THE MULTIFORMITY OF MAN

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The Theme: The Mystery of Man

The basis for the following chapters was formed by the lectures which, in 1935, I had the privilege to deliver at the Lowell Institute in Boston. Lectures and books try to formulate the new riddle laid before man by his own achievements. Man has succeeded in mechanizing his world. He has organized nature. For its very effectiveness, his deed raises the issue of man's own position in nature with new acuteness.

Man himself becomes a greater mystery than ever before. The question arises quite afresh how far man belongs to the natural world and how far, therefore, he can become organized in a social world. The intention of these pages is to reawaken our somewhat blunted consciousness to the fact that we really are faced with a mystery of the first order. What kind of a mystery I mean, will, I hope, become clearer from some current assertions about man:

> "All men will listen to reason. What we call evil is ignorance at the bottom," our textbooks said in the days of radiant liberalism.
>
> "Everybody has his price in a commercialized world," thought Mr. Bernard Shaw and tried to prove it in *Major Barbara*.
>
> "Man is incalculable," exclaimed John Galsworthy, and painted the priceless shades of the sunset of a civilization.
>
> "You, fellow, are my brother," felt General Booth, and treated the other fellow just like himself.

Now in these different statements the quandary of our present-day world is expressed very clearly. We do not know any longer, or at least we do not agree any longer on what "Man" is. Are the statements quoted before at random really dealing with the same subject matter? Are they discussing something substantially identical? Are "Mr. Just as Everybody" of Mr. G.B. Shaw's

world and "The Right Honorable Adam Man, Esquire" in a novel of Galsworthy really aiming at one and the same being?

That man be something definite and that he could be defined has been the general scientific assumption for some centuries. Man seemed something as definite and unmistakable as anything else. The scientists especially felt pretty certain that man was something in nature like anything else. And so they were sure that he should be investigated and explored like anything else. After some centuries of permanent indoctrination, scientists have become perfectly dogmatic about their capacity of applying to man the "Like-Anything-Else" method. They haven't even heard of any objection against this method.

I strongly object to it. I was puzzled about the "LikeAnything-Else" method all my life. Today I am beginning to see why Mr. Shaw's "Mr. Just As Everybody" really isn't my brother, and why "the other fellow" is. I am beginning to conceive why J. J. Rousseau and Thomas Paine paved the road to both Stalin and Hitler.

I am attacking the thesis of the uniformity of man. I am attacking the premise that the rule "A equals A" can be applied to man. I am attacking the dogmatic self-complacency through which we are treating mankind like anything else. On the other hand, I am more than ever convinced of the unity of mankind, of a common goal and destiny for all men, and of an urgent need for restoring the humanities.

My quandary probably is, in one way or other, related to the confusion which is raging in our political world. I am, after all, the contemporary of wars, revolutions, pogroms, famine, depressions. The confusion about man is considerable everywhere. And the dogmatist may point out that my admission of a quandary where he never thought of one and my passionate search for its solution are sufficient proof of my mind's and my passion's failure to keep clear from contagion with the epidemic confusion outside.

Indeed, the dogmatic scientist is not confused. Everything and everybody remain perfectly clear to him. He is happier than

I in my dilemma. He never doubted his first principle, that man was a definite object of science and research.

Absence of doubt and undisturbed happiness rarely are allies of scientific progress. What has to precede scientific progress is that we feel at a loss to accept the reigning dogma. And I think I am not the only one who feels at a loss to accept the reigning dogma of a nature of man. Whole nations are losing their certainty in the matter. A hurricane of evil spirits is shaking the foundations of human society because an old dogma is no longer believed, except by its high priests, the specialist of the different sciences on "man." I throughout respect their honesty and tenacity. I can fully appreciate their sincere conviction of being the only sane and sober people in the political and social bedlam.

However, our world crumbles because some central fallacies about man are passed round as science today.

I agree with the dogmatist that no scientific answer can be given under pressure or as a concession to popular beliefs and desires. But the alternative is not between one allegiance to the republic of scholarship and another to the political dogma of bolshevism or fascism. The choice is between the pride of scientists who believe they know once forever that man is a part of nature and the cautious admission of our ignorance about this premise. I cannot help feeling that only he who admittedly was confused like his fellow-men and who admittedly is working under the pressure of a possible crumbling of our society can be hoping to find scientific answers which might contribute to the reintegration of the social framework around us.

I therefore admit that
*multiformis proditoris, ars ut artem falleret,**
these thoughts have been thought.

* from the *Passion Hymn* of Venantius Fortunatus

I
Which Man Does Management Handle?

The worker who punches the time clock at the gates of the mill must satisfy a "boss." And this boss represents "management." If it becomes necessary to elaborate on the set-up at the mill, worker and boss are abstractly labeled "labor" and "management" today.

At this point, our thinking usually ends. It is a kind of frozen slogan that the social question centers in the relation between management and labor. "Management handles men," we are told. If the men are handled right, the question is solved. Nothing could be further from the truth. Management, it is true, confronts labor with certain demands, but it does not make them up out of whole cloth. Management transmits to the hands what the brain has previously invented and probed into. Our industrial system is the technical application of scientific progress. And therefore industry is basically dependent on technological changes. Wood may be replaced by coal, coal by oil, oil by electricity or vice versa, steel by aluminum, silk by nylon, butter by oleomargarine. Technology progresses by perpetual substitutions. Research enables a new producer to replace an old process of production by an entirely untried one.

This and this alone has compelled management to treat its enterprise not as the home of people but as a racetrack on which a competitive race goes on at record speed. Not management but the engineers prescribe the methods of production. And these engineers move at the nod of scientific research laboratories which try to narrow the margin of error in production. As often as they succeed, the workers in the plant lose some more freedom of action. Before science spearheaded production, a craftsman individualized his swords, scythes, and spoons.

With each scientific test the worker is less free to vary. The master chart for labor leaves nothing to the imagination. One bolt, one move on the conveyor belt, marks the triumph of technological progress over individual digressions. The science–labor relation, then, is in the driver's seat in industry. Management conveys, transmits, and mediates the pressures of technological progress to the hands. The engineer's brain and the manual laborer's hands were united in the old artisan and craftsman. He handled progress and routines. Laboratory plus management plus labor, all three together, represent him in modern production.

Nor is this all. As we said before, the "pure" scientist may discover something which overthrows the whole existing set-up from engineer to worker, replacing it by quite a new approach. The engineer's training may prove incongruous if his whole line of reasoning is abandoned. What does an engineer who knows all about steam engines do if production by atomic fission should become possible?

At the most forward-looking point of progress, then, pure science and its next invention threaten even whole industries with extinction. The sword of Damocles is suspended over the head of any technological expert: with all his skill he may still be superseded as the livery stable was by the motor car.

But the curious thing is that manual labor is threatened in a similar manner. The mechanical cotton picker may weed out thousands of human hands any minute. The process of mechanization always aims at increasing the ratio between men and machines in favor of machines. Labor never is safe, as the boss always looks beyond the existing ratio of mechanization. Therefore labor can never be made "at home" in the mill. For management is hoping for some progress which will allow it to do without labor. It well may be that in one particular mill, this is not to be expected; there, the saturation point of mechanization may seem to have been reached. This still would not change the general atmosphere of industry. It would be an exception. The law of human relations in

industry still would be predicated on technological progress. And this means that industry cannot afford to offer any man a "home" in its plants as long as it still has hitched its wagon to the stars of scientific progress.

The people in industry, we now may see, are living in suspense. For the future of any particular process of production is threatened by the substitution of new processes. And the place of any particular worker is threatened by the installation of one more mechanical tool. The ideal mill is the power plant with literally one or two men at the controls. All more numerous crews are *pro tem*, and are considered imperfect, less perfect!

What, then, is the constant in this flux? The sales bureau and management remain, even though machines may replace men and electricity may supersede gas.

In industry, then, management and salesmanship represent the constant elements because they are purely formal. Engineers and labor are changing because they are the embodiments of each passing phase of production.

This is the heroic grandeur of the campaign of industrial progress: that nothing is meant to be eternal. In our material existence, we are the more efficient the more we change our means of existence. The Chinese peasant has survived 3000 or 4000 years on his plot of rice by the same method. The people of this country change and change and change their methods not every century, but every year. Hence, they have a managerial task on their hands which Chinese peasants do not have. The managerial problem arises only when technological change is to be reckoned with.

Unfortunately, this condition usually is lost sight of. Thelabor–management relation is examined as though it were a dual relation. If it is treated that way, the divergence of interests is apt to appear irreconcilable. An antagonism between two opposing interests is not at the root of the industrial system. This thinking in dialectical terms is the common error of Capitalism and Communism.

A crucial situation exists. Hence management, labor, salesmen, engineers may not be lumped together as two opposing groups. Instead they must be viewed as four modes, and none of the four can be omitted or mentally reduced to one of the other modes without disastrous results. All our textbooks do just this. But the cross of industrial reality spreads out into two formal modes, marketing and management, and two qualitative ones, shop and laboratory. The salesman and the manager are called "formal" as they can manage or market anything. But the chemist or the special tool are wedded to this definite technical secret.

After this first survey, let us take the shop-laboratory zone apart in detail. Thomas Alva Edison is the extreme inventor type, with a wide range of ideas, freed from any routines. On the other side, the man at the conveyor belt makes the best money if he is the perfect rhythmical automaton. In any sizable industry the front of new ideas (Edison) and the front of daily repetition are manned by a different personnel. No doubt the reader could think of some small shop where I am the donkey for five days and have the ideas on the sixth. Even so we would do well to see that I am out for the new on the one day and that I am repeating the old on the five others because in no other way can any line of production exist.

Always needed are a forward front manned by engineers and research men freed from toil, and a backward front manned by mechanized tools and rationalized hands.

Within my own self I have to mediate between my free genius who gives the ideas to this book and "my brother donkey"—as St. Francis called his own body—who does the typing. In industry the mediating between the free and the tied-down ones is done by management. Management, innovation-front, and routine- front, together form one producing unit whose output is turned into cash by our fourth friend, the salesman on the markets of the world. Hence any discussion is useless which does not recognize the squeeze in which management finds itself. Management mediates between potential technological changes in products as well as in methods

of production and the actual set-up, under the whip of the possibilities for marketing. As we express this crucial relation by a cross, we shall place management at the inner front of industry facing the operations in the mill, the salesman at the outer front as he faces the markets. The engineers face the future, fraught as it is with technological changes. Labor faces backwards as it is expected to carry out the established routines again and again and again. The crucial analysis of groups is of course not restricted to industry. Elsewhere I have shown that any living group, family, army, football club, nation, church, cannot help splitting up in these four directions and delegating specialists for dealing with the new, the old, the external and the inner life of the group. A military leader, for instance, is not on the inner front like management. He has a right which is denied to management: he may and must sacrifice lives for the future of his country. Leaders are on the forward front. A manager who would think of himself as a leader would be a Fascist. Any particular factory, then, may be diagnosed by its correlation of management, markets, laboratory and shop. Every factory stands revealed to be a temporary arrangement "by establishment." For, from both ends, as to novelties and as to routines, it is kept in suspense. Any individual manual laborer may expect to be replaced by mechanization and the whole process of production may expect to become unprofitable.

The first result of this acknowledgment we already anticipated, when we claimed that the relation between labor and management is wrongly treated as complete in itself.

The second result is of even greater scope. The whole mammoth of industry is more real, more lasting than any one of its temporary centers of production. Industry is not composed of the existing mills. It is the other way round: any existing mill is at the mercy of the industrial system as a whole! Industry in any one phase of its progress, it is true, must be precipitated in certain forms of production. Any one of these boom towns, however, may become a ghost town. The life of industry then never is con-

tained in these forms; it solely pulsates through them and is ready to slough off any one of these forms.

