

# FIRST PRINCIPLES IN MORALITY AND ECONOMICS

on which depend personal well-being and social health and harmony

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## The Relationship Between Brotherly Love And Price Determination

Much of the morality agitation of the time consists in exhorting us that we have more *brotherly love*.

Much of the social legislation of the time consists in endeavoring to change the *relative prices* of goods and services, and in that manner altering the terms of the exchanges between men.

*Brotherly love* and *price determination* are related. If prices are "determined" in one way, they manifest scriptural brotherly love; if they are determined in other ways, they do not manifest brotherly love.

It is necessary, then, to understand thoroughly how prices are determined. That requires knowledge of *subjective value*, of *diminishing utility*, and of *marginal utility*.

## Bohm-Bawerk, On The Missing "Middle Term"

In his article "The Austrian Economists" in the *Annals of the American Academy of Political and Social Science*, in the

January 1891 issue, Böhm-Bawerk wrote as follows about the Classical economists (Smith, Ricardo, *et al*) and the Neo-classical economists (Menger, Wieser, himself, and others):

. . . [The Neo-classical economists] are striving for a sort of "renaissance" of economic theory. The old classical theory . . . [was] only patchwork at best. . . . It usually succeeded [in probing some distance] toward the depths. But beyond a certain depth it always, without exception, lost the clue. To be sure, the classical economists well knew to what point all their explanations must be traced—namely, *to the care of mankind for its own well-being*, which *undisturbed by the incursion of altruistic motives*, is the *ultimate motive-force* of all economic action.

But owing to a *certain circumstance* the *middle term* of [their] explanation . . . was always wrong . . .

To explain the modern economic order there is need of [explaining] two processes . . . (1) the relation of our interests to external goods: [and (2) the pursuit of] our [own] interests when they are entangled with the interests of others.

[The second of those is] difficult and involved. But [the classical economists even more] fatally underrated the difficulties of the first. They believed that as regards the relation of men to external goods, there was nothing at all to be explained, or, speaking more accurately, determined. Men need goods to supply their wants; men desire them and assign to them in respect of their utility a value in use. That is all the classical economists knew and taught in regard to *the relation of men to goods* . . .

It is a fact, however, that the relation of men to goods is by no means simple and uniform. The modern theory of *marginal utility* . . . shows that the relation between our well-being and goods is capable of *countless degrees*, and all these degrees exert a force in our efforts to obtain goods by exchange with others. Here yawns the great and fatal chasm in the classical theory; it attempts to show how we pursue our interests in relation to goods in opposition to [in competition or in rivalry with] other men, without [first] thoroughly understanding the interest itself [that is, the nature of *each man's interest in goods*].

\* \* \*

Thus, beyond a certain depth, all the explanations [of the Classical economists] degenerate into a few general commonplaces, and these are fallacious in their generalization.

\* \* \*

[The neo-classical theory of value] shows . . . that in an apparently simple thing, *the relation of man to external goods*, there is room for endless complications: that

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underneath these complications lie fixed laws, the discovery of which demands all the acumen of the investigator; . . .  
[Italics have been added.]

That important "middle term" which Böhm-Bawerk declares is critically important, what is it? His answer is that it is something in-between, such as this:

One end term:	The middle term:	The other end term:
The wants of a man, such as Jones.	?	Relation of Men to Each Other.

Böhm-Bawerk alleges that the something, which is in-between, will go far to explain the relation of men to each other.

This is the "middle term" that Böhm-Bawerk inserts:

One end term:	The middle term:	The other end term:
The wants of a man, such as Jones.	Relation of men to things, that is, value and price.	Relation of Men to Each Other; justice, brotherly love, righteousness.

In other words, justice, brotherly love and righteousness can be *understood* (as well as be accepted on faith) *only if value and price are understood*. They constitute the vital "middle term."

In other words, before a man endeavors to explain the relations of men to men he should *first* explain how each man is related to things.

## The Paradox Of Value

### I

Sometime in his life nearly everybody thinks as follows: "Bread is more valuable than diamonds; but bread is cheap and diamonds are dear. Should it not be the other way around; should not diamonds be cheap, because they are not nearly so necessary as bread; and, because bread is so necessary for welfare and even for survival in a famine, would it not be understandable if the price of bread were high?"

The error in such reasoning will be made evident in what follows in this issue.

### II

Sometime, too, in their lives, many people, especially farmers, will reason as follows: "The total value of a food crop is small if the crop is small. The price per bushel will be high, but

there are too few bushels to make the total dollar value large. For example, let us assume a crop of 500 million bushels and a price of \$4 a bushel, which totals \$2 billion. If, however, the crop is "normal", say 800 million bushels, and if the price is "fair", say \$3 a bushel, then the total value is \$2.4 billion. But if the crop is excessive and totals 1.2 billion bushels, then the price may drop to \$1 a bushel, and the total value will be only \$1.2 billion. A small crop yielded \$2 billion; a normal crop yielded \$2.4 billion; an excessive crop yielded only \$1.2 billion. Should prayer to God be: "Please spare us from having bumper crops?" Or, if one is not given to prayer, should the program be to destroy 400 million bushels, to reduce the supply from 1.2 billion bushels to only 800 million bushels, and thereby increase the dollar value of the crop from \$1.2 billion to twice as much, to wit, \$2.4 billion? A crop only two-thirds as large will yield, according to these assumptions, twice as much in dollars!

### III

The suburban town near Chicago in which FIRST PRINCIPLES is published is the "onion set" center of America. "Onion sets" are small, cherry-sized onions which are grown from seed, and which when replanted early in the next spring grow very rapidly into big onions. In regard to the profitability of growing this crop, the local theory is: in a three-year span there will be two "good years" for the producers and one bad one. The bad year is usually the year when the crop is larger than normal. The good years are those with a normal-sized crop, or a crop "on the short side." One farmer may subconsciously wish to have a big crop for himself, but hopes that other farmers will have a small crop. If the crop *in total* is small, the price will be high. But the *individual farmer*, who (in contrast to other farmers) has a large crop, will be able to multiply the high price by his own exceptionally big crop. If a man is disposed to pray for favorable effects for himself, his prayer should be: "Give my neighbors small crops, but give me a big one."

### IV

Some years ago the writer visited a retired farmer in The Netherlands. He was obviously a wise and respected man. He had been a potato farmer. In the great depression in the early 1930s the prices of potatoes had sunk very low. Nearly thirty

years later he was still complaining that the prices of potatoes had been "too low." "Nobody," he said, "could make money, at those prices."

What made those prices so low? Hard-hearted buyers? If so, why were the prices not *always* low? Buyers always bargain for low prices.

Moralists are disposed to explain the difficulty by implying or saying that somebody is doing something that is unethical. They do not analyze whether there is *some relationship of men to goods* rather than *some relationship of men to each other* which explains the "maladjustment."

## V

These paradoxes—can you explain them? Why is a diamond, which has limited usefulness, dear; and why is bread, which has great usefulness, cheap? And why is a bumper crop—to be looked upon in general as a blessing—to be viewed with consternation by a farmer? How can a small crop have modest gross value; how can an average crop have good gross value; and how can a bumper crop, in excess of demand, be practically valueless?

## VI

It is futile to "solve" such problems by referring to "supply and demand." Those three words are practically meaningless, to most people. The phrase is a cliché, unless one understands *subjective value*, and *diminishing utility*, and *marginal utility*.

# One Wrong Way To Endeavor To Explain The Cheapness Of Bread And The Dearness Of Diamonds

## or

### The Inappropriateness Of Generalities In Economics Versus What Is Specific

Later in this issue Böhm-Bawerk will be quoted extensively. To those who are not accustomed to reading in the field of economics, the material quoted may be a little difficult, unless the major ideas in the quotation are first outlined in simplified form.

Why should something be dear? The instinctive answer is,

because it is *useful*. And so the first explanation that a person gives for value and price is relative usefulness.

Bread being more useful than diamonds, it should (so the impulsive answer goes) be priced higher than diamonds. More accurately, the proposition of most people would be as follows: Bread prices should remain low, but diamond prices are too high and should come down; that should be the price relationship of bread and diamonds *because* bread is more useful than diamonds.

