribution function. No ranking of persons can be deduced merely by aggregating the utility functions, for two reasons: there is no common absolute unit of utility, and any aggregation already presupposes a ranking of persons.

It is sometimes said that the classical Utilitarian assumes that "each person counts for one and no person for more than one." But this is incorrect: in Bentham's version, each *unit of pleasure*, not each person, is presumed equal. This is why some Utilitarians of this ilk advocate the death of a person once his or her net pleasure falls below a certain point. In John Stuart Mill's version, units of pleasure are allowed to be unequal between different pleasures and different persons, according to the taste of the theorist. (Mill advocated extra political voting power for those with more education.) In neither case are all persons equal: a person is supposedly measured by his pleasures, not vice versa.

The problem is also confusedly described as requiring the "interpersonal comparison of utility." The phrase presupposes "cardinal" utility: the notion of utility as a *thing*, an absolute *quantum* that can be aggregated. And the objection quite sensibly raised is that no such quantum has ever been found, which could be used to verify that the quantum for Person A is the same as for Person B.

Thus the debate comes to a stalemate. One side argues that interpersonal comparisons of utility are illicit because unscientific, while the other side replies that such comparisons are a practical necessity of everyday politics. Among modern economists, perhaps Amartya Sen has come closest to identifying the nature of the problem, when he argued that "traditional theory has *too little* structure. A person is given *one* preference ordering, and as and when the need arises this is supposed to reflect his interests, represent his welfare, summarize

[79] "What we have been calling a family is after all but a disguised version of society itself—i.e., a collection of more than one person." Paul A. Samuelson, "Social Indifference Curves," *The Quarterly Journal of Economics*, Vol. 70 No. 1, February 1956, 1-22.

[80] "It is an error to suppose that the relationships between statesman and state, between king and subjects, between householder and household, between master and slaves, are all the same. In fact they differ not merely in size but in kind." *Politics* I, 1.

his idea of what should be done, and describe his actual choices and behavior. Can one preference ordering do all these things?"[81] But Sen's counter-proposal of "meta-rankings," or "rankings of preference rankings," is an incoherent combination of Jeremy Bentham and Emmanuel Kant. The notion fails to distinguish the ranking of persons as ends from the ranking of economic goods as means, and so in the end also finally reduces all human action to utility.

"Interpersonal comparison of utility" is meaningless if there is no such *thing* as utility to compare. But when it is clearly understood that utility is a *relation* between ends and scarce means, and that the ends of economic action are never exchanged, then it is possible to aggregate the means without giving the aggregate an exaggerated importance. Economic theory shows us that, in equilibrium, the ordinal ranking of economic goods must be the same for everyone in the community who possesses any of the commodities exchanged. Otherwise, it would pay any persons whose ranking of economic goods by marginal utility differed from prevailing market prices, and who possessed the means to do so, to acquire or dispose of commodities until their own rank-ordering of exchangeable goods coincided with that of the rest of the community united by exchange.[82] However, the persons who are the ultimate ends of economic activity can never be exchanged, and so the relative importance of persons to those for whom they are ends, need never coincide with their relative importance to those for whom they are not ends. This is the essence of Augustine's distinction between the City of God and the Earthly City, and explains why the two "cities" will never coincide in this life.[83]

An aggregate of means (such as Gross Domestic Product) therefore can have a precise meaning to everyone in a community united by exchange, but its meaning will not be the same for everyone in the community. Distributions by persons, social institutions or governments do not require precise "interpersonal comparisons of utility," merely a comparison of persons and the grossest knowledge as to whether someone's life is in danger. What is necessary is not to determine some optimal, highly calibrated distribution of income, but rather to ensure every person a sufficient use of means to continue living and, if possible, increase his or her means through production and exchange.

The scholastic "economists" favored both voluntary and socially organized redistribution of wealth to favor the less fortunate. But they also recognized that the capacity for such giving is always limited by the fact of scarcity. Absolute equality of wealth or income is neither practically possible nor useful to society, since it would require abolishing private property with its triple advantages of productivity, order and social peace. Policymakers' direct control does not extend beyond what the government can tax, subsidize or regulate. Policymakers therefore lack the two things necessary for an effective "social welfare function": the requisite knowledge of personal utility functions, and the unlimited power to redistribute income at will.