If a man boldly faces these crucial facts about industry which everybody knows, he rises beyond the slogans of Capitalists and Communists. What then is the practical conclusion of the crucial position of industrial plants? *Management does not handle men!* Management handles short-lived, transient, intermediary relations of engineers, men, machines and markets.

The man who appears at the gates of the mill is not the whole man. It is the man, regardless of color, race and creed, who asks to be employed by the hour because he cannot trust any mill to have permanent work for him. He says to himself with Walt Whitman: "I am on the Open Road. I don't believe in mansions." The man who works in industry is a peculiar human being because his sense for time and timing is conditioned by the dilemma of management. The worker is a man who must never forget that a boom town may become a ghost town overnight and that his skill may be replaced by a robot in the afternoon.

Therefore we shall study this specific and new man whom management has to handle. It is a man with a sense of time such as the earth has never seen before.

II
The Uniformity of Man

The other day I had to look for a man to revise the typewritten copies of a manuscript. I asked for somebody in the students' service at Harvard. They gave me an address and informed me that the regular pay was such-and-such an hour. The same evening I was with an old and famous colleague who happened to be talking about his student days. He had had to work his way through college, and so one day he was asked to use his mastery of German to read Luther's version of the Bible to a professor who wished to restore his knowledge of the language. The professor was William James. Things were arranged, and the reading went on through the winter. I asked him how he was remunerated. He replied, "I was paid monthly, of course. Any other form of payment would have seemed shocking in those days." The amount of money happened to be about the same for both students; the only difference was the way in which it was computed.

These two stories do not seem much in point for the problem: ecodynamics of a mechanized world. And yet I think they illustrate, better than anything more ponderous could do, the aim of this attempt. Both stories involve money and economic problems. But they do not deal with money as money. They deal with money as a social symbol. Salaries can be paid by the hour or the month. This is a social, not an economic question. Now this side of industrialism was long regarded as of minor importance and left to the consideration of economists and technicians. Little literature exists on the social framework of an industrial society.

The social implications of industry have only recently become definite and inescapable for all and everybody, including poets,

clergymen and professors of the fine arts. Europe is no longer producing pre-industrial men, America is no longer producing pioneers. The pre-capitalistic forms of society which were capable of reproducing their values and regenerating their types of character are disappearing. Puritans, gentlemen, citizens no longer come from Quincy or Salem in the old fashion. These types did not cease to exist when the industrial revolution came. The industrial revolution invaded a pre-industrial humanity; but for that very reason it relied on the people produced by this pre-capitalistic world for another hundred years. It is because these hundred years are now over that we ask ourselves how to regenerate values and men within the industrialized world which surrounds us; for in the future nothing can enter it from outside.

The first axiom for this world is its uniformity. Its problems are uniform; its confusion is uniform. Its time and space are of a special type. The change of time and space resulting from industry can best be described in little things. By comparing the modern wage-system with the forms of income in the past, we can perhaps learn how to wield the powers of time and space which surround our society like a magic circle.

A worker's day corresponded, in former times, to the rhythm of his own life. Honorary work lasted a year. Longer periods of work had no objective purpose, but served to give a man's personality a status of its own. The monthly salary signified one fraction of a life-time income. It trained people for life-time purposes. The new calendar is quite different. Even where salaries are still paid by the month or the quarter, the old significance no longer holds. The differences of day and night, of seasons and generations and ages, have been abolished. The day has 24 hours, 365 days make a year, and 100 years make a century in the course of the stars. The new calendar is the symbol of an economic revolution. Such a calendar never existed before; never before was the earth thought of as a tiny satellite of the sun. It is the costing calendar of industry, a scheme for anticipating the hours of future labor.

As soon as work is done in shifts, it is no longer calculated on the services of known persons, but by the multiplication of hours of labor performed by interchangeable anonymous labor-forces. This system of work in shifts has invaded all social life only in the last thirty years.

The calendar set up by the costing department disconnects working time from the man who does the job and relates it exclusively to the piece of work. The hours of man's labor are now without relation to each other. His future is transformed into an anticipated space of time for work. The new solar calendar makes no allowance for discrimination between past and future. The nervous breakdowns of our present industrialized society result from the tyranny of the appointment book, and from a past which is encroaching more and more on the future. For "working time" is explored territory. Man needs a balance between the explored and the virgin territory of time; but science has scorned the power which emboldens us to clear our calendar: faith.

I am going to speak of the social effects of the modern economic system. And since the word "social" has become rather pale, we can perhaps describe the term "social effects" by saying that modern economy brings about certain changes in government, art, science, family, municipal administration, friendship, and finally in the individual member of society.

For our purpose we shall deal with the world of industry and trade, but not as economists or technicians or salesmen. We shall not discuss high or low wages, nor cheap prices for raw material. I have no solution to offer for the depression.

Nevertheless, I am passionately interested in the economic system and in modern technique, because it affects men, myself and everybody else, in their daily life.

It is my conviction that we are only beginning to realize the repercussions of our industrialized world on man. This may seem a ridiculously belated remark. The first and last thing we assume in this country is that we know all about industrialism, and that in

a country of skyscrapers and Ford cars, society knows everything about industry. But this will be just my point and my question: How can a society live and exist in which everybody knows everything? We shall see that industrialization has done precisely what my friends have tried to convince me of—they are people who know everything and who have no secrets. Can such a society survive?

But I wish to defend my thesis that the effect of industry on mankind was really never studied during the nineteenth century. Here is my defense: so far as I know, no attention has been paid to the evolution reflected in my two stories about the students. I know of no book which describes the invasion of the lives of students, professors, secretaries, parsons, medical assistants, etc., by the system of wages per hour. I find no handbook on economics which mentions that the first coal-miners' strike in Germany on a large scale broke out because the old type of collier and pitman was not willing to accept the degrading label of "worker" or "miner." The strike which began the series was not for higher wages! But the textbooks mistake all strikes for strikes over wages. The worker's ideology about his motives has little to do with the subconscious forces leading up to a strike in modern industry. The superficiality by which we accept Labor's own thesis, is in itself an indication that the economist and the people in engineering have had the field of the social effects of industry pretty much to themselves.

It is only in the last thirty years that the governing class and those who ought to do the thinking for the governing class have faced a situation in which they could not draw on a pre-industrial humanity and its established values. Up to that time, the leaders of the community could, so to speak, alternate between the fruits and products of the new order and the products and goods of an older age. A regular stream of highly trained craftsmen went into the factories from the small artisan's workshop, and a regular

stream of skilled European workers migrated to this country from the Old World. Even today, I am told, in certain special American industries, the problem of recruiting masters or foremen from Europe still persists, because their kind is not reproduced in this country. A pianoforte worker, for example, may find a good living here but when he dies or retires, the next man again has to come from an old tradition. Each time, the chain is broken when this specific worker drops out. Here the industrialized world is still based on a civilization of the non-industrial type—in this case on a civilization with real apprenticeship and guild traditions of masterhood. In Europe up to 1908, two-thirds of all the skilled workers in factories had still been brought up and trained in a non-factory environment.

Now this held good not only for the factories and the crafts, but for the liberal professions as well. Eighty years ago two-thirds of the students in a college came from farms; that is to say, they had been educated in a pre-urban and pre-capitalistic environment. This environment had a strictly local character, with a concretely visible local government of selectmen. Nothing was abstract in the economy or policy of such a place, whereas one of the outstanding features of modern economy, even in the village, is that the economic relations of the First National Store, the bus company, the Western Union, which the children see at work in their community, are trans-local and cannot be judged or understood by glancing at the men and buildings in the village. It is only today that the colleges have begun to be filled with students who in overwhelming majority come not from homes and farms but from schools and apartment houses, and who have been surrounded not by a local economic unit but by a nation-wide, abstract economy. In spite of this fact, colleges go on teaching as if their pupils were still villagers who must be equipped with a knowledge of the world outside.

Not only are factory and college faced with a different type of man today, but in an emergency or for a specific task they can

no longer draw on any older type of personality. We are the first generation who can rely on nothing but an industrialized world.

Throughout the last century two civilizations co-existed. The so-called "industrial revolution" was not a revolution, because it merely added something new to the still subsisting old values of society. Thus an escape from the technical world was still possible. The poets could still talk in the language of an older age. (It was remarkable during World War I how contemporary style was incapable of describing the reality of the technical war, with its abstractness, its "emptiness of the battlefield," its big scale.) And for the adventurous spirit of the youngster, enough virgin territory used to be left to satisfy the imagination. Finally, Americans could go to Europe. All this will no longer work as a safety valve. We are definitely living in an industrialized world. A professor of education in Teachers College, Columbia, published a book in 1931 which says of this world:

> If from a car window you see only waste land, forests, and swamps, you see nothing.
> Waste lands are clay, sand and stone. Forests are beams, rafters and ties. Peat swamps are electric current.

And the book goes on to say: "We need factories not only to refine iron and steel. We also need factories to refine people."

This quotation helps us to recognize our real situation. The refining of people, now, has to be done within an industrialized world, in something corresponding to factories. Educational institutions will have to be contemporaneous in their basic elements with the industrial environment. Their values will have to stand the test of being understood and tolerated by the masses of the people who live under the factory system. Henceforth, no interesting Carusos or Einsteins or James Bryces are to be expected from the exhausted old civilizations of Europe. The uniformity of industrialization has uprooted the folk traditions of the Old World across the Atlantic. Perhaps for some decades certain interesting types, craftsmen, painters, etc., can still be imported. But they

will be exceptions only. Romanticism is useless in present-day Europe, and romantic Europeanism is becoming useless in America.

Up to the World Wars the industrial society was invading the territory of a pre-industrial humanity and using the moral safe-guards and inhibitions, the physical instincts and talents of the pre-capitalistic age. This exploitation of the past has reached its end. Henceforth everything, even cooking and washing, writing and calculating, is going to be done by machines. The uniformity of industrialization was not complete before 1914. Then man himself still had many standards of quite a different origin and type. I suppose that an American of my generation was still brought up in the ideology of Alexander Hamilton and Jefferson. For his personal aims and for his personal ideals he would, like Theodore Roosevelt, look to the self-made man of a hundred years ago. In the uniformity of modern civilization the ideal of a self-made man already seems rather destitute of meaning. Men are made by circumstances and constellations, by the mill of crisis or prosperity. The masses no longer share the notion of being self-reliant; they expect to be made by the industrial civilization around them.

For the first time, man is alone with industry and nothing but industry. Pioneering is a great memory, but one which is unable to provide us with men for the future.

That is, I suppose, why we all are beginning to reflect on the dynamics of a mechanized world. We leave behind us any assurance of glamour and adventure in an undiscovered or a non-mechanized part of the world. Neither the peasant songs of Bavaria nor the potentialities of Mount Everest shall distract us from our question. We overlook the few white spots on the map of the Sahara and the Arctic Zone, and the little oasis of folk-dancing in Croatia. We foresee the final industrialization and organization, and ask ourselves what such a world is going to make out of man and society.

We have all embarked on this common civilization. We shall neither deplore it nor try to desert it. We wish to share its respon-

sibilities. But on the other hand, since we cannot rely on old beauties, old values, old ways of regeneration in bygone worlds, we ask for beauty, values, and ways of regeneration from this new world. We are ready to give up the old forms of the evening spent in the family, the divine service and the complete quietness of Sunday, the genius of the undisciplined child of nature, the adventures of a Melville in the South Seas. But we wish to discover equivalents in one way or the other for all these losses. If, as we know, there is little in the world which cannot be discovered and has not been discovered, we will shift our curiosity from the world to society and try to discover its potentialities for existence on an industrialized globe.

