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## THE ULTIMATE STANDARD OF VALUE.

THE study of wealth is meaningless, unless there be a unit for measuring it. The questions to be answered are quantitative. How great is the wealth of a nation, and how can it be increased? This inquiry and others like it require that the thing that is studied be measured in a sum. Reciprocal comparisons give no sums. The commodity, *a*, may be regularly exchanged in the market for *b*, and the two together for *c*; but that fact gives us no intimation as to the total value of the three. Ratios of exchange alone afford no answer to the economist's chief inquiries.

The actual worth of a community consists in heterogeneous things. If they are ever added, it must be because there is some one element present in all of them, and this element is absolutely measured. Unlike things can be weighed, and their total weight can be stated in a sum. This is because they all gravitate toward the earth and exert a force on whatever resists their movement. There exists a unit of weight; and by applying it successively to many unlike things we measure one element common to all of them. In like manner there is one element that is common to all the diverse things that appear on the inventory of social wealth. There is, indeed, a power of a certain kind in every commodity; and this power can be measured.

Amounts of wealth are usually stated in terms of money; a man is "worth a million dollars." This does not merely mean that, if he chose to sell all that he has, he could get a million of our bulky silver coins into his possession. The thought of the men who use money as a standard of value runs forward to the power that resides in the coins. They will buy goods; they will set men working. There resides in each one of them a certain amount of influence on human well being. The rich man in the illustration wields a similar power, and it is a million times as great. The intuitions that are at the basis of this popular mode of speech are truer than much of economic analysis. They discern a



power of things over men, lay hold of an available unit of that power, apply it to the diverse goods and state the measurement in a sum.

The study now to be submitted is a continuation of one that was published in the *New Englander* in 1881. In this early study the power residing in all economic goods was termed "effective utility." The entity thus defined is closely identified with the "final" or "marginal" utility of Professor Jevons and the Austrian economists, whose researches were then unknown to me. The dialectical manner of approaching the law of value differed from that adopted by the European economists, and led to a certain distinctive view of its nature. The value that expresses itself in the exchanges of the market is always subjective and social. It gauges the power of things over society in its entirety.

The effective utility discussed in the study referred to is the power that a particular unit of a commodity has to change the status of its possessor. Give to a man one barrel of flour, and you make him by so much better off. You do not save him from starvation, though he may live for a time on the food that you furnish. If you did not give him the flour, he would get it by some sacrifice; and what you have done, in effect, is to save him from the sacrifice. This effect measures the value of the flour. Take away a barrel of flour that the man now has, estimate the real detriment that he suffers, and you measure the effective utility in another way. He must have food, and will get it by a sacrifice of some kind. He may not fully replace the loss of the flour; he may live on maize, and in that case the utility of the barrel of flour is gauged by the cost of the maize and the unsatisfied want of a better quality of food, which the substitution occasions.

It will appear that this power of substituting one thing for another, in repairing the injury caused by the loss of that other thing, plays a very comprehensive part in determining values. In the case of many articles the substitute resorted to is quite different in kind from the thing that it replaces. Having parted with one means of well being, the

man proceeds, as best he can, to make himself as generally well off as he was before. If he is to gauge the real importance to himself of a particular saddle horse, he may, perhaps, do it by ascertaining how many hours he must work in order to get enough in the way of boats, tennis outfit, etc., to afford as much pleasure as he can get from the horse. The mental process in the case is first a balancing of one pleasure as against another, and secondly a measuring of the substituted pleasure by its cost. By the two operations the owner of the horse determines how much it is effectively worth to himself. The final measure in the case is one of pain.