There is in such reasoning a basic error which should be noted at once, to wit, the reasoning deals with *categories*. It does not deal with one piece of bread, nor with one diamond, but with bread as a type or category of food, or with diamonds as a type or category of stone.

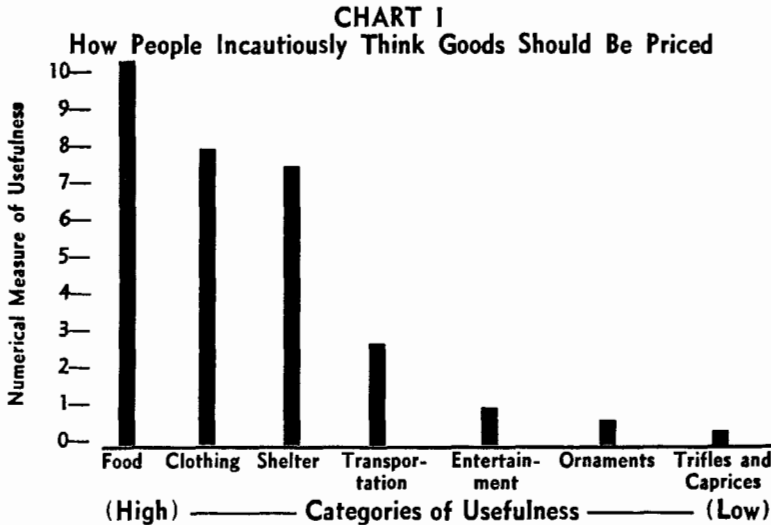
In order to make it easy to understand of just what the type of reasoning being discussed consists, Chart I is presented. The title is, "How People Incautiously Think Goods Should Be Priced." On the horizontal scale (see the bottom line), there is being shown what is being called "Categories of Usefulness." At the left hand side, there is being shown the category which has the greatest usefulness, namely, food. As the eye moves to the right, usefulness decreases. After food, comes clothing (remember Adam and Eve!); next shelter; next transportation; then entertainment; then ornaments; and finally, various trifles and caprices.

On the vertical margin, on the left hand side, there is a scale, from 0 to 10, designed to measure usefulness. Ten is taken as the maximum, and the other "usefulnesses" are in proportion.

The categories on the horizontal scale, the measures shown on the vertical scale, and the height of the several columns are all arbitrary—merely schematic.

The tallest column is for food; clothing and shelter are also shown to be important. Then there is a sharp drop to transportation, entertainment, ornaments, and trifles and caprices. Without quibbling about details, most people will agree that this chart "makes sense." From it one may conclude that food is, or should be expected to be, dear; next clothing, shelter, and so on. But regardless how simple and plausible this chart may appear to be, it is valueless and yields a false conclusion.

The reason is that it does *not* describe reality. In practical



life we do not think of food *as a category*. A sub-category under *food* is *bread*. But neither do we think of bread as a category; nor home-baked versus baker's bread; nor whole wheat versus white bread; nor the bread in the whole city of Chicago; nor the bread in a particular bakery. What we think of is *one loaf of bread*; or *one slice of bread*; or *one mouthful of bread* for ourselves. Others think the same way; they and we think in terms of the usefulness of a *specific quantity* of bread that they (we) need; (or some other food, which may be substituted for bread).

That the chart is valueless will be obvious when one thinks what is left off the chart, for example, drinking water and fresh air. Both are more useful than food. Without fresh air a man cannot live ten minutes; without drinking water a man cannot live ten days; a man can live longer than that without food. Air and water, although most useful, were not put on the chart, because they have no value under many circumstances. But according to naive reasoning, if the *usefulness* of a *category* is to be the principle that "explains," then *air* should appear farthest to the left on the chart, and should have the tallest column. Therefore, the *usefulness* of a *category* is practically meaningless in the determination of value.

The terms, *food*, *clothing*, *shelter*, *ornaments* and the rest,

are "glittering generalities." No *science* of economics can be built on them. The relation of men to things is too complex to be solved by talking of the relation of men to food, clothing and shelter. These terms must be reduced to a specific piece of bread, a specific article of clothing, and a specific house or something for shelter.

### The Concept Of "Diminishing Utility"

Let us assume that when thinking about economic problems we agree to abandon general terms like food, and bread; assume instead that we "get down to cases," and that we talk about Mrs. Brown's four loaves of white bread, wrapped in cellophane, of the same weight and size, bought in the same retail store, and baked by the same bakery. Are those four loaves of bread of equal value to Mrs. Brown or her family?

To that question economics gives two answers: they are equal in one sense, but they are unequal in another sense. They are equal in *objective exchange value* (as explained last month), that is, in price, but they are unequal in *subjective value*. This inequality in subjective value is of such importance, that it requires special consideration, and will hereafter always need to be kept in mind.

The subjective value of these four loaves of bread is affected by a phenomenon known as "diminishing utility."

Mrs. Brown's family of, say, four people may normally eat one loaf of bread during a meal. It could eat two loaves of bread if several other foods are eliminated. It could eat three loaves if *all* other food is removed. But the fourth loaf might be too much for the family at one meal. After eating bread only, and three loaves of it, the members are "sick" of bread; they have no appetite for the fourth loaf.

The first slice of bread for each of the hungry members of the family tasted good. The next slice tasted less good. The third slice still less good, and so on until some slice did not taste good at all.

This phenomenon of satiation, of becoming satisfied with increasing units of a good, is known as *diminishing utility*. It is a universal phenomenon. It is not only true of food; it is also true of clothes; a tenth new dress for a woman does not give her so much pleasure as the first. It is true of fine music; hear-



ing a symphony by Beethoven may entrance a listener, but if he has already sat eight hours listening to Beethoven, Bach, Brahms and Mozart, he will be weary with the sound and will welcome some quiet.

Increasing dosages of anything entail a reduction in the pleasure, and in the sense of utility, which a person enjoys. That progressive reduction in the sense of utility derived from the consumption of additional quantities of something is known as diminishing utility.

This diminishing utility was evident in the incident told in the New Testament of the changing of water into wine. The master of ceremonies, when he had sampled the new wine, called the bridegroom and admonished him that he should have served the best wine *first*. Why? Undoubtedly because the *best* wine would be *best* appreciated only when served *first*.

The ordinary man knows about diminishing utility although he may not name it. Take an obvious case: *one* automobile has a great utility for him. The *second* automobile has a reduced—a diminished—utility, compared with the first. A third automobile has an even lesser utility. There comes a time when he will not buy an additional automobile although he may have ample money for it.

In *self-conscious* thinking, people do not recognize the Law of Diminishing Utility; but in their actual calculations they unconsciously take it into account.

If you are a shirt manufacturer; if you produce more shirts than men want; if you can hardly give them away (because of their *diminishing utility* to men); and if the price of your shirts has to drop and drop and drop to match that subjective diminishing utility, then you have nobody to blame but yourself. You ought to understand *diminishing utility*. Nonrecognition of *diminishing utility* probably bankrupts more businesses than any other cause.

When you are thinking of producing more of your product, of satiating each customer some more, be forewarned that the diminishing utility of your product per person may be your undoing.

## The Concept Of Marginal Utility

The most fundamental concept in modern neoclassical economics is *marginal utility*.

The reason why marginal utility is so important is because the "marginal pairs" of buyers and sellers are the pairs that determine the prevailing market price of something. What is meant by "marginal pairs" will be explained in later issues.

*Price*, as has been repeatedly stated, pretty much determines what is equity, and justice, and brotherly love. As brotherly love and equity depend on *price*, price in turn depends on the *marginal pairs*; the marginal pairs in turn depend on *marginal utility*; and marginal utility depends on what Böhm-Bawerk calls the *indispensable condition*.

\* \* \*

Let us assume that a young miss whose father is rich has developed a consuming enthusiasm about owning a riding horse. The *utility* of a riding horse to the young lady plus the ample money supply of the dotting father might result in an outrageous price being paid for a horse to someone who realized how potent a combination the young lady's enthusiasm and the father's money might be toward enabling a seller to get much more than the prevailing market price.