The very uniformity of this industrialized world all over the earth is what may baffle us most. And it is by this uniformity that society is so deeply influenced and confused today. The uniformity of Russian, Italian, German, British, and American problems need not be stressed. It is obvious. Some hundred years ago there was a great variety of national situations, corresponding to climate, fertility, religious dissent, war, famine, and disease. Today unemployment is one great problem, distribution is the other. The Russians, for example, are in no wise in a different situation from the other nations in regard to these two problems; they are their problems also. The attempts to solve them differ in the different countries but the same confusion is everywhere. Everywhere people are groping to solve it. Everywhere people are jealous of other nations' solutions. The uniformity in two things, jealousy and confusion, is tremendous.

This uniformity is a uniformity in time and in space. In both respects, modern man lives in a new world compared to the world of the past. That is why I will have to deal mainly with the new time and the new space created and needed by the world of industry.

By describing the new time and the new space we will build up a diagnosis for the case of society under the domination and in the era of industry.

We are familiar with the methods of an industrialized world. Thus it may seem mere prating if I pretend that little is known of what this modern world does to man. And I think a civil engineer might be rather bored by the idea that I am going to tell him what the schedule in his factory really means and what kind of place he really works in. All I can say is that I have lived for more than ten years in closest contact with technicians from worker to managing director, that later on I was a colleague of leading engineers at three different Technical Institutes. Furthermore, I have shared the life of coal miners, lumbermen, stone masons; we have carried out a great many different enterprises together. And not one of them was conscious of the specific character of the time and the space in which he worked and lived. At least they were incapable of expressing it. It will take a whole new generation to develop fully the power and capacity of men to conceive and express the secrets of the world into which we are bewitched by the modern form of production.

It is the small things which betray most clearly the influence of an order of things on man. You remember the two students, one paid by the hour and the other by the month. These two trivial cases may reveal to us the new kind of time in which we are living today. At first glance the difference seems very unimportant. The two boys got the same amount of money. In one case it was arrived at by adding 50 cents to 50 cents twenty-five times, in the other by fixing a monthly salary which covered twelve to fourteen evenings of two hours each.

It takes, perhaps, some closer consideration to perceive the full meaning of the evidence. The month of the one and the hour of the other belong to completely different conceptions of time.

I must ask you to follow me into the world of which this monthly pay was only a last remnant, the pre-capitalistic world. I am not going to idealize it in the least. Let us look at the poorest devil among free men of the past, the day laborer. He was on the lowest rung of the social ladder. When Odysseus visited the fa-

mous hero Achilles in the land of the shades, Achilles was so outraged at being dead that he was ready to change places even with a day-laborer if he could only live again. Thus man's pride could not be more deeply depressed than by being paid by the day. Such a laborer would be paid for a day which lasted from sunrise to darkness. A full day's work was customarily counted as including four breaks for meals and rest. This man would work in harmony with the day of his environment. A day was the smallest unit of his natural life. He got up when everybody was expected to get up, and went home when the evening bell rang. Sundays or days of a funeral or a wedding in the village were not days for work. Satur-day afternoon and evening from 2 o'clock on was excepted also. The social environment had organized the time for work, we may say, in a rather inefficient and subjective way as a part of the life of man. Many things were not done in time because too many weddings or holidays occurred. The worker's day might be a sixteen-hour day in summer or a seven-hour day in winter. However, even half a day was called a day. Any subdivision of the day, even for a humble laborer, was meaningless. For man's personal life has no unit shorter than one day. From sleep to sleep, one day is the shortest conscious and waking unit; and this continuity of consciousness from morning to evening made a day and transformed that day into the smallest possible unit for any scale of wage-fixing.

In general, a man who had no property was not paid by days. He got a salary by the month or the year. Parsons, state officials would be paid in this way. Practically, however, even the yearly salary was by no means a payment for a single year. It was something very different. The limit of a year was used for two special purposes. First of all, it served as a period for probation. A contract for one year meant a contract for a first year; at the end of it, people would know if they ought to collaborate permanently. Secondly, one year was the favorite term for honorary services to be rendered to the community. A year's service, as a mayor, a mem-

ber of a jury or a committee, was a gentleman's contribution to the general cause. A gentleman would not accept pay for one year's work. A one year's period is still used in many institutions for such a purpose.

Month, quarter, and full year payments were regularly meant as subdivisions of larger units of time. For the unmarried fellow, three, five, or seven years were a normal term. For an adult, a husband, the year was meant as a subdivision of his life. When Hawthorne was made consul in Liverpool or when Herman Melville became Inspector of Customs in the Port of New York, their monthly pay was a link in a chain, a drop in one stream of income which they could anticipate for the rest of their natural lives. Now this natural life might last another ten or twenty or forty years. In those days man's health was much more exposed to dangers, and the duration of a man's life was utterly fortuitous. Thus the appointment was clearly related, not to any objective scheme of production, but to this specific personality whom a responsible politician wished to insure against further troubles. Lifetime appointment clearly expresses the personal character of a job. To appoint anybody for so long a time may seem frivolous if we regard only the objective work which he is to perform. Therefore the life-time appointment obviously neglects the objective side of the world's production and centers around a man's personality.

But by doing so, it gives a peculiar significance to the monthly income. This monthly income is looked upon by the man who receives it regularly as a payment on an installment plan. A hundred dollars a month ceases to be $100 if I know that I am getting it for twelve months. The German schoolmaster and all the other German civil servants were famous for the miracles which they achieved on their ridiculously small emoluments. The thrift of such an official has always been astounding. Being the husbandman of his whole lifetime, he could carry income and outgo backward or forward over many years. On the first of each month or each quarter he would set aside the larger sums which were the

key to the larger aims of his life. And no temptation of the present moment could lead him to curtail amounts on which, not his daily life, but his whole life-time depended. Out of 2500 marks, 600 dollars a year, a German teacher would cheerfully save 200, in spite of the fact that he was underpaid. For to him thanks to the way in which he was engaged, these 200 marks did not represent a daily or monthly wage, not even a bonus for Christmas, but were there to make possible the dream of his life, say that his son should have an education and go to Heidelberg. It pays to look at every penny twice just now, when one can count on the dollars year in and year out for twenty or thirty years. Thus this man is encouraged to save for far-distant goals, his son's education, his daughter's dowry, or his own silver wedding-trip to Italy. The years being only sub-entries in the record of a lifelong annuity, the salary payments of the public official were really a biographical thing which made his life, economically speaking, a single unit. Through this system the highest type in the wage-earning class, the life-time official, in spite of the smallness of his reward, could vie with the gentry and the wealthy citizen. He could really feel like a free man, since to a certain extent he was able to survey and dispose of his life-time.

To conclude this side of the picture, the student at Harvard who was paid by the month was treated as a candidate for a life-time appointment. The other student, the one who came to me, was handled in a more modern way. Modernity has a calendar of its own, completely detached from the old day in the life of a laborer or from the lifetime of a man like Herman Melville. This calendar, which is recommended by the American Chamber of Commerce, and which they are trying, by a subversive and revolutionary propaganda, to extend over all the parts of our life, contains a 24-hour day, a 365-day year and, sometimes, periods of five or ten or thirty years, the latter only for a re-balancing of the budget or for the planning or the amortization of loans. All these periods are taken from the solar calendar, from a nature in which man no longer has a voice. The day, the year, and the thirty years

of this new industrial calendar are something quite new. Man does not have any special knowledge of an equality between the 24 hours of a day. His watch does. By our watches we are harnessed to the triumphal car of the new calendar. For this calendar, night and day do not exist. The interest on the capital invested mounts up incessantly as steam, electricity, light, and coal serve day and night with perfect equanimity. The principle of modern industry is the twenty-four hour day. The system of shifts is the true expression of this calendar. It is not my time, but nature's production time, a thing foreign to me, which governs the industrialized world. Day and night have no meaning for the railroad, the telegraph, the smelting furnace, or the taxi business. Even astronomy is no definite limitation on this new calendar. One of the great European banks charges interest for the 29th and 30th of February for the sake of simplicity in bookkeeping.

Therefore the new solar calendar has little to do with the earthly calendar of former days, and should not be mistaken for it. Its 365 days are all equal. It knows no seasons, no holidays. The 365 days go uniformly on, a sum of interchangeable units.

And the greater periods, again, have nothing to do with the life of men or with real generations. The term of the war debts originally extended to the year 1987. So it is not that the modern calendar is unable to look out for long periods. Only these periods are completely separated from their significance for man. They take no account of the sequence of generations, fathers and sons and grandsons.

This solar calendar is a calendar which is indifferent to man. In its "nature," its solar system, man is dust on one of the smallest planets. It is a calendar of Copernican scope, destroying or neglecting man's week and Sabbath, man's Christmas and Easter, man's natural divisions of 3, 5, 7, or 30 years. That is why peace did not come in 1919. It was a mere superstition to believe that peace could return, after five years of war, by a stroke of the pen. People looked to the abstract calendar, and used a speed laudable in

car-driving but fatal in human affairs. Everything was done too early at Versailles.

This is no accident. The new calendar is the symbol of an economic revolution. Perhaps you assume that I exaggerate. One may point to the old rural calendar of the farmer. Is the solar calendar not an old institution? Since much depends upon an agreement between us on the novelty of the present calendar, we had better analyze the allegedly solar calendar of the peasantry. It is true, the farmer had his special chronology. The years regulated the harvests and therewith the most important sources of income for the year. And man himself, as a body and a soul, was touched and changed by summer and winter, cold and heat, like the rest of the surface of the soil. Humus (the soil) and human being were interrelated. Soil and man were caught in the same calendar of the seasons, differing in every zone and varying every year. And so humanity lived within this environment as a part of it, not as its entrepreneur. The harvest home was not a festival at which the peasant looked proudly upon what he had done with nature. It was a festival of thanks for the harvest, because peasant and wheat field had both longed and prayed for fertility, had both thriven and been richly provided for. Economically, therefore, the farmer's year was not a general year for the whole earth. It was, in its specific dates for harvest and planting, the normal time-span for a local group of people. The simple man lived the year of the earth, not that of the Copernican sun; he was happy when the harvest was finally realized again. He had hoped for it, but he had not anticipated it.

Our analysis has now gone far enough to define the difference between the old year and the new calendar. The old calendar anticipated man's individual life-time, but it could only hope for the life of outside nature. Modern economy anticipates the work of outside nature, and hopes of man that he will be all right, even without any anticipation of his future.

The modern world does not employ labor an hour longer than it is needed. The liberties of the French revolution gave the entrepreneur the liberty of engaging and discharging labor by the hour. Only in this way is the calculation of costs per unit of product possible. On the basis of the single piece the "productive" wage is calculated, namely, that which must be paid for the hand labor on the production of this piece. And there one arrives at fractions of the older unit of daily wages, hours, minutes, and eventually in the Taylor system, seconds. But that is not all. It seems impossible at first sight to split up the work of management in a factory in such a way. How can one tell, with 1000 pieces of goods coming off the looms in a day, how much of the engineer's, the draftsman's, or the salesman's salary is to be assigned to each piece? Especially when two hundred of this thousand may demand the most loving care of the factory management, while the other 800 run through mechanically, without any special effort on the part of the directing force? Cost-accounting proceeds, nevertheless, by adding these "general" expenses to the productive wages as extra charges, at the rate of 100, 200, or 300 percent. Granting that this is only a way of figuring, still it is the ideology of factory cost- accounting. It is clear the laborers who work with their hands carry the whole structure, and the gentlemen of the pen, the white-collar proletariat, are looked upon by the entrepreneur himself as a superstructure, the cost of which is reckoned on the basis of the productive wages. The ultimate unit of pay is the working hour of the man at the loom.

This man receives his pay-envelope at the end of the week; in other words, he receives a combined wage made up of piece-wages and hourly wages. The manufacturer makes his own calculations by the piece, but he pays in terms of contract or hourly wages. This makes no difference, however, for the principle which rules this wage-system, and which was unknown to pre-capitalist economy. The principle is: wages may be paid to labor only inso-

far as it produces per piece and per hour. Now both these units reach below the day, the smallest natural unit in the wage-earner's life, to an infinitesimal standard unit of work, which is quite meaningless in a human sense and was only invented for purposes of cost-accounting. A year is the minimum unit of life; only beyond it does a man become conscious of himself. "Only what outlasts a year within us is true and genuine." (Goethe) A natural period of life encompasses from three to seven years.