It is this process in which men are continually engaged, of determining how important it is to have one thing by ascertaining how much it will cost to get a very different thing, that reveals one special significance of a study of effective utility. Men pursue happiness in the generic, and the form in which it may come is secondary. The measuring of well being in the abstract is an occult but dominant fact in exchanges. A man may have a monopoly of one means of promoting happiness; but he cannot set his own price for his ware. That is fixed by the cost entailed on the community by the effort to secure, by any means whatever, an equal quantity of happiness. With many possible ladders to Elysium, the toll for the use of any one is limited. Effective utility, whatever be its form, is measured in the market in a purely quantitative way.

It is measured by society as a whole; and in this lies the significance of the phrase "measure of effective *social* utility," which, in the study referred to, was used as a synonym of value. It was on the term *social* that emphasis was laid. The price of a thing gauges its importance, not to one man, but to all men, as organically related to each other. The efficient serving power of an article varies in the case of different individual users; but to society as a whole it is constant. A civilized man is a specialist. He produces unit after unit of one kind of product, and hands them over to society. The price that he gets tells how important they are to society. Into the mysteries of distinctively social

psychology the measuring process that gauges value must be traced. Essentially simple in nature the operation is. It is even simpler than the act of the man who decides how important a horse is to himself by seeing how long he must work to get a boat and a tennis outfit.

I desire now to give definiteness of meaning to the term "social" in this connection. There is such a thing as a unit of social improvement or detriment. It happens that the detriment is more available for measuring purposes than is the improvement; and the final unit of value is the sacrifice entailed by a quantity of distinctively social labor. Society ascertains how hard it must work in order to replace a thing or to get an equivalent for it.

In its simplest form division of labor means that one kind of commodity is continually made by one man, and that it is completed by him. He is a specialist to the extent of being a maker of entire shoes, clocks, tables, etc. Taking raw material from nature he hands it over to the community in a condition for final use.

The differentiating of labor has, of course, gone far beyond the point where any man begins the making of a thing and completes it. It is highly complex groups that do this; and the man's function is limited to a minute but distinguishable part of the operation. The principle that we are studying is not affected by this fact; and we may gain an advantage in clearness by examining first a society of a more primitive type in which it may be assumed that whole articles are made by individual workers. As they leave the maker's hand day after day, in a continuous supply, they go everywhere seeking purchasers. The community buys them. No one man will take many; but society will take them all. We may even assume, without vitiating the principle to be studied, that every man in the community takes at least one. That one kind of article is made, in great numbers, by one man, and consumed singly by many men is the essential fact to be noted.

It is users of an article who can gauge the well-being that it secures to them; and they make the estimate continually. Shall I buy this article? Will the paying for it trench on



my income and make me go without something that is of greater importance? Is this article or some other of equal cost the more desirable? Comparisons of services rendered by different articles are going on in the minds of the many consumers who constitute the purchasing public. These comparisons alone give us equations and rude ratios only, not sums; and the ratios are different in the case of all the different members of the community.

If each man could measure the usefulness of an article by the effort that it costs him to get it, and if he could attain a fixed unit of effort, he could state the utility of a number of different articles in a sum total. If all society acts in reality as one man, it makes such measurements of all commodities, and the trouble arising from the fact that there are many measurers disappears. A market secures this result. It is as though society were one man.

Human sensibility is under a limitation in measuring well-being that is akin to that under which the eye finds itself in measuring light. It is possible to pronounce two lights equal, but it is not possible to tell, by a mere effect on the eye, how much brighter one light is than another. It is possible to say that two pleasures are equal, but not to say that one is just twice as great as the other.

It is, however, practicable to determine when a pain and a pleasure offset each other; and if we can compare many kinds of pleasure with one kind of pain, we can as a result both compare pleasures with each other, and attain a sum total of many different ones. If a man knows that he would walk a mile for one gratification, and that he would do this twice over for another, he has a means of knowing that the good afforded by the second is twice as great as that afforded by the first, and that the gain ensured by the two together is an offset for three walks of a mile each. Something like this society does; but it does not do it thus crudely.

