VII. ACTION WITHIN THE WORLD

1. The Law of Marginal Utility

ACTION sorts and grades; originally it knows only ordinal numbers, not cardinal numbers. But the external world to which acting man must adjust his conduct is a world of quantitative determinateness. In this world there exist quantitative relations between cause and effect. If it were otherwise, if definite things could render unlimited services, such things would never be scarce and could not be dealt with as means.

Acting man values things as means for the removal of his uneasiness. From the point of view of the natural sciences the various events which result in satisfying human needs appear as very different. Acting man sees in these events only a more or a less of the same kind. In valuing very different states of satisfaction and the means for their attainment, man arranges all things in *one* scale and sees in them only their relevance for an increase in his own satisfaction. The satisfaction derived from food and that derived from the enjoyment of a work of art are, in acting man's judgment, a more urgent or a less urgent need; valuation and action place them in one scale of what is more intensively desired and what is less. For acting man there exists primarily nothing but various degrees of relevance and urgency with regard to his own well-being.

Quantity and quality are categories of the external world. Only indirectly do they acquire importance and meaning for action. Because every thing can only produce a limited effect, some things are consider scarce and treated as means. Because the effects which things are able to produce are different, acting man distinguishes various classes of things. Because means of the same quantity and quality are apt always to produce the same quantity of an effect of the same quality, action does not differentiate between concrete definite quantities of homogeneous means. But this does not imply that it attaches the same value to the various portions of a supply of homogeneous means. Each portion is valued separately. To each portion its own rank in the scale of value is assigned. But these orders of rank can be ad libitum interchanged among the various portions of the same magnitude.

If acting man has to decide between two or more means of different classes, he grades the individual portions of each of them. He assigns to each portion its special rank. In doing so he need not assign to the various portions of the same means orders of rank which immediately succeed one another.

The assignment of orders of rank through valuation is done only in acting and through acting. How great the portions are to which a single order of rank is assigned depends on the individual and unique conditions under which man acts in every case. Action does not deal with physical or metaphysical units which it values in an abstract academic way; it is always faced with alternatives between which it chooses. The choice must always be made between definite quantities of means. It is permissible to call the smallest quantity which can be the object of such a decision a unit. But one must guard oneself against the error of assuming that the valuation of the sum of such units is derived from the valuation of the units, or that it represents the sum of the valuations attached to these units.

A man owns five units of commodity *a* and three units of commodity *b*. He attaches to the units of *a* the rank-orders 1, 2, 4, 7, and 8, to the units of *b* the rank-orders 3, 5, and 6. This means: If he must choose between two units of *a* and two units of *b*, he will prefer to lose two units of *a* rather than two units of *b*. But if he must choose between three units of *a* and two units of *b*, he will prefer to lose two units of *b* rather than three units of *a*. What counts always and alone in valuing a compound of several units is the utility of this compound as a whole—i.e., the increment in well-being dependent upon it or, what is the same, the impairment of well-being which its loss must bring about. There are no arithmetical processes involved, neither adding nor multiplying; there is a valuation of the utility dependent upon the having of the portion, compound, or supply in question.

Utility means in this context simply: causal relevance for the removal of felt uneasiness. Acting man believes that the services a thing can render are apt to improve his own well-being, and calls this the utility of the thing concerned. For praxeology the term utility is tantamount to importance attached to a thing on account of the belief that it can remove uneasiness. The praxeological notion of utility (*subjective use-value* in the terminology of the earlier Austrian economists) must be sharply distinguished from the technological notion of utility (*objective use-value* in the terminology of the same economists). Use-value in the objective sense is the relation between a thing and the effect it has the capacity to bring about. It is to objective

use-value that people refer in employing such terms as the "heating value" or "heating power"of coal. Subjective use-value is not always based on true objective use-value. There are things to which subjective use-value is attached because people erroneously believe that they have the power to bring about a desired effect. On the other hand there are things able to produce a desired effect to which no use-value is attached because people are ignorant of this fact.

Let us look at the state of economic thought which prevailed on the eve of the elaboration of the modern theory of value by Carl Menger, William Stanly Jevons, and Leon Walras. Whoever wants to construct an elementary theory of value and prices must first think of utility. Nothing indeed is more plausible than to assume that things are valued according to their utility. But then a difficulty appears which presented to the older economists a problem they failed to solve. They observed that things whose "utility' is greater are valued less than other things of smaller utility. *Iron* is less appreciated than *gold*. This fact seems to be incompatible with a theory of value and prices based on the concepts of utility and use-value. The economists believed that they had to abandon such a theory and tried to explain the phenomena of value and market exchange by other theories.

Only late did the economists discover that the apparent paradox was the outcome of a vicious formulation of the problem involved. The valuations and choices that result in the exchange ratios of the market do not decide between *gold* and *iron*. Acting man is not in a position in which he must choose between *all* the gold and *all* the iron. He chooses at a definite time and place under definite conditions between a strictly limited quantity of gold and a strictly limited quantity of iron. His decision in choosing between 100 ounces of gold and 100 tons of iron does not depend at all on the decision he would make if he were in the highly improbable situation of choosing between all the gold and all the iron. What counts alone for his actual choice is whether under existing conditions he considers the direct or indirect satisfaction which 100 ounces of gold could give him as greater or smaller than the direct or indirect satisfaction he could derive from 100 tons of iron. He does not express an academic or philosophical judgment concerning the "absolute" value of gold and of iron; he does not determine whether gold or iron is more important for mankind; he does not perorate as an author of books on the philosophy of history or on ethical principles. He simply chooses between two satisfactions both of which he cannot have together.