From these higher time-units the worker is excluded by the fact of the wage-system. The present moment, with its fleeting form, is pressed upon him as the essence of his work. The world will appear to him in consequence as a sum-total of such moments —and as an incalculable sum. His 2400 hours of labor a year, from first to last, are disconnected. His whole attention, then, ought to be concentrated on bringing them together. But it is asking too much to expect him to see from 1 to 2400. And this has a practical consequence. It means that all concern for the distant future—sickness, accident, old age—must inevitably be taken from the worker step by step. For the years beyond the present, and for his lifetime, he is placed under guardianship. Only the concerns of daily life are left to his responsibility. He is only half of age. Expenses of less than a year's duration he still has to meet out of his wages while for the rest, unions, social workers, charity, and social policy take over. And as soon as such a paternal socialism is established, the worker gives up all ambition and enters the Lilliputian calendar of hours. He breaks down. In 1918 the workers marched through the streets of Berlin with a placard: "Eight hours work, eight hours leisure, eight hours sleep." They had capitulated to the new calendar; they had become real proletarians. They now measured their own future life by the methods of the costing office, which has nothing to do with the life of man but only with the anticipation of hours for the achievement of a piece of work.

Let us take an example. We are planning a bridge. The bridge requires 715,000 units of work, which we call hours. These hours

can theoretically be distributed among 715,000 men, in which case each man would work one hour, or among 71,500 workers, or among a thousand; in the latter form of production each man would find at least three or four months of work. But the hours for which he gets paid during these three or four months are not portions of his personal three months. On the other hand, they have equally little to do with the life of the man for whom he works. They are 715 fractions, each one of which makes sense only in relation to 715,000. Fraction 300 and fraction 533 have the same significance as fraction 1 or 715. They do not receive any new quality from their large quantity. They are an imaginary scheme which can be realized in many diverse ways, in three months or in ten years.

The walls of a medieval city were built more or less in ignorance of the time it would take to erect them. The objectivity of the modern process of production allows us to handle work like an accordion: we can compress it or protract it lengthwise. But we always remain in the abstract world of anticipation. The time involved is always just a means to an end that dwells beyond this space of time which we divide by the hour. In calculating by the hour, we treat time as a means to an end. The man who is paid by the month lives his full life during his month of work; there is nothing outside or beyond it. The man who is paid by the hour lives in a time which is treated as previous to the fullness of time. And by the very fact that it is a time anticipated in relation to a result, it has no meaning in itself. We are all well acquainted with those fragments of time which are endurable only because we are aiming at an achievement, say an examination. The hours spent in typing these pages have no meaning in themselves; they serve an objective result. The difficulty begins if I begin to type, not my own lectures, but those of somebody else, if I begin to devote my hours to aims far beyond my understanding or approval, and if I remain spellbound by the calendar of the costing-office.

Whenever a man is forced into this way of thinking by hours, he ceases to be a citizen and becomes a proletarian. Year and day

are a citizen's interest; lifetime and eternity are a Christian's interest. Taking an interest in hours makes a man into something new and different from either. Do not think that we can re-enter the larger home of the city or the church by piling 10,000 hours one upon the other. I have shown that industrial calculation is always related to an external piece of work, a house, a wall, a sewer system. Nowhere does it meet man's life except for the single hour by which his work is calculated.

In the Russian primer for the Five-Year Plan, Mr. Ilin, a Bolshevik engineer, says: "We need machines in order that we may work less and accomplish more. By the end of the Five-Year Plan the working day in a factory will be reduced by fifty minutes. If we assume that the working year consists of 273 days (not counting rest days and holidays), the worker will labor 227 hours a year less than he did at the beginning of the plan."

The new solar calendar trains man to think of the future not as something new, but as something that can be calculated in advance. Future, in this world of economy and technique, is the prolongation of the past. If former civilizations had dared to think of the future as an annex to what we know about the past, a special grammatical form for the future would probably never have been invented. Real future, in its proper meaning, implies a change in quality, a surprise and a promise. To live in the future means to be indifferent to present hardships.

In America the future was such a deity because it meant an unknown life. The solar calendar of commerce is pedantic. A witty banker in Berlin effectively made fun of it in the following story. He had a conference with the president of the largest German electric company, and after two hours they saw that they would have to meet again. The industrialist was rather self-important, and explained how terribly busy he was. Every day he was completely booked up. Practically every hour was taken by meetings, consultations, committees, and business trips. It was now January, and not before April the 16th could he find a free day in his ap-

pointment book. Yes, the 16th of April would suit him, would it suit the banker, too? Bored by this pompousness, the banker said calmly, "I'm sorry. On the 16th of April I have a funeral."

The abolition of the real future is the price we pay for overloading our calendar as though the days to come were as much our own as those of the past. He who treats the future as his private property never gets the full benefit of its character of regeneration.

Now an adult cannot help treating his future as a logical result of his past. He cannot help borrowing on his past for half a year or more ahead. But by doing so he shows that he has little real future left over. During the length of time he is booked up in advance, no real future can enter his life. For by being booked up our days are never entered in the book of life. Once in a while we must cancel all engagements, clear the whole calendar. If we do not do it, something will break. Under the pressure of too much anticipated time, modern men have found a way out. Our soul, overloaded with so much past, replies by a nervous breakdown. In minor cases, that providential attack of flu which we always catch at the right moment helps us to clear our calendar. By these devices we resist the invasion of the future by the past.

But the important thing is that we should realize how much poison gets into our life from this invasion of pre-calculated time. It amounts to upsetting the sound equilibrium between an organized time and the free space of our unexplored future. This poison of too highly organized time has been felt to be fatal in every age of history. St. Francis of Assisi tried, because of it, to live his days as *fioretti*, little flowers. The *Fioretti of St. Francis* are very often quoted today. People think they are a pious booklet. But "*fioretti*" is no sentimental metaphor. Francis was perfectly serious. Like a modern psychiatrist, he knew very well the ruinous results of a situation in which the past encroaches upon the future. Each day must be freed and lived like a new present, unknown, unheard-of, incalculable, virgin territory. Each day Francis lived was a new flower.

The modern variety of time, which we call "working time", is explored territory. It is an anticipated time, the time necessary for production, reckoned backwards from a certain fixed point in the future. He who is caught in its schedule belongs to a framework of thought which was arranged in the past. The framework of an industrialized world leaves the cog in the machine in the precincts or antechamber of real life, in a pre-arranged world without a future. The question arises: where is he going to find his future?

III
The Molecule of Production: *The First Ecodynamic Law*

We discovered a magic calendar in the bewitched world of today, an objective solar calendar which is related to objective ends. We stated that in this scheme an hour is a fraction of the imaginary plan evolved in the costing office. The hour for which a man is paid is not a part of his life, but a part of the several hundred thousand hours required for the building of a bridge. The English language reflects this situation. A worker will say, "That's nothing in my life". And he is right, because in his life the important fact is the biological and psychological unit of the day and the year. His first and his hundredth and his thousandth hour are completely different. In the calendar of production they are not different, because they all entered the production plan at one and the same moment of anticipation. The hours of production are treated as though they were lying piled up in a storehouse, millions and billions of hours. The hours of men are anticipated like natural forces of which society can dispose at any given moment.

Let us try now to learn something more definite about the character of man in industry. Why don't we speak of the individual worker? The smallest unit in a factory is not one man – and that for a demonstrable cause. The smallest unit for work under the accepted domination of electricity and technique must bear one special mark of identification, namely, it must be able to work in shifts. The great accomplishment of the last centuries must be upheld. The individual who needs sleep and rest cannot compete with recurrent nature and its men of iron and steel who need no stopping or relaxation. The great law of the "second nature" runs: In industry three natural men are equal to one man. Man is treated

as a molecule of M_3 since one man is too frail an atom to enter the new universe directly. The group must prevail in an industrialized world for the very reason that 3 are equal to 1 in the calendar of technicalized nature.

The representation of man in industry cannot be achieved by the individual. In technical work, the team is the natural unit. The three physical men must be conceived as one working unit, as the smallest possible social molecule. Our timeprinciple makes it easy for us to see what the fantasists of space deliberately overlook: that man, in entering a factory, is one third of the only human force which can be used in the system without disastrous results.

This first ecodynamic law of industry abolishes all individualism in the conventional sense. It does justice to the worker's instinctive feeling that he cannot be helped as an individual, and solemnly recognizes the supra-personal character of his problems as a worker.

I hope it is perfectly clear that this ecodynamic law is as abstract as the thermodynamic laws of dead nature. I know that in countless cases no three shifts exist; people go home after eight or ten hours. And many factories close on Saturday and Sunday. But by virtue of man's power over time our constitution for the technical world declares all these cases to be exceptions to the technical principle. It does that because it wishes to get at the very root of the prevailing conditions. And the fathers of this constitution may be convinced that a student who is paid by the hour, a half-time secretary, an assistant, are all more or less dependent in their treatment and pay on the first ecodynamic law that *Three is equal to One*. This being unknown, legislation was unable to state the case for Labor satisfactorily. Our laws evade the realities about Labor Unions and strikes, because they are all built on the fiction of *One equals One*. But the employer has in mind an abstract 24-hour-being!

What is true of one day is also true of one week. Since a great deal of work cannot stop on Saturday but goes on seven days a

week, even those men who do not work in daily shifts need a substitute for the seventh day. This is but a sub-case of our first ecodynamic law. Let me illustrate by an example.

I know a man in Boston who is in charge of a workshop of nearly a hundred people. The workshop is open from 7:30 in the morning to 7 in the evening, and as head of the department he must be there all the time. The business goes on weekdays and Sundays alike. The working force in the department gets the equivalent of Sunday through a system of alternation, but the head has a seven-day week! He told me that he had practically no day off. The man himself blushed when he admitted he had no Sunday. He felt that there was something revolting, something inhuman in his situation. His sense of human dignity and the pressure brought upon him by the system were obviously irreconcilable. But he was afraid that he would lose his job unless he proved to be irreplaceable.

A third application of our law can be derived from the fact that this same man who did not observe Sundays took a fortnight off every year. During this fortnight an assistant was allowed to replace him. Thus the annual vacation proved to be unrenou nceable and unresignable. This enlarges our picture of the natural man's second form of existence in a technicalized world. His natural and personal year revolts against the solar year of 365 days in the form of demanding vacation. Vacations were unknown to the pre-industrial world, but they are perfectly legitimate now, since the industrial calendar itself is no longer based on human needs.

The vacation can be found even in cases where the three-shift principle or the Sunday substitution does not happen to obtain. It is the most general expression of man's liberation from the perpetual calendar of his work. Where vacations are sanctified and seem more important than free evenings or free Sundays, you can be sure that you are living under the spell of industry. A farmer had no vacations, the soil merely rested for a time in winter, and so he rested with the soil. Vacations mean business which does not stop but goes on without you or me.

The civilization of the worker and employee will probably be based on the fact of his annual vacation. With a wonderful simplicity, man has emerged from his scattered 2400 hours a year by asking for one vacation every year. This once granted, the year is redintegrated in spite of the wage mechanism; it is redintegrated for the individual worker. He is the man who has 50 weeks of work and two weeks of vacation, or 46 weeks of work and six of vacation, and so on. The length of the vacation, though not unimportant, is less important than the principle itself, which restores man to a human level of existence. A year is human; the hour was not.

But the same fact which makes it possible for the worker to have vacations also unites him to the man who replaces him in the meantime. This man must not betray him. This man must not try to throw him out or get the place himself. Vacations and shifts are based on a code of honor between members of a group in time. According to this code no member of the group can take an advantage during his shift which damages the prospects of another member of the group.