At the outset of an attempt to measure wealth by labor, whatever be the method adopted, there presents itself the difficulty that wealth is created by work aided by instruments. There is capital in the case, and this is the fruit of a

sacrifice termed abstinence. None of our material comforts are brought into existence by the unaided efforts of laborers.

This difficulty may be surmounted by taking marginal labor as the test of cost. Let the capital of an establishment remain exactly as large as it is, introduce a small supply of extra labor, and whatever of product is created by the addition is virtually due to labor only. There may be said to be a part of the supply of every article that is put upon the market the existence of which is traceable to the presence of a final increment of work. Take a man or two out of each of the shops that produce this article, leaving the capital unchanged, and this increment of the product would cease to be created. Restore the men, but make no other change, and this marginal part of the product will re-appear. This virtually unaided labor is the only kind that can measure values. Attempts to use the labor standard have come short of success, because of their failure to isolate from capital the labor to which products are due. Though we cannot stop to prove it, the product of marginal work is the virtual product of all work; and a fuller study would enable us to disentangle all labor from the capital that it uses, and to find the part of the entire product of industry that is distinctly traceable to it.

Work, moreover, consists of concrete acts of men; and these are unlike in themselves, as are the miscellaneous articles that are, in some way, to be measured by them. Labor is cutting wood, playing violins, setting type, etc. Can we make one sum of these things? Adding the unlike acts that constitute social labor is as difficult as adding the products that constitute social wealth. There is need of a pervasive element in the actions, and one that can be measured. Common to all commodities is utility, and common to all varieties of labor is personal sacrifice. There is service rendered to man, on the one hand; and there is burden imposed on him, on the other. Social self-service,—the act of mankind ministering to its own needs,—constitutes the whole economic process. Man works on nature to make it useful, and experiences a painful reaction in his own person during the process. Improved nature then works on man,

the consumer, and has a counterbalancing and favorable action upon him. We are to find the point at which the unfavorable reaction exactly counterbalances and measures the favorable one. We can then estimate pleasure in terms of pain.

Work becomes more costly to the man who performs it, as the hours of the day succeed each other. The burden of it begins as a light one, and becomes heavy. Burdensome to a nearly insupportable degree it becomes in the afternoon or evening hours of the really struggling members of the "submerged tenth" of society; while it is lighter at the end of a day's work of higher grade. In all cases, however, it is the later hours that burden the laborer and test his willingness to continue in the shop. He may work for two hours with pleasure, for four with cheerfulness, for eight with submission and for ten with incipient rebellion.

The actual number of hours spent in labor, in a highly organized society, is, of course, not left wholly to the choice of the individual. There is an advantage in working in companies, and beginning and ending together. The principle that determines the length of the normal working day operates in spite of this fact; and it may be revealed by a study of simpler conditions. We will forget that gangs of men are tied to the steam whistle.

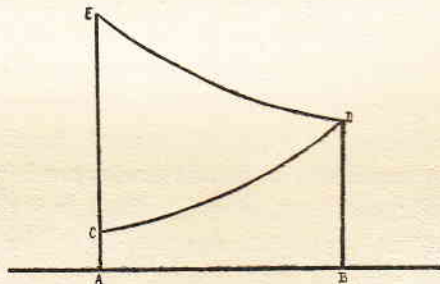
An isolated worker is the user of his own products; and he naturally works each day till it does not pay to work longer. Another product might be gained by prolonging the toil. The advantage of having it could not compensate for the sacrifice of making it. The man is already tired, and he feels the confinement of his occupation. He wants both rest and freedom. Nature is luring him from the shop, and the comforts of his home are calling to him. His normal work-day ends when these calls have their way. It is at the moment when the gains and the losses of production are equal.

