CHAPTER V.

OF INDUSTRY AND EXCHANGE.

That which does no harm to the state can do no harm to the citizen. That can not be for the good of a single bee which is not for the good of the whole hive.

Marcus Aurelius.

Both parties to an exchange will be benefited if the utility which each gains is larger to him than the utility which he parts with. *John M. Gregory.*

In order to pass to the next step of our inquiry, let us assume that our Selkirk builds a rude boat and starts out upon a voyage of discovery. On a neighboring island he finds a small company of men of his own race with their wives and families who, like himself, have been shipwrecked. Out of their wreck the men have saved various commodities and implements sufficient for their simplest needs. At first Selkirk takes but little notice of this fact. No sooner has he seen these men than he determines to abandon his island and all his fixed improvements and cast his lot with them. The mere matter of their companionship is more to him than all his physical possessions. On the other hand, they are glad to welcome him as one of their number. So he conveys to their island his movable belongings with all convenient speed. He thus willingly gives up the result of many days' labor spent in building an abode upon his own island and cheerfully exerts himself to build another home.

In doing this Selkirk weighs the advantages of companionship against the labor-forms which he must lose, and chooses the former. He may, indeed, be said to exchange the one for the other, but it must be observed that, in fact, it is a mere change on his part, and not an exchange in any commercial sense. No one acquires anything by what he loses, or loses anything by what he acquires. They all gain from a more extended companionship, but this gain has nothing to do with his loss of improvements. The gain would have been just as great to them all, and greater to him, if he had had nothing to lose by deserting his own island. There are many instances of this kind in our daily lives. We often relinquish advantages which do not thereby accrue to others, and we as frequently acquire advantages without any corresponding disadvantage to any one else. These changes have no economic significance. The loss or gain is confined to the individual and can not be measured.

The men upon the island coöperate, as men tend to do everywhere, for the satisfaction of their desires. At first their coöperation is likely to take the form of joint exertion of physical strength. Thus, in building huts, they can jointly place in position logs which, working singly, they could not even move. This simple illustration may stand for others of the same class, the distinctive characteristic being the union of labor-power in the performance of heavy tasks. On the other hand, in the joint performance of many tasks labor-power is not united, but purposely divided. One man rows the boat while another casts the line; one carries the cross-bow or the gun; another, the

game. Afterwards they adopt the simpler forms of what in a more complex society is known as division of labor. Thus, in the production of labor-forms one man habitually makes but a part, and often a small part, of the finished product, and so is enabled to acquire skill and dexterity otherwise impossible. Each man, in fact, may become an expert in his line, and the joint product of ten men is vastly more than ten times as great as the aggregate product of the same men working independently in the production of labor-forms of the same kind; for aside from the increase in skill there is a saving of the time otherwise required by each man in passing from one kind of work to another.

Then again, it is not long before the inventive powers of some of these men begin to develop. A tool is made which enables one man to do the work formerly done by two. The tool suggests the simple machine, which not only increases the amount which one man may produce in a given time, but also reduces the labor-power to be exerted within that time. Finally, in a higher civilization, the complex and intricate labor-saving machinery of our present factory system is developed, and the products of man's handiwork are prodigiously increased until, in present conditions, the world at times seems overstocked, and men by hundreds, thousands, aye, by millions, are somehow compelled to stop working and to remain idle for days and months, and even years, because of a seeming and so-called over-production.

We have seen that nature has provided certain utilities so generously that no voluntary action on the part of man is necessary for their production and enjoyment; as air

and sunshine in ordinary circumstances. Such utilities are spontaneous. So far as they alone are concerned man exists without the exertion of labor-power. We have also seen that the exertion of labor-power is irksome to man, and that he tends to satisfy his desires with as little irksomeness as possible. His ideal is to reduce all labor-forms to spontaneities. In practice this is impossible, but he seeks to approach spontaneity as closely as he can; he strives to lower the point of positive utility until it will coincide with the point of spontaneity.