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[81] Amartya K. Sen, "Rational Fools: A Critique of the Behavioral Foundations of Economic Theory," *Philosophy and Public Affairs*, Volume 6, Issue 4 (Summer 1977), 317-344; 335-36. Emphasis in original.
[82] For further discussion, see Part 3, "Personal Economy."
[83] For further discussion of this distinction, see "The Invisible Hand of St. Augustine," in "Divine Economy."

Only members of one's immediate family or circle of friends are likely to have detailed (though still imperfect) knowledge of one's preferences for economic goods. But even in this case, precise comparisons of such preferences are not necessary. All of us know the marginal utility of wealth to ourselves, because we love ourselves in an economic sense. We also know the importance of every person (of whom we are aware) relative to ourselves, because this is the formula by which we divide our goods with them (or not). And this formula determines the marginal utility of the wealth remaining to one's own use after the distribution. No precise calculation of other people's utility is necessary, even in those cases in which it is feasible.

"Total capital" assumptions. *Production*. The "total capital" theory proposed by Theodore W. Schultz in 1961 was essentially a return to the Aristotelian production function, in that it recognized all forms of capital—tangible and intangible human capital, tangible and intangible nonhuman capital—and allowed all the variables in the production function actually to vary. Schultz was impressed by the failure of economic theory using neoclassical assumptions to account for a majority of the post-World-War-II economic growth in industrial economies, notably Germany, Japan and the United States. "It has been widely observed that increases in national output have been large compared with the increases of land, man-hours, and physical reproducible capital," he noted.[84] Schultz theorized that most of the missing growth might be explained by investment in what he termed "human capital"—the economically useful qualities embodied in human beings. The total capital theory was shown by John W. Kendrick to account satisfactorily for all of the economic growth that had been missed by theorists using neoclassical assumptions.[85] Because of its narrow focus on explaining growth, the "total capital" literature places little emphasis on the utility or distribution functions.

Becker-Stigler-Bentham assumptions. As the psychologist Abraham Maslow famously observed, "it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail."[86] If the only economic tools an economist recognizes are the utility and production functions, he or she naturally assumes that all human behavior is based on utility, and that humans interact only by treating each other as commodities. This is eminently the case with what Gary Becker and George Stigler termed the "economic approach to human behavior." The strength of the approach stems from the fact that it adopts the "total capital" theory's realistic assumptions about the Aristotelian production function. This accounts for its fruitfulness in treating many economic topics involving the interaction of economic choice and fertility. The weakness of the approach stems from the fact that it ignores the distribution function, interprets utility as Utilitarian pleasure, and fills the utility function with constants. In Becker's hands, this takes the form of replacing equations (1) and (2b) and (4).

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[84] Theodore W. Schultz, "Investment in Human Capital," *The American Economic Review*, Vol. 51, No. 1 (March 1961), 1-17.

[85] John W. Kendrick, *The Formation and Stocks of Total Capital*, National Bureau of Economic Research and Columbia University Press, New York, 1976; "Total Capital and Economic Growth," *Atlantic Economic Journal*, Vol. 22, No. 1 (March 1994), 1-18.

[86] Abraham Maslow, The psychology of science; a reconnaissance, Harper & Row, New York, 1966, 15-16.

Value. Becker theorizes that the "final objects of choice" are certain "basic commodities," the content of which he identifies with the satisfaction of Jeremy Bentham's list of 15 (or 22) basic, supposedly instinctive pleasures. So Becker rewrites the utility function as follows:

(1a) $U = U(Z_1,\ldots Z_n)$; $Z_j = c_j$, a constant.

Becker and Stigler argue that each Z is to be understood as a *constant* that is "the same to all men" and "stable over time."[87] Note also that Becker does not assign utility uniquely to specific human persons: this implies the "lump of utility" fallacy, which treats utility as a thing existing apart from persons, rather than a relation between a person and a thing.

