

CHAPTER 7 — CO-OPERATION: ITS TWO WAYS

Co-operation means joint action; the union of efforts to a common end.

All increase in the productive power of man over that with which nature endows the individual comes from the co-operation of individuals. But there are two ways in which this co-operation may take place:

1) By the combination of effort. In this way, individuals may accomplish what exceeds the full power of the individual.

2) By the separation of effort. In this way, the individual may accomplish far more than one what does not require the full power of the individual.

To illustrate: the first way of co-operation, the combination of labor, enables a number of men to remove a rock or to raise a log that would be too heavy for them separately. In this way men can join themselves, as it were, into one stronger man.

Examples of the same principle in a more elaborate state of society are to be found in the formation of joint-stock companies — the union of many small capitals to accomplish works such as the building of railroads, the construction of steamships, the direction of factories, etc., which require greater capitals than are possessed by one man.

But while great advantages result from the ability of individuals, by the combination of labor, to concentrate themselves as it were into one larger man, there are other times in which an individual could accomplish more if he could divide himself, as it were, into a number of smaller men.

Thus in sailing a boat, one man of extraordinary strength would be equal to two men of half his strength only in such exertions as rowing, hoisting the heavier sails, or the like. In other things, two

men of ordinary strength would be able to do far more than one man of double strength, since where he would have to stop one thing to do another, they could do both things at once. Thus while he would have to anchor in order to rest, they could move on without stopping, one sailing the boat while the other slept.

How often now when beset by calls or duties which require not so much strength as time, does a thought occur, "I wish I could divide myself into half a dozen." What the division of labor does is to permit men, as it were, so to divide themselves, thus enormously increasing their total effectiveness.

To illustrate from the example used before: while at times Tom, Dick, Harry and Jim might each wish to move logs, at other times they might each need to get something from the village two days' journey distant. To satisfy this need individually would thus require two days' effort on the part of each. But if Tom goes alone, performing the errands for all, and the others each do half a day's work for him, the result is that all get at the expense of half a day's effort what would otherwise have required two days' effort.

It is in this manner that labor is saved by the second way of cooperation, the separation of effort, or to continue the term adopted by Adam Smith, the division of labor. It permits the accomplishment of equal results with less exertion, or larger results with equal exertion. But out of this primary saving of exertion arise other savings of exertion.

Take for instance the baking of bread. To bake a loaf of bread requires the application of a certain amount of heat for a certain time to a certain amount of dough. To heat an oven to this point requires a certain expenditure of fuel; to maintain it for this time a certain other expenditure of fuel; and a certain expenditure of fuel is lost in the cooling of the oven after the bread is baked. To bake one loaf of bread in an ordinary oven thus requires a much greater

relative expenditure of fuel than is required to bake as many loaves as the oven will hold; and the larger oven will bake more loaves with a proportionately less expenditure of fuel than a smaller one, since the loss of heat that escapes from the work of baking is relatively less; and if one batch of bread is succeeded by another batch without suffering the oven to cool, another relative saving is made. The concentration of the work of baking bread effects a great saving of labor in the item of fuel allowed. And it is so with other items.

The saving thus made in the concentration of work arises not only from physical laws but from mental laws as well. All our doing or accomplishing of things, except those that may be referred to instinct, require in the first place the exertion of conscious thought. We see this in the child as it learns to walk, to talk, to read and to write. We see this as adults when we begin to do things new to us, as to speak a foreign tongue, to write shorthand, or to use a typewriter or a bicycle. But as we do the same things again and again, the mental exertion becomes less and less, until we come to do them automatically and without consciously thinking of how we do them.

Now the result of what regarded from the standpoint of the whole or industrial organism is the division of labor in the production of wealth, is that the individual does fewer things but does them oftener. It is thus from the standpoint of the individual the concentration of effort or of labor, and so from the standpoint of the things to be done it involves a similar concentration in place and time.