To prefer and to set aside and the choices and decisions in which they result are not acts of measurement. Action does not measure utility or value; it chooses between alternatives. There is no abstract problem of total utility or total value.[1] There is no ratiocinative operation which could lead from the valuation of a definite quantity or number of things to the determination of the value of a greater or smaller quantity or number. There is no means of calculating the total value of a supply if only the values of its parts are known. There is no means of establishing the value of a part of a supply if only the value of the total supply is known. There are in the sphere of values and valuations no arithmetical operations; there is no such thing as a calculation of values. The valuation of the total stock of two things can differ from the valuation of parts of these stocks. An isolated man owning seven cows and seven horses may value one horse higher than one cow and may, when faced with the alternative, prefer to give up one cow rather than one horse. But at the same time the same man, when faced with the alternative of choosing between his whole supply of horses and his whole supply of cows, may prefer to keep the cows and to give up the horses. The concepts of total utility and total value are meaningless if not applied to a situation in which people must choose between total supplies. The question whether *gold* as such and *iron* as such is more useful and valuable is reasonable only with regard to a situation in which mankind or an isolated part of mankind must choose between *all* the gold and *all* the iron available.

The judgment of value refers only to the supply with which the concrete act of choice is concerned. A supply is *ex definitione* always composed of homogeneous parts each of which is capable of rendering the same services as, and of being substituted for, any other part. It is therefore immaterial for the act of choosing which particular part forms its object. All parts—units—of the available stock are considered as equally useful and valuable if the problem of giving up *one* of them is raised. If the supply decreased by the loss of one unit, acting man must decide anew how to use the various units of the remaining stock. It is obvious that the smaller stock cannot render all the services the greater stock could. That employment of the various units which under this new disposition is no longer provided for, was in the eyes of acting man the least urgent employment among

1. It is important to note that this chapter does not deal with prices or market values, but with subjective use-value. Prices are derivative of subjective use-value. Cf. below, Chapter XVI.

all those for which he had previously assigned the various units of the greater stock. The satisfaction which he derived from the use of one unit for this employment was the smallest among the satisfactions which the units of the greater stock had rendered to him. It is only the value of this marginal satisfaction on which he must decide if the question of renouncing one unit of the total stock comes up. When faced with the problem of the value to be attached to one unit of a homogeneous supply, man decides on the basis of the value of the least important use he makes of the units of the whole supply; he decides on the basis of marginal utility.

If a man is faced with the alternative of giving up either one unit of his supply of *a* or one unit of his supply of *b*, he does not compare the total value of his total stock of *a* with the total value of his stock of *b*. He compares the marginal values both of *a* and of *b*. Although he may value the total supply of *a* higher than the total supply of *b*, the marginal value of *b* may be higher than the marginal value of *a*.

The same reasoning holds good for the question of increasing the available supply of any commodity by the acquisition of an additional definite number of units.

For the description of these facts economics does not need to employ the terminology of psychology. Neither does it need to resort to psychological reasoning and arguments for proving them. If we say that the acts of choice do not depend on the value attached to a whole class of wants, but on that attached to the concrete wants in question irrespective of the class in which they may be reckoned, we do not add anything to our knowledge and do not trace it back to some better-known or more general knowledge. This mode of speaking in terms of classes of wants becomes intelligible only if we remember the role played in the history of economic thought by the alleged paradox of value. Carl Menger and Bohm-Bawerk had to make use of the term "class of wants" in order to refute the objections raised by those who considered *bread* as such more valuable than *silk* because the class "want of nourishment" is more important than the class "want of luxurious clothing."[2] Today the concept "class of wants" is entirely superfluous. It has no meaning for action and therefore none for the theory of value; it is, moreover, liable to bring about error and confusion. Construction of concepts and classification are mental tools; they acquire meaning and sense only in the

2. Cf. Carl Menger, *Grundsätze der Volkswirtschaftslehre* (Vienna, 1871), pp. 88 ff.; Böhm-Bawerk, *Kapital und Kapitalzins* (3d ed. Innsbruck, 1909), Pt. II, pp. 237 ff.

context of theories which utilize them.[3] It is nonsensical to arrange various wants into "classes of wants" in order to establish that such a classification is of no avail whatever for the theory of value.

The law of marginal utility and decreasing marginal value is independent of Gossen's law of the saturation of wants (first law of Gossen). In treating marginal utility we deal neither with sensuous enjoyment nor with saturation and satiety. We do not transcend the sphere of praxeological reasoning in establishing the following definition: We call that employment of a unit of a homogeneous supply which a man makes if his supply is *n* units, but would not make if, other things being equal, his supply were only *n*-1 units, the least urgent employment or the marginal employment, and the utility derived from it marginal utility. In order to attain this knowledge we do not need any physiological or psychological experience, knowledge, or reasoning. It follows necessarily from our assumptions that people act (choose) and that in the first case acting man has *n* units of a homogeneous supply and in the second case *n*-1 units. Under these conditions no other result is thinkable. Our statement is formal and aprioristic and does not depend on any experience.

There are only two alternatives. Either there are or there are not intermediate stages between the felt uneasiness which impels a man to act and the state in which there can no longer be any action (be it because the state of perfect satisfaction is reached or because man is incapable of any further improvement in his conditions). In the second case there could be only one action; as soon as this action is consummated, a state would be reached in which no further action is possible. This is manifestly incompatible with our assumption that there is action; this case no longer implies the general conditions presupposed in the category of action. Only the first case remains. But then there are various degrees in the asymptotic approach to the state in which there can no longer be any action. Thus the law of marginal utility is already implied in the category of action. It is nothing else than the reverse of the statement that what satisfies more is preferred to what gives smaller satisfaction. If the supply available increases from *n*-1 units to *n* units, the increment can be employed only for the removal of a want which is less urgent or less painful than the least urgent or least painful among all those wants which could be removed by means of the supply *n*-1.

3. Classes are not in the world. It is our mind that classifies the phenomena in order to orgaize our knowledge. The question of whether a certain mode of classifying phenomena is conducive to this end or not is different from the question of whether it is logical permissible or not.

The law of marginal utility does not refer to objective use-value, but to subjective use-value. It does not deal with the physical or chemical capacity of things to bring about a definite effect in general, but with their relevance for the well-being of a man as he himself sees it under the prevailing momentary state of his affairs. It does not deal primarily with the value of things, but with the value of the services a man expects to get from them.