If we consider this mechanism of a group in the workshop as a natural arrangement in series of three men working one after the other, this law of good comradeship needs no explanation. But since we are assuming that it is the fundamental law of industry, it throws a bright light upon a fact which is known to every expert, namely, that even those who work together and at the same time in a group despise a member who breaks the common standard of production.

By principle, the idea of working in shifts permeates our whole industrial system. The various spatial groups, five or ten men or women co-operating in the same workshop by doing precisely the same thing, are only projections in space of an arrangement whereby one of these men or girls would take up the work left by his predecessor. The well-known phenomenon of slacking in efficiency is a general rule for any group. The lowest mem-

ber, or at least the normal member, of the group is the one who determines the maximum output. A smart employer tries to enforce upon every individual worker the idea of going to the limit of his individual capacities. The factories have built up incentive plans and premium systems on the assumption that the worker will react as an individual. But he does not do anything of the kind. I quote from a study worked out in the Harvard Business School:

> Most of the operators were obsessed with the idea of keeping their weekly average hourly output rates "even" from week to week. The activities of the group were such as to nullify the employer's attempt to increase output. Some of the workers had actually completed more work than they ever reported to the group chief at the end of the day. They reported a figure which approximated their individual mean daily output.

The atomic unit in a factory is not the single physical man. The smallest unit on which factory morale can be built is the triune group.

This conception enables us to see that work in an industrial society will have to take account of the group. The group is a reality the existence of which is felt everywhere. Yet its requirements and needs are constantly violated by the employer because he and his staff are trained to look upon a man simply as a man.

When I first tried to get hold of the trans-personal situation in the factory, I came to the conclusion that industrial law had to recognize the real facts. I sent my book on the decentralization of industry to my teacher of Civil Law at the University of Heidelberg. When he saw me the next time he tapped me paternally on the shoulder and said, half irritated and half depressed, "But we are all human beings. I see human beings everywhere, I see nothing but human beings." This kindly and charitable fellow was doing exactly what the proverb means when it says: "He cannot see the wood for the trees." He could not see the industrial system for the workers.

All propositions for the organization of industry will have to be revised at one blow. Honor, competition, ambition, pride can

be developed between groups in a factory, not between individuals. The normal size of a group in space can now be investigated. I cannot give in detail the reasons which lead to the assumption that from 5 to 15 people co-operating simultaneously can preserve the qualities of identity and unity significant for the group in industry. The optimum in the size of a group differs of course according to circumstances. Yet the collective group has an optimum. And as soon as the prejudices of humanitarianism no longer blind men to reality, the energies of electricity or steam will cease to be the only forces whose optimum is carefully explored.

Once this point of view has proved useful, the optimum of the factory as a whole will become a question of primary importance for the civil engineer. The social and economic optimum for a factory as a whole is, according to my own investigations in Germany, much lower than is usually assumed. Nowhere are units of more than 600 or 800 workers really necessary. The "bigger and better" principle has looked at the bricks instead of the men, and has burdened public finance by increasing expenditures for police, prisons, hospitals, roads, railroads, lunatic asylums, to a scandalous extent. The financial unity of an enterprise has nothing to do with a sense of duty toward the energies used in a factory. These energies have to be used in a scientific way, and they have not been technicalized so long as enormous darkish masses of ten or fifteen thousand workers pour through the gates of a single factory. Such a mammoth is usually over-organized. Friction among the members of the staff is inevitable, and since every such friction is apt to show up in some mysterious way at the bottom, friction above is partly responsible for unrest below. It would prove much more profitable in many cases to study these frictions than the seconds which figure in the time studies of piece-work.

We have taken for a moment the point of view that the optimum can be determined by a study in space alone. This was a breach of my promise to apply our own yardstick of time to the problems of the factory. Can it be done for the factory as a whole?

I maintain not only that it can be done but that it is a necessary condition for any correct balance sheet in an electrified industry.

Modern industry differs completely from farming in a village. There the same soil is tilled every year, and the same fences surround the same area year after year. Man is at home on his soil.

In industry, and especially in an electrified world, this is no longer true. The factory is the application of the gold-mine principle to all work. The factory lives for a limited period of time. It is not a permanent foundation like the church and the churchyard. The particular factory is a temporary tool like the cranes and steam shovels engaged in the Tennessee Valley project. The factory is transient by principle. It should not be built for eternity. It is a temporary arrangement, the machines of which are written off after three or five years of use. To an imagination which pictured business above and individual workers below, this vision of a perpetually changing workshop was terrifying. The average Liberal preferred to believe that an ugly factory had to be carried down through the centuries as inevitably as the cathedrals of Milan, a vision which seems much more terrifying to me. Thanks be to Heaven, King's Chapel will outlive many factories. We need not cling to the assumption that modern work must be done in houses built for eternity. We already know that a factory is a rearrangement of nature. That is why it is as transitory as nature itself, and that is why the enterprises of the future will be mobile. Some of them will follow their raw materials over the earth, others will change their location in space for reasons of organization. But the groups at the bottom will survive the migrating factory. The individual worker can accept this vision of change wholeheartedly. On the one side, the factory ceases to be a lasting fortress like a Bastille; it proves to be a tool fashioned for a transient purpose. Technique reveals itself not as a despot who establishes himself forever in one particular territory, but as a servant for simple and special tasks. And on the other side the individual worker is protected against the violence of the change by his recognized member-

ship in a molecule. Some day the group, with this kind of solidarity, will survive the changes in the buildings of industry. And is that not the simplest thing in the world? Since molecularity is the backbone of the factory, it must be strengthened enough to survive.

Naturally our concept of time will warn us against oversimplification. We cannot assume that every timemolecule has an equally long existence. The group is unknown to us unless we know something of the sound or natural timespan for its existence. How long is it possible to identify myself with my associates in such a co-operative fellowship? Here again the superstition of the space-experts has prevented man from even raising the simplest question. How long does such a group last? How long should it last? What is the optimum in time for one and the same fellowship? When I first mentioned this question of an optimum in time I well remember that people simply laughed. One of my critics was the editor of a periodical. He was so polite that he only smiled. Five minutes later he said, "Most magazines are utterly mistaken in trying to keep on forever. Every journal of real value and purpose has its raison d'être for a certain period. It should be honest enough to know that and to expire after that certain period of time. The best test is the loyalty of the first group of editors. The commercialized periodical is as a rule completely dead, and only prevents better and fresher things from growing. It goes on forever because it is dead. Dead things cannot die. Most people do not know how dead the stuff is they are living on. The truth is that a group of very young men seldom has anything valuable to say for more than a couple of years; older men can go on longer."

The units in a factory are not lifetime units. A man is not born in a factory and he is not born into a factory group. The group is not a dead thing like the commercialized journal. It is alive, and for that very reason it is bound to die some day. Death is inevitable for the group. And it must come as a real pain and a human experience. Yet the death of the group is by no means tragic. Death has lost its tragic character in modern society, because it is

distributed over the whole of life in little doses. It is always partial; a part of us survives.

The worship of space causes a terrible loss in the modern world by neglecting to notice the seriousness of these permanent processes of death and birth, of binding and loosing the groups. The hour system has misled people into thinking that all sacraments have vanished without a trace and that man can live by adding meaningless seconds or hours or days together. The discovery of the group and its moral and legal recognition would be a first step in the direction in which life can regain its full depth and intensity. The modern masses will have to learn how to spell "five years." It is like learning to walk again after a long illness.

I hope there is no misunderstanding of the fact that the optimum for a group, let us say three or five or seven years, is a real and moral unit of time and not a mere sum total of hours. He who enters the group must know that it is intended to exist for five years. He must commit himself from the very beginning to the difficult and serious task of being a member of an optimum group instead of a laborer per hour. The five-year time span is no external and accidental measure on the part of the factory administration. It is meant as a duty and a privilege of the members of the group. The five years are their five years, not five years in an abstract plan. They are their five years because man does exhibit his different powers and original qualities when he co-exists with his fellow-workers day after day, but only when he can anticipate his fellowship with them over the period of five years.

However, society has experienced such a complete atomization and degradation of man's faith in time that to organize even one fiveyear group of nine workers is a very difficult task. The way to form them is, of course, to force them into responsibility. Work is done well only if the duties involved are clear and testable. The group in a factory can develop self-government. It can be allowed to discipline its members. Its chief can perhaps be appointed with regard to the group's own feelings. The group,

not the thousandfold individual in the unarticulated factory force, is the unit on which to build a representation of the force. Most workshop councils are false imitations of the democracy of universal suffrage. Don't fall into the error of thinking that workers during their working time are in the same position as voters at a State election. Three equals one! The problem of representation in a factory is not solved by manhood suffrage. The workshop councils in Germany were a failure in spite of the honesty of all those involved. They never gained flesh and blood, because they represented the unarticulated labor force as a whole. The groups are more than mere social units. In many cases, they themselves can take care of the space in which they live. Wherever the group gets back the right to police its own environment, it begins to conquer space like the knight who was installed in a medieval castle far from his overlord. There will never be a one-man space again. But space can be turned into assigned fields of responsibility and self-government for a group. In many cases, more than one group will have to be coordinated. The diverse problems of coordinating two, three, or more groups for all or for special purposes are countless.

Just now I wish to focus all your attention on the ecodynamic law we have discovered, which states that in every kind of organized work today more than one man is potentially presupposed. The equation, *Three equals One*, is at the foundation of industrial society for all purposes of work. People cannot help feeling unhappy and cannot be really organized as long as this principle has not been thought through. It is not a question of money. Unemployment is not a question of money. People have been happy, have been real men and good citizens, with much less money than people have today.

The way to a scientific treatment of human time has opened up. We have distinguished man's state of aggregate in work and for work as something which resists complete individualization. We have proclaimed the first ecodynamic law, namely that in the

struggle for man's existence on earth the individual is swallowed up in the chain of co-working shifts. In its formula, *Three equals One*, the first ecodynamic law only reminds modern man of the eternal fact that society wages its struggle for life unitedly. Whenever we participate in the division of labor we are soldiers in an army. The soldiers of the night-watch in Hamlet who see the ghost of Hamlet's father are links in a chain of watches that guard the castle of Elsinore day and night. Work in shifts is not a new fact. Men have always been posted as sentinels of the community. Labor in society is the organized sentry-go which must be performed regardless of individual illness, weakness, or death. Work in society goes on whether a father dies, a child cries, or a wife's heart breaks. This is all expressed by the equation: *Three equals One*. "Three" expresses the un-individual and social character of man as co-worker. Working in shifts, relying on predecessor and successor, and evening out as far as possible our deviations from both of them, we do our best when we become replaceable. To be replaceable means that one has been successfully turned into a wheel in the social machine; it means that one is employable. But that is not all. The situation involved in "three" includes a risk. Whenever I must think of myself as one sentinel between two others, I walk into the unknown. "*Three equals One*" has a connotation of social risk which is familiar to us in driving a car. On the highway you do not know the other drivers; you cannot know them. You assume that they will act reasonably, as you try to do. But once in a thousand times your assumption proves fatal. The other man reacts foolishly. The actuarial law of "once in a thousand times" turns against you. The drunkard jams your fender. This remains an impersonal event. It is no use to feel vindictive toward the man. He represents that inevitable social risk formulated by the statisticians, the risk of the unknown. The anonymous character of our social cooperation incessantly forces this kind of risk upon us, one which may be expressed by saying that we cannot know that certain co-worker who is going to be a match for us. A man can

know one other human being. He can know his mate; he does not know his co-workers well enough to exclude the risk of failure.

In the world of applied thermodynamics, in the midst of the technical world, ecodynamics places man as a molecule, instead of an atom.

