# The Economics of Love and Marriage

## Chapter 21

This chapter consists of two parts. The first discusses the economics of marriage; it starts with an analysis of the marriage market and goes on to consider what marriage is and why it exists. The second part of the chapter is devoted to the *economics of altruism*: the analysis of rational behavior by an individual who values the welfare of another. It demonstrates that altruism, which one might think of as outside of economics, actually fits neatly into economic theory. The result is not merely to accommodate the theory to an important feature of the real world but also to use economics to derive some surprising results about the consequences of altruism.

### THE ECONOMICS OF MARRIAGE

We start our discussion of marriage by taking marriage itself as a given. We assume that some people want to marry other people and that they prefer some potential partners to others. We also assume that although marriage partners, potential and actual, may put considerable value on each other's welfare (a phenomenon to be analyzed in the second part of the chapter) there is still room for some conflict of interest between them. There is therefore also room for some bargaining over the terms, implicit or explicit, of the marriage.

To add interest to the discussion, I will focus on a particular policy issue. In our society, only *monogamous* marriages are permitted--one husband, one wife. In various other societies, *polygynous* marriages (one husband, two or more wives) and *polyandrous* marriages (one wife, two or more husbands) have also been legal. What would the effect of legalizing polygyny or polyandry be on the welfare of men? On the welfare of women? On the net welfare of all concerned?

In order to answer this question, we require a formal model of the marriage market. I will work out the implications of two different ones. The first is designed to make the marriage market appear very similar to the markets with which we are by now familiar; the second is designed to emphasize two of the respects in which it differs from such

markets.

One element common to both models is the assumption that women and men belong to themselves: The marriage partners are the only ones whose consent is required in order for the marriage to take place. This is appropriate if we are considering marriage in the United States or some similar society, since adults in such societies do, in that sense, belong to themselves. But in many past societies (and some present ones), unmarried women were to some degree the property of the male head of their household; his consent was required in order for them to be married. Economic analysis is as applicable to such a society as it is to ours, but the results must be modified to take account of the different property rights; gains that in our society would go to the bride may in such a society go to her father instead. Similar modifications would apply in the less common case where sons, as well as or instead of daughters, were the property of their families.

## Model 1: A Market with Prices

In many societies, marriage is commonly accompanied by payments--bride price paid by the groom or his family to the family of the bride, dowry provided by the bride's family to the new couple, and so on. While explicit payments of this sort are not a part of our marriage institutions (unless you count expenditures on the wedding and the wedding gifts), one may still see a marriage as containing an implicit price. When two people get married, they do so with some general understanding of the terms they are committing themselves to: how free a hand each will have with the common funds, what duties each is expected to perform, and so on. One may think of the terms of this understanding as corresponding to a price and serving the same function as an explicit price in other markets.

Imagine, for example, that a plague kills off many young women of marriageable age. After the plague is over, young women find it easy and young men difficult to get married. One result we would expect is a shifting of the "price" associated with marriage. Men will find that they are implicitly bidding against each other for wives; the terms of the bidding may include the willingness of the men to accept marriage terms pleasing to the women. This is particularly likely in a society in which divorce is relatively easy, so that either partner can enforce the terms of the contract by threatening to dissolve it and find someone else. If, in a society where women are scarce, the man who promised before the wedding to do everything his wife wanted

proves less accommodating afterward, some other man will be willing to take his place. Similarly, if a war greatly reduced the population of marriageable men, we would expect to find the terms of the marriage contract swinging toward the men's side.

For our first model, then, we will think of the marriage market as an ordinary market with a price. The price is defined relative to an arbitrary "standard" marriage contract. Any other contract can be viewed as a standard contract plus or minus a certain number of dollars paid by the husband to the wife; plus represents a contract more favorable to the wife than the standard, while minus represents one less favorable. Supply and demand behave just as they do on any other market. The quantity supplied of wives--the number of women willing to marry--will be higher, and the quantity demanded lower, the higher the price. The model is entirely symmetrical, as we will see on Figures 21-1a and 21-1b; we can just as easily speak of the quantity demanded and quantity supplied of husbands. As long as all marriages are monogamous, the number of husbands supplied and the number of wives demanded are the same, since a man seeking to become a husband is a man seeking to obtain a wife, just as, on a barter market, someone who offers to trade wine for beer is both supplying wine and demanding beer.
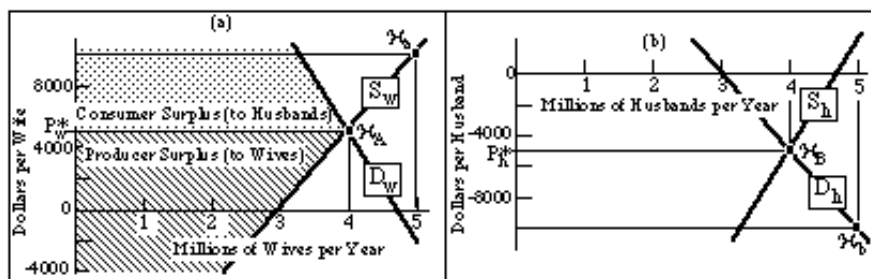


Figure 21-1

The monogamous marriage market. Figure 21-1a is drawn from the standpoint of a potential husband, who sees the market as a market for wives. Figure 21-1b is drawn from the standpoint of a potential wife, who sees it as a market for husbands. $P_w$ is the price of a wife, defined as the terms of the actual marriage contract relative to the terms of some arbitrary standard contract. $P_h$ is the price of a husband, defined similarly relative to the same standard contract. $P_w$ is positive (and $P_h$ negative) if the terms of the actual contract are more favorable to the wife than the terms of the standard contract.

**Omissions**. Before using this model to analyze the consequences of polygyny and polyandry, several additional points should be made. We have so far ignored quality differences in potential husbands and wives--the fact that some people are more

desirable marriage partners than others. We can, if we wish, include this in our model by including quality in our definition of the standard contract. Marrying an unusually desirable woman at a price of 0 would correspond to a marriage contract in which the woman received specially favorable terms to balance the advantages the husband received from having a particularly desirable wife. Perhaps the husband would have to agree to wash all of the dishes.

Seen from this standpoint, attractiveness is simply one element of the initial wealth of an individual. A man or a woman who has good looks or a pleasant disposition is wealthier, has a greater command over the desirable things of life, than someone who has not, just as someone who has inherited a million dollars is wealthier than someone who has not.

We would still be failing to take account of another important feature of marriage: not everyone has the same tastes. The woman I recognized as a one in ten thousand catch was not even being pursued by anyone else, with the result that I married her on quite reasonable terms; I did not even have to agree to wash all of the dishes. Some of the women that my friends married, on the other hand, were of no interest to me at all. Yet my friends obviously preferred them, not only to remaining bachelors but to trying to lure my intended away from me.

This feature of the marriage market is not, of course, unique to it. We would observe the same thing in the market for houses or the market for jobs--indeed in most markets where both the good and the purchaser are very inhomogeneous, so that the problem is not merely the allocation of limited quantities but the proper matching of buyer and bought. One of the implications of such situations--high transaction costs-- was mentioned in the discussion of barter in Chapter 18.

I think it would be possible to take account of this feature of the marriage market without substantially altering the results of our analysis, although I cannot be sure, since I have not actually tried. It would, however, make the model too complicated for our present purposes. We will therefore ignore complications associated with varying quality of potential mates until we come to the second model and ignore complications associated with differing tastes throughout this chapter.

**The Effect of Legalizing Polygyny or Polyandry.** Figures 21-1a and 21-1b show the same marriage market seen from two sides. In Figure 21-la, $S_w$ is the supply curve for wives, $D_w$ the demand curve for wives; in Figure 21-1b, $S_h$ the supply curve for husbands, $D_h$ the demand curve for husbands. In Figure 21-1a, $P_w$ is a price (positive or

negative) paid by husbands to wives--the price of a wife. Similarly, in Figure 21-1b, $P_h$ is a price paid by wives to husbands--the price of a husband. Both figures convey the same information; $S_w$ is identical to $D_h$ except for the differing definitions of price. For $P_w = + \$10,000$/wife, quantity supplied= 5,000,000 wives per year (point $X_a$); for $P_h = -\$10,000$/husband, quantity demanded = 5,000,000 husbands per year (point $X_b$). A price of $10,000 paid by a husband to a wife is the same thing as a price of - $10,000 paid by a wife to a husband. Both prices represent the same contract, one that is equivalent to a standard contract plus a $10,000 payment by the husband to the wife. At this price, the quantity of wives supplied is greater than the quantity of wives demanded (or, equivalently, the quantity of husbands demanded is greater than the quantity supplied).

$P^*_w$ on Figure 21-1a is the equilibrium value of $P_w$, the value for which quantity of wives supplied equals quantity demanded. $P^*_h = - P^*_w$ is similarly the equilibrium value of $P_h$ on Figure 21-1b. On the particular marriage market shown by the figures, the equilibrium price of a bride is $5,000; in order to get married, a man must offer marriage terms that are $5,000 more favorable to the wife than the standard marriage contract relative to which $P_w$ is defined.