Or the assumption could be reversed. Assume that there is a horse enthusiast who can no longer afford the luxury of a riding horse. He is a *necessitous* seller, and he must sell *quickly*. A sharp buyer, in such a situation, might endeavor to "take advantage" of the seller, just as a sharp seller might be inclined to take advantage of the buyer in the former case.

\* . \*

But in orderly markets *extremes in prices are avoided*; that is the most wonderful thing about a "market." The so-called "free market" (by "market" is meant all the buyers and sellers and even the would-be buyers and sellers) "protects" the participants from grossly overpaying or underselling. The system works out this way: *No buyer* pays more than the marginal utility of the good for him; in fact, *all* except the marginal buyer obtain more than the marginal utility to them of what they buy. Likewise, the sellers obtain substantially more for what they sell than

they would have taken, except only the last marginal seller. Much of this will have to await further explanation in later issues.

\*            \*            \*

Let us assume that a man has an income of \$100 a week. Let us assume that 10% of this goes for taxes withheld by law. That leaves him \$90 a week of "disposable" income. How will he dispose of it?

This man has many *wants* of varying intensities. He will exchange his \$90 for what he thinks best satisfies those *wants*. He will try to maximize the gratification, which he can get by paying out his dollars and pennies in the way which yields the most satisfaction *to him*. This does not mean that he will spend all of the \$90 for himself. He may get a greater satisfaction from giving away 10% of the \$90 for charity, but he will not do that unless his *values* are of that kind. He may also *save* 5% and invest it for income to have a claim on future goods. In that case, the *value* of the saving to him is such that he prefers it to an alternative use; the *marginal utility* to him of saving \$4.50 is greater than the marginal utility of an expenditure of \$4.50.

We are down to the following—\$100 minus \$10 for taxes, = \$90, minus \$9 for charity = \$81; minus \$4.50 for saving = \$76.50 for other items. Our imaginary man will also allocate this remaining \$76.50 in a manner to get the most out of it, according to his wants and his ideas on how best to satisfy them.

What will he do? He will allot an amount for milk, gasoline, magazines, room rent, a shirt, cigarettes, musical concerts, steaks, watch repair, etc.

He will *not* deal in generalities or *categories*. He will deal with specific items and specific quantities. Every day, and every week, and every year, his allocation of his funds will change as his wants change and as his ideas on how better to satisfy his wants change. In this connection he will always take into account *diminishing utility*. Even though he is a music enthusiast, he will reach a point where he will curtail the purchase of tickets for concerts, in order to obtain another higher "utility" for him, under his specific circumstances, than the additional concert ticket will yield.

\*            \*            \*

What might another term for *marginal utility* be? The term *marginal satisfaction* has been suggested, and that may be an

even more descriptive term than marginal utility. At points in the following quotation, where *marginal utility* fails to be entirely clear, mentally substitute *marginal satisfaction*.

The economic decisions of men are designed to give them the greatest satisfaction from each of the dollars they spend. Our man with his income of \$100 a week is constantly endeavoring to maximize his satisfactions. Whenever the satisfaction he hopes to get from something falls below the satisfaction he expects to get from something else, then he turns away from the former to the latter. Marginal utility or marginal satisfaction are these borderline cases.

Men have wants. They are divisible and fractionable. Goods to satisfy those wants are equally divisible and fractionable. Problems about *value*, in the science of economics, are based on an *increment of satisfaction* dependent on an *increment of a good*. The critical, borderline cases are the instances where marginal utility and marginal satisfaction become apparent.

## Bohm-Bawerk's Chapter On "The Magnitude Of Value; The General Principle; The Law Of Marginal Utility"

*In what follows, there is a quotation in extenso of the whole third chapter of Eugen von Böhm-Bawerk's chapter on value in Volume II of his Capital and Interest. Some of the footnotes have been dropped; others have been incorporated in the text. The sub-headings have been interpolated, with the hope that they will make the reading easier.*

### Value Depends on Contribution To Personal Well-being

When we seek to establish the principle that governs the value of goods, we enter upon the field where the chief task of the theory lies, but also where we find its greatest difficulties. The latter are the result of a peculiar concentration of circumstances. On the other hand, the correct principle seems to suggest itself almost automatically. If value is the significance of goods for human well-being, and if this significance is based on the fact that some gain in well-being is dependent upon the disposition of those goods, then it is clear that the magnitude of value must be determined by the gain in well-being that depends on the good in question. A good will have a high value when an important advantage for our well-being depends on it; it will have a low value when only some trifling gain in well-being depends on it.

### The Disconcerting Paradox In Value

On the other hand, certain facts are found in the world of economics that seem to give the lie to this most obvious and natural explanation. Everyone knows that in practical economic life jewels enjoy a high valuation, goods like iron and bread have a modest value, air and water have no value at all. But everyone also knows that without air and drinking water existence would be a sheer impossibility, that bread and iron perform services that are extremely important for our well-being, whereas jewels serve primarily to meet our desire for ornamentation which, so far as human well-being is concerned, certainly has only minor significance indeed. Suppose then, that a person adhered to the principle that the magnitude of value is determined by the importance of the contributions to well-being that depend on the goods. Such a person would necessarily, it would seem, expect that jewels would have small value, bread and iron great value, water and air the highest of all. Yet the actual facts show exactly the opposite.

### Erroneous Explanations Of The Paradox

This unquestionably astonishing phenomenon became a troublesome bone of contention for the theory of value. Supreme utility and minimal value—what a strange paradox! Admittedly, one reason why the situation was neither perceived nor portrayed quite correctly lay in the prevailing confusion between usefulness and “use value.” By assigning (erroneously) a high “use value” to iron and a low one to diamonds, the causes for bewilderment were reduced to the mere circumstance that the “exchange value,” in the case of these goods, seemed to follow a principle so radically different. But that of course merely shifted the name by which the contrast was known, without altering the sharpness of the contrast itself. There was no lack of devious expedients to reconcile the awkward contradiction. They all failed. It is therefore not difficult to understand that from the days of Adam Smith down to our own, numberless theorists have despaired completely of finding the essence and the measure of value in a relation to human welfare. They therefore seized upon other and singular lines of explanation, such as labor or labor-time, production costs, “difficulty of acquisition,” “resistivity of nature toward man” and others of the sort. But since they could not entirely rid themselves of the feeling that there must be some connection between the value of the goods and their contribution to well-being, they recorded this disharmony between utility and value as a strange enigmatic paradox, a “*contradiction économique*.”

### The Ordinary Man Is Astute In His Economic Decisions

In the chapter which is to follow I shall submit proof that the early theory of value unnecessarily abandoned the most natural explanation. As a general rule, *the measure of the benefit depending on the good is really also the measure of the value of that good*. In order to be convinced of the truth of this statement, all we need to do is employ so-

ber and selective activity in our investigation of the question as to just which advantage to our well-being depends upon a good in a given situation. I say advisedly "selective activity." For actually the whole theory of *subjective value* is nothing but an extended selection as to how much depends upon a good in terms of promotion of our well-being, and when and under what circumstances that dependence manifests itself.

It is a remarkable thing that the ordinary man is erring in the selective decisions of this sort which he is called upon to make in practical life. He very rarely makes a mistake, and even then never in principle. He may be in actual error in taking a diamond to be a glass bead and in therefore assigning to it a very low value. But he will never allow himself to be misled into a selective error of judgment on the principle, say, of the value of drinking water. That is to say, the circumstance that man cannot live without water is, from the standpoint of principle, irrelevant; the common man would not be misled into the erroneous selective judgment that every quart of water he draws from the kitchen tap is therefore a treasure of immense value, and cheaply purchased at \$1,000. It will now be our task to hold the mirror, as it were, up to the practice of making *selective decisions* in everyday life, and to discover the rules that the common man instinctively applies with such utter assurance. We shall then perceive them with equal assurance, but with far greater conscious recognition.

As a general rule, whenever the promotion of our well-being depends on a good, such promotion consists in the satisfaction of a *want*. There are certain exceptions of minor importance, but we shall defer treatment of them until a later time. The correct selective decision as to how much depends on a good for the promotion of the well-being of a person really resolves itself into the answers to two complementary questions.