If we were to believe that marginal utility is about things and their objective use-value, we would be forced to assume that marginal utility can as well increase as decrease with an increase in the quantity of units available. It can happen that the employment of a certain minimum quantity—*n* units—of a good *a* can provide a satisfaction which is deemed more valuable than the services expected from one unit of a good *b*. But if the supply of *a* available is smaller than *n*, *a* can only be employed for another service which is considered less valuable than that of *b*. Then an increase in the quantity of *a* from *n*-1 units to *n* units results in an increase of the value attached to one unit of *a*. The owner of 100 logs may build a cabin which protects him against rain better than a raincoat. But if fewer than 100 logs are available, he can only use them for a berth that protects him against the dampness of the soil. As the owner of 95 logs he would be prepared to forsake the raincoat in order to get 5 logs more. As the owner of 10 logs he would not abandon the raincoat even for 10 logs. A man whose savings amount to $100 may not be willing to carry out some work for a remuneration of $200. But if his savings were $2,000 and he were extremely anxious to acquire an indivisible good which cannot be bought for less than $2,100, he would be ready to perform this work for $100. All this is in perfect agreement with the rightly formulated law of marginal utility according to which value depends on the utility of the services expected. There is no question of any such thing as a law of increasing marginal utility.

The law of marginal utility must be confused neither with Bernoulli's doctrine *de mensura sortis* nor with the Weber-Fechner law. At the bottom of Bernoulli's contribution were the generally known and never disputed facts that people are eager to satisfy the more urgent wants before they satisfy the less urgent, and that a rich man is in a position to provide better for his wants than a poor man. But the inferences Bernoulli drew from these truisms are all wrong. He developed a mathematical theory that the increment in gratification diminishes with the increase in a man's total wealth. His statement that as a rule it is highly probable that for a man whose income is 5,000 ducats one ducat means not more than half a ducat for a man with an

income of 2,500 ducats is merely fanciful. Let us set aside the objection that there is no means of drawing comparisons other than entirely arbitrary ones between the valuations of various people. Bernoulli's method is no less inadequate for the valuations of the same individual with various amounts of income. He did not see that all that can be said about the case in question is that with increasing income every new increment is used for the satisfaction of a want less urgently felt than the least urgently felt want already satisfied before this increment took place. He did not see that in valuing, choosing, and acting there is no measurement and no establishment of equivalence, but grading, i.e., preferring and putting aside.[4] Thus neither Bernoulli nor the mathematicians and economists who adopted his mode of reasoning could succeed in solving the paradox of value.

The mistakes inherent in the confusion of the Weber-Fechner law of psychophysics and the subjective theory of value have already been attacked by Max Weber. Max Weber, it is true, was not sufficiently familiar with economics and was too much under the sway of historicism to get a correct insight into the fundamentals of economic thought. But ingenious intuition provided him with a suggestion of a way toward the correct solution. The theory of marginal utility, he asserts, is "not psychologically substantiated, but rather—if an epistemological term is to be applied—pragmatically, i.e., on the employment of the categories: ends and means."[5]

If a man wants to remove a pathological condition by taking a definite quantity of a remedy, the intake of a multiple will not bring about a better effect. The surplus will have either no effect other than the appropriate dose, the optimum, or it will have detrimental effects. The same is true of all kinds of satisfactions, although the optimum is often reached only by the application of a large dose, and the point at which further increments produce detrimental effects is often far away. This is so because our world is a world of causality and of quantitative relations between cause and effect. He who wants to remove the uneasiness caused by living in a room with a temperature of 35 degrees will aim at heating the room to a temperature of 65 or 70 degrees. It has nothing to do with the Weber-Fechner law that he does not aim at a temperature of 180

4. Cf. Daniel Bernoulli, *Versuch einer neuen Theorie zur Bestimmung von Glücksfällen*, trans. by Pringsheim (Leipzib, 1896), pp. 27 ff.

5. Cf. Max Weber, *Gesammelte Aufsätze zur Wissenschaftslehre* (Tübingen, 1922), p. 372; also p. 149. The term "pragmatical" as used by Weber is of course liable to bring about confusion. It is inexpedient to employ it for anything other than the philosophy of Pragmatism. If Weber had known the term "praxeology," he probably would have preferred it.

or 300 degrees. Neither has it anything to do with psychology. All that psychology can do for the explanation of this fact is to establish as an ultimate given that man as a rule prefers the preservation of life and health to death and sickness. What counts for praxeology is only the fact that acting man chooses between alternatives. That man is placed at crossroads, that he must and does choose, is—apart from other conditions—due to the fact that he lives in a quantitative world and not in a world without quantity, which is even unimaginable for the human mind.

The confusion of marginal utility and the Weber-Fechner law originated from the mistake of looking only at the means for the attainment of satisfaction and not at the satisfaction itself. If the satisfaction had been thought of, the absurd idea would not have been adopted of explaining the configuration of the desire for warmth by referring to the decreasing intensity of the sensation of successive increments in the intensity of the stimuli. That the average man does not want to raise the temperature of his bedroom to 120 degrees has no reference whatever to the intensity of the sensation for warmth. That a man does not heat his room to the same degree as other normal people do and as he himself would probably do, if he were not more intent upon buying a new suit or attending the performance of a Beethoven symphony, cannot be explained by the methods of the natural sciences. Objective and open to a treatment by the methods of the natural sciences are only the problems of objective use-value; the valuation of objective use-value on the part of acting man is another thing.

2. The Law of Returns

Quantitative definiteness in the effects brought about by an economic good means with regard to the goods of the first order (consumers' goods): a quantity *a* of cause brings about—either once and for all or piecemeal over a definite period of time—a quantity α of effect. With regard to the goods of the higher orders (producers' goods) it means: a quantity *b* of cause brings about a quantity β of effect, provided the complementary cause *c* contributes the quantity γ of effect; only the concerted effects β and γ bring about the quantity *p* of the good of the first order *D*. There are in this case three quantities: *b* and *c* of the two complementary goods *B* and *C*, and *p* of the product *D*.