The gains that are due to the successive hours of labor diminish from the first onward; and the last product that the man secures is the least useful of all. If he can work but one hour, he will create that of which food is the type, the life-sustaining things for daily use. If he adds a second hour, it will be spent in getting what still rates as a neces-



sity. With more time available he will add comforts to his list; and he may end with a positive luxury. In any case it is the least of his gains for which he works last and hardest. Left to himself and nature, he must work during a part of the day to sustain life, and he must refrain from working during a part of it for the same reason. Between the point of no-work, at which he would starve, and that of nothing-but-work, at which he would die from exhaustion, there is the point of balanced gain and loss. If he stops just there, the net gain from labor is at its greatest.

In determining whether it will pay to prolong work through an eleventh hour during each day of the year, the man goes through that balancing of one pleasure against another, and that balancing of each pleasure against fatiguing work, to which attention has been called. For the final hour of all days in a year the man will get a miscellaneous list of pleasures, and will decide whether the sum total of them offsets the sacrifice of almost three hundred final hours of labor. It is a difficult decision, but the man will make it; and in doing so he will get a unit of final utility in terms of equivalent pain. We pursue no farther the analysis of the method by which, in the individual mind, it is decided whether it will pay to work eleven hours a day. We are safe in assuming that the man arrives at a judgment on this point. What we wish to know is how society arrives at this judgment.



If the duration of a working day be measured on a horizontal line, and the gains and the sacrifices entailed by it are measured by vertical distances from that line, we may make a simple figure that presents the facts concerning a free and isolated laborer.

AB is the length of the day, while AC is the pain of the earliest labor, and BD that of the last. AE represents the gain secured by the first product, and BD that of the last. BD is in fact two coinciding lines, of which one measures the burden of the final labor, and the other, the gain of the final consumption.

The area ABCD measures the total sacrifice involved in a day's labor; ABDE is the total gain, and CDE is a surplus gain, representing the net benefit of a day of industry. All gains below the line CD are exactly offset by costs.

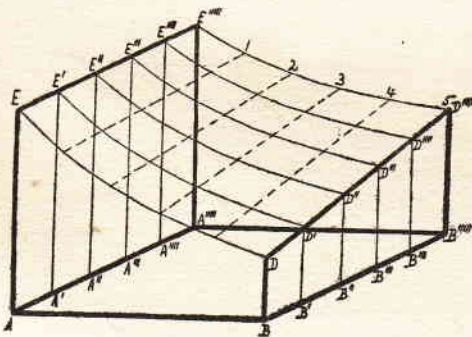
The man that we are studying is a society by himself; he makes things, and he alone uses them. The line BD is his unit of value; it measures the effective utility of everything that he makes. Though AE may measure the absolute benefit conferred by the loaf that satisfies hunger, the real importance of having that loaf is far less. If this necessary article were taken away, the man would devote a final hour to bread making, and would go without the article otherwise secured by that final increment of work. Destroy his day's supply of food, and what he goes without will be the luxuries naturally secured by the terminal period of labor. BD measures the utility of those luxuries, and it measures therefore the *effective* service rendered by the supply of necessaries that are produced in an equal period of work. Any article on the line between E and D will have a true importance measured by BD; since if it were lost there would be diverted to the replacing of it work that otherwise secures an article having an importance measured by that line. It is of no more real consequence to the man to keep one of these articles than it is to keep any other. BD measures the subjective value of each of them.

Of a society regarded as a unit the same is true. It produces for itself; the burden of its final labor measures the utility of its final products; and this is the same as the effective utility of all its products created by the same expenditure of working time. Take away the articles that the society gains by the labor of a morning hour,—the necessary food, clothing and shelter that it absolutely must have,—and it will divert to making good the loss the work



performed at the approach of evening, which would otherwise have produced the final luxuries on its list of goods. To society the net importance of the different grades of commodities is equal. Take away one variety entire, and terminal labor will be made to replace it. The things otherwise produced by that final labor will be the ones really lost; and their utility is measured by the burden entailed in the creating of them.

If we arrange a series of descending curves to represent the lessening absolute utility of the things consumed by a society, we shall get a social unit of value,—a quantity that measures wealth in all its forms.