Thus, when instead of each individual or each family endeavoring to hunt, fish, and obtain vegetables, build habitations and make clothing or tools, for the satisfaction of their own needs, some devote themselves to doing one thing and some to doing another of the things required for the satisfaction of general needs, what is the separation of function from the standpoint of the all or industrial

whole is a concentration of function in its units, and special trades and vocations are developed. And as the social organism grows by increase in numbers or the widening of the circle of exchanges, or both, this differentiation of function between its units tends constantly to increase, augmenting the efficiency of the productive powers of man to a degree to which we can assign no limits, and of which the marvelous increase in productive power which so strikingly characterizes our modern civilization affords but a faint forecast.

In civilized society where the division of labor has been carried to great lengths, we are so used to it that is hard to realize how much we owe to it, and how utterly different our life would be without it. But as one tries to think to what we should be reduced without division of labor, he will see how large a part it plays in the production of wealth — so large, indeed, that without it man as we know him could not exist. Take for instance the providing of clothing. If each one had to make his own clothing from the raw material, he could get nothing better than leaves or skins. Even with all the advantages which the division of labor gives in the making of cloth, of needles, thread, buttons, etc., let anyone unused to it set himself to the making of a garment. He will soon realize how hard it is to make the first one; how much easier and better the second is made than the first, the third than the second, and so on, until the process ceases to require thought and becomes automatic. When by means of the division of labor, the making of clothing is so far concentrated that the clothing for some dozens or scores of men can be made together, then individuals can devote themselves solely to the making of clothes, with greatly increased economy. As a concentration of clothes-making proceeds further, and the making of clothes for hundreds, thousands, tens of thousands, and even hundreds of thousands of

individuals is by the development of the ready-made clothing industry brought together, greater and greater economies become possible. Separate individuals devote themselves to the making of particular garments, and then to the making of particular parts or to particular processes. Instead of one tailor cutting out a garment with a pair of shears and then proceeding to make it in all its parts, others who do nothing else cut out scores of garments at once with great knives; the operations of basting, lining, buttonholing, etc., are performed by different people who devote themselves to doing these things alone, and this work is aided by powerful machines, the use of which becomes possible with the larger scale and greater continuity of employment this concentration permits.

This concentration and specialization of work brings about the development of labor-saving machinery of all kinds. The essential quality of the machine is its adaptation for the doing of certain special things. The human body considered as a machine is of all machines that which is best adapted for the doing of the greatest variety of things. But for doing only one thing, for the increase of quantity at the expense of variety, man is able to make machines which within a narrow range are far superior to the tools nature gives him. And the same principle governs the employment of forces other than the force he can command in his muscles. The utilization of winds and tides and currents and falling streams, of steam and of electricity, and chemical attractions and repulsions, is dependent on this concentration.

Thus the division of labor involves and proceeds from the concentration of effort for the satisfaction of desires. It begins when there are two individuals who cooperate; it increases and becomes productive of greater and greater economies with the increase of the number who thus cooperate.

We may perhaps best analyze the advantages that result from

the cooperation of labor as follows:

A. The combination of labor permits a number of individuals by direct union of their powers to accomplish what severally would be impossible.

B. The division of labor, with the concentration and cooperation it involves, permits the doing for many (or a larger number) of what may with a less expenditure be done by one (or by a smaller number):

1. By the saving up of time and effort, as in the preceding illustration, where one man goes on a journey which to accomplish severally four men would have to make.

2. By utilizing the differing powers of individuals, as where those who excel in certain qualities do the things for which such qualities are best adapted, thus practically bringing up the level of the accomplishment of all to that of the highest qualities of each.

3. By increasing skill, consequent upon those who do a larger amount of that same kind of work being able to acquire facility in it.

4. By accumulating knowledge.

5. By utilizing the advantages of doing things on a large scale instead of on a small scale, and of doing them successively instead of separately.

6. By utilizing the natural forces, and by the invention and use of machines and of improved processes, for the use of which the large-scale production gives advantages.