Figure 21-2a shows what happens if polygyny is legalized; Figure 21-2b shows what happens if polyandry is legalized (with polygyny still illegal). The essential thing to notice about the figures is that $P^*_w$ is higher on Figure 21-2a than on Figure 21-1a, and $P^*_h{'}$ is higher on Figure 21-2b than on Figure 21-1b. Wives get better terms, more attractive marriage contracts, when polygyny is legal than when it does not; husbands get better terms when polyandry is legal than when it is not. The result is exactly the opposite of what one might expect; polygyny benefits women and polyandry benefits men!
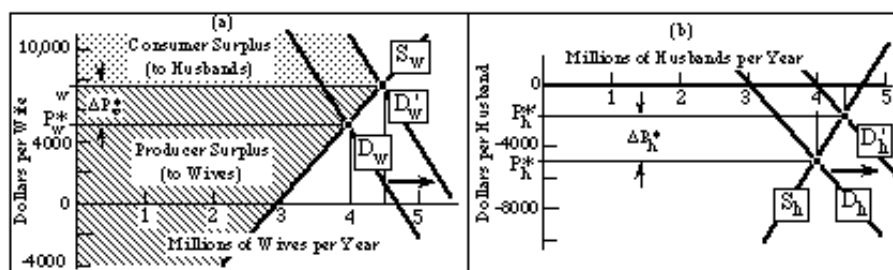


Figures 21-2

Polygamous marriage markets. Figure 21-2a shows the market for wives after the legalization of polygyny; Figure 21-2b shows the market for husbands after the legalization of polyandry.

Why? On Figure 21-2a, the supply curve for wives is the same as on Figure 21-1a. The legalization of polygyny does nothing to increase or reduce the number of wives willing to accept any particular marriage contract. Of course, a woman willing to accept a monogamous marriage may be unwilling to share the same husband with another wife, but that is already taken into account in the definition of $P_w$. $P_w$ was defined relative to a standard contract, one of whose features was monogamy. A bigamist who offers a price $P_w = 0$ for a wife must be offering her terms sufficiently favorable to balance the cost to her of having to share him with another wife, making the marriage equivalent, for her, to a standard contract. The same applies at all other values of $P_w$; we define the price corresponding to any particular bigamous marriage contract as the price earlier assigned to that monogamous contract that potential wives consider equivalent to it.

We can now see why the equilibrium price in Figure 21-2a is higher than in Figure 21-1a. Suppose it were not; suppose the two prices were equal. Quantity supplied on Figure 21-2a would then be the same as on Figure 21-1a, but quantity demanded would be higher. Legalizing polygyny will hardly make a man who before wanted one wife decide that (at the same price) he now wants none, but it will allow some who before wanted one to marry two instead--even if they must offer terms at which potential wives are willing to accept half a husband apiece. So when polygyny becomes legal, quantity demanded at any price rises; the demand curve shifts out from $D_w$ to $D'_w$. At the old equilibrium price ($P^*_w$), quantity demanded is now higher than quantity supplied. So the price must rise; the new equilibrium price ($P^*_w{}'$) must be higher than the old. Since price is defined in such a way that an increased price means a contract more favorable to the wife, this means that women are better off.

What about men? Those who end up with only one wife are worse off, since they must offer her more favorable terms than before. They are worse off by [[Delta]] $P^*_w = P^*_w{}' - P^*_w$, the increase in the price they must pay for a wife. Those who end up with two (or more) wives may or may not be better off. The fact that someone chooses to marry two wives shows that at a price of $P^*_w{}'$ he prefers two wives to one; it does not tell us whether he prefers two at $P^*_w{}'$ to one at $P^*_w$.

Is the change a Marshall improvement or a Marshall worsening? It is a Marshall improvement. To see this, imagine that we go from Figure 21-1a to Figure 21-2a in two steps. The first consists of transferring [[Delta]] $P^*_w$ from every husband to every wife. That is a pure transfer; wives gain what husbands lose. The next step is to allow husbands and wives to adjust to the new price; quantity of wives increases from $Q_w$ to

$Q_w$'. That is a Marshall improvement. Men who do not change the number of wives they have are unaffected; men who reduce the number of wives they have from one to zero in response to the higher price or increase the number above one to take advantage of the legalization of polygyny, and women who at the old price did not choose to marry but at the new price do, are better off. A pure transfer plus a Marshall improvement adds up to a Marshall improvement.

Figure 21-2b shows the effect of legalizing polyandry. The logic is exactly the same as for polygyny, with the roles of women and men reversed. Since some women now buy two (or more) husbands, the demand curve for husbands shifts out. At the old price for husbands, quantity demanded is greater than quantity supplied, so the price rises. Women marrying only one husband must compete against the polyandrous women to get him, hence must offer better terms than before. Men are better off, monogamous women are worse off, and polyandrous women may be better or worse off. The net effect is a Marshall improvement.

To many readers, the conclusion may seem extraordinary--how can women possibly be made better off by polygyny and men by polyandry? That reaction reflects what I described in Chapter 2 as naive price theory. Naive price theory is the theory that prices do not change. If polygyny were introduced and nothing else changed, then it seems likely that women would be worse off--except for those who prefer to share the burden of putting up with a husband. But when polygyny is introduced, something else does change; the demand curve for wives shifts up, and so does the price for wives implicit in the marriage contract. Those wives who end up with one husband get him on more favorable terms--he must bid more for a wife because of the competition of his polygynous rivals. Those who accept polygynous marriages do so because the price they are offered is sufficient to at least balance, for them, the disadvantage of sharing a husband.

Another reason why you may regard the result as implausible is that in many historical societies, including some of the polygynous ones, women did not belong to themselves. In such a situation, a woman's father, or whoever else was in a position to control whom she married, could have ended up receiving a large part of the price implicit in the marriage contract. If so, the demonstration that women are benefited by the legalization of polygyny no longer holds. That is why, at the beginning of the discussion, I explicitly assumed a society in which men and women belonged to themselves.

The result would seem less paradoxical if we substituted cars and car buyers for wives

and husbands (or husbands and wives). Suppose there were a law forbidding anyone to own more than one car. It seems obvious enough that the abolition of that law would increase the demand for cars. Sellers of cars would be better off. Buyers who did not take advantage of the new opportunity--those who bought only one car--would be worse off, since they would have to pay a higher price. Buyers who bought more than one car would be better off than if they bought only one car at the new price (otherwise that is what they would have done) but not necessarily better off than if they bought one car at the old price, an option no longer open to them.

One thing you may find confusing in all this is the time sequence. Am I describing a situation in which, after polygyny becomes legal, some men divorce one wife to marry two others, and some women insist on renegotiating their marriage contracts? No. What I am doing is comparing two alternative futures, one with polygyny (or polyandry) and one without. The man who would have married one wife if polygyny had remained illegal either marries one wife on different terms if polygyny is legal, marries two (or more) wives, or is priced out of the market and remains a bachelor.

## The Second Model

So far, we have modeled the marriage market in a way designed to make it seem as similar as possible to more conventional markets. The next step is to switch to an entirely different model--one that some of you may find more realistic.

We start by assuming that there is no way marriage partners can offer prices to each other, implicit or explicit. One reason might be the difficulty of enforcing such contracts, especially in a society where divorce is difficult. The obvious strategy in such a situation is "Promise anything but don't wash the dishes." Actual cash payments between the mates are impractical if, after the marriage, all property is held in common; there is little point in bribing someone with what will belong to him or her after the marriage anyway.

In such a society, the marriage market is a market without a price. The absence of a price does not eliminate the fundamental problem of scarcity; it just means that some other means of allocating the scarce supply of desirable mates (of both sexes) must be found.

We will now explicitly include one of the features that we earlier pushed into the background--the varying quality of mates. We suppose that all of the potential mates

of each sex can be arranged in a hierarchy ranging from "most desirable" to "least desirable" and that everyone agrees on who belongs where in the hierarchy.

We now have a very simple rationing mechanism. The most desirable woman has her pick of mates, so she accepts the most desirable man; he, having his pick of mates, is only interested in her. The second most desirable woman would gladly accept the most desirable man, but he is already taken, so she settles for the second most desirable man. The process continues until all the members of whichever gender is less plentiful on the marriage market have been paired up, leaving the least desirable members of the other gender unmarried.

Suppose we now introduce polygyny. The most attractive woman can no longer be certain of marrying the most attractive man. He may prefer two less attractive women--and they may each prefer half of him to all of a less attractive man. If fewer men than women want to get married, some women may be choosing half of a husband over the alternative of no husband at all.

The result is no longer an unambiguous improvement from the standpoint of women, as it was in the first model. Some women at the top of the hierarchy find themselves with less attractive men than before. Neither is it an unambiguous worsening; some women who were previously unmarried may now have (half of) a husband, while others may get half of a man instead of all of a dolt.

It may or may not be an unambiguous improvement for the men. Some men benefit by getting two wives instead of one. In addition, every time a man near the top of the hierarchy settles for two (lower quality) women instead of one (high-quality) one, he opens up a rung on the ladder; the men below him move up a step and end up with more desirable wives than they could have before. Figure 21-3 shows such a change; A, B, C, . . . are the men, in order of desirability, while 1, 2, 3, . . . are the women. When B chooses 7 and 8 instead of 2, whom he would have married in a monogamous society, C-G all find themselves with more attractive wives as a result.

How can the change injure men? A man is worse off if someone above him marries two wives, *both* higher in the women's hierarchy than the woman he was going to marry. That eliminates one step above him on the men's ladder and two steps on the women's, pushing his relative position down a step; he must be content with a woman one step below the one he could have gotten if monogamy were the rule. In Figure 21-3, that is what happens to H and everyone below him.