With *b* remaining unchanged, we call that value of *c* which results in the highest value of $\frac{p}{c}$ the optimum. If several values of *c* result in this highest value of $\frac{p}{c}$, then we call that the optimum which results also in the highest

value of *p*. If the two complementary goods are employed in the optimal ratio, they both render the highest output; their power to produce, their objective use-value, is fully utilized; no fraction of them is wasted. If we deviate from this optimal combination by increasing the quantity of *C* without changing the quantity of *B*, the return will as a rule increase further, sbut not in proportion to the increase in the quantity of *C*. If it is at all possible to increase the return from *p* to p_1 by increasing the quantity of *one* of the complementary factors only, namely by substituting *cx* for *c*, *x* being greater than 1, we have at any rate: $p_1 > p$ and $p_1 c < pcx$. For if it were possible to compensate any decrease in *b* by a corresponding increase in *c* in such a way that *p* remains unchanged, the physical power of production proper to *B* would be unlimited and *B* would not be considered as scarce and as an economic good. It would be of no importance for acting man whether the supply of *B* available were greater or smaller. Even an infinitesimal quantity of *B* would be sufficient for the production of any quantity of *D*, provided the supply of *C* is large enough. On the other hand, an increase in the quantity of *B* available could not increase the output of *D* if the supply of *C* does not increase. The total return of the process would be imputed to *C*; *B* could not be an economic good. A thing rendering such unlimited services is, for instance, the knowledge of the causal relation implied. The formula, the recipe that teaches us how to prepare coffee, provided it is known, renders unlimited services. It does not lose anything from its capacity to produce however often it is used; its productive power is inexhaustible; it is therefore not an economic good. Acting man is never faced with a situation in which he must choose between the use-value of a known formula and any other useful thing.

The law of returns asserts that for the combination of economic goods of the higher orders (factors of production) there exists an optimum. If one deviates from this optimum by increasing the input of only one of the factors, the physical output either does not increase at all or at least not in the ratio of the increased input. This law, as has been demonstrated above, is implied in the fact that the quantitative definiteness of the effects brought about by any economic good is a necessary condition of its being an economic good.

That there is such an optimum of combination is all that the law of returns, popularly called the law of diminishing returns, teaches. There are many other questions which it does not answer at all and which can only be solved a posteriori by experience.

If the effect brought about by one of the complementary factors is

indivisible, the optimum is the only combination which results in the outcome aimed at. In order to dye a piece of wool to a definite shade, a definite quantity of dye is required. A greater or smaller quantity would frustrate the aim sought. He who has more coloring matter must leave the surplus unused. He who has a smaller quantity can dye only a part of the piece. The diminishing return results in this instance in the complete uselessness of the additional quantity which must not even be employed because it would thwart the design.

In other instances a certain minimum is required for the production of the minimum effect. Between this minimum effect and the optimal effect there is a margin in which increased doses result either in a proportional increase in effect or in a more than proportional increase in effect. In order to make a machine turn, a certain minimum of lubricant is needed. Whether an increase of lubricant above this minimum increases the machine's performance in proportion to the increase in the amount applied, or to a greater extent, can only be ascertained by technological experience.

The law of returns does not answer the following questions: (1) Whether or not the optimum dose is the only one that is capable of producing the effect sought. (2) Whether or not there is a rigid limit above which any increase in the amount of the variable factor is quite useless. (3) Whether the decrease in output brought about by progressive deviation from the optimum and the increase in output brought about by progressive approach to the optimum result in proportional or nonproportional changes in output per unit of the variable factor. All this must be discerned by experience. But the law of returns itself, i.e., the fact that there must exist such an optimum combination, is valid a priori.

The Malthusian law of population and the concepts of absolute overpopulation and under-population and optimum population derived from it are the application of the law of returns to a special problem. They deal with changes in the supply of human labor, other factors being equal. Because people, for political considerations, wanted to reject the Malthusiam law, they fought with passion but with faulty arguments against the law of returns—which, incidentally, they knew only as the law of diminishing returns of the use of capital and labor on land. Today we no longer need to pay any attention to these idle remonstrances. The law of returns is not limited to the use of complementary factors of production on land. The endeavors to refute or to demonstrate its validity by historical and experimental investigations of agricultural production are as needless as they are

vain. He who wants to reject the law would have to explain why people are ready to pay prices for land. If the law were not valid, a farmer would never consider expanding the size of his farm. He would be in a position to multiply indefinitely the return of any piece of soil by multiplying his input of capital and labor.

People have sometimes believed that, while the law of diminishing returns is valid in agricultural production, with regard to the processing industries a law of increasing returns prevails. It took a long time before they realized that the law of returns refers to all branches of production equally. It is faulty to contrast agriculture and the processing industries with regard to this law. What is called—in a very inexpedient, even misleading terminology—the law of increasing returns is nothing but a reversal of the law of diminishing returns, an unsatisfactory formulation of the law of returns. If one approaches the optimum combination by increasing the quantity of one factor only, the quantity of other factors remaining unchanged, then the returns per unit of the variable factor increase either in proportion to the increase or even to a greater extent. A machine may, when operated by 2 workers, produce *p*; when operated by 3 workers, 3 *p*; when operated by 4 workers, 6 *p*; when operated by 5 workers, 7 *p*; when operated by 6 workers, also not more than 7*p*. Then the employment of 4 workers renders the optimum return per head of the worker, namely $\frac{6}{4}$ *p*, while under the other combinations the returns per head are respectively 1/2*p*, *p*, $\frac{7}{5}$ *p* and $\frac{7}{6}$ *p*. If, instead of 2 workers, 3 or 4 workers are employed, then the returns increase more than in relation to the increase in the number of workers; they do not increase in the proportion 2:3:4, but in the proportion 1:3:6. We are faced with increasing returns per head of the worker. But this is nothing else than the reverse of the law of diminishing returns.