- 1] *Which among several or numerous wants depends on a good?*
- 2] *How important is the dependent want, or rather its satisfaction?*

For reasons of expediency let us consider the second question first.

## I

### How Important Is The Dependent Want?

#### Wants Are Graded

It is a matter of common knowledge that our wants vary widely in importance. We are in the habit of determining the degree of that importance by the gravity of the adverse consequences which ensue for our well-being when the wants are not satisfied. We therefore attach supreme importance to wants of such a nature that the failure to satisfy them would result in death. We attach the next smaller degree of importance to wants of such a nature that failure to satisfy them would entail a serious and long lasting impairment of our health, our honor, our happiness. Further down the scale are such wants as involve more transitory sorrows, pains or deprivations. At the very bot-

tom we place wants of such kind that failure to satisfy them costs no more than some very slight discomfort or renunciation of some very lightly regarded pleasure. In accordance with these characteristics it is possible to construct a progression or graduated scale of wants in point of importance. That scale will of course vary from person to person because their varying physical and intellectual propensities, amount of education and the like, will result in widely varying wants. Even the same individual will vary widely in his wants at different times. And yet every practical economizing person, if he is to make a wise choice in the application of his limited means, will have to have his scale of wants more or less clearly in mind. There have even been several theorists who have taken occasion to set up such a graduated scale on the basis of "objective" unbiased scientific considerations.

#### The Difference Between Concrete Wants And Categories Of Wants

That would all be very simple and sure, if it were not for the ambiguity inherent in the expression "the ranking of wants." The expression may mean the rank and order of *categories of wants*, or may mean *concrete wants*, that is to say, the individual feelings of want. The two graduated scales differ materially from each other. If categories of wants, taken as units, are assigned to classes with respect to their importance for human well-being, there can be no doubt that the leading class would include the need of food; in a class very little lower would be found the need of shelter and of clothing. It would be only to classes much lower that we should assign such needs as the desire for tobacco, for alcoholic beverages or for the enjoyment of music. Finally the desire for ornament and the like would be assigned to a class far lower down the scale.

Graduating concrete wants however, would lead to materially different results. For within each category of wants the individual wants are by no means equally intense and not all satisfactions are equally important. Consider, as an example, the case of a man who has not had a bite to eat for a week and who is close to starvation. The need for nourishment is inordinately more urgent than in the case of a man sitting at the dinner table, who has just completed the second course of his usual three course dinner and merely wants to eat the third as well. That modification puts an entirely different aspect on the question of ranking individual concrete wants, and introduces far greater variability. On the graduated scale for categories "need of nourishment," lumped together, was placed well ahead of need of tobacco, need of alcoholic beverages, need of ornament and so forth. But now the individual concrete wants from different categories cross each other's paths. Admittedly, the most important wants out of the most important categories will be ranked in the very forefront. But the less important wants of those categories will often be out-ranked by concrete wants from lower ranking categories. It will even happen that the last strugglers in the high categories will be of lower rank than the leaders among concrete wants of lower categories. It is analogous to com-

paring the European mountain ranges, Swiss Alps, Pyrenees, the Sudetic range, the Harz Mountains. It is one thing to rank these mountains as to altitude, taking each range as a whole; it is quite another thing to rank the individual peaks in the order of their altitude. Taken as whole ranges, the Swiss Alps outrank the Pyrenees which in turn are higher than the Sudetes, and the Harz Mountains have the lowest rank. But if the individual peaks are compared, there will be many Swiss mountain tops of a lesser altitude than some peaks in the Pyrenees, and some of them may even be outranked by one or two in the lowly Harz.

Now the question arises as to which scale to use, when we value goods, in order to determine the importance of the wants that depend on the goods. Shall we use the *scale of categories*, or the *scale of concrete wants*?

#### Value Not Properly Measured By Scale Based On Categories

Arriving at this crossroads—the first that offered an opportunity for error — the older theory chose the wrong turning. It seized upon the scale of categories of wants. Now on that scale the category called “need of nourishment” occupies a very high place, the category “need of ornament” a very low rank. For that reason the old theory of value rendered a verdict that, in general, bread has a high “use value,” and jewels a very low “use value.” And then, of course, there was great astonishment at finding that in real life the estimation in which the two are held is just the reverse.

The verdict is in error. The rationalization which determines the selection must run as follows. With the one piece of bread which is in my possession I can very well assuage one or the other concrete hunger pang as it manifests itself in me. But I can never in the world satisfy the aggregate of all real and possible stirrings of hunger, all the present and future appetites which constitute the category called need of nourishment. It is therefore patently ill advised, in gauging the importance of the contribution this bread can make to my well-being, to measure it by considering whether that universal aggregate of wants is of great or small importance. It would be comparable to the act of a man who, when asked about the height of the Kahlenberg hill (part of a tiny spur of the Swiss Alps), answered by stating the height of the entire Alpine range. As a matter of actual fact, no one in practical life would even dream of revering every slice of bread he owns as a life-giving treasure of supreme importance. Neither does anyone jump for joy because for two thin dimes he has preserved his life by buying a loaf of bread at the chain-store, any more than he would condemn his neighbor for wantonly risking his life by carelessly handing out a “slice of rye” to a hobo, by squandering it, or even by feeding it to the dog! Yet those are the very things people would do, if they attached the same importance to every *specimen* as they do to the *category* “need of nourishment,” the satisfaction of which actually is a matter of life and death.

Thus it becomes clear that the valuation of goods has nothing to do with the order in which categories of goods



may be ranked, but only with the ranking of concrete wants. If full benefit is to be derived from that conclusion, a few points concerning the composition of that graduated scale of rank must be made clearer. It is especially necessary to supply a firmer foundation than the foregoing discussion has as yet furnished.

#### Wants Are Divisible Or Fractionable

Most of our wants are fractionable in the sense that they are amenable to partial satisfaction. When I am hungry, I am not faced with the alternative of being fully sated or starving entirely. It is possible for me to assuage the worst of my hunger by partaking moderately of food, possibly to enjoy my fill later by means of a second and even a third ingestion of food, or possibly to content myself perforce by the first partial satisfaction. Such partial satisfaction of a concrete want has an importance for my well-being that is different from and smaller than that of a complete satisfaction of the same want. That circumstance alone would to a certain degree suffice for the existence of the phenomenon previously mentioned, namely that within a single category of wants individual concrete wants (including partial wants) manifest varying degrees of importance.

#### Continually Repeated Enjoyment Affords Decreasing Pleasure

But there is a further circumstance which allies itself to this one. It is a facet of human experience, as familiar as it is deep-seated in human nature, that the same act of enjoyment continually repeated, affords decreasing pleasure from a certain point on until it is finally transformed into its opposite and arouses disgust and revulsion. Everyone knows from his own experience that the fourth or fifth course of a banquet arouses far less appetite than did the first, and that as the courses continue to be served there finally comes a point where any further partaking of food is utterly repugnant. Similar sensations can arise in the course of a concert, a lecture, a walk or a game that continues for an unduly long period. This will apply, indeed, to virtually all physical and intellectual enjoyments as well. [This is known as "Gossen's Law of Diminishing Utility."]

To express the essence of these familiar facts in the technical language of economics we can formulate the proposition as follows. The concrete fractional wants into which our sensations of want are divisible, or the successive partial satisfactions which can be obtained through equal quantities of goods are usually of *differing importance, and that importance tends to diminish progressively toward zero.*

This principle explains a number of the foregoing statements which were there presented as bare assertions. In the first place we find here an explanation of the fact that within one and the same category of wants there can be concrete wants and partial wants possessing varying degrees of significance. Indeed, not only *can* such be the case but rather it *must* occur as an organically imperative phenomenon, as it were, simply for the reason that it is an obvious characteristic of fractionable wants,

which is what our wants, for the most part, are. In the second place we find here an explanation for the fact that even in the most important categories gradations of wants are represented down to lower and lower intensities of importance. The only real difference between the more important and the less important categories is that the "peaks" in the former attain higher altitudes, so to speak. The base for all the categories is at the same level. And finally we find here an explanation for one fact which is not merely a *possibility*, as we said above, but rather a regular, usual and organically inevitable phenomenon. I refer to the circumstance that although a category may, on the whole, occupy a very high position in the scale of comparative importance, some individual concrete want within the category may be outranked by some individual concrete want in a category that, on the whole, occupies a lower position on that same scale. There will at all times be innumerable wants of nourishment that are less intense and less important than some concrete wants in quite unimportant categories such as the needs for ornament, for attendance at dances, for tobacco, for making pets of song birds and the like.