Just as in the first model, the argument can be repeated for the case of polyandry, with

essentially the same results. When polyandry becomes legal, some men near the top of the hierarchy almost certainly lose; some near the bottom--in particular any who before could not find a wife--gain. Women may all gain, or those at the top may gain at the expense of those at the bottom.
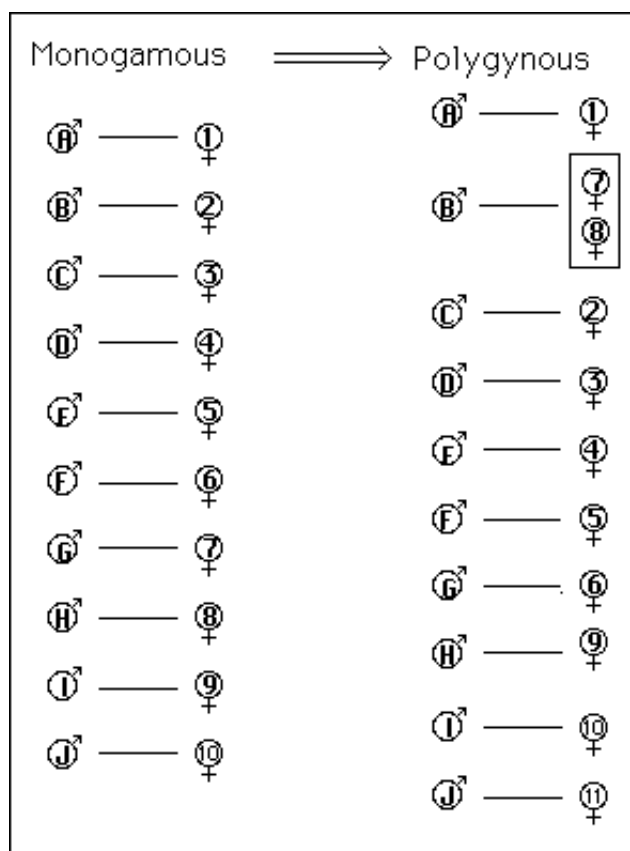


Figure 21-3

The effect of polygyny in a marriage market without prices. Both men and women are ranked (A,B,C, . . . ; 1,2,3 . . .) according to their attractiveness as marriage partners. If polygyny is illegal, A marries 1, B marries 2, etc. If it is legal, A marries 1, B marries 7 and 8, C marries 2, etc.

## Markets with and without Price--Some General Comments

Whenever it is suggested that something should be provided on the market instead of produced and allocated by government, one of the objections made is that such a proposal only benefits the rich, since if something is sold, "The rich get it all." The outcome of the marriage market I have just described--a market without price--is much more like that stereotype than is the outcome of an ordinary market with a price.

On an ordinary market, differences in income are one of the factors determining who gets what, but not the only one. An individual who particularly values something--car, clothes, books--may end up with more of it than a competitor with higher income but different tastes. And the outcome is not all or nothing; the individual who spends more money gets, not all of the good, but an amount proportioned to what he is willing to spend.

On the monogamous marriage market without price, it does not matter how much a man wants an intelligent and beautiful wife and how many other things he is willing to give up to get her; if anyone above him on the hierarchy also wants her, he has no chance. Wealth--not in money but in whatever makes for an attractive mate--is the sole determinant of who gets what. And the competition, for any particular mate, is all-or-nothing; if you have half the attractiveness of your competitor, the result is not that you get a third of what you want and he gets two thirds but that he gets all of it.

In the Soviet Union some goods, such as meat and out-of-season vegetables, are sold at low prices but are frequently unavailable in ordinary stores. They can be found only in special stores to which ordinary citizens do not have access. In that respect, at least, inequality is greater under communism than under capitalism--precisely because goods are not allocated by the market. Similarly during World War II, when the United States had price control and rationing on food, what you ate often depended less on what you were willing to pay than on whom you knew.

## Money, Beauty, and Folk Songs

"The Brown Girl she has house and lands, fair Ellender she has none."

--No. 73 of *The English and Scottish Popular Ballads* collected by Francis James Child

At the end of this chapter, there is a brief discussion of the anti-money bias of our culture, the attitude that regards money transactions, especially in a social context, as somehow base or corrupt. Those who do not believe such a bias exists may find it instructive to reread the earlier parts of this chapter or explain them to their friends and then examine their own and their friends' reaction to describing marriage as buying a wife or husband.

One aspect of this that is particularly relevant to our two models of the marriage market--with and without price--is a motif frequently seen in folk songs. A young man

must choose between two women, one beautiful and one rich. Almost invariably he chooses the rich one. The result is tragedy; at least two and often all three of the parties end up dead. The lesson is clear: Marry the beautiful woman.

It is clear in such songs that marrying a woman for her money is bad, but marrying her for her beauty is fine. It is less clear why. True, the Brown Girl (dark complexioned, hence less attractive than "Fair" Ellender) has done nothing to deserve her wealth; one could argue that she therefore does not deserve to get Lord Thomas. But no more does Fair Ellender deserve her beauty. All either of them has done is to pick the right parents, the one for wealth and the other for looks. Why then is it good and noble for Lord Thomas to reject wealth for beauty and base and wicked for him to reject beauty for wealth?

One answer may be that the plot depends on something that I earlier assumed away. In the world of folk songs--and in many, perhaps most, human societies--the bride and groom are not the only ones whose interests are involved in their marriage, nor are they the only ones with some control over it. Both sets of parents are involved as well. What may really be going on in "Lord Thomas and Fair Ellender" (and other songs with the same plot line) is a conflict of interest between the groom and his family. If Lord Thomas marries Fair Ellender, he will be the only one to benefit by her beauty; if he marries the Brown Girl, his parents may reasonably hope to get their hands on some of her wealth. Perhaps they are counting on it to support them in their old age. It is Lord Thomas's mother who persuades him to marry the Brown Girl.

If that is what is going on, it is clear enough which side of the generation gap the singer is on. Or, more precisely, which side he believes his audience is on.

## What and Why Is Marriage?

(Miss Manners) also asks that you not bore her with explaining the comparative quality of marital and nonmarital relationships, especially when using the term "honesty" or asking the nonsensical question of what difference a piece of paper makes. Miss Manners has a safe-deposit box full of papers that make a difference.

--*Miss Manners' Guide to Excruciatingly Correct Behavior* by Judith Martin

So far in our discussion of the marriage market, we have taken the existence of

marriage for granted. We will now turn from examining the market to examining the institution. Our first questions are "What is marriage" and "Why does it exist?"

**Marriage as a Firm.** One way of looking at marriage is as a rather odd sort of package deal, an exchange in which the two parties agree to share income, housing, sexual favors, and a collection of productive activities such as cooking meals, cleaning house, washing dishes, and rearing children. Seen from this standpoint, the motivation for marriage is, in part, the existence of economies of scale in production--it is easier to cook one meal for two people than two meals each for one person--and, in part, the advantage of division of labor. A marriage is simply a particular kind of two-person firm.

But a firm is not the only way of taking advantage of division of labor--there is the alternative of the market. Most of us take advantage of the comparative advantage of the butcher, the baker, and the brewer; but we do not have to marry them to get our dinner. The wife in a traditional marriage may have a comparative advantage over the husband in cooking, and the husband might have a comparative advantage over the wife in carpentry. But outside of the household, there are surely better cooks and better carpenters than either of them. Why does the couple limit itself to division of labor within the household?

**The Reasons for Household Production.** Few couples do; most of us obtain much of what we want by buying it on the open market. The typical family does, however, rely on household production for a considerable range of what it consumes--most meals, most domestic cleaning, much child care and education, and so on. Why are not these things too purchased on the market?

One reason is the existence of transaction costs. If you are going to build a house, it is worth hiring a carpenter. If you are simply fixing a few loose shingles, the time and trouble of finding a good carpenter, negotiating mutually satisfactory terms, and making sure he does the job may more than wipe out the carpenter's comparative advantage. The carpenter may be better at fixing the shingles than I am, but I am the one who gets wet if the roof leaks, so I have an incentive to do a good job even if nobody is watching me. And I have no incentive to waste time and energy haggling with myself over the price.

A second reason may be specialization--not in a particular product but in a particular set of customers. The cook at the restaurant my wife and I would go to if we spent less time cooking and more time earning money to pay for going to restaurants may be

better at cooking than we are. But the restaurant cook is worse than we are at cooking *for us*. We, after all, are specialists in what we like. This may be still more true for some other forms of household production.

We now have at least a partial explanation for the existence of marriage. A second element worth investigating is the fact that marriage, in most societies, is a very long-term contract. Why?

**Marriage and the Costs of Bilateral Monopoly.** The answer was given back in Chapter 9, in the discussion of bilateral monopoly as a reason for long-term contracts. Before I went to work at UCLA, both I and the economics department were participating in a large and moderately competitive market. Once I had accepted the job and spent a year or two learning to do it, we were both to some degree locked into a bilateral monopoly. Both they and I had borne substantial costs associated with training me for that particular job and equipping the department to deal with that particular professor.

Marriage is a more extreme version of the same situation. Individuals choose their mates on a large and competitive market, however much they may protest that there could never have been anyone else. But once they are married, they rapidly acquire what in other contexts is known as *firm-specific capital*. If they decide to end the contract and find other partners, they incur very large costs that they would have avoided if they had chosen the right partners to start with. Their specialized knowledge of how to live with each other becomes worthless. One, at least, must leave a familiar and accustomed home. Their circle of friends will probably be divided between them. Worst of all, the new mate, whatever his or her advantages, is not the other parent of their children.

As I explained in Chapter 6, one problem with acquiring firm-specific capital is that it creates a large bargaining range between the two parties. Each may be tempted, in trying to get things his way, to take advantage of the fact that the other is locked into the relation and will choose to leave it only if things get very much worse. There is no way to eliminate such problems entirely, in marriage or in other contexts, but long-term contracting, explicit or implicit, is a common way of reducing them.

**Enforcement Problems.** The marriage contract involves two different elements, one a good deal more enforceable than the other. The agreement to remain married "till death do us part" is to a considerable degree enforceable; in many societies, although not ours at present, getting out of one marriage and into another is a difficult and

expensive undertaking. Henry VIII, as you will remember, had to change the religion of an entire country in order to cancel his long-term contract with Catherine of Aragon.

But preventing the parties to a contract from backing out of it entirely does not solve the problem unless the contract specifies the precise obligations of each party--and does so in a way that can be enforced. Marriage without divorce can result in an even larger bargaining range than marriage with divorce, since one party can threaten to make the other's life so unpleasant that divorce would be an improvement. Whether the threat is a believable one may depend on the cost of carrying it out. If both parties know that when the argument is over they are still going to be married to each other, that may give them an incentive to avoid extreme strategies.