If a plant or enterprise deviates from the optimum combination of the factors employed, it is less efficient than a plant or enterprise for which the deviation from the optimum is smaller. Both in agriculture and in the processing industries many factors of production are not perfectly divisible. It is, especially in the processing industries, for the most part easier to attain the optimum combination by expanding the size of the plant or enterprise than by restricting it. If the smallest unit of one or of several factors is too large to allow for its optimal exploitation in a small or medium-size plant or enterprise, the only way to attain the optimum is by increasing the outfit's size. It is these facts that bring about the superiority of big-scale production.

The full importance of this problem will be shown later in discussing the issues of cost accounting.

3. Human Labor as a Means

The employment of the physiological functions and manifestations of human life as a means is called labor. The display of the potentialities of human energy and vital processes which the man whose life they manifest does not use for the attainment of external ends different from the mere running of these processes and from the physiological role they play in the biological consummation of his own vital economy, is not labor; it is simply life. Man works in using his forces and abilities as a means for the removal of uneasiness and in substituting purposeful exploitation of his vital energy for the spontaneous and carefree discharge of his faculties and nerve tensions. Labor is a means, not an end in itself.

Every individual has only a limited quantity of energy to expend, and every unit of labor can only bring about a limited effect. Otherwise human labor would be available in abundance; it would not be scarce and it would not be considered as a means for the removal of uneasiness and economized as such.

In a world in which labor is economized only on account of its being available in a quantity insufficient to attain all ends for which it can be used as a means, the supply of labor available would be equal to the whole quantity of labor which all men together are able to expend. In such a world everybody would be eager to work until he had completely exhausted his momentary capacity to work. The time which is not required for recreation and restoration of the capacity to work, used up by previous working, would be entirely devoted to work. Every nonutilization of the full capacity to work would be deemed a loss. Through the performance of more work one would have increased one's well-being. That a part of the available potential remained unused would be appraised as a forfeiture of well-being. The very idea of laziness would be unknown. Nobody would think: I could possibly do this or that; but it is not worthwhile; it does not pay; I prefer my leisure. Everybody would consider his whole capacity to work as a supply of factors of production which he would be anxious to utilize completely. Even a chance of the smallest increase in well-being would be considered a sufficient incentive to work more if it happened that at the instant no more profitable use could be made of the quantity of labor concerned.

In our actual world things are different. The expenditure of labor is deemed painful. Not to work is considered a state of affairs more satisfactory than working. Leisure is, other things being equal, preferred to travail. People work only when they value the return of labor higher than the decrease in satisfaction brought about by the curtailment of leisure. To work involves disutility.

Psychology and physiology may try to explain this fact. There is no need for praxeology to investigate whether or not they can succeed in such endeavors. For praxeology it is a datum that men are eager to enjoy leisure and therefore look upon their own capacity to bring about effects with feelings different from those with which they look upon the capacity of material factors of production. Man in considering an expenditure of his own labor investigates not only whether there is no more desirable end for the employment of the quantity of labor in question, but no less whether it would not be more desirable to abstain from any further expenditure of labor. We can express this fact also in calling the attainment of leisure an end of purposeful activity, or an economic good of the first order. In employing this somewhat sophisticated terminology, we must view leisure as any other economic good from the aspect of marginal utility. We must conclude that the first unit of leisure satisfies a desire more urgently felt than the second one, the second one a more urgent desire than the third one, and so on. Reversing this proposition, we get the statement that the disutility of labor felt by the worker increases in a greater proportion than the amount of labor expended.

However, it is needless for praxeology to study the question of whether or not the disutility of labor increases in proportion to the increase in the quantity of labor performed or to a greater extent. (Whether this problem is of any importance for physiology and psychology, and whether or not these sciences can elucidate it, can be left undecided.) At any rate the worker knocks off work at the point at which he no longer considers the utility of continuing work as a sufficient compensation for the disutility of the additional expenditure of labor. In forming this judgment he contrasts, if we disregard the decrease in yield brought about by increasing fatigue, each portion of working time with the same quantity of product as the preceding portions. But the utility of the units of yield decreases with the progress of the labor performed and the increase in the total amount of yield produced. The products of the prior units of working time have provided for the satisfaction of more important needs than the products of the work performed later. The satisfaction of these less important needs may not be considered as a sufficient reward for the further continuation of work,

although they are compared with the same quantities of physical output.

It is therefore irrelevant for the praxeological treatment of the matter whether the disutility of labor is proportional to the total expenditure of labor or whether it increases to a greater extent than the time spent in working. At any rate, the propensity to expend the still unused portions of the total potential for work decreases, other things being equal, with the increase in the portions already expended. Whether this decrease in the readiness to work more proceeds with a more rapid or a less rapid acceleration, is always a question of economic data, not a question of categorial principles.

The disutility attached to labor explains why in the course of human history, concomitantly with the progressive increase in the physical productivity of labor brought about by technological improvement and a more abundant supply of capital, by and large a tendency toward shortening the hours of work developed. Among the amenities which civilized man can enjoy in a more abundant way than his less civilized ancestors there is also the enjoyment of more leisure time. In this sense one can answer the question, often raised by philosophers and philanthropists, whether or not economic progress has made men happier. If the productivity of labor were lower than it is in the present capitalist world, man would be forced either to toil more or to forsake many amenities. In establishing this fact the economists do not assert that the only means to attain happiness is to enjoy more material comfort, to live in luxury, or to have more leisure. They simply acknowledge the truth that men are in a position to provide themselves better with what they consider they need.

The fundamental praxeological insight that men prefer what satisfies them more to what satisfies them less and that they value things on the basis of their utility does not need to be corrected or complemented by an additional statement concerning the disutility of labor. These propositions already imply the statement that labor is preferred to leisure only in so far as the yield of labor is more urgently desired than the enjoyment of leisure.