#### Classifications Of Wants Both By Categories And Intensities

If we attempt to illustrate the classification of our wants by a typical schematic arrangement, we should on the basis of what has just been said arrive at something like the following.

#### Importance Of Categories On A Descending Scale

Importance Of Fractional Amounts On A Descending Scale	I	II	III	IV	V	VI	VII	VIII	IX	X
	10	—	—	—	—	—	—	—	—	—
9	9	—	—	—	—	—	—	—	—	—
8	8	8	—	—	—	—	—	—	—	—
7	7	7	7	—	—	—	—	—	—	—
6	6	6	—	—	6	—	—	—	—	—
5	5	5	—	—	5	5	—	—	—	—
4	4	4	4	4	4	4	4	—	—	—
3	3	3	—	—	3	3	—	3	—	—
2	2	2	—	—	2	2	—	2	2	—
1	1	1	1	1	1	1	—	1	1	1
0	0	0	0	0	0	0	0	0	0	0

In the foregoing schematic arrangement the Roman numerals I to X denote the various categories of wants and their rank in descending order. Number I represents the most important category of wants—let us say, want of nourishment. Number V represents some category of medium importance—let us say, the desire for alcoholic beverages, while X represents the category of wants possessing the smallest conceivable importance.

The Arabic figures 1 to 10 then represent the concrete wants and partial wants that occur in the various categories. The figure itself indicates the relative ranking of the concrete wants in question, the rank 10 designating a want of the greatest conceivable importance, the rank of 9 designating a want of the next greatest importance, and so on down to 1 which represents a want that has the least

importance that will account for its existing at all.

The table enables us to visualize the fact that the more important the category, the greater is the maximum importance that any concrete want within the category may attain.

But it also illustrates that in addition all lesser degrees of importance are represented right down to the vanishing point. Categories IV and VII are exceptions to this rule in that certain gradations in the descending order are missing. These illustrate those infrequent categories in which for technical reasons successive satisfying of partial wants is either partly or entirely impracticable, that is to say, where the satisfaction of wants must take place completely or not at all. The need for a device for heating my dwelling, for instance, is so completely satisfied by *one* furnace that I should simply have no use at all for a second.

There is a third and final point to be visualized by means of our table. In the most important category, Number I, concrete wants occur with the minimum ranking of 1, while at the same time in almost all categories of lesser importance than I, there are concrete wants with a rank in excess of 1.

To correct misunderstandings which have arisen despite my precautions, I should like to state explicitly that the descending scale represented by the Arabic numerals 10 to 1 in this table do not symbolize anything beyond the fact that each concrete want designated by a given number has a lower intensity or importance than any want or wants designated by a higher number or numbers. The series of numbers is not meant to convey the *degree* to which the importance of a want with a higher index exceeds that of a want with a lower index. It is *not* by any means my intention to make the statement that a want with an index of 6 is exactly three times as important as one with an index of 2, nor that one with an index of 9 possesses an importance exactly equal to that of wants with indices of 6 and 3 combined. [This paragraph was originally a footnote.]

## II Which Among Several Or Numerous Wants Depends On A Good?

Let us now turn to the other one (the first) of the two principal questions propounded on page 142 of this section. That question reads: *Which among several or numerous wants depends on a good?*

This question could not arise, if conditions in economic life were so simple that each single want corresponded to a single good. If a good is suitable for the satisfaction of just one single concrete want and if it is at the same time the only one of its kind, or at least the only one available, then it would be clear without any deliberation that on the power to dispose of that lone good depended the satisfaction of the only need which the good is capable of serving.

But in actual practice the matter is almost never so simple as that. On the contrary, it is usually very complicated in two directions. In the first place, one and the

same good is ordinarily suitable for use in satisfying several concrete wants, which also exhibit varying degrees of importance. And in the second place there are often numerous specimens of the same kind of good available, and so it is the result of purely arbitrary choice that one specimen is used to satisfy an important want, and another to meet an unimportant need. Let us adduce as simple an example as possible. I am on a hunting expedition and the only food I have with me is two completely identical loaves of bread. I need one to satisfy my own hunger and the other to feed my dog. It is quite clear that my own nourishment is far more important to me than that of my dog. It is just as clear that I can make an arbitrary choice as to which of the two loaves I want to eat myself and which I will feed to my dog. And now the question arises, "Which of the two wants here depends on my bread?"

**Identical Goods In Identical Situations Have Identical Values, Although Used Differently**

One could be easily tempted to answer by saying it is the want which the loaf in question was actually intended to satisfy. But it is easy to see immediately that such a decision would be erroneous. For it would mean that the two loaves, since they are destined for the satisfaction of wants of differing importance must also themselves differ in value. At the same time it is beyond question that two identical goods, available in identical situations must also be absolutely identical in value.

Here again some simple selective rationalizing leads to the desired goal. The simplest way to determine which one of several wants depends on a good is to observe which want would fail of satisfaction if the good which is to be valued were not present. That need is obviously the dependent one. *And now it becomes easily demonstrable that the choice does not fall at all on the want which its owner's arbitrary option had selected. It will always fall on the least important among all the wants concerned, that is to say, among all the wants which would otherwise have been provided for through the total supply of goods of that kind, including the specimen to be valued.* [Italics added.]

**Wants Are Ranked Or Graded**

Regard for his own advantage, as obvious as it is compelling, will induce every reasonable economizing person to maintain a certain fixed order of precedence in satisfying his wants. No one will be so foolish as to expend all the means available to him on the satisfaction of trifling and easily dispensable wants, only to leave necessities unprovided for. Rather will it be every man's purpose to employ the means available to him for his most important wants to begin with. He will then go on to the next most important, proceed to wants of third rank and continue in such manner that the wants of a lower rank will not be selected for satisfaction until all wants in higher grades have been met, and as long as means of further satisfaction are available.

These obviously reasonable rules are adhered to even when the previous supply suffers diminution by the loss of one specimen. This of course disturbs the plan of expenditure followed up to that point. Not all the wants which had previously been scheduled for satisfaction can now be covered, and a diminution in the number of satisfactions is inevitable. But the reasonable economizing subject will of course attempt to have the diminution strike at the least sensitive spot. That means that if the loss happens to involve a good that was intended for a more important disposition, he will not forgo satisfying the more important need and obstinately cling to the former plan of satisfying needs of minor importance. Instead he will in any event satisfy the more important need and leave uncovered the want which, among all the wants previously slated for satisfaction, he regards most lightly.

Let us return to the example we were last discussing. If the hunter loses the loaf which he had intended for his own lunch, he will never expose himself to the risk of starvation and feed his one remaining loaf to the dog. He will on the contrary make a quick change in his plans for the disposition of his means, replace the lost loaf of bread by using the second loaf for the more important function and transferring the loss to the less sensitive spot, the feeding of the dog.

#### Discovery Of The "Dependent Want"

The case can be stated as follows. All wants which are more important than the often mentioned "last" remain unaffected by the loss of the one specimen, for satisfaction of them remains assured by requisitioning a replacement. Nor are those wants affected which are still less important than the "last," since they were not to be satisfied whether or not the one specimen was lost. Of all wants the only one affected is the last one of those previously covered. That want is satisfied when the good is present, it remains unsatisfied when the good is absent. It is the *dependent want* we have been looking for.