This suggests that the ideal solution would be a long-term contract that completely specified the obligations of both parties. Before the contract is signed, there is no marriage, no bilateral monopoly, and not much of a bargaining range. After the contract is signed, there is nothing left to bargain about.

To some extent, marriage is such a contract. It is, in principle, possible for a husband or wife to claim that the other is not living up to his or her responsibility--for a wife to sue a husband for failing to support her, for example. The problem is, first, that one can never write a contract detailed enough to specify all the relevant terms and, second, that even if one could, it would be almost impossible to enforce it. Here, as with price control, the individual who is legally obliged to provide a specified product at a specified price can generally evade the obligation by lowering quality. So far as I know, nobody has ever successfully sued his or her spouse for cooking--or making love-- badly. So a considerable amount of bargaining room remains, and is used, even in marriages in traditional societies.

**Love and Marriage.** So far in this chapter I have said nothing about love, which is widely believed to have some connection with marriage. It may seem odd to ask why we marry someone we love, instead of marrying someone whose tastes agree with and whose skills complement our own and then conducting our respective love lives on the side, but it is a legitimate question.

There are two answers. The first is that love is associated with sex, for reasons that can be explained (by *sociobiology*--economics applied to genes instead of people) but will not be here, and sex with having children. Parents much prefer rearing their own children to rearing other people's, and much of child rearing is most conveniently done in the home of the rearer. So it is convenient, to say the least, if a child's parents are

married--to each other.

The second answer is that love reduces, although it does not eliminate, the conflicts of interest that lead to costly bargaining. If I love my wife, her happiness is one of the main things determining mine; we therefore have a common interest in making her happy. If she also loves me, we also have a common interest in making me happy. Unless our love is so precisely calculated that our objectives are identical, there is still room for conflict, in either direction; if we love each other too much, my attempts to benefit her at my expense will clash with her attempts to benefit me at her expense.

A more precise discussion of the logic of such situations will have to wait for the second part of the chapter, where I work out in some detail the effect of altruism on the behavior of altruist and beneficiary.

**The Decline and Fall of American Marriage.** Now that we have at least a sketch of an economic theory of marriage, we might as well do something with it. One obvious thing to do is to explain the decline of marriage in the United States (and some similar societies) over the course of this century. Why has marriage become less common and why has the effective term of the contract become so much shorter?

The simple answer is that the amount of time spent in household production has declined drastically, and with it the amount of firm-specific capital acquired by the partners, especially the wife. Earlier I remarked that it was not necessary, in order to get dinner, to marry one's butcher, baker, and brewer. In fact, a few hundred years ago, it was not uncommon for a man to be married to his baker and brewer and a woman to her butcher--all three of those professions were to a considerable extent carried out within the household, especially in rural areas. Dorothy Sayers, in one of her essays, suggests that men who complain about women stealing men's jobs should be asked whether they wish to return to women all the industries that used to be conducted by housewives and have now moved onto the market, such as brewing beer, preserving food, and making clothes.

One factor reducing the amount of household production has been the increase in specialization over the past few centuries. Bacon, clothing, jams, and many other things are now mass-produced instead of made at home. A second factor has been the mechanization of much of what remains. Clothes and dishes are still washed at home, but a good deal of the work is really done by the firms that make the washing machines. A third factor has been the enormous decrease in infant mortality. It used to be necessary for a woman to produce children practically nonstop in order to be fairly

sure of having two or three survive to adulthood, with the result that bearing and rearing children was virtually a full-time job. In a modern society, a couple that wants two children produces two children.

The result of all three changes has been greatly to reduce the amount of work done by an average housewife. Housewife is no longer a full-time profession, save in certain unusual cases--families that want a lot of children, couples going "back to the land," and the like. But household production in general and child rearing in particular are responsible for a large part of the specialized capital associated with marriage. If husband and wife each spend 80 percent of the day working at a job and 20 percent taking care of the household and if they have no young children, the costs of divorce are not all that great. Even for a somewhat more traditional family, with the husband working full time and the wife dividing her time between work, housekeeping, and rearing one or two children, the costs of divorce are much lower than they were a few generations ago.

Divorce is not all costs. There are benefits too; otherwise nobody would ever get divorced. If the benefits remain unchanged and the costs are reduced, the number of cases in which at least one partner finds that benefits are greater than costs will increase. Judging by the divorce rate, it has. Seen from this standpoint, the increase is neither inherently good nor inherently bad, neither evidence of increased freedom nor a consequence of declining moral standards. It is merely a rational adjustment to a changing world.

It is good insofar as it reflects, and accommodates, an increase in the range of choice available to individuals. We could choose to live in eighteenth century households, tanning our own leather and brewing our own beer. Some people do--you can read about their lives in *Mother Earth News* every month. The fact that most do not is evidence that, for most of us, the costs of living that kind of life instead of our present one are larger than the benefits.

The increased divorce rate, and the general difficulties with modern marriage, are bad things only to the extent that they reflect the failure of our institutions and expectations to adjust completely to new circumstances. The terms on which two people can live a happy and productive life together are not so simple that each couple can invent them independently in a few hours. The division of labor has a place in building institutions as well as houses. In a relatively static society, we can observe successful arrangements, patterns that have worked in the past and will probably work in the future. In a rapidly changing society, it is more difficult to figure out what kind of

a contract we should or should not agree to and what kind of a marriage--or alternative arrangement--we should or should not choose. Hence there are likely to be more mistakes. Here as in most other areas, economic theory is more useful for describing the equilibrium than for describing the process by which we move from one equilibrium to another.

## THE ECONOMICS OF ALTRUISM

A common argument against economics is the claim that economists either assume or advocate selfishness, whereas people in the real world should and do care for others. There is some truth to this charge, but not very much. Economists assume that people have their own objectives and act to achieve them, but, as I have pointed out several times, there is no reason why those objectives must be selfish; economists can and do assume that one of the things some people value is the welfare of other people.

### Geometric Version

Someone who values the welfare of someone else is called an *altruist*. It is possible to use economics to analyze the rational behavior of an altruist and of the person whose welfare he cares about, and in the process to derive some surprising results.

Figure 21-4a shows the indifference curves of an altruist A, who is concerned with his own consumption, $C_A$, shown on the vertical axis, and the consumption of a beneficiary B, $C_B$, shown on the horizontal axis. Both $C_A$ and $C_B$ are goods for A, so his indifference curves slope down and to the right; both exhibit declining marginal utility, so the curves are convex toward the origin. In drawing the figure, I have assumed that both $C_A$ and $C_B$ are normal goods; as his income rises, he buys more of both. That assumption will be retained throughout the discussion.

A has an income $I_A$ and B an income $I_B$. If A gives nothing to B, each will consume his own income, putting them at point X ($C_A = I_A$, $C_B = I_B$). A can, if he wishes, transfer part of his income to B, reducing his own consumption and increasing B's. As he does so, he moves down the line L. The slope of L is -1; when A gives B a dollar, A's consumption goes down by a dollar and B's goes up by a dollar. A will continue to make transfers until he reaches point Y, where an indifference curve is tangent to L. This is his optimal point on L, just as the point where an ordinary budget line is tangent to an

indifference curve was the optimal point for an ordinary consumer in Chapter 3--it is the most desirable bundle available to him.



Figure 21-4a
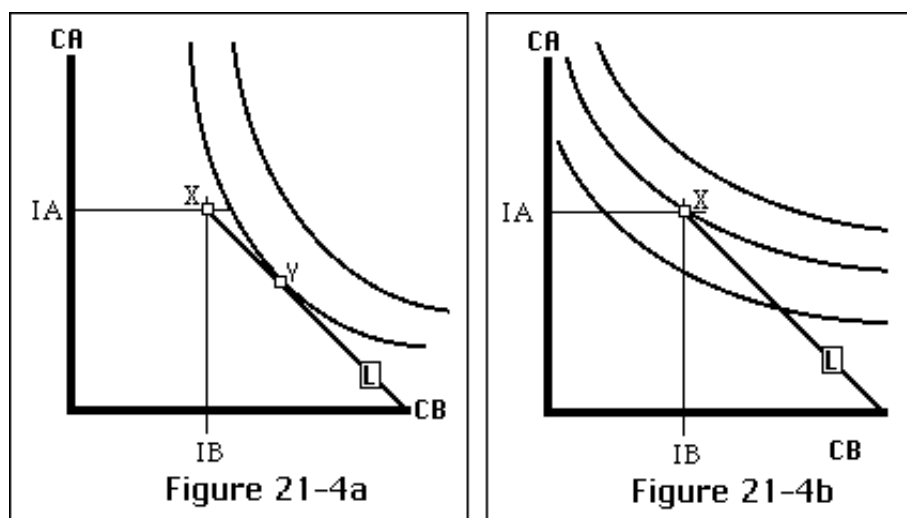
Figure 21-4b

<u>Budget line/indifference curve diagram for an altruist.</u> By choosing how much of his income ($I_A$) to give to the beneficiary, the altruist is choosing a point on the budget line L. Figure 21-4a shows an interior solution at Y; Figure 21-4b shows a corner solution at X.

Figure 21-4a shows a situation in which the altruist chooses to make transfers to the beneficiary. Figure 21-4b is similar, except that the altruist's preferred point is X, where he starts out. Any transfer will move him to a lower indifference curve. The altruist consumes his entire income ($I_A$), and the "beneficiary" consumes his entire income ($I_B$). A is still an altruist, since he still values B's utility, but he does not value it enough to buy any of it, given its cost.