We have now a descending curve for each member of the society. The goods indicated by the upper section of the several curves, between  $E E''''$  and the dotted line designated by the figure 1 are the most essential things used by the society. They are to be treated as the product of the first period of the social working day, and the absolute service which they render to society is measured approximately by lines falling from  $E E''''$ , etc., to the line  $A A''''$ .

These goods will differ in the case of different consumers; but taken collectively they may be treated as a social complement of goods of the highest importance. We will term them complement number one; and they are the society's necessities of life. Complements numbers two, three, four and five are designated in the figure. The variety of the goods represented increases as the complements succeed each other, and that of number five, containing the luxuries,

is very diverse. What is true of the isolated man is true, in reality, here. The effective utility of the different complements is uniform, and is measured by the lines from  $D D''''$  to the line  $B B''''$ . Destroy any one of them except the last, and society will replace it and go without the last. The burden entailed is that of the final period of labor.

The aggregate length of the lines  $BD$ ,  $B' D'$ ,  $B'' D''$ , etc., constitutes the social unit that measures all values. Everything that is produced by one hour of social labor possesses an effective social utility that is measured by the sacrifice that all society undergoes in the labor of its final hour.

Single things, however, are, in our illustration, produced by individuals, and are consumed by society in its entirety. The relations of man and society must be studied. As applied to social complements of goods the law is simple enough; since it is society, as a whole that makes and uses them. A complement of the kind referred to comes from all men and goes to all men. The social organism gets each complement by labor, and measures the importance of it by the labor of creating the final complement. Collective labor secures and measures collective gain.

The different complements of goods are of unequal absolute utility, since they minister to wants of varying degrees of intensity. Bread is absolutely more important than jewelry. The complements are all on a par in effective utility, since if any one of them were destroyed, the result would be to make the community go without the last. In like manner the periods of labor are of unequal degrees of absolute burdensomeness, since the last hour is the most wearying and irksome; yet they are all on a par in *effective* burdensomeness, as will appear from a similar test. As we gauged the virtual importance of a thing to its owner by supposing that it were taken away, and seeing how much worse off the man would thus be made to be, so we may estimate the virtual sacrifice involved in the labor of a particular hour by making it unnecessary, and seeing how much better off the man is thereby made to be. Supply by a gift the product that an isolated man usually makes in the first and easiest working hour in the day, and you thereby save him



the necessity of working through the last and hardest hour. You shorten the day by one hour, by supplying the product of any equal period ; and the deduction is, of course, made at the latter end, where sacrifice is at its greatest. In like manner, if we could make nature supply gratuitously any one of the successive complements of goods that enter into the consumption of society, the effect would be to shorten the social working day by the omission of the most wearying and irksome period. The effective disutility of all labor is gauged by the absolute disutility of the concluding work of the day.

It follows that, in the case of an isolated man, we may measure the subjective values of goods by the mere duration of the work that creates them. All goods made in an hour are equal in effective utility ; all hours of labor are of equal effective disutility. Destroy the product of an hour's work, and you injure the man by a fixed amount ; make any hour's work unnecessary, by making nature freely supply what is produced in that period, and you benefit the man by a fixed amount. Unit of product and unit of labor are alike represented by the lines BD of the diagram. The product of two hours' work will always be of just twice as much subjective value as is the product of one.

In like manner, in the case of society as a whole, the values of different complements of social goods are measured by the mere duration of the collective labor that creates them. The effective sacrifice entailed by labor varies directly as its duration, and the effective utility of products created in different parts of the day varies in the same way. The unit of utility and of disutility is the aggregate length of the lines BD, B' D', etc. In the subjective valuations of society as an organic whole the product of two hours' labor is always worth just twice as much as is the product of one. Mere labor time is an accurate gauge of the values of different complements of goods.