#### What Marginal Utility Is

That brings us to the goal of our present search. *The magnitude of the value of a good is determined by the importance of that concrete want or partial want which has the lowest degree of urgency among the wants that can be covered by the available supply of goods of the same kind.*

*Value is determined then, not by the greatest degree of utility which a good affords, nor by the average utility which goods of that kind afford, but by the smallest degree of utility for which, in whatever concrete economic situation obtains, it is rationally advisable to expend the good or its equivalent.* [Italics added.] That is rather a long-winded description of the situation, and to be entirely correct it really ought to be even somewhat more long-winded.

But we must be spared such prolixity in the future when we wish to refer to this minimal usefulness which stands on the borderline of the economically admissible.

So let us follow the example of Wieser and speak of it tersely as the economic *marginal utility* of the good. And now we can formulate the law of the magnitude of the value of goods as follows. *The value of a good is determined by the magnitude of its marginal utility.*

#### **The Prime Importance Of The Idea Of Marginal Utility**

This proposition is the crux of our theory of value. But it is more than that. It constitutes, in my opinion, the key that opens the door to an understanding of the broadest fundamentals underlying the behavior of economizing men with respect to goods. It applies equally well to both the simplest cases and the exceedingly complicated situations which abound throughout the multiform manifestations of our modern economic life. Everywhere we see men making valuations of goods on the basis of their marginal utility and ruling their *actions* in accordance with the results of those estimations. And in view of that the doctrine of marginal utility may be regarded as the crux, not only of the theory of value, but of every explanation of man's economic behavior, and hence indeed of the entire field of economic theory.

Even when people act altruistically rather than selfishly they have good reason to take marginal utility into account. In this case it is the marginal utility which the goods to be given to other persons have for the recipients. Donations and alms are given when their significance in promoting well-being, as measured by their marginal utility, is far greater for the recipient than for the donor. The reverse is virtually never true. [This paragraph was originally part of a footnote.]

I do not consider that pronouncement [of the supreme significance of marginal utility in both the science of economics and in the determination of human action] an exaggeration, and I am confident that anyone who understands the art of observing life accurately will be convinced of its correctness. To observe aright and to interpret observations aright is an art which is at times far from easy. To practice that art we will do well to avail ourselves of the theory of value insofar as such practice falls within the domain of that theory. I propose to follow my own advice in the pages to come, and I shall begin with an example of the greatest conceivable simplicity.

#### **An Example Of Action Determined By Valuations Based On Marginal Utility**

A pioneer farmer, whose solitary log cabin stands in the primeval forest far from the paths of commerce, has just harvested five sacks of grain. These he must "make do" until the next harvest. Being a methodical soul he lays careful plans for the use to which he will put them. One sack is absolutely essential as the food supply which is to keep him alive until the next harvest. A second sack will enable him to supplement his meals to the point where they will keep him at full strength and in complete health. He has no desire to eat more grain in the form of fancy breads and sweet puddings, but he would like very much to add some nutriment in the form of meat to his farinaceous

diet. Therefore he determines to use a third sack for the raising of poultry. He devotes a fourth sack to the distilling of brandy. Now that his modest personal wants are fully provided for by the arrangements just described, he can think of no better use for his last sack than to feed it to a number of parrots whose antics give him pleasure.

It stands to reason that these uses do not rank equally as to their importance to him. In order to arrive at a brief numerical method of expressing our facts, let us set up a scale of 10 degrees of importance. In that event our pioneer farmer will naturally assign the maximum grade of 10 to the preservation of his life; he may call the preservation of his health worth a rating of 8; then descending the scale he might rate the improvement of his cuisine at 6, the enjoyment of his brandy at 4, and finally the keeping of parrots at the lowest conceivable mark of 1. And now let us put ourselves in the pioneer's position and ask ourselves what is the significance for his well-being of *one* sack of grain?

We are already aware that the simplest way to establish that is to determine what loss in utility would be represented by the loss of one sack of grain. Let us apply that yardstick. It is quite obvious that our man would be most foolish to make good the loss of the sack out of the food that goes into his mouth and thus sacrifice his health or even his life, and yet continue to distill brandy and feed chickens and parrots as before.

Upon sound reflection only one solution is conceivable. Our pioneer will use the four remaining sacks to cover the most urgent groups of needs and will renounce the enjoyment of only the least important, the final, the "marginal utility." In this case that is the keeping of parrots. Having or not having the fifth sack makes no greater difference to him than the ability, in one case, to indulge himself in the pleasure of keeping of parrots or in the other case, the inability to do so. And this unimportant utility will afford a rational basis for the estimation of the value of a single sack of his supply of grain. And that means *every* single sack. For if the five sacks are all exactly alike, it will be all one to the pioneer whether he loses sack A or sack B—just so long as its background harbors four other sacks with which to meet his more important wants.

Now let us modify the illustration. Let us assume our pioneer under the very same circumstances possesses only three sacks of grain. How high a value does he now place upon a sack of grain? The test is again quite easy. If our pioneer has three sacks he can cover the three most important groups of wants with them. And that is what he will do. If he has but two sacks he will restrict himself to satisfying the two most important groups, and have to forgo the third group of wants, the eating of meat. The possession of the third sack means for him nothing more and nothing less than the satisfying of the third most important group of wants, that is to say the final group that is provided for when his whole supply totals three sacks. When we say "third sack" we do not mean any certain individual sack, but rather any one of the three sacks, pro-

viding only there are still two more to "back it up." To value it on any other basis than that of its final or marginal utility would be contrary to the factual situation and therefore a fallacy.

Let us make a final supposition, namely, that our pioneer under the same conditions possesses only a single sack of grain. It is now crystal clear that every other disposition is out of the question, and this one sack must be devoted to and used for a bare subsistence, for which it is just adequate. It is just as clear that if the pioneer loses that single sack he will no longer be able to maintain life. The possession of it therefore signifies life, its loss means death. The single sack of grain has the greatest conceivable significance for the well-being of the pioneer. And once more the valuation occurs in absolute adherence to the principle of marginal utility. For the supreme utility, the preservation of life, is now the only utility and as such is at the same time the last, the final, the *marginal* utility.

And all these valuations in accordance with the marginal utility are not merely "academic." Quite the contrary. Nobody will doubt that our pioneer's practical behavior will be governed thereby in whatever situation arises. Suppose someone made an offer to buy his grain. There is no doubt that any one of us in his position would be inclined to sell *one of the five sacks* relatively cheaply, and quite in keeping with its small marginal utility. We should be willing to sell *one of three sacks* only at a considerably higher price, while the irreplaceable *one and only sack* with its enormous marginal utility would not be for sale at any price, however high.

#### Marginal Utility In A Highly Organized Society

Let us shift the theater of action from the lonely primal forest to the hurly-burly of a highly developed economy. Here the situation is under the veritable domination of the empirically familiar proposition that the value of goods is in inverse proportion to their quantity. The more goods of a given category are on hand, the smaller, other things being equal, will be the value of the individual specimen and vice versa. [However, this is a much inferior formulation of the economic law explaining the influence of quantity on price.—Editor of F. P.]

It is a matter of common knowledge that economic theory has utilized this elementary empirical proposition in the field of the doctrine of price, to set up the law of "supply and demand." But the proposition is also valid quite independently of exchange and price. How much more highly, for instance, does a collector prize the only specimen of a given category, than when that same category is represented by a dozen identical specimens! It can easily be shown that such facts as this, so well attested by experience, follow as a natural consequence from the operation of laws in full accord with the theory of marginal utility. For the more numerous the specimens of a given category of goods are, the more completely can the wants dependent on them be satisfied, the less important are the last wants which still achieve satisfaction and the satisfaction of which



would be at stake if a single specimen were lost. In other words, the more numerous the specimens of a given category of goods, the lower the marginal utility which determines value. And to complete the picture, if there are so many specimens available that after complete satisfaction of all dependent wants there are still further specimens of that good available for which no useful employment can be found at all, then the marginal utility equals zero, and the goods are without value. [The whole quantity becomes free goods as was explained last month.—Editor of F. P.]