Figures 21-4a and 21-4b are almost exactly like the budget line-indifference curve diagrams we constructed in Chapter 3. A is "buying" two goods, $C_A$ and $C_B$, with a "total income" of $I_A + I_B$. The only difference is that since the altruist can make transfers to B but cannot force B to make transfers to him, the line stops at X; there is no way he can choose a bundle higher and further to the left than that. In effect, the altruist is deciding how to divide the total income $I_A + I_B$ between himself and the beneficiary, subject to the condition that the beneficiary has to end up with at least $I_B$.

Figure 21-5a shows the effect of two possible changes in the situation. The budget line *df* is the result of decreasing $I_A$ by \$10 (Case 1); *cf* (*df* plus the dashed extension *cd*) is the result of instead decreasing $I_B$ by \$10 (Case 2) . The two lines are identical except

that the dashed line goes a little farther up and to the left. The optimal point chosen by the altruist (*e*) is the same in both cases.



Figure 21-5a                    Figure 21-5b
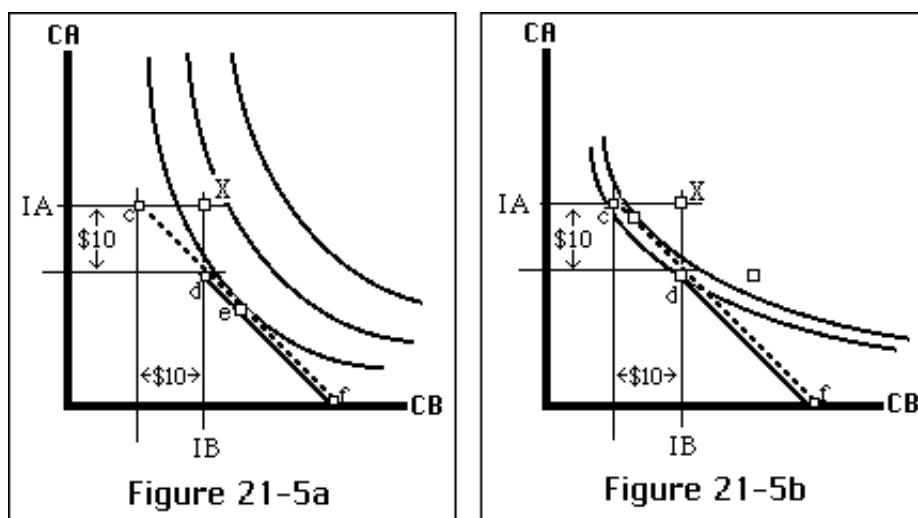
The effect on an altruist's situation of a change in the combined income of altruist and beneficiary. *df* is the budget line after a $10 reduction in the altruist's income, *cf* the budget line after a $10 reduction in the beneficiary's income. In Figure 21-5a, where the optimum is an interior solution, it is the same for both cases; in Figure 21-5b, one of the optima is a corner solution (no transfer) and is not the same as the other.

As you should be able to see from the figure, this is not an accident. The two lines, one representing the situation where the altruist loses $10 and the other the situation where the beneficiary does, are the same except for the dashed section *cd*. So unless the altruist's optimal point is on *cd*, it must be the same for both cases. If the optimal point is on *cd*, as shown on Figure 21-5b, then in Case 1, where the altruist loses the money, his new optimum is at *d*. The altruist chooses not to transfer anything, so each ends up consuming all of his own income.

## Verbal Version

The analysis can be put in words as well as in figures. The altruist, in deciding how much of his income to give to the beneficiary, is dividing the combined income of the two ($I_A + I_B$) between them, subject to the condition that he can only give, not take, so the beneficiary cannot end up with less than he starts with ($I_B$). A $10 decrease in either the altruist's or the beneficiary's income means that there is now $10 less to be divided between them. The only difference is that if the decrease is in the altruist's income, the least the beneficiary can end up with is $I_B$; if it is in the beneficiary's

income, the least he can end up with is $I_B$ - $10--his new, lower, income. If the altruist's preferred division involves the beneficiary consuming more than $I_B$, as it does in Figure 21-5a, that difference does not matter; even if the altruist could create a division in which the beneficiary consumed less than $I_B$, he would not choose to. So the outcomes of Case 1 and Case 2 are the same, as shown on Figure 21-5a.

This means that as long as we only consider situations in which the altruist chooses to make some transfer (unlike Figure 21-4b and case 1 on Figure 21-5b, where he does not), changes in the combined income of altruist and beneficiary have the same effect on the consumption of both, whether they change the altruist's income or the beneficiary's income. The beneficiary, if he understands this analysis, will find it in his interest to pay as much attention to maintaining the income of the altruist as to maintaining his own. In this respect, the beneficiary ends up acting rather as though he too were an altruist--even though he is actually indifferent to the altruist's welfare.

It is in the interest of the beneficiary to take any action that produces net gains to himself plus the altruist, in exactly the same sense in which we discussed net gains in the context of Marshall efficiency. Any change that is a Marshall improvement will also be an improvement for the beneficiary once we include in our calculations the effect of the change on the amount that the altruist chooses to transfer. A change that benefits the altruist by $5 and hurts the beneficiary by $3 will also result in the altruist increasing his transfer to the beneficiary by at least $3 and less than $5; a change that injures the altruist by $5 and benefits the beneficiary by $3 will result in a reduction of the transfer by something between $3 and $5. I have proved this result graphically in the simple two-dimensional case where all changes are in money; the proof in the more general case (where the loss might be a broken arm, a broken window, or even a broken heart) is similar but more complicated.

Your response to this result may be that it is not surprising; if the beneficiary hurts the altruist, the altruist punishes him by reducing the transfer, so the beneficiary finds it in his interest not to offend his patron. That is not what is happening. Nothing in the argument depends on the altruist knowing that the beneficiary is responsible for the change. Exactly the same thing will happen in the case of a change produced by some third party, or by nature. If the change is a Marshall improvement, both beneficiary and altruist end up better off after the change--and the resulting change in the amount the altruist chooses to transfer. If it is a worsening, both end up worse off.

You can see that result in Figure 21-5a, where the equilibrium position depends only on the combined income $I_A + I_B$, not on the individual incomes. That remains true as long

as, both before and after the change, the altruist chooses to make some transfer to the beneficiary. Figures 21-4b and 21-5b show situations where that is not true; two of the equilibria on those figures are corner solutions with zero transfer. Since in such situations, $C_A = I_A$ and $C_B = I_B$, the division of consumption depends on $I_A$ and $I_B$, not just on their sum.

## The Rotten Kid Theorem

Consider a situation with one altruist ("parent") and two beneficiaries ("kids"). One of them is a rotten kid who would enjoy kicking his little sister. The analysis I have just described implies that if the dollar value to the rotten kid of kicking his sister (the number of dollars worth of consumption he would, if necessary, give up in order to do so) is less than the dollar cost to the sister of being kicked, the rotten kid is better off not kicking her. After the parent has adjusted his expenditure on the kids in response to the increased utility of the kid and the decreased utility of the kicked sister, the rotten kid will have lost more than he has gained. Here again, the argument does not depend on the parent observing the kick but only on his observing how happy the two kids are.

This result--that a rotten kid, properly allowing for the effects of parental altruism, will find it in his self-interest to kick his sister only if it is efficient to do so--is known as the *Rotten Kid Theorem*. There is a sense in which the altruist in such a situation functions, unintentionally, as a stand-in for the bureaucrat-god, at least as far as the tiny society made up of altruist and beneficiaries is concerned. Because of the altruist's peculiar utility function--which contains the beneficiaries' utilities among its arguments--both altruist and beneficiaries find it in their private interest to maximize Marshall efficiency, to make decisions according to whether the net effect on altruist and beneficiaries is or is not a Marshall improvement.

## Altruism and Evolution

What, if anything, is this analysis of altruism useful for, other than entertainment? Gary Becker, the economist whose ideas I have been describing, has used them to try to resolve one of the principal puzzles of sociobiology: the existence of altruism. If, as the theory of evolution seems to imply, animals (including ourselves) have been selected by evolution for our ability to serve our own reproductive interest (roughly speaking, to

act in such a way as to have as many descendants as possible), those who sacrifice their interest for the interest of others should have been selected out. Yet altruism seems to occur among a variety of species, possibly including our own.

One explanation is that altruism toward kin (most obviously toward my children, but the argument turns out to apply to other relatives as well) is not really altruism from the point of view of evolution; I am serving my reproductive interest by keeping my children alive so that they can have children. This still leaves altruism toward non-kin as a puzzle to be explained. Becker's argument is that altruism generates cooperative behavior via the mechanism described above and so benefits the altruist as well as the recipient, by giving each recipient an incentive to behave efficiently vis-à -vis the entire group. A group containing an altruist will therefore be more successful than one that does not; it will have more surviving descendants, and its genes, including the genes for altruism, will become increasingly common.

Although the altruist is promoting the reproductive success of his group vis-à -vis other groups, he is also sacrificing his own reproductive success vis-à -vis other members of his group. He is, after all, transferring resources of some sort from himself to them. If Becker's analysis is correct, genes for altruism should be becoming less frequent over time within groups containing one or more altruists, but the genes of such groups should be becoming more frequent over time; only if the second process at least balances the first will altruism survive.

### Fair Ellender and the Rotten Kid

In the first part of this chapter, I asked why marrying for beauty is generally considered better than marrying for money. We now have a possible answer. It is widely believed that beauty is, and wealth is not, one of the things that makes men fall in love with women. Our analysis of altruism suggests that people will work together much more easily if one of them is an altruist with regard to the other, since it is then in the interest of both altruist and beneficiary to maximize their joint welfare. Lord Thomas is in love with Fair Ellender and is not in love with the Brown Girl, as he informs her immediately after the wedding--with the result that the Brown Girl stabs Fair Ellender, Lord Thomas kills the Brown Girl, and Lord Thomas then commits suicide, thus ending the song and presumably teaching his parents a lesson. If we are willing to identify "being in love" with altruism, perhaps the moral of the song is correct. If you marry the beautiful woman, you get not only beauty but also the advantage of being part of an efficient

household--coordinated by your own altruism.