Before passing to the next step in the development of these islanders, let us note that so far we have considered their coöperation only as it involves the exertion of labor-power in the production of labor-forms. Quantity and variety of products have been the results sought and obtained. The union of effort has resulted in substantial buildings; the division of labor, in the production of more hats, more coats, more shoes, more food, and more kinds of food. But when a man has one or two coats he is comparatively content on that score. An additional quantity or even variety of coats is of no considerable moment to him. But he may have no shoes. Another may have both coat and shoes, but no hat; a third may have clothing to spare, but no food. Taken all in all, there is in the community plenty of clothing, plenty of food, and plenty of shelter, these constituting the simplest satisforms; but no man among them is in possession of a supply of all three. In such circumstances these men, acting naturally, will exchange labor-forms. The man with an extra coat and no

shoes will seek another who has an extra pair of shoes, but no coat. Still another man will exchange a hat for food.

Let us now consider the islander who has an extra coat, but no shoes. He has secured the coat by the exertion of a certain amount of labor-power. The coat, therefore, to him represents a certain disutility. He has reduced the disutility by applying his labor-power to an industry with which he is familiar—the making of coats—rather than to one of which he knows little or nothing—the making of shoes. But while the disutility of his product is comparatively low, so, also, is its positive utility to him at the present time. The utility of a pair of shoes to him is much greater than that of the coat, but if he had to make the shoes himself, the disutility would be so great as to offset much of the utility, thus leaving the positive utility of the shoes comparatively small. His plan is to produce a coat with small disutility, and then exchange it for a pair of shoes of greater utility, and thus enjoy the benefit of a maximum of utility as the result of a minimum expenditure of labor-power. The natural law by which men everywhere attempt to secure a maximum of utility with a minimum of disutility is the economic "law of gravity."

With the producer of the pair of shoes the conditions are just the reverse, but the ultimate object is the same. His pair of shoes represents to him a comparatively small disutility, and he hopes to exchange his product for a coat having to him vastly greater utility than the shoes. He, also, obeys the "law of gravity" of the market.

When they have exchanged labor-forms, the one has secured a pair of shoes with the disutility of making a coat;

and the other, a coat with the disutility of making a pair of shoes. Both are gainers by the transaction; not necessarily equal gainers, but that gives them no concern. Both are better off than if the exchange had not been made; neither has suffered a whit because of it. Each has satisfied his desire with the least labor-power, and each is in possession of his product or what, to him, is a satisfactory equivalent.

Our illustration has assumed an "even trade," but not of necessity. In the discussion of the estimates put upon different labor-forms by our Selkirk alone upon his island, we found that such estimates were influenced by at least four possible circumstances, or conditions, which affect intensity of desire. All these and other considerations may enter into the calculations of each of the two islanders in the exchange just described. The intensity of the desire of one of them for a coat will vary greatly according to the season of the year, and from other causes. If he has no coat at all, his desire will be greater than if he has an old coat which he intends to wear for a time before entering into the enjoyment of a new one. If he desires the coat merely for bodily comfort, he will esteem it less than if it will also administer considerably to a desire for display—a desire to be in style. If his desire is simply for a work coat, its place may be supplied by a simpler and smaller garment, as a jacket or a roundabout. And the number of coats possessed either by himself or by the other islander in question, if known to the former, will affect his estimate of the coat which he desires to secure. Again, a like number of considerations may affect his estimate of the pair

of shoes which he proposes to exchange for the coat; and to these must be added all the considerations which go to the question not of utility, but of disutility, which will be greater or less according to his opportunities for the use of tools and all other labor-saving devices in their manufacture.

On the other hand, the maker of the coat is beset with a like number of considerations upon his side of the transaction. From this point of view the matter of the exchange which seemed at first simple appears now exceedingly complex, especially when we include in the category of determining factors not only the tendency of each to make the best of the bargain so as to secure the greatest results from his labor, but also the varying degrees of shrewdness with which they severally carry on the "higgling of the market," which finally fixes the terms upon which the exchange is made.