Becker's approach assumes that each head of each household has sufficient economic power that his or her utility function overrides the utility functions of all other members—unless the head of household happens to be an "altruist," in which case the super-function is assumed also to *include* the utility functions of the other members. And if other family members are altruists, their utility functions include that of the head of household. Becker concedes that these overlapping and interacting utility functions entail an "infinite regress," but argues that with sufficiently restrictive assumptions there need be no practical problem.[88] The problem stems partly from confusing the utility and distribution functions, and partly from Becker's failure to distinguish consistently whether utility results from the ownership of goods or the use of their services. He typically says that "Z_j stands for both the services from and the quantity of commodity Z_j."[89] The utility super-function of Becker's head of household is based partly on ownership/disposition and partly on his personal use of wealth, while the utility functions of other members depend mostly on their use of resources. (In scholastic economics, utility pertains consistently to use, not to ownership of wealth, and all utility is assigned uniquely to persons, so no overlap occurs.) Like the "individualistic social welfare function" in welfare economics, Becker's household utility super-function mixes the utility function (the scale of preferences for economic goods, which are the means of economic action) with the distribution function (which expresses the scale of preferences for persons, who are the ultimate purpose of economic action). Becker and Stigler refer to both kinds of preferences indiscriminately as "tastes."

Production. The "basic commodities," according to Becker, are produced by the household:

(2c) $Z_j = f(x_1,\ldots x_n; t_1,\ldots t_n)$

Equation (2c) is similar in form to our (2b), except that the product is a "basic commodity" rather than "human capital." Each *x* is understood as a product purchased by households from business firms (our δK), and $t_1,\ldots t_n$ is described

[87] George J. Stigler and Gary S. Becker, "De Gustibus Non Est Disputandum," *American Economic Review* 67, No. 2 (1977), 76-90; reprinted in Gary S. Becker, Accounting for Tastes, Harvard University Press, 1996, 24-49; 24-5.

[88] Gary S. Becker, "A Theory of Social Interactions," *Journal of Political Economy* 82, no. 6 (1974): 1063-1091, reprinted in Gary S. Becker, *The Economic Approach to Human Behavior*, University of Chicago Press, 1976, 253-281; 270n.

[89] Gary S. Becker and Robert T. Michael, "On the New Theory of Consumer Behavior," *Swedish Journal of Economics* 75 (1973): 378-395, reprinted in Gary S. Becker, *The Economic Approach to Human Behavior*. I have changed his subscript from *i* to *j* to avoid confusion with my person *i*.

as the non-market "time" of the members of the household—by which Becker presumably means the human capital services of the household members during intervals of time (our *h*'s).

Distribution. In place of the distribution function Becker places an empty "expenditure function":

(4a) $g = g(Z_1,\ldots Z_n)$.

It is left unspecified because Becker has told us that the "final objects of choice" are the commodities listed in the utility function, and that "tastes" for these "final objects" are constants. This implies that the distribution function never changes. Thus in the Becker-Stigler-Bentham theory of "choice," humans are not in fact free to choose or alter fundamental preferences, either for goods or for persons: their behavior at most responds to exogenous changes in prices and incomes.

This analysis clears up what would otherwise remain a puzzle—why on earth would Stigler and Becker choose to identify their "economic approach to human behavior" with Adam Smith? Smith was a Stoic philosopher who explicitly rejected the utility theory of value, while the "economic approach" appeals to Jeremy Bentham's Epicurean philosophy and uses the utility theory of value. How are these two positions compatible? First, while the utility theory of value formally involves free choice of economic means, the choice is emptied by the Becker-Stigler-Bentham assumption that the utility function is the same for all persons and for all time. Second, both Smith and Becker lack a theory of distribution, and so must equally rely on Smith's "invisible hand"—that is, assume a divinely ordained distribution of income—to fill the gap. In short, both sets of assumptions deny that humans have free choice of either the means or the ends of their economic actions. The only difference is that Smith tried to reduce all of economics to a production function using peculiar assumptions, while Stigler and Becker try to reduce all of economics (and human behavior) to a utility function using peculiar assumptions.