Of course, it only works in one direction; we have no reason to believe that Fair Ellender's beauty makes her any more likely to act altruistically toward Lord Thomas. But that is not an important objection to the argument; we know, from the Rotten Kid Theorem, that one altruist in a family is enough.

A more serious objection is that it is not clear how close the relationship is between "being in love" and altruism; Fair Ellender's response to being jilted by the man she was "in love" with was to dress up in her finest ("every village she came through, they thought she was some queen") and go spoil her ex-boyfriend's wedding. "Being in love" seems to describe a mix of emotions, some of them far from altruistic. To what extent the elements in the mix associated with physical beauty involve altruism, and, if they do, whether they are likely to survive the first six months of marriage, is at least an open question.

### Gift vs Money

Why do people ever give gifts in any form other than money? If, as we normally assume, each individual knows his own interest, surely he is better off getting money and buying what he wants instead of getting what the donor decides to buy for him.

There are two obvious reasons to give gifts instead of cash. The first is that the donor may believe the recipient's objectives are different from his own. I may give you a scholarship not because I like you but because I want there to be more educated people in the society or more smart high school students going to my alma mater.

Another example is the food stamp program. The idea is not merely to help poor people, but to get them to buy more food. This leads to another question: Why do we care what the poor people spend the money on? If they feel clothing or shelter is more important than food, why not let them make that choice? One answer to that question is that the program is largely supported by politicians from food-producing states.

A second reason for giving restricted gifts is paternalism. If you believe that you know better than the recipient what is good for him, you will naturally want to control how he spends your money. The obvious example is the case of parents dealing with children. A second reason to give food stamps instead of money may be the belief that some of the poor should spend money on food but, if given a choice, will spend it on whiskey

instead.

It is not entirely obvious that paternalism is a sensible policy even applied to children. When I was quite small, my family traveled by train from Chicago to Portland, Oregon, to visit grandparents. The trip took three days and two nights. My father offered me and my sister the choice of either having sleeping berths or sitting up and being given the money that the berths would cost. We took the money.

This brings us back to the question of why we give gifts instead of cash--to our friends and even our parents on Christmas, birthdays, and the like. Even if paternalism is appropriate toward one's children, it hardly seems an appropriate attitude toward one's parents. A possible answer is that, in this particular small matter, we do think we know their interest better than they do--we are giving, say, a book we have read and are sure they will like. I doubt that this is a sufficient explanation; we frequently give people gifts we have no special reason to think they will like. I suspect that the correct answer is somehow connected with the hostility to money, especially in personal interactions, which seems typical of our society. Consider, for example, the number of men who would think it entirely proper to take a woman to an expensive restaurant in the hope of return benefits later in the evening, but would never dream of offering her money for the same objective.

Many readers find this particular example a disturbing one, in part because it seems to imply that conventional dating is simply a disguised form of prostitution. Much the same claim has occasionally been made about marriage. In both cases, the argument seems plausible and yet the conclusion does not. This raises a variety of interesting questions, starting with the question of why we have such strong negative feelings about prostitution--why, in a variety of societies, the sale of sex is regarded very differently from the sale of other services, and why our condemnation does not extend to situations in which sex is, at least implicitly, part of a much broader transaction. Students interested in exploring that question may find that the ideas of this chapter, the discussion of commitment strategies in Chapter 11, and the analysis of the evolution of behavior in books such as *The Selfish Gene*, provide at least a starting point for an economic explanation of such apparently uneconomic attitudes.

Such an explanation leads to a further problem--explaining why our society is hostile to the use of money, especially in personal relations. As an economist, I would like to find an economic explanation even for "anti-economic" behavior.

# Suspension of Disbelief

Some of my more courageous readers may at this point be about ready to ask whether I expect them to take this chapter seriously. Do I really believe that love and marriage can be analyzed with the abstract logic of economics? Do I really believe that a 7-year-old boy, in deciding whether or not to kick his little sister, works out a cost-benefit calculation based on economic theory that is fully understood by almost no one without a Ph. D. in economics?

The answer is "yes, but." I do believe that the analysis of this chapter is *useful* in understanding love, marriage, and children as they exist in the real world. I do not believe that the analysis is *sufficient* to understand them, without also knowing a good deal about what it is like to be human, to love, to be a child, to be a parent. Nor do I believe that if theory clashes with what we observe in the real world, it is the real world that must back down; I am not willing to say, in the words of a famous German philosopher confronted with evidence contrary to his theories, "So much the worse for the facts."

Economics is one way of understanding the real world. It depends, in virtually all practical applications, on using an approximate picture of the real world, one that retains the essential features while eliminating inessential elements whose inclusion would make the analysis intolerably complicated. Making such approximations correctly is a matter of judgment; one way of finding out whether you have done so is by seeing how well the predictions of the theory fit what you actually observe. It is most unlikely that they will fit perfectly, since the world you observe is not identical to the simplified picture of it that you have analyzed. But an approximate theory may still be better than no theory at all.

All that being said, it is also true that for some of us the creation of economic theory, especially economic theory of things that everyone else regards as outside of economics, is an entertaining game and even, perhaps, a form of art. As long as that is all it is, the theory is properly judged by artistic criteria: elegance and consistency. It is only when we stop sketching out theories for fun and start testing them against the real world that economics becomes a science as well as an art and its analysis useful as well as entertaining.

## PROBLEMS

1. In the first model of marriage, an increase in the price that potential husbands offered for wives resulted in an increased quantity of wives supplied, since improved marriage terms made more women willing to marry. Suppose we were considering a society in which the price went to the bride's parents instead of the bride. Discuss how and why the quantity of wives would depend on the price, in both the short and long run.

2. In analyzing the effects of polygyny, I claimed that the polygynists themselves--the men who ended up with more than one wife--might be worse off as a result of the legalization of polygamy. How can that be--if they are worse off, why do they not simply decide to marry only one wife?

3. It is said that there exists a traditional society in which every year there is a bride market. It takes the form of an auction, starting with the most desirable bride. The money paid by suitors for the desirable brides is collected. When the auctioneer gets to a bride nobody wants to pay to marry, the price goes negative--he starts offering a payment to potential suitors, paid out of the money collected. As the brides get less desirable, the payments get larger. The auction continues until all of the young women of the appropriate age have been auctioned off.

Discuss the workability and the implications of this system. What would be the effect of legalizing polygyny? Polyandry? Who do potential brides "belong to" under this system?

4. Historically, most marriages have been monogamous, but many societies have also permitted legal polygyny. Polyandry seems to be much rarer. Can you suggest reasons?

5. Can you suggest economic reasons for the hostility to money, especially in social contexts, discussed in the chapter? Can you suggest noneconomic reasons? If so, can you translate your noneconomic reasons into economic language?

6. One interesting characteristic of gift-giving that should be explained by an adequate theory is the tendency to give gifts that are pleasurable but ephemeral, luxuries such as candy and flowers. What do you think the explanation is?

7. In discussing the nature of marriage, I presented reasons why both love and sex are normally part of the package, along with cooking, home repairs, child rearing, and a variety of other services. This does not seem to have been true of French upper-class society in the nineteenth century, at least as depicted by French novelists. One has the

impression that every well-to-do husband had a mistress and every wife a lover.

Discuss why marriage may have taken the form it did in that society. In general, what relation would you expect to observe between income and the stability of marriage? Does this correspond to what actually happens, in that society and others?
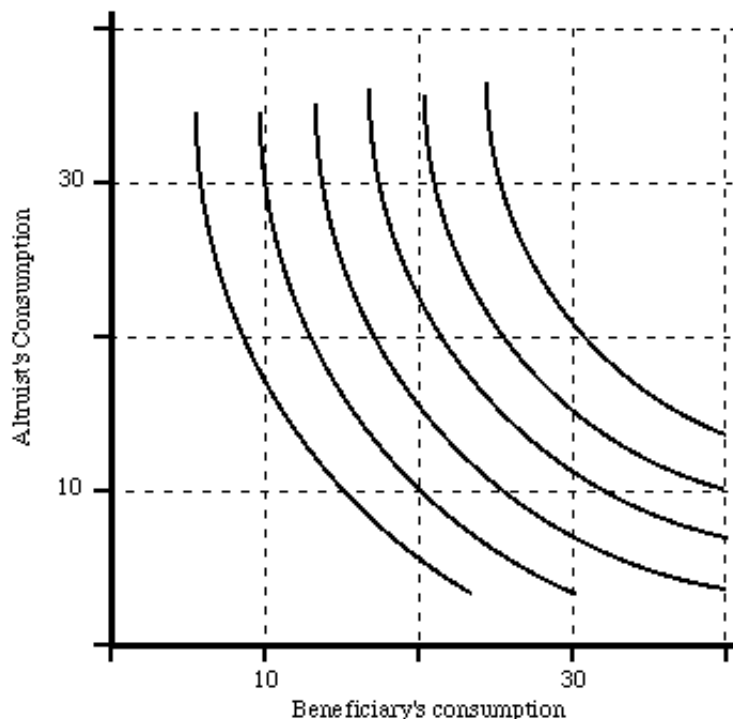


Figure 21-6

Indifference curves for an altruist. For Problems 8 and 9.

8. Figure 21-6 is the indifference map for an altruist A. Draw his budget line and indicate the equilibrium if:

a: His income is 30, the beneficiary's income is 10.

b: His income is 20, the beneficiary's income is 20.

c: His income is 10, the beneficiary's income is 30.

9. Do Problem 8 on the assumption that there is a gift tax of 33 percent; for every $3 the altruist gives, $2 goes to the beneficiary and $1 to the government. The government spends its tax money on people whose utility is not of value to the altruist.