The fraction $\frac{1}{2}$ when encountered by a child in the first lesson in common fractions is a very simple thing, and is easily understood. The complex fraction with half a dozen other complex fractions for its numerator and as many more complex fractions for its denominator which he encounters later on among the miscellaneous problems is to all appearances quite a different matter; but when the simple rules of multiplication and division are applied to it, its complexity disappears, and the result, when it has been reduced to its simple form, is found, perchance, to be $\frac{1}{2}$. In much the same way all of the complexity of the problem of exchange vanishes when the parties thereto auto-

matically and almost unconsciously reduce their various estimates to their simplest forms.

Each man has in his consciousness, if not actually in his possession, some labor-form which he will barely exert himself to save, if he has it, or to possess, if he has it not, and which has, consequently, for him but one unit of positive utility, and which represents to him but one unit of disutility. To this marginal labor-form he refers and with it compares, first, the labor-form which he has, and then the one he has not. In this way he is enabled accurately to compare his estimate of the one with his estimate of the other. This done, if he prefers what he has not to what he has, he determines at once to exchange, provided the disutility of the labor-form secured in this manner is not greater than the disutility of producing a similar labor-form himself. Having decided to exchange, and having not only the desire but the wherewithal to secure what he desires, he is economically capable; and if no third party intervenes, the respective abilities of himself and his opponent to higgle will determine the point of exchange.

A **Capable Buyer** in a given market is one who is both willing and able to buy at the market price rather than not buy at all.

After the maker of the coat has made his own estimates of the two labor-forms he will consider the various circumstances likely to influence the maker of the shoes in the formation of his estimates, and so anticipate, as far as he can, the action of the latter. The maker of the shoes will do likewise, and the comparative skill of the two as traders will decide the terms upon which the exchange is

made. But after all, the transaction is one of simple barter between the two, wholly uninfluenced by circumstances outside themselves. So far the results obtained do not differ in effect from those derived from physical coöperation in the union or division of labor. In each of these, however, the active participation of each person involved is essential to the final result. The mere presence of bystanders, however capable they may be, avails nothing in industry. Their labor-power must be brought into use in order to be effective.

It is otherwise in the matter of exchange. A capable bystander upon either side of the market is not without influence. Let us assume that *two* islanders have extra coats, both being in want of shoes. The three men now meet for barter, and all are capable traders. All of the considerations which influenced the traders when there were but two will influence the three. They will severally make their estimates in substantially the same way. But when expression is given to these estimates the fact of the presence of the second coat owner will cause the owner of the shoes to set his asking price on the shoes high and to offer a relatively low price for a coat. On the other hand, the first coat owner will be influenced by the presence of the second, and will consent to take less for his coat, or, what is the same thing, to give more for the shoes than he otherwise would, and so make the exchange. Thus the mere presence of the second coat owner as a possible and capable trader for the shoes, although he may not even have made a bid for them openly, may cause the first coat owner

to give not only a coat, but a vest, also, for the pair of shoes.

In this transaction we note that the presence of the second coat owner has not affected the other parties equally or in like manner. It has given to the shoes a greater, and to the coat a less utility to those who offer them, respectively, in the market. From another point of view it caused the owner of the shoes to acquire what he desired at a less, and the coat owner at a greater disutility than would otherwise have been the case. Both have satisfied their desires with the least effort in the circumstances, however, and each has his labor-form, or what to him is its equivalent, for otherwise there would have been no exchange.

Men by associated effort may strive to put themselves into the best relations with their physical environment. They may unite labor-power to labor-power when greater strength is required. They may divide their tasks when greater skill or a saving of time is sought. They may make tools and machinery to supplement both strength and skill by calling to the assistance of man the powers of nature and the mathematical precision of the mechanic arts. These efforts may extend from the simplest coöperation, as in the building of a hut in the wilderness, to the exquisite finishing of the most delicate products of modern industry, and from the transportation of logs in the "lumber woods" to the transmission of intelligence by telegraph or telephone. Yet in all these things we have but the application of labor-power for the purpose of overcoming the disutilities of nature. They are but manifestations of man's

desire to approximate the spontaneity of nature in the physical world by annihilating the disutilities of matter, space and time. They result simply in an increase of positive physical utility.