#### **Why Bread Is Ordinarily Cheap, And Diamonds Dear**

And now we have the perfectly natural explanation of the phenomenon that at first seemed so startling — that things with little usefulness, such as pearls and diamonds, should possess such high value, while much more useful things like bread and iron should have a far lower value, and water and air no value at all. It is simply a case of pearls and diamonds being available in such small quantities that the need for them is satisfied to only a very small extent. As a result, the satisfying of the want “descends” only to a rank which denotes a final or marginal utility that is still relatively high. On the other hand—and fortunately—bread and iron, water and air are normally available in such great quantity especially for the rich who can buy pearls and diamonds, that satisfaction of all the more important needs dependent upon them is assured. And there are either very trifling needs or none at all that still depend upon the availability of a single example of the good or on a concrete partial quantity.

Of course, under abnormal conditions such as the siege of a city or a voyage through the desert, water and bread can become scarce. In that case the very limited supplies no longer suffice to cover the most important concrete needs for food and drink. That causes the marginal utility to soar and the value of these otherwise so lightly regarded goods to rise rapidly, quite in accordance with our principle. The conclusion thus logically arrived at finds empirical corroboration in the proverbially exorbitant prices which the most modest foods and beverages customarily command in situations of that sort. And so we can now once more consider those facts which at first glance seemed to deride our principle that the magnitude of value is determined by the magnitude of the utility dependent on it. And lo! instead of conflicting with the theory they furnish a brilliant corroboration of it!

#### **The Question Of The Accuracy Of The Selective Decisions Determining Marginal Utility**

The cases we have considered so far were relatively easy to interpret. But practical life often offers economic complications which are more difficult for the research theorist to penetrate, even though the layman deals with them with consummate ease in actual practice. The solution of the problems they present depends entirely on the accuracy of the selective decision that is arrived at concerning the rank which the marginal utility will under given conditions attain. To that end the following general precept may be

applied, with confidence that it will furnish a universal rule for the solution of all the more difficult problems of value. The economic position of the person called upon to render the decision on the question of valuation must be taken into account from two points of view. In the first instance, the good that is to be valued must be imagined as included in the supply of goods possessed by the economic subject and an estimate must be made as to which concrete wants will represent the lowest grade that will be satisfied. In the second instance, the good must be imagined as excluded or lost, and a new estimate made as to how low a grade of want will now still find satisfaction. The two operations will reveal a certain layer of wants which is deprived of satisfaction. This is of course the lowest layer of the total wants covered by the good. It is this lowest layer that indicates the marginal utility which determines valuation.

There are two principal types of occasion which cause a person to make a valuation. On occasions of the one type he is parting with a good, that is to say, he is giving it away, exchanging it, or using it up. On occasions of the other type he is acquiring a good. The line of thought which he follows in one case is, on the surface, different from the one he follows in the other case. A good which he already has, is valued according to the *deprivation* he suffers; that means it is determined by the last or lowest on the scale of his otherwise guaranteed satisfactions. Conversely, a good that he does not yet possess is valued according to the *addition* in the way of utility which its acquisition entails; that means it is determined by the most important of the satisfactions which the person in his previous situation, when not in possession of the good, would have been unable to procure. Of course, both methods of valuation lead to the same result, for the last or least of the satisfactions that is assured *with* the good is always identical with the first which is no longer covered when one is *without* the good. [This paragraph was originally part of a footnote.]

#### The Important Effect Of A Large Quantity Being Involved

One immediate application of this formula is readily apparent and yet not without theoretical importance. It leads to a recognition of the fact that in some cases the valuation of a good sometimes involves the significance of only one concrete want, in others it involves the significance of many concrete wants which must be considered as an integral sum. In the very nature of things the depth of the layer of dependent wants may vary greatly according to the nature of the thing to be valued. When the latter is a single specimen of a perishable category of goods, such as food, the marginal utility will ordinarily embrace only a single concrete want, or even only a partial want. If on the other hand we are valuing a durable good capable of rendering repeated useful services, or a rather large quantity of goods considered as an integral whole, then the dependent layer of wants will naturally be so deep as to embrace a large number of wants. Under some conditions that number may be very, very large indeed. Hundreds of wants will, for instance, be dependent on the possession or nonpos-

session of a piano or of a ten-cask hoard of wine. In the first instance they will be musical enjoyments, in the second gustatory delights, but in both cases their significance must be summed up integrally to permit a valuation of the respective goods.

In cases of that kind it is possible under certain circumstances for a further phenomenon to be present which may at first blush appear incongruous, but which upon closer examination is susceptible of a perfectly natural explanation. For it may be that the valuation of a rather large quantity will differ widely from that of a single unit of the same good, the large quantity being estimated at a far higher valuation. "Five sacks of grain," for instance, will be rated as worth, not five times as much as *one* sack, but 10 times or 100 times as much. As a matter of fact this is regularly the case when the large quantity which is being valued as an integral sum constitutes such a considerable fraction of the total available quantity of the good in question that its removal will make deep inroads on the satisfaction of the wants of the individual making the value judgment, and leave some concrete wants still unsatisfied which are of a grade of importance materially higher than that of the final or marginal want. In that event, of course, the "lowest layer" which is dependent on the integrally valued quantity of goods embraces concrete wants that occupy several different steps on the graduated scale—that is to say, are of differing degrees of importance. It then becomes a matter of simple arithmetical calculation that the sum of a number of unequal factors is greater than the product derived by multiplying the final, the smallest factor (which is the one that determines the value of the single unit of the good) by the number of factors. It is inevitable that the sum of  $5 + 4 + 3 + 2 + 1$  will be greater than the product  $5 \times 1$ .

#### Marginal Utilities Must Be Added To Get Correct Results

The previous illustration of our pioneer permits us to envision the phenomenon quite clearly. As long as he had five sacks of grain, one of them had a value equivalent to the pleasure of keeping parrots as pets. But when it comes to a matter of three sacks, we find an aggregate of satisfactions dependent on them which is by no means merely the equivalent of three times as much pleasure as keeping parrots. What depends on the three sacks is the pleasure of keeping parrots plus the imbibing of brandy plus the eating of meat. And when all five sacks are considered as an integral unit, not only the last mentioned three wants of ascending importance are dependent on them but in addition the maintenance of health and the preservation of life itself. Surely that is a sum which is not merely five times, but infinitely greater than the pleasure of breeding parrots. Let us imagine that our pioneer is required to place a value on "three sacks" or on all "five sacks" as an integral quantity. Such a situation might arise if a second pioneer should wish to settle in the vicinity and offer to purchase one or the other quantity. It would occasion no surprise if our pioneer were quite ready to sell *one* of his

five sacks at a moderate price, say \$25. But we should not expect him to consider selling the larger quantity of "three sacks" unless he received far more than three times the price of one sack. And finally, he would assuredly not be willing to sell all five sacks together at any price, be it ever so high.

The exact counterpart, that is to say, a disproportionately *lower* valuation of a larger aggregate, can be observed when, instead of being a case of disposing of a quantity of goods, it becomes one of an acquisition of them. If, for example, our pioneer had no grain at all, the purchase of a first and only sack would mean the preservation of life, the purchase of each succeeding sack would mean correspondingly less, and consequently the purchase of five sacks would mean considerably less than five times the value of the first one. It is simply a matter of  $5 + 4 + 3 + 2 + 1$  being less than  $5 \times 5$ . The attentive observer will be able to perceive numerous cases of this sort in practical life and will find that our theory furnishes a key to the ready solution of them. [This paragraph was originally a footnote.]

**Total Value Is Never Equal To Marginal Utility  
Times The Number Of Units, But Far More**

*The subjective value of a rather large supply of goods is therefore not the equivalent of the marginal utility of a single unit of the good multiplied by the number of units comprising the supply. It is determined by the total value derived by adding together the marginal utilities of those units.* [Italics added.] And indeed, so long as the quantity to be valued does not completely exhaust the total available or existing supply, such value is determined in accordance with the principle of marginal utility by the smallest combined utility that is still economically feasible or admissible. The value of "three sacks of grain" in our illustration is not three times the marginal utility of one sack; nor on the other hand is it equivalent to the total utility which any "three sacks" would afford, and which could therefore be that derived from the three most important groups of needs, namely, preservation of life, maintenance of health, and ingestion of meat. Instead, it is determined by the marginal utility that can be derived from the "last three sacks," when expended for the last three purposes that are still economically justifiable. In our example this means the aggregate derived by totalling the keeping of parrots, the enjoyment of brandy and the eating of meat. [In Böhm-Bawerk's previously designated valuations this is  $1 + 4 + 6$  or  $11$ .] Only when the supply to be integrally valued coincides with the total existing or available supply does the total utility of the supply coincide with its marginal utility. This is comparable to the valuation of goods which are available only in the amount of one single specimen of that kind of good. But this is of course no exception to the law of marginal utility. It simply means that because of the maximal limitation of numbers, there is no latitude for the characteristic development of the law to manifest itself. We can say with equal justice that it does not constitute a violation of the law of primogeniture

when in any given instance an *only* son inherits the entire estate of his father.