Is it an adequate gauge of the value of different articles that enter into the complement? Here we introduce a complication. Neither the pain nor the duration of labor will now serve our purpose. The essential feature of the valua-

tion of a complement in its entirety is the fact that the same collective personage creates and uses the whole of it. When a man creates an article and makes it over to society, the condition changes. He then experiences the burden of the production, and society gets the benefit. The final disutility of his labor will stand in no connection with the final utility of society's goods. Though the social organism as a whole will work till what it gets offsets what it suffers, will a man also work till what society gets from him offsets what he suffers? Obviously when the enjoying is by one party and the suffering by another, there is no offsetting in the case. There is therefore no equivalent established between the disutility of work and the utility of its product.

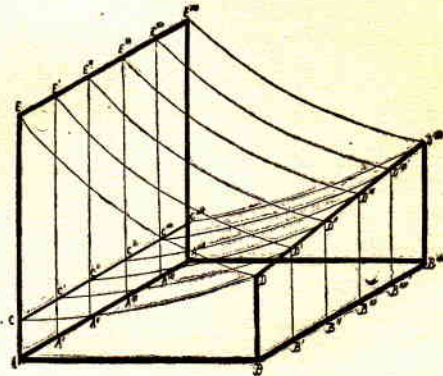
Yet there is an equivalent between the man's sacrifices and his own enjoyments. The pain that he undergoes in making his own product is a payment for other men's products. It is the personal cost of what he gets. In like manner the pain that all other men suffer in making products for him represents the cost to them of what they get from him. Between cost and gain there is still an equivalent; and it will furnish us a unit for appraising specific commodities.

If A makes the article W, and if B makes X, C makes Y and D makes Z, and each gets and uses some part of each product, we have a miniature society in which the relations are clear. A sells to B, C and D; and the effective social utility of W is measured by the pain undergone by B, C and D in creating, in the final period of the day, articles to exchange for it. If money is used in the transactions, and if the price of W and that of X are equal, it is because the last unit of the supply of each commodity, as it is made over to the miniature society for consumption, imparts to the society as a whole a uniform addition to its enjoyments. That addition is in each case measured by the pain of working through the final period of the day in order to get it. Price is an indication of the *social cost of acquisition* of different commodities.

Back of the figure A, B, C, D, E, which represents the sacrifice, the gain and the surplus of benefit realized by one



laborer in a working day, let us place a series of similar figures, telling the same facts for each member of our miniature society.



The curves ascending from  $C$ ,  $C'$ ,  $C''$ ,  $C'''$ , and  $C''''$  represent the increasing cost entailed by the labor of successive hours in the case of all the men. The curves descending from  $E$ ,  $E'$ , etc., show the lessening gains afforded by different increments of things consumed.  $D$ ,  $D'$ ,  $D''$ , etc., are points of equilibrium of gain and loss, and the lines descending from  $D$ ,  $D'$ ,  $D''$ , etc., to  $B$ ,  $B'$ ,  $B''$ , etc., measure sacrifice entailed on all society by its final period of labor.

If the figures were multiplied in number and were so drawn that the lines of one should be contiguous to the similar lines of the other, then the area of the irregular ascending surface that follows the lines  $CD$ ,  $C'D'$ , etc., would indicate the increasing costliness of the work of all society, as the hours of labor in a day succeed each other; and that of the descending surface  $ED$ ,  $E'D'$ , etc., would represent the diminishing utility of all things consumed. The volume between these curved surfaces and the vertical plane  $C C'''' E E''''$ , would measure the total surplus realized by society as a whole in consequence of its work. The area of the vertical plane  $BD B'''' D''''$  expresses the pain suffered by society as a whole in the final periods of daily labor; and *this is the ultimate unit of value*. In so far as the selling price of a thing corresponds with labor of any

kind, it corresponds with that terminal labor which society, the consumer, puts forth in order to get it. If it is as anxious to have more of one product as it is to have more of another, it will be as willing to add a minute to the length of its day in order to obtain the one, as it will in order to get the other. By laws that are now wholly familiar, the two things will sell for the same price; and this price is the gauge of the uniform cost, in the labor at the end of successive days, that the acquisition of the two things entails on society.