The conflict between economy and thermodynamics is no longer needed. We have discovered the first kind of house devoted to nature, the house by which nature is made recurrent. The fac-- tory has incorporated nature into the family of man. Thanks to the era of technique, nature has become a part of man's own history. No wonder that we can reconcile thermodynamics and economy. Housed nature is no longer the nature of mere physics. It has been conquered by an historical victory. Hence thermodynamics can be balanced by ecodynamics. On the other hand, we discovered man himself to be a part of this nature housed in the factory. He and his unique properties must be studied in a scientific way, since he has been made a part of nature. Man, who cannot be explained by the laws of thermodynamics—that would be an insult, an insinuation that he is dead—need not feel insulted if we begin to study his behavior in a factory. Ecodynamics may even restore his dignity among his elder brothers: steam, coal, and electricity.

The ecodynamic laws can perhaps overcome the prior right of these first-born elements in the modern world. The laws of ecodynamics can take the right from the first-born and give it back to man. Esau sold his birthright to Jacob. Mankind is always in the position of Esau. It is always on the edge of despair, always near to idolatry, always prone to recognize the powers of dead things. It has worshipped iron and steel as it once worshipped the golden calf. In Egypt the golden calf symbolized the technical world of cattleraising and ploughing. Today the monistic faith in matter has made idols of motor cars and telephones. After a time of excessive technical excitement, mankind always comes to its senses and recognizes its idolatry. It reestablishes man among

the elements of nature, and a calf is simply a calf again. Then humanity shifts from Esau to Jacob. Yet this experience with the golden calf is of the highest value. All our knowledge of nature has sprung from our passion for nature. If ecodynamics is going to install man in his rightful place among the elements, it is still indebted, as a new science, to the scientific advance of the last centuries.

Karl Marx, for example, was groping for our new science. He formulated the rule "caught together, hanged together" for men's cooperation in society. It was only because he paid his tribute to the golden calf of space that he had to formulate his rule in the Communist way, "*All for one*," which because of its abstract universalism is made unadaptable to practical use. Our rule "*Three equals One*" does not exclude the "*All equals One*" of Communism, but it allows that rule to broaden out from the group to the nation and from the nation to the world. The abstract formula of absolute solidarity is a wonderful idea for Sundays, but it discourages any effort to act immediately and restore all labor to its proper dignity. And it intensifies the group competition between nations by getting the nations into war with each other instead of getting them together for work. For all practical purposes the Russians are nationalists and Fascists today, despite their Marxian formula. "*Three equals One*" is enough to tell man the truth about his situation in society. The rest, the "more than three," is implied in it. And it is a golden rule, set up by St. John the Evangelist, that we should never try to impose on our fellow-men more of a common creed than is absolutely and intrinsically required for our co-existence. St. John, in his old age, limited the whole creed to two indicative phrases and one imperative; the three together contain twelve words. The Communist creed is like Islam: it demands the acceptance of a complete intellectual system. It cannot help, therefore, separating men instead of uniting them. Ecodynamics, if it is to be handled in a really scientific way, must restrict itself to the smallest area within which truth can still be ascertained. It must be built up from the bottom and not from the

top. The science of ecodynamics in its formulations must give the minimum requirements and not the maximums. It is opposed to the Liberal or Communist confusion between political science and political programs. We purposely say "three," while the political leader says "all and everybody." He is right; but we are right too. The thing that makes Communism impossible, or at least delays it indefinitely, is the Communist party.

A minimum requirement for cooperation stated in a scientific rule does no violence to a man's pride in applying the rule himself. A universal creed abolishes spontaneous action. But here everybody is invited to investigate for himself the sore spots where our rule is violated in his environment.

Marxism, by virtue of its universal formulas, tries to put mankind into the straitjacket of natural science by commanding two billions of men to behave like drops of water. That in itself is enough to prevent them from behaving so. Wherever man is not invited to give his consent by a spontaneous "Yes," he is obliged to say "No" lest he cease to be a man. Ecodynamics has to respect man's freedom of allegiance. He will never say "No" if you leave him the power of saying "Yes" freely and decently. But it must be left to him in full truth and reality. A man who is not asked for his consent is challenged by his own sense of self-respect to say "No." That is an assumption with which a science of society cannot dispense.

In giving the name of ecodynamics to this science we are laying all our emphasis on two facts: that mankind is constantly building houses, that man is a house-builder – and that the houses of mankind are transitory and provisional. We defy the traditional rule of the political economists that it is in the nature of governments, churches, corporations to build their houses for as long a time as possible. We declare that long duration is an exception for such buildings, and concede the necessity for a perpetual revision of all the foundations of society. We are assuming that there is an optimum timespan for the different houses. By starting with the factory as the most ephemeral kind of house in society, we can

hope to prove in an unmistakable way the temporary character of every house. But of course, not all are as short-lived as the factory. Mount Vernon is meant to remind many generations of George Washington. And it is no luxury that St. Peter's in Rome is so old. Without the continuity it represents, we should know nothing of Christianity. The difference between the old balance sheet of society and the ecodynamic balance sheet can be defined as a simple change of direction. Political economy took its departure from stable forms of government in State and Church. It discussed the constitutions of empires or republics, it looked with horror upon the decline and fall of those great powers, and it admitted only reluctantly that the change and breakdown and death of institutions were inevitable.

Ecodynamics sets out from forms slated for death. It is not afraid to face the quick turnover of human houses. It begins with the old question "Quousque tandem?" "How long can it last?" This is its clue to the labyrinth of man's temporary forms. It is quite willing to learn of the existence of everlasting houses or long-enduring loyalties, but it wishes to know why they have the power of lasting so long. After having ascertained the fugitive character of man's life in a factory, we ask for the next higher form of man's houses on earth. We shall try to limit the short-time grouping to its proper purposes, for by so doing we can limit our first ecodynamic law and supplement it with another.

The first ecodynamic law is unsatisfactory because it seems to nail man to his work alone, and to derive all the rules for his treatment from his place in the group which has a social task to perform. As in most cases, it is enough to pursue the group principle to its own ultimate goal to see it transformed into another. This dialectical shift in the group principle comes inevitably when the group gains more strength. We have spoken of the factory group as a temporary arrangement. Nature knows of nothing but temporary arrangements. Man is not the same after ten years of work. By nature, a group is an arrangement for less than a human life-time.

The group will exhaust its possibilities in a certain sequence of time—three, five, seven years. Any living unity just by living produces its own end. The importance of our law lies in the fact that a life-time group is not even theoretically the optimum for a team in production! The optimum of teamwork lies far beneath a man's life-time.

If this is admitted, changes in our activities are not a necessary evil but of the essence of any social system. Man must survive all the teams he is on. On the other hand, it is obvious that this law of an optimum in teamwork does not dominate all sides of man's being.

IV
The Labor Movement:
The Second Ecodynamic Law

Industry, by its principle of costing accounts for future production of goods, looks at man as an atom in the molecules of labor- supply for planned work. In the plan 70,000 working hours are the first rough estimate. Only later this general estimate is subdivided among working days. And this distribution remains elastic always. For the work may be speeded up or lengthened according to financial pressure or other reasons of convenience. Each change in the period allowed for accomplishing the task will result in a change in the number of workers employed. This being so, the costing office is concerned with the twenty-four hour day of Nature's Labor Day. The endless recurrence of a day of labor for this kind of natural force is expressed best by the endless willingness of the iron man, the machine. The weak machine which is man cannot match the purely mechanical forces which are able to serve without a break. Man needs rest, vacations, sleep. That is why he has to make up for his deficiencies by working in shifts. That human labor may work in shifts, then, is a concession made to humanity by industry. It is not inherent to industry to make similar concessions. In the first days of the industrial revolution children would work 23 hours a day. And an English physician testified to a committee of the House of Lords that he did not see why they should not!

This man was not mad. To allow for shifts contradicts the innate industrial set-up. The frame of reference of the factory system nowhere contains the non-labor elements of man's nature. There is no such thing in this frame of reference as the growth of a child, the life-time of a worker, sunrise or sunset, the rhythm of week and holiday. What things are and what they can do is the

only thing that counts. Labor is bought as a fixed and invariable, as a standardized and permanent raw material. The standardization depends on a pluralistic concept of man. Three or more of these individuals are knitted together in shifts lest the industrial molecule termed "a Worker" be impossible. Industry nowhere meets the real single L. B. Thompson directly or primarily. It reaches no farther down into the reservoir of labor-supply than to the abstract "individual." An individual is one in three or four. He differs widely from a real man.

Now such is our machinery of thinking that we cannot utter the plural of a concept without conjuring up a whole quadruplet of connotations. Where there is a plural, there ought to be, for example, a singular. Since industry approaches the questionable existence of man from the pluralistic side, let us ask where in society is the legitimate place for man as unique, as a real personality in the singular. An old Liberal would have answered the question by pointing to a man's private property; an old Christian might have replied: "You ask where man is unique? You had better ask when he is unique. And as for that I can tell you, sir: on his deathbed, and in his grave."

Perhaps both were right. Still, as humble members of modern society we are loath to pretend too precise a knowledge of metaphysics. At least we are not prone to repeat any dogma about the single man which was never based on any investigation of the facts of society. The thinkers too long tackled man as "one" without even mentioning his being treated as a plural by society, making us suspicious of their whole method. They overlooked all the consequences of the first ecodynamic law. The first impulse of any group of six or seven beings who find themselves treated as a mere sum is not at all an individualistic reaction. Man, when treated as a figure in a sum, does not try to go back to his uniqueness and singularity.

When a professor numbers his many students as "his" forty-five students, the instinctive reaction of Messrs. Mackeray,

Crackeray, and Thackeray is not what might be expected. They don't rebel, "If you please, I am Mr. John William Mackeray, I am Mr. Ralph Burton Thackeray, senior," or "Don't mistake me for my younger brother Al, I am Chester Franklin Crackeray" — far from that. These three students turn instinctively towards collectivism! They become and suddenly behave as a bunch of students. They claim perhaps to be or to represent the student body, the class of Prof. Wrong, or the seminar-group of Prof. Right. Their self-assertion might spread so that finally they pretend to be "the youth of the nation."

In precisely this fashion the workers reacted against industrial management. They would fight together in a strike, they would build up a moral home for fleeting labor and call it a union. They would erect the collective of an international proletariat. Labor is a collective concept like youth. When an employer begins to speak of labor instead of his workers or his men, he will soon have to surrender to the new collective and to collective bargaining. Nobody exchanges the collective concept for the plural without being caught by its logic. The logic of a collective and the logic of a plural are wholly different. The grammatical disguise of a collective may be misleading. One may mistake it to be a harmless singular, "the capitalist is greedy," "the student is lazy," "man is a fighter," "the state is based on justice." "The state," "Man" are not singulars in these sentences. They are abstractions and abstract types like Christianity or Feudalism. Christianity is the collective feature in all Christians, and the state is as much a generalization as Feudalism.

In Latin the words ending in *-as*, or *-us*, are clearly collectives. Libertas, civitas, iuventus, senectus are well-known nouns of that formation. In English the words ending in *-ness* and *-hood*, like manhood and oneness, reflect the special grammatical apparatus for expressing general ideas. It is, then, highly significant that the era of the last 150 years overlooked the collective forms of language or degraded them to mere abstractions. Citizenship and civilization are abstracts compared to *civitas*. The *civitas* is

neither citizenship or civilization, it is "we, the free people of the city"; still a touch of the idealizing element in citizenship and civilization is inherent to this concrete collective also. Now in this sphere of collectives, the two words "labor" and "youth" are remarkable innovations of the last fifty years. Their linguistic construction is completely detached from the old ways of speech. For neither *-hood* nor *-ness* nor *-tas* nor *-tus* was used in shaping the new terms. They had to be framed in the nineteenth century, that is to say, in an era directly opposed to the use of concrete collectives.