The unique position which the factor labor occupies in our world is due to its nonspecific character. All nature-given primary factors of production—i.e., all those natural things and forces that man can use for improving his state of well-being—have specific powers and virtues. There are ends for whose attainment they are more suitable, ends for which they are less suitable, and ends for which they are altogether unsuitable. But human labor is both suitable and indispensable for the performance of all thinkable processes and modes of production.

It is, of course, impermissible to deal with human labor as such in general. It is a fundamental mistake not to see that men and their abilities to work are different. The work a certain individual can perform is more suitable for some ends, less suitable for other ends, and altogether unsuitable for still other ends. It was one of the deficiencies of classical economics that it did not pay enough attention to this fact and did not take it into account in the construction of its theory of value, prices, and wage rates. Men do not economize labor in general, but the particular kinds of labor available. Wages are not paid for labor expended, but for the achievements of labor, which differ widely in quality and quantity. The production of each particular product requires the employment of workers able to perform the particular kind of labor concerned. It is absurd to justify the failure to consider this point by reference to the alleged fact that the main demand for and supply of labor concerns unskilled common labor which every healthy man is able to perform, and that skilled labor, the labor of people with particular inborn faculties and special training, is by and large an exception. There is no need to investigate whether conditions were such in a remote past or whether even for primitive tribesmen the inequality of inborn and acquired capacities for work was the main factor in economizing labor. In dealing with conditions of civilized peoples it is impermissible to disregard the differences in the quality of labor performed. Work which various people are able to perform is different because men are born unequal and because the skill and experience they acquire in the course of their lives differentiate their capacities still more.

In speaking of the nonspecific character of human labor we certainly do not assert that all human labor is of the same quality. What we want to establish is rather that the differences in the kind of labor required for the production of various commodities are greater than the differences in the inborn capacities of men. (In emphasizing this point we are not dealing with the creative performances of the genius; the work of the genius is outside the orbit of ordinary human action and is like a free gift of destiny which comes to mankind overnight.[6] We furthermore disregard the institutional barriers denying some groups of people access to certain occupations and the training they require.) The innate inequality of various individuals does not break up the zoological uniformity and homogeneity of the species man to such an extent as to divide the supply of labor into disconnected sections. Thus the potential supply of labor available for the performance of each

6. See below, pp. 139-140.

particular kind of work exceeds the actual demand for such labor. The supply of every kind of specialized labor could be increased by the withdrawal of workers from other branches and their training. The quantity of need satisfaction is in none of the branches of production permanently limited by a scarcity of people capable of performing special tasks. Only in the short run can there emerge a dearth of specialists. In the long run it can be removed by training people who display the innate abilities required.

Labor is the most scarce of all primary means of production because it is in this restricted sense nonspecific and because every variety of production requires the expenditure of labor. Thus the scarcity of the other primary means of production—i.e., the nonhuman means of production supplied by nature—becomes for acting man a scarcity of those primary material means of production whose utilization requires the smallest expenditure of labor.[7] It is the supply of labor available that determines to what an extent the factor nature in each of its varieties can be exploited for the satisfaction of needs.

If the supply of labor which men are able and ready to perform increases, production increases too. Labor cannot remain unemployed on account of its being useless for the further improvement of need satisfaction. Isolated self-sufficient man always has the opportunity of improving his condition by expending more labor. On the labor market of a market society there are buyers for every supply of labor offered. There can be abundance and superfluity only in segments of the labor market; it results in pushing labor to other segments and in an expansion of production in some other provinces of the economic system. On the other hand, an increase in the quantity of land available—other things being equal—could result in an increase in production only if the additional land is more fertile than the marginal land tilled before.[8] The same is valid with regard to accumulated material equipment for future production. The serviceableness of capital goods also depends on the supply of labor available. It would be wasteful to use the capacity of existing facilities if the labor required could be employed for the satisfaction of more urgent needs.

Complementary factors of production can only be used to the extent allowed by the availability of the most scarce among them. Let us assume that the production of 1 unit of *p* requires the expenditure of 7 units of *a* and

7. Of course, some natural resources are so scarce that they are entirely utilized.

8. Under free mobility of labor it would be wasteful to improve barren soil if the reclaimed area is not so fertile that it compensates for the total cost of the operation.

of 3 units of *b* and that neither *a* nor *b* can be used for any production other than that of *p*. If 49 *a* and 2,000 *b* are available, no more than 7 *p* can be produced. The available supply of *a* determines the extent of the use of *b*. Only *a* is considered an economic good; only for *a* are people ready to pay prices; the full price of *p* is allowed for 7 units of *a*. On the other hand *b* is not an economic good and no prices are allowed for it. There are quantities of *b* which remain unused.

We may try to imagine the conditions within a world in which all material factors of production are so fully employed that there is no opportunity to employ all men or to employ all men to the extent that they are ready to work. In such a world labor is abundant; an increase in the supply of labor cannot add any increment whatever to the total amount of production. If we assume that all men have the same capacity and application for work and if we disregard the disutility of labor, labor in such a world would not be an economic good. If this world were a socialist commonwealth, an increase in population figures would be deemed an increase in the number of idle consumers. If it were a market society, wage rates paid would not be enough to prevent starvation. Those seeking employment would be ready to go to work for any wages, however low, even if insufficient for the preservation of their lives. They would be happy to delay for awhile death by starvation.

There is no need to dwell upon the paradoxes of this hypothesis and to discuss the problems of such a world. Our world is different. Labor is more scarce than material factors of production. We are not dealing at this point with the problem of optimum population. We are dealing only with the fact that there are material factors of production which remain unused because the labor required is needed for the satisfaction of more urgent needs. In our world there is no abundance, but a shortage of manpower, and there are unused material factors of production, i.e. land, mineral deposits, and even plants and equipment.

This state of affairs could be changed by such an increase in population figures that all material factors required for the production of the foodstuffs indispensable-in the strict meaning of the word-for the preservation of human life are fully exploited. But as long as this is not the case, it cannot be changed by any improvement in technological methods of production. The substitution of more efficient methods of production for less efficient ones does not render labor abundant, provided there are still material factors available whose utilization can increase human well-being. On the contrary, it increases output and thereby the quantity of consumers' goods. "Labor-

saving" devices increase supply. They do not bring about "technological unemployment."[9]

Every product is the result of the employment both of labor and of material factors. Man economizes both labor and material factors.