10. Throughout the analysis of altruism, I assumed not only that the beneficiary's utility was a good for the altruist but that it was a normal good. Suppose it is instead an

inferior good. How would the conclusions of the analysis be changed? How would the beneficiary find it in his interest to behave?

11. Suppose the utility of one person is a bad for another. How might one describe this situation? What results would you expect?

12. Suppose we concede that my sister and I correctly perceived our own interest when we chose money over berths for our train trip. What reasons can you suggest, in terms of the analysis of this book, why letting us make the choice might nonetheless not have led to the efficient outcome?

## FOR FURTHER READING

An excellent introduction to sociobiology--the study of the behavior of animals, including humans, on the assumption that it has been "designed" by evolution to maximize the reproductive success of the individual's genes--is Richard Dawkins, *The Selfish Gene* (New York: Oxford University Press, 1976).

For a more advanced discussion of the economics of marriage (and other things), I recommend Gary Becker, *A Treatise on the Family* (Cambridge: Harvard University Press, 1981). An interesting article on the economics of marriage, and one that takes a somewhat pessimistic view of the move towards easier divorce, is: Lloyd Cohen, "Marriage, Divorce, and Quasi Rents; or, `I Gave Him The Best Years of My Life'," *Journal of Legal Studies*, XVI 2 (June, 1987). An interesting discussion of altruism, arguing that Becker's theory does not explain observed behavior and suggesting an alternative, is: Howard Margolis, *Selfishness, Altruism, and Rationality* (Cambridge University Press: 1982_. A less theoretical and more practical guide to (among other things) courtship and marriage is Judith Martin, *Miss Manners' Guide to Excruciatingly Correct Behavior* (New York: Atheneum Publishers, 1982). Finally, for a witty and intelligent discussion of the differences between men and women, written some sixty years ago and well designed to infuriate equally all parties to the issue, I recommend H. L. Mencken, *In Defense of Women* (New York: Octagon Books, 1976).

In a recent article, I combine some of the ideas of this chapter and of Chapter 15 to discuss, among other things, the economics of gift taxation. See David Friedman, "Does Altruism Produce Efficient Outcomes? Marshall vs Kaldor." *Journal of Legal Studies*, 1987 Vol. XVII, January 1988.

**Why You Should Buy This Book**

**Chapter 22**

**Final Words**

One defect of many economics textbooks, especially at the elementary level, is that they teach you about economics instead of teaching you economics. The result is to produce students who may be equipped to talk about economics but certainly not to do any--a sort of academic equivalent of learning what names to drop at cocktail parties.

You have now spent 22 chapters learning to do economics. In this final chapter, I shall try to tell you something about economics: what it is good for, how it is done, and to what degree economists know anything.

WHAT IS ECONOMICS GOOD FOR ANYWAY?

Looking at the title of this section, it may occur to you that it belongs in the first chapter of the book, not the last. As a believer in rational behavior, I should perhaps have explained to you why economics was worth learning before expecting you to spend a lot of time and trouble learning it. Unfortunately, if I had told you what economics was good for before you read the book, you might reasonably enough have dismissed my claims as no more than deceptive advertising. You may still conclude that, but at least you now have some evidence on which to base your conclusion.

There are at least four different reasons to learn economics. The first is that economists, in the process of developing a theory of human behavior based on rationality, have done quite a lot of useful thinking about how it is rational to behave. While we may know very little about what your objectives are or should be, we know

quite a lot about how, given a set of objectives, they can best be attained. Once you understand concepts such as marginal cost, marginal value, sunk cost, and present value, you should find them to be useful tools in making decisions about how to organize your life. When you finally realize that you have invested six months of effort and heartache pursuing a member of the opposite sex who has no interest at all in you, you can sum up your situation--and reluctantly reach the correct conclusion concerning what to do about it--with the observation that "Sunk costs are sunk costs." When deciding whether to spend another few weeks looking for a better buy in a house or a car, you can put the issue more clearly by asking, not whether you have found the best possible buy, but whether the expected return from additional search is greater or less than its marginal cost.

A second reason to learn economics is in order to understand and predict the behavior of other people, especially the effects of the behavior of large numbers of people, in order to take account of it in planning your own life. This should be useful whether you are an investor trying to make money on the stock market, a general trying to keep his soldiers from running away, a homeowner trying to discourage burglars, or a student trying to predict future wages in different professions. In none of these cases will a knowledge of economics by itself be enough to answer your questions--you always need facts and judgment as well. But in all of those cases and many more, economics provides the essential framework within which knowledge and judgment can be combined to reach, perhaps, a correct conclusion--or at least a better conclusion than could be reached without economics.

A third reason to study economics may be that you expect to be a professional economist: someone employed to teach economics, to create economic theory, or to apply economic theory to questions that your employer wants answered. Obviously I believe that being an economist is an attractive profession; if I did not, I would be doing something else for a living. As a missionary, I hope some of you have come to the same conclusion. Of course, as an individual concerned with his rational self-interest, I hope that I have not persuaded enough of you to become economists to reduce my income significantly--or that if I have, you will have the consideration not to enter the field until after I have retired, or at least signed a long-term contract.

The fourth reason to learn economics is that it is fun. Once you understand the logic of economics, you can make sense out of elements of the world around you that you could not otherwise understand, which is entertaining as well as useful. You can also make the process of extracting a rational pattern from apparent chaos into a game played for its own sake--even in cases where it is likely enough that there is no pattern

there to be extracted.

It may occur to you that I have omitted a fifth reason to learn economics, one that many textbooks would put first: to make yourself a better citizen and a better informed voter. It is true that understanding economics makes you much more likely to perceive correctly the consequences of actual or proposed government policy. But while that may be a good reason for me to teach you economics, it is not, unless you are quite an extraordinary individual, a good reason for you to learn it. In a society as large as ours, your vote, as I have pointed out several times, has a very small chance of affecting anything. If you are extraordinarily altruistic, the large number of people benefited by an improvement in government policy may balance, for you, the tiny chance that your actions will produce such an improvement. If you expect to be unusually influential--perhaps because your name is Kennedy or Rockefeller--you may conclude that the public benefit of making yourself an informed citizen justifies the cost. If neither is the case, it is unlikely that the effect on you of the public benefits produced by your improved understanding of economics will be worth the private costs.

## WHAT ECONOMISTS DO

So far as I can tell, economists employed in business or government have two functions. One is to use economic theory to answer questions their employers want answered--to tell Ford what the demand for autos will be next quarter or to estimate for the Treasury what effect a change in the tax laws will have on tax revenues. The other is to use economic language to construct plausible and professional-sounding arguments in favor of whatever their employers want.

Since I am myself an academic economist, I have a somewhat more detailed picture of what academic economists do. What academic economists do is to teach courses like the one you are taking, write books such as the one you are reading, and write articles and do research designed to use economics to explain, predict, and prescribe.

Of the three activities, research is the one with which you have had the least contact. I commented in an earlier chapter that doing economics involves a continual balance between unrealistic simplification and unworkable complication. I might have added that striking that balance--producing pictures of reality simple enough so that they can be analyzed and understood and accurate enough, in their essential structure, to tell us something useful about the real world--is an art, not a mechanical process that can be learned from this book or any other. One discovers whether the attempt has been

successful by seeing whether the theory generates predictions about the real world that are not obvious and are true.

This raises a problem: How can we distinguish between things a theory logically implies and things it "predicts" only because its author knew they were true before constructing the theory? There is a fine line between using knowledge of the real world to construct a correct theory and constructing a theory that is no more than a complicated restatement of things you already know.

One solution to this problem is to predict things you do not know--preferably things you cannot know because they have not happened yet. This is a very convincing way of demonstrating the usefulness of your theory, especially if other people with other theories are making different predictions, and theirs turn out to be wrong and yours right. Unfortunately, this way of testing a theory only works for theories whose implications can be tested over a fairly short period of time and under conditions that currently exist. The first article I ever published in an economics journal was entitled "An Economic Theory of the Size and Shape of Nations." Its predictions were tested against the changing political map of Europe, from the fall of the Roman Empire to the present. If I had restricted myself to testing my theory against future events, the first tentative results might have come in during the lifetime of my great grandchildren.

One way to stay on the right side of the line dividing prediction from description is to only predict the future. Another way is to adopt what appears to be an unreasonably rigid insistence on following out the logic of complete rationality. Most of us believe that actual behavior is a mixture of rational and irrational elements. It is tempting, in constructing an economic theory, to start with a model based on rationality and then introduce elements of irrationality whenever they are needed to resolve a conflict between the predictions of the model and what is actually observed. The resulting "theory" looks more like a description of the real world than would a theory that assumed rationality everywhere, but it is very much less useful. If you feel free to assume irrationality wherever convenient, you can explain anything--and having done so, there is no easy way for either you or anyone else to know whether your theory works because it is right or because you knew the answers before you started and modified the theory accordingly.

If, instead, one insists on assuming rationality everywhere, even in the behavior of small children deciding whether or not to kick their siblings, one has much less freedom to alter the predictions to fit the facts. Once the basic assumptions have been set up, the model is driven by its own internal logic. It takes you wherever that logic

leads, whether or not you want to go there. One advantage of this is that it may take you to conclusions that you know are false, providing evidence that the initial model was wrong. Another advantage is that it may take you to conclusions you thought you knew were false--thus showing you something you did not already know and would never have learned from a "theory" constructed to fit what you thought were the facts.

Seen in this way, the economist's assumption that individuals are rational is in part, as I argued in Chapter 1, a way of deducing the predictable element in human behavior and in part a way of keeping the economic theorist honest.

## MODEL, MODEL, AND MODEL

The term "model" is used, in economics, to describe three quite different things. Explaining the different sorts of models prevents confusion among them; it is also a way of sketching out three quite different things that economists, especially but not exclusively academic economists, do.