We have seen, however, that men in association attempt to satisfy their desires not only by creating labor-forms, but by exchanging them; by taking advantage not only of physical utility, but of the utility of social environment. When a labor-form has entered the market for exchange its importance to its possessor depends upon its commercial rather than upon its industrial utility. These, however, are but forms of intermediate utility.

Industrial Utility is that form of intermediate utility which avails its possessor in the processes of industry.

Commercial Utility is that form of intermediate utility which avails its possessor, as seller, in the processes of exchange.

Commercial utility, as we have so far discussed it, has two of the elements of direct measurement. It lies between the point of disutility, where all economic utility begins, and the point of exchange. We have not yet developed a common unit of measurement, however, nor are we ready to define the point of exchange.

The presence in the market of other capable buyers compels the successful bidder to give more for an article, and so gives rise not only to a commercial utility, but to a commercial disutility. In the case last considered we found that with but two exchangers in the market one of them secured a pair of shoes in return for a coat. But the coming of a second capable shoe buyer into the mar-

ket caused the first to give in exchange a coat and vest for a pair of shoes. In the market and at the point of exchange the disutility of the pair of shoes was as to him increased by the presence of another capable shoe buyer, or, in other words, a competitor. This disutility arises from the fact that only one person can wholly possess and enjoy a given labor-form at any given time. This is a physical fact, but assumes a social aspect when manifested in the market. Experience teaches us that in every general market this disutility asserts itself and is recognized, under the name of "competition," as the determining factor in every exchange. The disutility which arises from the acquisition of utility by means of exchange we shall call commercial disutility. This will distinguish it from that disutility which arises from the acquisition of utility by means of the processes of industry.

All disutility is onerous, so that we do not have a division of disutility to correspond to the distinction between spontaneous and onerous utility. But like utilities, disutilities may be either absolute or relative. The disutility of gaining a certain end may be the disutility of giving life itself, but ordinarily disutilities are susceptible of comparison. Industrial and commercial disutilities are but forms of relative disutility.

Absolute Disutility is irksomeness of acquisition without relation to the irksomeness of any or all other disutilities.

Relative Disutility is irksomeness of acquisition in relation to the irksomeness of any or all other disutilities.

Economics takes no note of absolute disutilities. We therefore exclude them from further consideration.

Industrial Disutility is that form of relative disutility which arises from the acquisition of utility by means of the processes of industry.

Commercial Disutility is that form of relative disutility which arises from the acquisition of utility by means of exchange.

In the early part of our discussion reference was made to the fact that labor-forms are primarily of two kinds according as they avail a consumer subsequent to all the processes of industry and exchange or a producer in some of these processes. For the sake of clearness we shall here repeat four definitions and add two which grow out of these.

Labor-Power is the physical or mental power of man irksomely exerted for the satisfaction of desire.

A **Labor-Form** is any material object, great or small, so circumstanced that its present distinctive utility is the result of labor-power.

A **Satisform** is a labor-form so circumstanced that it avails a consumer subsequent to all the processes of industry and exchange.

A **Capital-Form** is a labor-form so circumstanced that it avails a producer in some of the processes of industry or exchange.

An **Aid-Form** is a capital-form so circumstanced that its distinctive utility is industrial.

A **Trade-Form** is a capital-form so circumstanced that its distinctive utility is commercial.

We have also seen that the distinctive utility of a satisform is ultimate; of a capital-form, intermediate. Ulti-

mate and intermediate utility on the one hand, and industrial and commercial utility on the other, are divisions and subdivisions, respectively, of relative utility. They are not independent utilities, but are merely forms of relative utility. To a large extent they are interconvertible. Ultimate utilities may be thrown back upon the market and so become trade-forms (intermediate utilities); while trade-forms are constantly passing into the domain of satisforms (ultimate utilities). All industrial utilities may be changed for the time being from aid-forms to trade-forms; while trade-forms are constantly leaving the field of exchange to become the instruments of industry. As we shall see, commercial utilities and disutilities are forms which all relative utilities and disutilities must assume for the purposes of measurement.