The language of our times did not offer any serviceable matrix for the new terminology because the endings formerly used for collectives had all been watered down into mere abstractions. So the new realities had to break through and find their way against heavy linguistic odds. The era of the French Revolution believed in no other realities except the singular and plural. Neither collectives nor wholes were visible. Still the concepts "Labor" and "Youth" cannot be determined by either of the two categories "singular" or "plural". A collective is something third. It deals with one common goal, by pointing towards one ideal or abstract type. The collective deals with parts in relation to a whole, with positive facts in relation to a superlative, with fractions in relation to an integer number. A youth is the microcosmic cell of the macrocosmic reality "Youth." And whereas the mere plural of many equals "many" men, many workers must be rendered as an indefinite and endless series of 1+1+1+1; the collective must be described by $1 = 1/4 + 1/8 + 1/8 + 1/16 + 1/4 + 3/16$.

Though the two equations may suffice to dismiss any sort of identity between a plural and a collective, it would not do to consider the whole as a purely statistical concept. The idea of wholeness, of youth or labor is never expressed as a quantitative statement. Each whole has a character and quality of its own. In the collective the quality shown by the parts or cells or samples is enhanced and carried to perfection. A collective is a superlative! The elative or superlative character of a collective use of the words

"manhood," "virility," "beauty," "truth" cannot be overlooked lest we misunderstand our ways of life and order. All the Greek gods sprang from this elative quality of collectives or abstractions. Any word can become a fascination on account of the quality for which it stands. Instead of being interested in the many black clouds, instead of wearing black myself, I may be suddenly caught by a kind of awe and admiration for blackness—and when that happens I am bowing to an independent force in life with respect. That is what happened in the virgin days of religion and is happening over and over again. The many workers, then, injured by the extension of the industrial equation *Three and over equals One* to their lives, did not react by stressing the personality of each worker. The many individuals gathered with their comrades and exclaimed: we represent Work, we embody Labor, we emblematize the social energies of the masses. And thus, the second ecodynamic law must be instated. The law of qualification runs: *All equals One*. Mathematically spoken: $\infty = 1$.

This collectivism, though newly stated by Communism, is nothing new in mankind. Each class in college is made into such a collective quite automatically. The very process of education and good breeding is no other. "Give the boy an education" means make him one of all members of good society, make him a true representative of the group you like best, give him the common background suited for his time and nation. In education, the unobtrusive word "common" in common background deserves a better analysis than it usually gets. It is too often slighted. In fact, most educators stare at the problem of what to teach. It is more important to ask yourself what you should give to *every* member of your educational group. That it is an experience of a collective body is the first value of an education. *Education "collectifies".* It deals with generalizations. To educate means to nationalize that part of the future adult on which he will later look back as his past. It is a highly artificial and highly useful collectivization of our future memories! The prearrangement of future memories may seem a funny

purpose. But that's what general education is! By working upon a child's blank brain intentionally, we are not concerned with his immediate needs – why not leave him in the state of nature as long as possible? We wish to turn this innocent and prepersonal phase of the boy's or girl's life into an experience of a common life. Whenever he looks back on this juvenile past, he must think of it as the regular life of a young man of normal health and morals and of moral and healthy normalcy. Why is this so important?

Later life will always individuate the boys. Personalities differ. Life inevitably will scatter and break up the group of brothers or classmates. In the long run we all sheer off. This being the fatal way into loneliness for each son of a woman, we take refuge in education. We try to make the young one, at the dawn of life, experience true solidarity and friendship. Through sisters and brothers in the old days of endless children, and today through their classmates, their life is bedded into the life of all mankind. Since the alumni cannot help being individuated, the freshmen are requested to learn generalities connecting them with the great stream of tradition. They are asked to experience a full community-life and as good sports to join the group.

The pre-personal phase of life is colored with truly communistic colors by education. And it is this side of education which is fascinating the parents who give the last farthing for the education of their offspring. The adults, living in a pluralistic society of industry, are in love with the collective forms of life, because every feature here is the opposite from the situation in the factory. For example, in the factory a man is bought at his face value. He is what he is now and here. In education nobody is believed or expected to be what he is. He is believed to change, and to be for the time being in a fleeting state which is of no final significance. He is taken for a maggot. He is expected to grow. In education nobody has his fixed price. He has no present day value, like a newborn child.

Thus the slogan, "Give a man an education," means: delay his getting under the schedule by which he is earmarked for definite

wages and a definite price, wait for his development. By the installation of educational measures, the period of growth, of dreams, of hope is protected against exploitation. By retaining him in the collective group we clothe the young member of society in the protective garb of fellowship, by which no final demand on his character or abilities is made. In the idealistic group of a school we are in the happy state which precedes, and must precede always, the period of rugged individualism. That is why the masses believe in the spread of collective forms of life. For collectivism is a wile by which we can escape individual responsibility. Now he who has no collective education of sufficient length, is suffering from the burden of too early individuation. The workers, like any members of a collective, are not living in the present as long as they are labeled "the proletariat" or "labor." These names make them into visionaries of their "ideal type." During childhood and adolescence and during the growth of a new movement, this feeling is perfectly legitimate. Life is before us, then, and we are drawn naturally more towards the future.

This tendency qualifies all collectives. Collectives draw their impulses from the future or from the past; they are utopian or romantic. The collective form, then, does not belong to the simple present or rational reality of existing facts and things. Neither a college education, nor the labor movement, nor the American Legion lives in the present day. The Legion men who cherish their war experience when they stood highest in their country's esteem idealize a past, while Communism is preached as the goal of the future.

Such a goal leaves out all existing divisions of men, creeds, colors, classes. It is this appeal which is so attractive. We all wish to get rid of limitations or fetters of reality. To all men collectives offer the escape they desire from the prison of our existence.

So we can learn about the collective aggregate state some definite truth, a truth heeded by every politician, but not often observed by the logician. The collective form Man, Youth, Women,

does not belong to the simple present or rational reality of things. It represents a tendency to be found in the many specimens which are qualified by the collective. Wherever we apply the collective form, we stress something which is in flux. We seem to decry or to enhance the quality, to create or to suppress a formation and thereby go beyond the statistic reality of the present moment. "Labor" and "youth" are tendential words. They are words of growth and intensification. The collective is our means of increasing a quality which we think important enough to bestow on it the character of an essential element of the world. The Semitic languages have forms of intensity for their verbs. In Arabic the form "I love violently" is expressed by a special form, inasmuch as the superlative element "most" or "violently" is put into the form "I love" itself so that it reads, so to speak: "I lovest," or like an imaginary Latin, amabissimo. In a similar way, the collective use of a noun is the fortissimo, the superlative of this noun. Any object can be exalted into an idea by using it as a collective affirmatively. And any such idealized noun can lose this collective quality and then an idea dies. Ideas are not immortal. They are tendencies in our dealing with reality. They are expressing our fears or hopes about reality, they are our program of the future.

That is why any idea is incumbent on society as an imperative. "Labor" implies an effort and a task. It says, and the *Manifesto* of 1847 did this literally, all or nothing. Labor turns the many workers from busy bees into a swarm who have left the hive and are now hanging on as a big, indissoluble cluster.

It is safe to say that the collective reaction of the workers is normal and must find an outlet in legislation in a two-fold direction. In the many relations of the pluralistic worker his molecularity must be recognized. The sooner the phantom of a liberal situation in the factory is looked through as fictitious, the better for the permanent peace of society.

When all reasonable changes in the law of contracts and the like have been made, there will still be the social instinct for

collectivism. The natural outlet for labor's collective instinct is probably its cooperation with the collective instincts in every human being. The natural outlet for the collective tendency in man is common service. An industrial society needs symbols of common service in the field of production itself. That is why the army is no longer the efficient symbol of a nation's collaboration. Modern society is permeated by the desire of collective symbols for our collective struggle against nature. This was in the mind of William James when he wrote about a positive substitute for war and the war-spirit in the youth of the country. In many writings I have exposed practice and theory of the "Labor-Service" as a voluntary contribution of each member of society. After six years of military service, I myself gave more than three hundred days in a series of years to the "Working-Camp" movement. In the American Civilian Conservation Corps the foundations of a general, nation-wide service may be disentangled from a narrow scheme for the unemployed. The nationwide scheme of universal service for the conservation of the soil would be a real step in the solution of the social question, whereas the limitation of the CCC to the unemployed secluded the classes of the American people and separated the college boy from the jobless youngster. The two conceptions, therefore, of the CCC are highly significant of the ambiguous situation. In reality the plans of the American Legion for common service of all in wartimes and Mr. Baruch's scheme for taking the profits out of war are pointing in the same direction in which William James was pointing as early as 1910 and in which the great opportunity of the CCC movement could easily be integrated.

The collectivism of the leisure-classes found an outlet in college education. Since it is impossible to give a college education to each man up to his twentieth year, something else has to comprehend all men in the prime of their collective aspirations, which tends to fall around man's twentieth year. When Huey Long promised a college education to every child of an American family, he

voiced a deep longing of human nature. But it is obvious that as soon as the college education is expanded farther and farther, the character of this education will necessarily become rather different from the times when only wealthy people and members of the professional classes went there. A certain "rapprochement" must take place by which both the standards of education for a minority and the standards of service for the youth of the whole nation may be used for giving satisfaction to the deep instinct for collective service in man.

Purely logical considerations led to immediate practical conclusions. We discovered that much as industry is based on the molecularity of the skilled and trained adult, education is based on the communistic trend in every human being. One might state the multiformity of man with regard to collectivism this way. At twenty, man is by nature a communist. Education should make use of this potentiality in man at this moment. If it does not, Communism will carry this natural tendency to its extreme. And thus, a common tendency for idealistic unselfish service which might well be satisfied during one period of life, will be made into the only tendency of man's whole life by an artificial political propaganda. Human trends can become nightmares or they can be turned into problems of clear daylight. But they will make themselves felt one way or the other. The night begets passionate suppressions and desperate obsessions; the sobriety of the day is for study and cool observation.

The era of liberalism exiled men's collective instincts from his daylight horizon as childish and superstitious. The Liberal ignored the eternal adolescent in man. He ignored that his own usage of "man," when speaking of men, was a monotonous manifesto and not a fact. No wonder that he stands helplessly before the manifestos of classes or races. Only after Youth, Labor, Man, Reason—all in turn—have become manifest shall we allay their fury.

V
The Secret of a Self-Perpetuating Body: *The Third Ecodynamic Law*

Our impassionate study of pluralism and collectivism will prove irrefutable when it can be shown that they are by no means the only ways of classifying man. The mechanism which roused any sum of people to establish themselves as a collective is at work in a third and fourth direction also.

As before, we shall find support in buried grammatical traditions for our rediscovery of man's aggregate states beyond the collective and the plural. These truisms were overlooked by the philosophy of the last centuries. But although modern thought blinded us against these important grammatical expressions of reality, the ancient languages and also experience warrant their existence.

In work, in our struggle against nature, man is arranged like the soldiers on their watch, as links in a chain. For nature is sleepless; it follows that our fight against her is endless. It is this perpetuality of nature's movements which made man into the particle of a bigger unit. He became an atom within a molecule called "labor." In work, three or more equals one.

In education, in all preliminary and voluntary grouping, far off from nature's brutal demands, human beings concur under the spontaneous instinct for a common life. The slogan runs, *All equals One*, because the frame of reference for any voluntary gathering must be larger than the cash-reality of today. It must point into the future, a larger and better future and, for that purpose, expansion and intensification are expressed in the form of the collective which is able to gather people and to collect their little energies.