One kind of model is a simplified picture designed to make it easier to analyze the logic of a situation while ignoring inessential complications. Models of this sort have been used repeatedly in the previous 22 chapters. One example is the discussion in Chapter 7 of the effect on landlords and tenants of legal restrictions on rental contracts. I assumed that all landlords were identical, that all tenants were identical, and that the restriction affected cost (to the landlord) and value (to the tenant) in a way similar to the effect of a tax or subsidy. I made these assumptions not because I believed they were true, but because they made the problem simple enough to be analyzed, without changing the essential logic of the situation. Once one has used this sort of model to figure out what is happening in the simple situation and why, one is prepared to analyze more realistic--and difficult--cases. Other examples in this book would be the barbershop problem in Chapter 11, the analysis of the effect of tariffs--in a world where wheat is the only export and autos the only import--in Chapter 19, and the two models of the marriage market in Chapter 21.

A second and different sort of model is used in mathematical economics. A typical example might start by assuming "a world of N commodities and M consumers"-- where the numbers could be 10, 100, or a billion. Simplifying assumptions are then made, not about the number of goods or participants but about the mathematical characteristics of elements of the model such as utility functions and production functions. These assumptions are useful not to solve the model--nobody expects to

solve that sort of model anyway, in the sense of plugging numbers in and getting numbers out--but to prove theorems about what the solution must be like. I have not done any of that sort of rigorous mathematical economics in this book, but I referred to it in Chapter 8, when I explained how, in principle, one would solve an economy, and again in Chapter 16, when I suggested that my proof of the efficiency of a competitive market could be translated into a more precise form. One of the things mathematical economists prove theorems about is under what circumstances an economy is efficient.

The third sort of model, which I have not used at all in this book, is a large-scale econometric model. Unlike the other two, this sort of model attempts to give a quantitatively accurate picture of a particular economy--say, the U.S. in January of 1991. It does this by first simplifying the real situation--rather as I simplified it in Chapter 14 when I reduced everything to three factors of production, although not quite that drastically--and then using real-world data and statistics to estimate actual numbers for the quantities and relationships of the model. It is thus a crude picture of a real economy. Its objective is not so much understanding as prediction.

As you probably realize by now, a real economy--say, the U.S. in January of 1991--is an enormously complicated interacting system. Econometric models generally take the form of computer programs, run on very large and expensive computers. Even with the best computers available, any model simple enough to produce a prediction of what will happen next year and take less than a year producing it has to ignore most of what is really happening in the economy being modeled. Econometric modeling is then the art of building models simple enough to be useful but with enough resemblance to the real economy being modeled to be of some use for predicting what will happen. Seen from the perspective of an economic theorist, it is an art made up in roughly equal parts of economics, statistics, and witchcraft.

Econometric modeling survives and prospers, despite the difficulty of doing it and the unreliability of its predictions, because of the immense value of the information it is trying to generate. If you knew what was going to happen to interest rates for the next year, you could make a very large fortune playing the bond markets. Even if the predictions of such models are not very good, knowing a little bit, having a prediction that may well be wrong but has a slightly better than random chance of being right, is worth enough to pay the cost of many hours of computer time and the salaries of many econometricians and programmers.

IS ECONOMICS A SCIENCE?

One side effect of econometric modeling, unfortunately, is to encourage the idea that economists are people who spend their time trying to predict what the economy will do next and that economics is either a confidence game or a very primitive science, since "economists never agree with one another." It would make about as much sense to say similar things about physics and physicists and to cite as evidence the poor performance of weather forecasters. On questions of economics, economists often, perhaps even usually, agree with each other. They disagree about quantitative predictions of the outcomes of systems much too complicated to be solved in any other than a very approximate sense.

A second cause of the popular belief that economics is a highly unscientific endeavor is that economic theory often concerns issues of considerable real-world importance. An economist who says that we would be better off if tariffs were abolished is making a statement that several large and wealthy organizations--General Motors and the United Auto Workers, for example--would like to believe is false, or would at least like other people to believe is false. In such a situation, the publicity given to opposing views has very little relation to the percentage of the profession that supports them. If 99 percent of all economists agree that tariffs should be lowered (only a slight exaggeration of the real situation), the supporters of tariffs will surely be able to find at least one articulate member of the remaining one percent to represent their views. The public impression will then be that "some economists are for tariffs; some are against them."

The same thing happens in other fields. Physics is generally regarded as the hardest of the hard sciences. But when it comes to issues about which many people feel deeply it rapidly begins to seem as though physicists too "never agree with each other." Consider the controversies over whether nuclear reactors are safe, what the long-term effects are of nuclear war, or whether space-based defenses against a nuclear attack are practical. For all I (or, probably, you) know, there is a right answer to each of these questions, subscribed to by the great bulk of those competent to hold an opinion. But as long as there are at least a few people on the wrong side equipped with the right credentials, and as long as large and influential groups support both sides, the impression received by the general public will be that the profession is more or less evenly divided.

Several years ago, the *American Economic Review* published the results of an opinion poll sent to a large number of economists, some academic, some employed by

business or government. The questions--and the results--divided fairly clearly into three categories. One consisted of reasonably straightforward issues of price theory: the effect of rent control, of minimum wage laws, of tariffs. On those questions, there was general agreement, often by more than 90 percent of those polled. The second category involved questions, mostly "macroeconomic" questions, in areas where there is considerable professional controversy; as one would expect, opinion on those questions was divided. The third category consisted of questions where the answer depended in large part not on economics but on issues of moral philosophy--what one believes to be a good or just world. An example would be the question "Should the income distribution of the U.S. be made more equal?" In this category too, there was widespread disagreement. My conclusion from the results of the poll was that economists, like physicists, generally agreed about the solved questions of their science, disagreed about areas where work was still going on, and disagreed on issues where their conclusions depended largely on things other than economics.

## PROBLEMS

1. In discussing reasons for learning economics, I asserted that making you a better informed voter was not a good reason for you to learn economics but might be a good reason for me to teach it. Explain. You may have to assume that I take a very optimistic view of how successful this book is going to be.

2. Apply economics in an original way to something that has not been analyzed in this book. Ideally, your analysis should use one or more of the ideas developed in this book to provide some non-obvious explanations of or predictions about real-world phenomena. Some possible subjects are: professional sports, college sports, intramural sports, sex, mental illness, dieting, the relation between students' GPA's and other characteristics, religion, landscaping of different campuses, attractiveness of female students at different campuses with different majors, attractiveness of male students at different campuses with different majors, dorm food, climates and the people who live in them, pet ownership, the notorious inability of Americans to speak foreign languages, why drivers are more courteous in some cities than in others, relation between amounts of partying engaged in by students and other characteristics of themselves or their campuses, and differences between the attitudes and behavior of residents of small towns and those of inhabitants of big cities.

3. In the course of reading this book, you have been learning two things--a general

approach to understanding behavior (economics) and a particular application of that approach (price theory). In many cases, an idea that was worked out as part of price theory can be applied more generally to understand what people do or what you should do. Examples include armies running away (an application of externalities), giving up on a romantic lost cause (sunk costs), and discouraging muggers by carrying a big stick (firms exit an industry when profit is negative).

a. Briefly give two more examples from the book.

b. Briefly give three examples of your own, not in the book.

c. Take one of the three and work it out in some detail, showing how the economic ideas can be used to see things that would otherwise not be obvious.

4. Give a consistent and plausible-sounding economic explanation of something that you are sure cannot be explained economically.

5. Reread your answer to Problem 4. Are you still sure your explanation is wrong? Discuss.


FOR FURTHER READING

My first economics article, referred to in this chapter, is David Friedman, "An Economic Theory of the Size and Shape of Nations," *Journal of Political Economy*, Vol. 85, No. 1 (February, 1977), pp. 59-77. The poll of economists is reported in J. R. Kearl, et al., "A Confusion of Economists?" *American Economic Review: Papers and Proceedings*, Vol. 69, No. 2 (May, 1979), pp. 28-37.

Students who would like to learn economics from its inventors should read Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (New York: Oxford University Press, 1976); David Ricardo, *The Principles of Political Economy and Taxation* (Totowa, N.J.: Biblio Distribution Centre, 1977); and Alfred Marshall, *The Principles of Economics* (8th ed., London: Macmillan, 1920).

The three books are very different. Smith's is the most far ranging and entertaining. Ricardo's is the most difficult; in it he works out the essential logic of economics--what we would now call general equilibrium theory--without any of the mathematical tools that we would consider essential for doing so. The modern economist reading Ricardo's *Principles* feels rather as a member of one of the Mount Everest expeditions

would feel if, arriving at the top of the mountain, he encountered a hiker clad in T-shirt and tennis shoes. Marshall's *Principles* is the book in which modern economics was first put together; it is the only one of the three that could, for a sufficiently ambitious reader, serve as an alternative to a modern textbook.

Students who would like the help of a modern discussion of the classics of economics should read Mark Blaug, *Economic Theory in Retrospect* (New York: Cambridge University Press, 1978). For a series of interesting essays on the economics of past societies, I recommend Carlo Cipolla, *Money, Prices and Civilization in the Mediterranean World* (Staten Island, N.Y.: Gordian Press, 1967). Two books that I can recommend as alternatives or supplements to this one, covering much the same materials in a different and interesting way, are Milton Friedman, *Price Theory* (Hawthorne, N.Y.: Aldine Publishing Co., 1976) and Armen Alchian and William Allen, *University Economics* (Belmont, Ca.: Wadsworth Publishing, 1964). A shorter version of the latter also exists as Armen Alchian and William Allen, *Exchange and Production: Competition, Coordination, and Control* (Belmont, Ca.: Wadsworth Publishing, 1983). A much simpler introduction to economics is *The Economic Way of Thinking* by Paul Heyne.

Next Chapter
(Chapter 21 from the first edition--which wasn't included in the second edition)
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