It should occasion no astonishment to learn that writers who were strangers to the theory of marginal utility or even hostile to it should be bewildered by these complications, and derive from them material for objections arising out of misunderstanding. [This paragraph was originally part of a footnote.]

#### The Quantity Involved Has Important Consequences In Many Cases

In practical, everyday economic life there are innumerable estimations of subjective value. Probably the overwhelmingly greater portion of them will be concerned with single units of a good or a small, even a minute partial quantity thereof. For that reason valuation in accordance with the principle of the marginal utility of the single unit is by far the commonest. And yet there are cases—they constitute a small minority—in which we are impelled or even required to exercise our economic deliberation in connection with very large quantities of goods or even with the total supply of goods of a given kind. This minority of cases includes some that are particularly important and especially interesting. The duty therefore devolves upon me to develop the selective reasoning that deals with the subject of marginal utility to such a point as to offer a key to the understanding of these cases, too.

It may be of some interest to have it pointed out that the familiar power of strikes to exert pressure is founded in large part on the progressive increase of "total utility" in contrast to the "final utility" of the individual worker. The understanding of the theoretical aspect of such cases, and the correct incorporation of them into the general laws governing value becomes more important, the more strongly the tendency becomes manifest in modern economic life to unite persons and goods more and more into consolidated massive bodies by means of organized associations and unions of one kind or another. [Originally this paragraph was a footnote.]

### III On What Does Magnitude Of The Marginal Utility Itself Depend?

I feel it is legitimate to ignore once and for all several other complications of selective rationalization, because they have no bearing on the specific purpose of this book. Others I am ignoring for the time being because they have all too much bearing on our purposes and therefore require such detailed treatment that separate chapters must be devoted to them. At this point I am returning to the simple fundamental law of the value of goods because it needs a little amplification in a certain direction.

For we have been so far citing the magnitude of the marginal utility as the explanation of the magnitude of the value of a good. But we can go a step further in our research into the causes of the value of goods by asking this question: "On what, in turn, does the magnitude of the

marginal utility itself depend?" The answer there is: the *relation between wants and the wherewithal to satisfy them.*

The manner in which these two factors influence the marginal utility has been so frequently and so thoroughly commented on in the foregoing explanations that I can dispense with any further elucidation and content myself with a brief formulation of the pertinent rule. It reads as follows. The more extensive and the more intensive the want is—in other words, the more wants there are, and the more urgently they demand satisfaction — and, *per contra*, the smaller the quantity of good that is available for that purpose, the higher will be the point in the graduated scale of wants where satisfaction will end, or in other words the greater will be the marginal utility. Conversely, the fewer wants there are to be satisfied, and the less urgently their satisfaction is demanded, the lower on that scale will be the point down to which wants are satisfied, and hence the smaller is the marginal utility and the value which must result.

Approximately the same thing may be said, though somewhat less accurately, in a different form. One may say that *usefulness and scarcity* are the ultimate determinants of value. For insofar as the degree of usefulness of a good will indicate whether that good is by nature capable of contributions to well-being which are of major importance or only of minor significance, it simultaneously furnishes a basis for judging the maximum rank which the marginal utility can attain under the most favorable conditions. But scarcity determines the highest point which marginal utility can really attain in a particular concrete case.

#### Subjective Value Is Different For Different Persons

The proposition that the rank of the marginal utility is determined by the relation between want and coverage furnishes material for numerous applications. I shall rest satisfied with selecting two which we shall have occasion to make use of later on when we come to the theory of objective exchange value.

The first is, that the relations of want and coverage vary so in individual cases that the same good may have quite a different subjective value for different persons. Indeed, if that were not so, the effecting of exchanges would not be conceivable at all.

The second is that under conditions that are otherwise identical, equal quantities of goods have quite unequal value for the rich and for the poor, that value being greater for the poor and smaller for the rich. For since the rich are more abundantly endowed with goods of all categories, their satisfactions in general extend downward to include even the more insignificant needs, and the addition or the loss of satisfaction which attaches to a single specimen of a good is therefore relatively unimportant. The poor, however, are able to cover only their most urgent wants anyway, and for them therefore there is an important use depending on *every* specimen of a good. And experience does in actual fact show

that the poor man hails the gaining and bewails the losing of a sum of goods which the rich can gain or lose with complete indifference. Compare the emotional state of a poor clerk who on the first day of the month loses his whole monthly salary of \$250 with that of a millionaire who drops the same amount at poker! For the former the loss means painful deprivation throughout an entire month, for the latter it can mean nothing more than the renunciation of some idle little luxury.

## Selfishness? Relative To Goods Or To Men!

Now that the reader, from perusal of the foregoing, has a preliminary understanding of the relationship of men to goods, what may his conclusion be regarding selfishness?

1. *Before* a man's relations to other men can be a problem, there is a *prior* problem, the relationship of that man to goods. In regard to that relationship a man is *always* selfish. Man was not created for goods; goods were created for him. The essential nature of the relation of man to goods is purely one of his self-welfare. What other principle *could* a man follow and still be rational?

2. Man's relationship to goods is complex and ever changing, because the wants of men are invariably variable and circumstances are also changing constantly. No two cases are ever identical. Consider the variability of wants, diminishing returns, marginal utility.

\* \* \*

Böhm-Bawerk dealt with a simple case, an isolated farmer possessing five sacks of grain. What problems arise when we think of two farmers, each with five sacks of grain? Let us call the farmer whom Böhm-Bawerk has been considering, Farmer *A*; and the second farmer, Farmer *B*.

Farmer *A* used (1) one sack for himself to avoid starvation; (2) another sack to have full health and strength; (3) a third sack for raising poultry; (4) a fourth sack to distill whiskey; and (5) a fifth sack to feed parrots which he desired for his entertainment.

A natural question is: Will Farmer *B* use his five sacks identically? Secondly, should he?

\* \* \*

3. It is an impossibility that Farmer *B* will wish to devote his five sacks to the same purposes as Farmer *A*. He may be

a bigger or smaller eater, and may wish a different quantity of corn for himself. He may prefer beef to chicken; he may not care for whiskey; and may dislike parrots. He allocates his five sacks to different purposes than Farmer A. We can then answer the first question in this manner: the relationship of one man to goods will always be different from any other man to goods. *Equality is impossible.*

4. Further, it may be added, that *equality is undesirable.* The only way to obtain equality is that Farmer A coerce his choices on Farmer B; or vice versa; or that they compromise so that A has his way on some subjects and B on other subjects. But why not let each make his own decisions? Only then are these two men "meek" toward each other. Only then will they be able to get the maximum enjoyment for themselves—when they can follow *their own* choices, and thereby have the strongest feeling of well-being. Only then can the statement in the Sermon on the Mount be true: "Blessed are the meek for they shall inherit the earth," i.e., they will have the greatest sense of well-being, if everybody is left free (in this case, *free* to use his five sacks of grain as *he* individually wishes.) Obviously, *meekness*, when correctly defined, results in the highest level of well-being—an "inheriting of the earth" by the people therein.

5. Further, note the peculiar subjectivity of all valuing of goods. How could A properly undertake to decide for B? Is not all valuing for *others* a demeaning of the others? To undertake to determine values for others is to indicate that you consider them inferior. *Valuing* for others is intolerable arrogance because the man who undertakes to decide for others in effect considers himself a god in knowledge.

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