Immediately Gratifying Labor and Mediately Gratifying Labor

As a rule labor gratifies the performer only mediately, namely, through the removal of uneasiness which the attainment of the end brings about. The worker gives up leisure and submits to the disutility of labor in order to enjoy either the product or what other people are ready to give him for it. The expenditure of labor is for him a means for the attainment of certain ends, a price paid and a cost incurred.

But there are instances in which the performance of labor gratifies the worker immediately. He derives immediate satisfaction from the expenditure of labor. The yield is twofold. It consists on the one hand in the attainment of the product and on the other hand in the satisfaction that the performance itself gives to the worker.

People have misinterpreted this fact grotesquely and have based on this misinterpretation fantastic plans for social reforms. One of the main dogmas of socialism is that labor has disutility only within the capitalistic system of production, while under socialism it will be pure delight. We may disregard the effusions of the poor lunatic Charles Fourier. But Marxian "scientific" socialism does not differ in this point from the utopians. Some of its foremost champions, Frederick Engels and Karl Kautsky, expressly declare that a chief effect of a socialist regime will be to transform labor from a pain into a pleasure.[10]

The fact is often ignored that those activities which bring about immediate gratification and are thus direct sources of pleasure and enjoyment, are essentially different from labor and working. Only a very superficial treatment of the facts concerned can fail to recognize these differences. Paddling a canoe as it is practiced on Sundays for amusement on the lakes of public parks can only from the point of view of hydromechanics be likened to the rowing of boatsmen and galley slaves. When judged as a means for the attainment of ends it is as different as is the humming of an aria by a rambler from the recital of the same aria by the singer in the opera. The carefree Sunday paddler and the singing rambler derive immediate gratification from their activities, but not mediate gratification. What they do is therefore not labor, not the employment of their physiological functions for the attainment

9. See below, pp. 769-779.

10. Karl Kautsky, *Die soziale Revolution* (3d ed. Berlin, 1911), II, 16ff. About Engels see below, p. 591.

of ends other than the mere exercise of these functions. It is merely pleasure. It is an end in itself; it is done for its own sake and does not render any further service. As it is not labor, it is not permissible to call it immediately gratifying labor.[11]

Sometimes a superficial observer may believe that labor performed by other people gives rise to immediate gratification because he himself would like to engage in a kind of play which apparently imitates the kind of labor concerned. As children play school, soldiers, and railroad, so adults too would like to play this and that. They think that the railroad engineer must enjoy operating and steering his engine as much as they would if they were permitted to toy with it. On his hurried way to the office the bookkeeper envies the patrolman who, he thinks, is paid for leisurely strolling around his beat. But the patrolman envies the bookkeeper who, sitting on a comfortable chair in a well-heated room, makes money by some scribbling which cannot seriously be called labor. Yet the opinions of people who misinterpret other people's work and consider it a mere pastime need not be taken seriously.

There are, however, also instances of genuine immediately gratifying labor. There are some kinds of labor of which, under special conditions, small quantities provide immediate gratification. But these quantities are so insignificant that they do not play any role at all in the complex of human action and production for the satisfaction of wants. Our world is characterized by the phenomenon of the disutility of labor. People trade the disutility-bringing labor for the products of labor; labor is for them a source of mediate gratification.

As far as a special kind of labor gives a limited amount of pleasure and not pain, immediate gratification and not disutility of labor, no wages are allowed for its performance. On the contrary, the performer, the "worker," must buy the pleasure and pay for it. Hunting game was and is for many people regular disutility-creating labor. But there are people for whom it is pure pleasure. In Europe amateur hunters buy from the owner of the hunting-ground the right to shoot a definite number of game of a definite type. The purchase of this right is separated from the price to be paid for the bag. If the two purchases are linked together, the price by far exceeds the prices that can be obtained on the market for the bag. A chamois buck still roaming on precipitous rocks has therefore a higher cash value than later when killed, brought down to the valley, and ready for the utilization of the meat, the skin, and the horns, although strenuous climbing and some material must be expended for its killing. One could say that one of the services which a living buck is able to render is to provide the hunter with the pleasure of killing it.

11. Rowing seriously practiced as a sport and singing seriously practiced by an amateur are introversive labor. See below, pp. 587-588.

The Creative Genius

Far above the millions that come and pass away tower the pioneers, the men whose deeds and ideas cut out new paths for mankind. For the pioneering genius[12] to create is the essence of life. To live means for him to create.

The activities of these prodigious men cannot be fully subsumed under the praxeological concept of labor. They are not labor because they are for the genius not means, but ends in themselves. He lives in creating and inventing. For him there is not leisure, only intermissions of temporary sterility and frustration. His incentive is not the desire to bring about a result, but the act of producing it. The accomplishment gratifies him neither mediately nor immediately. It does not gratify him mediately because his fellow men at best are unconcerned about it, more often even greet it with taunts, sneers, and persecution. Many a genius could have used his gifts to render his life agreeable and joyful; he did not even consider such a possibility and chose the thorny path without hesitation. The genius wants to accomplish what he considers his mission, even if he knows that he moves toward his own disaster.

Neither does the genius derive immediate gratification from his creative activities. Creating is for him agony and torment, a ceaseless excruciating struggle against internal and external obstacles; it consumes and crushes him. The Austrian poet Grillparzer has depicted this in a touching poem "Farewell to Gastein."[13] We may assume that in writing it he thought not only of his own sorrows and tribulations but also of the greater sufferings of a much greater man, of Beethoven, whose fate resembled his own and whom he understood, through devoted affection and sympathetic appreciation, better than any other of his contemporaries. Nietzsche compared himself to the flame that insatiably consumes and destroys itself.[14] Such agonies are phenomena which have nothing in common with the connotations generally attached to the notions of work and labor, production and success, breadwinning and enjoyment of life.