Still, Stigler and Becker ultimately rested their case not on the logic of their "approach"—it is not a "theory," but a set of assumptions—but rather on its fruitfulness: "we assert. . . that no other approach of remotely comparable generality and power is available."[90] Becker repeated the challenge in his Nobel Prize address: "This is not the place to go into a detailed response to the criticisms, so I simply assert that no approach of comparable generality has yet been developed that offers serious competition to the rational choice theory."[91]

Stigler and Becker argued that "It is a thesis that does not permit of direct proof because it is an assertion about the world, not a proposition in logic."[92] The difficulty stems from the fact that the assumptions concern "basic commodities" which by hypothesis cannot be observed. But if it is indeed an assertion about the world in which we live, it must be at least indirectly testable.

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[90] Ibid., 25.

[91] Gary S. Becker, "The Economic Way of Looking at Life," revised version of Nobel Lecture, delivered December 9, 1992, in Stockholm, Sweden, originally published in *Journal of Political Economy*, 101, No. 3 (June 1993), 385-409; reprinted in Becker, *Accounting for Tastes*, 139-161.

[92] Op. cit., 25.

1.5 An Empirical Test of the Becker-Stigler-Bentham Assumptions.

If the Becker-Stigler-Bentham assumptions are right, then economic choices are essentially amoral: both social and anti-social behavior would be the result of "tastes" which are not only natural, but essentially unrelated. But if this were true, the aggregate time and resources devoted to social or anti-social behavior would never change, except insofar as behavior were responding to exogenous changes in the relative costs of such actions, such as punishments for crime.

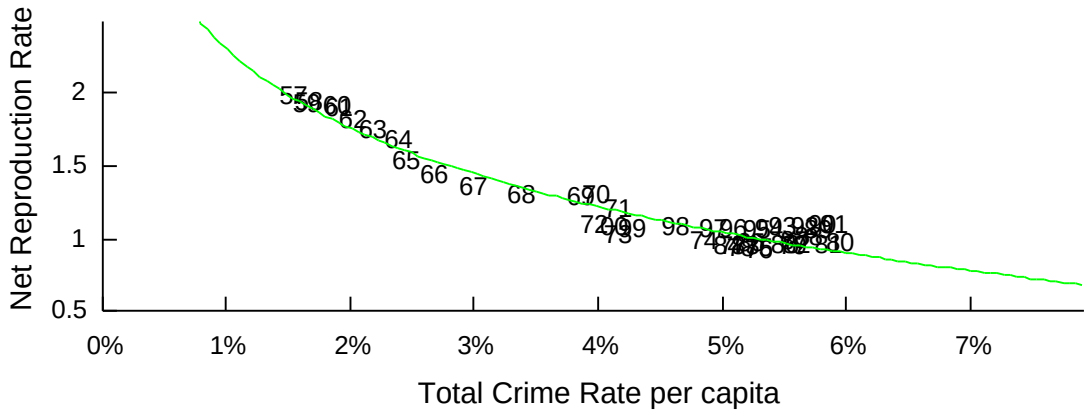
Our alternate understanding is that every economic choice necessarily involves a weighing of persons as well as a weighing of utilities. In other words, all economic choices are moral choices. If so, we should find that all forms of action that involve weighing the self against other persons are systematically related, even after changes in the relative costs of the alternatives are accounted for. Specifically, those behaviors which involve lowering the importance of the self relative to other persons (as in marriage, fertility, and worship) should be positively correlated with one another. And those behaviors which involve raising the significance of the self relative to other persons (crime and other antisocial behavior) should be positively correlated with one another. But the two kinds of behavior should be inversely related. For example, the aggregate crime rate should fall whenever the aggregate fertility rate rises, and vice versa. Finding such a correlation would, at one and the same time, prove the reality of the distribution function and disprove the Becker-Stigler-Bentham assumptions.

Later in the book (Part 2, "Personal Economy"[93]), I develop a theory of the allocation of time based on the personal distribution function, and apply it to the relationship between fatherhood and crime in some detail (Part 6, "Applications"). Here it suffices to show that there is in fact a strong (94%) inverse relation between the fertility rate and the crime rate, which holds up statistically when the factors cited by Becker's theory are accounted for (see graph below). I will claim that the Bentham-Stigler-Becker assumptions are thereby disproved, and the empirical reality of the distribution function demonstrated.

[93] [The earlier section in this paper.]

Net Reproduction Rate vs. Crime Rate

1957-2000



R-square = 0.936 # pts = 44
y = -1.3 + -0.784(lnx)