The value of a thing, then, is the measure of the effective service that it renders to society as a whole. This service is subjectively estimated. The standard for measuring it is the sacrifice, in final periods of labor, entailed on society in acquiring it. By establishing an equality between the gratification conferred on itself by articles different in kind and the element pain, society is able to compare the quantities of gratification in the different cases with each other. The price of things corresponds to the pain of acquisition, of which the unit is the sacrifice entailed on society by the work of the final minute in each of a series of days.

The burden of labor entailed on the man who makes an article stands in no relation to its market value. The product of one hour's work of an eminent lawyer, an artist, a business manager, etc., may sell for as much as that of a month's work of an engine stoker, a seamstress or a stone-breaker. Here and there are "prisoners of poverty," putting life itself into products of which a wagon load can literally be bought for a prima donna's song. Wherever there is varying personal power, or different position, giving to some the advantage of a monopoly, there is a divergence of cost and value, if by these terms we mean the cost to the producer, and the value in the market. Compare the labor involved in maintaining telephones with the rates demanded for the use of them. Yet of monopolized products as of others our rule holds good; they sell according to the disutility of the terminal social labor expended in order to acquire them. Differences in wealth between different producers cause the cost of products to vary from their value.



The rich worker stops producing early, while the sacrifice entailed is still small; but his product sells as well as if it were costly.

If we say that the prices of things correspond with the amount and *efficiency* of the labor that creates them, we say what is equivalent to the above proposition. The efficiency that figures in the case is power and willingness to produce a certain effect. The willingness is as essential as the power. The man of great capacity who is too rich to work more than an hour a day is not an efficient laborer. Moreover the effect that gauges the efficiency of a worker is the value of what he creates; and this value is measured by the formula that we have attained. Efficiency in a worker is, in reality, power to draw out labor on the part of society. It is capacity to offer that for which society will work in return. Things must, then, sell at rates that are in accordance with the quantity and efficiency of the work that creates them.

The value of this truth lies in its enabling us to establish, in the case of a particular worker, a measure of efficiency. If A's labor during a year draws out five minutes of final social labor in return, and B's induces ten, then B has twice the efficiency that A possesses. We can average workers intelligently, notwithstanding the unlikeness of the myriad functions that they perform. We can tell whether A embodies more or less than one true unit of labor.

A multitude of applications of the principle of social valuation are before us. Questions immediately arise that we make no effort here to settle. One extension of the theory is necessary, before it can be well applied. We have isolated labor, as a producing agent. We have attributed products to marginal labor, by supposing a case in which the capital in an industry remained unchanged, and new labor was introduced into it. The addition thus made to the product was seen to be due to labor only.

Now we can isolate the product that is due to capital in exactly the same way. We can leave the labor in an industry unchanged in amount, introduce new capital, and measure the increase in the output. The extra product is

the outcome of the use of capital. Abstinence is the descriptive name of the act that brings capital into existence. The sacrifices involved in successive savings, or acts of abstinence, increase as do the burdens of successive hours of labor. Some abstinence costs us but little; twice as much costs us more than double this amount of personal sacrifice. The final act of abstinence is like the last act of labor, the costliest of all; and this act measures the utility of the last thing secured by means of it. We can repeat our discussion, duplicate our diagrams, and assert throughout of abstinence what has already been said of labor. If we were to do it, we should find that the cost entailed on society by its final acts of abstinence is a second possible measure of value. Society, in its capacity of a collective capitalist, compares pains and pleasures in its own consciousness, and stops saving at the point when the two opposing motives are equal. We should establish a truth that we must now leave as an unproved thesis, that at the test points where values are measured, the total sacrifice entailed on society by abstinence is identical with that entailed by labor.

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