The achievements of the creative innovator, his thoughts and theories, his poems, paintings, and compositions, cannot be classified praxeologically as products of *labor*. They are not the outcome of the employment of labor

12. Leaders [Fürhrers] are not pioneers. They guide people along the tracks pioneers have laid. The pioneer clears a road through land hitherto inaccessible and may not care whether or not anybody wants to go the new way. The leader directs people toward the goal they want to reach.

13. It seems that there is no English translation of this poem. The book of Douglas Yates (*Franz Grillparzer, a Critical Biography*, Oxford, 1946), I, 57, gives a short English resume of its content.

14. For a translation of Nietzsche's poem see M.A. Mügge, *Friedrich Nietzsche* (New York, 1911), p. 275.

which could have been devoted to the production of other amenities for the "production" of a masterpiece of philosophy, art, or literature. Thinkers, poets, and artists are sometimes unfit to accomplish any other work. At any rate, the time and toil which they devote to creative activities are not withheld from employment for other purposes. Conditions may sometimes doom to sterility a man who would have had the power to bring forth things unheard of; they may leave him no alternative other than to die from starvation or to use all his forces in the struggle for mere physical survival. But if the genius succeeds in achieving his goals, nobody but himself pays the "costs" incurred. Goethe was perhaps in some respects hampered by his functions at the court of Weimar. But certainly he would not have accomplished more in his official duties as minister of state, theater manager, and administrator of mines if he had not written his plays, poems, and novels.

It is, furthermore, impossible to substitute other people's work for that of the creators. If Dante and Beethoven had not existed, one would not have been in a position to produce the *Divina Commedia* or the Ninth Symphony by assigning other men to these tasks. Neither society nor single individuals can substantially further the genius and his work. The highest intensity of the "demand" and the most peremptory order of the government are ineffectual. The genius does not deliver to order. Men cannot improve the natural and social conditions which bring about the creator and his creation. It is impossible to rear geniuses by eugenics, to train them by schooling, or to organize their activities. But, of course, one can organize society in such a way that no room is left for pioneers and their path-breaking.

The creative accomplishment of the genius is an ultimate fact for praxeology. It comes to pass in history as a free gift of destiny. It is by no means the result of production in the sense in which economics uses this term.

4. Production

Action, if successful, attains the end sought. It produces the product.

Production is not an act of creation; it does not bring about something that did not exist before. It is a transformation of given elements through arrangement and combination. The producer is not a creator. Man is creative only in thinking and in the realm of imagination. In the world of external phenomena he is only a transformer. All that he can accomplish is to combine the means available in such a way that according to the laws of nature the result aimed at is bound to emerge.

It was once customary to distinguish between the production of tangible

goods and the rendering of personal services. The carpenter who made tables and chairs was called productive; but this epithet was denied to the doctor whose advice helped the ailing carpenter to recover his capacity to make tables and chairs. A differentiation was made between the doctor-carpenter nexus and the carpenter-tailor nexus. The doctor, it was asserted, does not himself produce; he makes a living from what other people produce, he is maintained by carpenters and tailors. At a still earlier date the French Physiocrats contended that all labor was sterile unless it extracted something from the soil. Only cultivation, fishing and hunting, and the working of mines and quarries were in their opinion productive. The processing industries did not add to the value of the material employed anything more than the value of the things consumed by the workers.

Present-day economists laugh at their predecessors for having made such untenable distinctions. However, they should rather cast the beam out of their own eyes. The way in which many contemporary writers deal with various problems—for instance, advertising and marketing—is manifestly a relapse into the crude errors which should have disappeared long ago.

Another widely held opinion finds a difference between the employment of labor and that of material factors of production. Nature, it is asserted, dispenses its gifts gratuitously; but labor must be paid for by submitting to its disutility. In toiling and overcoming the disutility of labor man adds something to the universe that did not exist before. In this sense labor was called creative. This too is erroneous. Man's capacity to work is given in the universe as are the original and inherent capacities of the land and the animal substances. Nor does the fact that a part of the potentiality of labor can remain unused differentiate it from the nonhuman factors of production; these too can remain unused. The readiness of individuals to overcome the disutility of labor is the outcome of the fact that they prefer the produce of labor to the satisfaction derived from more leisure.

Only the human mind that directs action and production is creative. The mind too appertains to the universe and to nature; it is a part of the given and existing world. To call the mind creative is not to indulge in any metaphysical speculations. We call it creative because we are at a loss to trace the changes brought about by human action farther back than to the point at which we are faced with the intervention of reason directing human activities. Production is not something physical, material, and external; it is a spiritual and intellectual phenomenon. Its essential requisites are not human labor and external natural forces and things, but the decision of the mind to use

these factors as means for the attainment of ends. What produces the product are not toil and trouble in themselves, but the fact that the toiling is guided by reason. The human mind alone has the power to remove uneasiness.

The materialist metaphysics of the Marxians misconstrues these things entirely. The "productive forces" are not material. Production is a spiritual, intellectual, and ideological phenomenon. It is the method that man, directed by reason, employs for the best possible removal of uneasiness. What distinguishes our conditions from those of our ancestors who lived one thousand or twenty thousand years ago is not something material, but something spiritual. The material changes are the outcome of the spiritual changes.

Production is alteration of the given according to the designs of reason. These designs—the recipes, the formulas, the ideologies—-are the primary thing; they transform the original factors—both human and nonhuman—into means. Man produces by dint of his reason; he chooses ends and employs means for their attainment. The popular saying according to which economics deals with the material conditions of human life is entirely mistaken. Human action is a manifestation of the mind. In this sense praxeology can be called a moral science (*Geisteswissenschaft*).

Of course, we do not know what mind *is*, just as we do not know what motion, life, electricity *are*. Mind is simply the word to signify the unknown factor that has enabled men to achieve all that they have accomplished: the theories and the poems, the cathedrals and the symphonies, the motorcars and the airplanes.