In all relations of friendship, of personal liking and antagonism, of jealousy and love, of hate and desire, a third relation prevails, that of dialectic polarity. Friend and foe, you and me, and the little word "both" betray the existence of dualism. The climax of this dualism is represented by the forms of reproducing the kind. Male and female are linked together in a polar relation. Whenever we become interested in the processes of succession of life on earth, heredity, reconstruction, historical evolution we are bound to look at reality with eyes similar to those of Plato or Hegel. The universe appears as a dialectical process; life is wrested from the unwilling self by a duel between God and the devil, light and darkness, man and wife, Christ and his Church, heaven and earth. These are all legitimate expressions for one aspect of reality. And this aspect is as consistent as the description of a pluralistic universe or of a galaxy of ideas by materialists or idealists. Marriage is an elementary concept. To mate a pair and to mate all reality as a system of innumerable couples is a form of explanation natural for our mind. When a rabbi was asked what God was doing after he had finished his creative work, he said, "He is marrying the parts of his creation to each other."

The dual, this peculiar grammatical form of verbs and nouns and adjectives is well preserved in Homer. It is familiar to us in all the forms of comparison, as in the Latin *alter*, *uter*, *neuter*, *ambo*, *duo*. In English, it is clearly present in every comparative like bett-er, bigg-er. "Either" and "another" are further vestiges. That is not all. All the parts of the human body which happen to be twins —legs, arms, eyes, ears, hands, feet—were probably conceived as duals in the beginning. And some of the most primeval words of our modern speech are preserving today a phase in our history when language was deeply interested in the dual. These words are mother and father, sister and brother. Here, a feminine and a masculine are both ending in r, the remnant of the comparative form "er" as in bigg-er. In the presence of the child the wife of a man will be called by him "Mother", and the beloved husband is

talked of by the bride as "Father." Most people well know what a step it is from wooing to housekeeping when a man begins to call his sweetheart, "Mother." Mother and Father are titles given by husband and wife to each other in relation to their children. Without cutting the tie between themselves which united them into one body, the articulation of this body is now expressed by making one member the mother and the other the father within this little body politic of the family.

The dual is the truest expression for any incorporation and embodiment. The dual means that diversity is found within unity. The two foci of an ellipse presuppose each other and have no meaning except in relation to each other.

When we understand the process of the dual, it is not difficult to understand that the pair "husband and wife" is a genuine dual, though no grammatical ending comes to our aid. Husband and wife are neither a plural (in that case some third, fourth, and fifth could be added), nor are they a collective since there is no tendency beyond the sober presence, no deification of "Love" as an absolute which makes lovers into worshipers of Eros or Venus. Husband and wife are bound together by a relation of mutual integration. The more the mother is the mother, the more the father may be the father.

By dropping the difference between dual and plural, mankind was depriving itself of an original side of its conscience and consciousness. As man and wife are polar halves of the kind, any two things or beings can be mated, and it seems an endless adventure of life to establish new mixtures, new blends, new marriages among the elements of chemistry, among any two elements of comparatives. The frame of reference of the dual is no less universal than the two other ways of approach. For example, the same employer who deals with his men under the wage-system as atoms in molecules of labor can be in passionate love with his factory, or his work, and many businessmen fortunately have married the good cause of their vocation. We may embrace a

faith, marry a cause, woo a nation, as any great statesman does. In the Bible one of the profound passages about the dual is that which tells of the temptation felt by Moses to desert the faithless Jews and to wait for a better and more loyal tribe. The absolute realism of the Bible, however, is rare. Most men are hypocrites and do not dare to state in public their perpetual temptations of divorce, whether it be the GOP, or the State, or a movement by which they are disappointed and harassed.

The silence in which the necessary duals of our soul are kept has far-reaching consequences. Whenever a situation is not recognized as it should be, it never is left to itself. It is distorted and placed under a wrong rubric and treated according to the rules of this inappropriate heading. That is happening more and more today to the dualistic side of life. Lest the reproduction of mankind and our highest values be impaired, the truism of the third ecodynamic law must be formulated again. This law says that in all relations which are representative of the generation and regeneration of man: *Two equals One*.

Isolated, this statement must seem trivial, irritatingly trivial. Unfortunately some conclusions of it do not seem trivial today, even to philosophers and sociologists. The utter impoverishment of our tools for understanding becomes most evident when one masters the pandemonium which is raging in the field of sex theories and practices. The root of the evil may perhaps be found in the ingenuity with which most sociologists think of man merely in terms of the equation *One equals One*. The outcome cannot but be confusing whenever this primitive formula serves to describe the problems of family life, eugenics, friendship, and the dialectical processes in history between classes or nations. Jealousy and war are no realities to these thinkers. They live in an oversimplified universe of their own making. When the crash comes, a world war, a world revolution, a divorce in their family, a felony in their friendship, they are not only unprepared; they even go so far as to keep the disagreeable fact outside their accounts. How many

rationalists were perfectly unable to see that the World War is the only reality of which all the political events of the last twenty years are minor fragments or symptoms? They go on blaming the war and tumbling into the next because they cannot admit that they themselves remained guilty of the last.

Now these ingenuous rationalists are especially funny when it comes to a discussion of sex. I know a professor of psychology who has one great passion, his only daughter. Since he is an enlightened freethinker, psychoanalyst, and behaviorist, he has decided that the girl ought to have a boyfriend lest she might suffer from inhibitions. The girl, up till today, has stubbornly refused to have any affair. She is craving for a real love, marriage, and children, and is not willing to compromise with a cheap relation. She is craving something complete. The father, firmly believing in mere "sex-relations" between two human beings, is seriously depressed by his daughter's strange superstition and is not able, with all his psychoanalysis, to explain to himself what she is longing for.

The professor, like many other astute thinkers, extends his sociological knowledge of modern pluralism in industry to the realm of dualism. He eyes the whole realm of the dual through glasses constructed for the innumerable atoms in work. It seems to him impossible that man has more than one frame of reference in which to live. He is so deeply in love with his pluralistic logic that he would fear to lose all his clear thinking by admitting a complex, rich, and sovereign vocabulary for the dual, for all relations outlasting a single day or a sum of many single days. In his microscopical optics love appears as sex. Where love is explained as sex we can be sure that the speaker is wearing the glasses of pluralism. The era for the pluralistic man is, indeed, so much shorter than the time-span for a couple, that love is perverted into an endless chain of sex desires, sex shocks, and sex attacks. And it is true that seventy thousand hours of work are merely a sum, and once we make use of the yardstick of hours, a million hours cannot build up a higher unit—say, a life's work, a reputa-

tion, immortal fame. And five hundred experiences in sex never lead into the realm which is governed by the time-span of a generation.

Each way of classifying man, plural, collective, and dual, are however intimately linked up with a specific timespan. Each grammatical form has an intimate relation to the tenses. We have seen already that man can be made into a plural temporarily, and only temporarily. For an hour, for twenty-four hours, for a couple of years, I can devote my work to the cooperative group. Still, there is a limit to this devotion. A group in rationalized production will have spent its energies after several years at most. Careful observations carried out in a factory over a period of five years corroborated the fact that the constellations in the best team which make for the efficiency of a group are exhausted after that time. All possible varieties of rivalry, competition, good neighborhood, leadership are exploited. The spurs which man exerts over man in collaboration do not last forever. In any army a shakeup must take place after three or four years to instill new energies into the troop. A new commander, new privates, other sergeants must join the company. Or it will grow stale and soon the army will be rotten. The same is true in schools and factories. After several years, the men need to be placed in new groups. The first ecodynamic law implies that man's qualification for the molecular group at work is fleeting and transitory.

The collective, on the other hand, is not satisfied with microscopical time-spans. It is not worthwhile to start a great movement for a short campaign of some days or weeks. That can be done and is done because the pluralistic tendencies of our industrial environment are invading every field of life. However, the results are equally as disappointing as when love is disintegrated into myriads of sex drives. And before returning to matrimony, we had better study the kind of perversion that happens to human ideal collectives which come under the tyranny of rationalists. The true collective binds people together for endless periods

of time; science is involved in a campaign of more than three hundred years now. The church has been building up mankind through two thousand years. Language, the living word which educates us into members of the spiritual kingdom, is at least six thousand years old. We found that collectives tend to endless perpetuation into the past and into the future. The life of the spirit outlasts the physical life of one generation. It may be said that the very phrase "spiritual life" would lose its usefulness without the connotation of outlasting our physical life. The higher processes of thought, speech and creative genius transcend the timespan and the biography of any individual. They have a chronology of their own. To serve the goddess of art, to be in research, to pray for peace, always and everywhere reaches into an order of things which is proof against the death of any single artist or explorer or believer. And this spiritual order of things is particularly dear to the scientists who think that they know how love should be diluted into the plural of sex experiences. These scientists move in the collective world of timelessness without divining it. They are serving in the collective "science," which is as much an idealizing collective as youth or labor. Now what will become of a collective which is abused by the industrial means of pluralism? The devotees of the collective ideal will be watered down into the masses of an election campaign!

Mass in the treatment of a collective movement corresponds, then, to sex in the field of the dual. He who is wearing the glasses of pluralism can observe nothing but mass and sex when he turns to events which proceed in a rhythm of time unknown in the production of goods! Our modern society, unaware of the contradictory concepts of "man" that are at the bottom of our various statements about man, has fallen under the despotism of short time-spans. The priests of this modern society (and the natural scientists are the high priests of our modern world) are manipulating all the affairs of mankind today with the stop-watch. All short-lived constellations of society can be studied that way. But to

call that one approach to human life with the comprehensive name of "sociology" or "psychology" is demonstrating a logical error. *Three equals One* is at the bottom of all their wrong generalizations. A group of scientists observing the stars through an endless series of centuries are all serving the same leading idea, astronomy. This service is binding them together into the republic of scholars. A true code of honor is ruling their dealings with each other. From Galileo Galilei to the men of the Lick Observatory one unbroken chain can be traced. The longtime service through centuries is setting these men aside as a disciplined bodyguard of truth. Now take an astronomer's conference in a given year, say 1897. Suppose 170 living astronomers were present at the meeting. The observer who thinks that he can study the influence of colleetivism at this occasion will get much data about mass-behavior. He will hear plenty of criticism about boarding and food, witty remarks and stunts; he will scent jealousy and friendship, ambition and benevolence, as in any group of 170 people. But of the flame burning in the best of these men, he will not have and he cannot acquire the faintest notion. His eyeglass furnishes no other observations except those which can be collected on the spot. His methods deal with the behavior of man in a place, not with the process or procedure of men through human and superhuman timespans of thirty or two hu ndred years. The results cannot help leading to the reduction of reality to the pettiness of momentary behavior. Ideals and marriages, churches and arts, appear in the phraseology of these observers as mere gatherings of a certain number of people.

A few years ago, to an influential law school of this country, the due process of law appeared to be simply a technique of influencing three or five or seven elderly gentlemen of the bench according to their prejudices, nerves, and digestion. A process of law which could be diluted into the psychoanalysis of five contemporaries would no longer be the due process of law. Again, the fallacy of the professors in that famous law school is that they

mistake their microscopical glasses for the only glasses which can penetrate into human time. They are arranging in a cross-section of simultaneity what cannot be envisualized in one moment or one day. To glare at the visible procedures of the court on January 24th, three o'clock in the afternoon, does not tell you a thing about the loyalties which bring about the strange sentences uttered by attorneys, bailiffs, and judges.

The wave-lengths operating in genuine collectives are not traceable by the instruments of behaviorists and psychologists with all their tests and statistics. Short waves and long waves in radio are not more different than the short and the long time spans in human life. One thousand short waves will never lead to one long wave. The same is true of the microscopic and the telescopic vision of human time. They never coincide, nor can one thousand observations obtained through the microscope of reporters on one thousand conferences ever explain any event which is bound to a long time-span.

It is rather easy to explain that the continuity of the Christian church cannot be measured or understood through an intelligence test of the living cardinals. It may perhaps seem less evident that marriage cannot be tested by statistics or similar industrial techniques. The telescope of centuries and the microscope of hours and seconds are extreme. But a wedding is, after all, a short event even when it is celebrated by good old-timers for a full three days and nights. Why, then, not tackle love with the modern methods of investigation which are applied to sex-appeal and similar transitory stimuli?

The dual, however, also has its peculiar chronology as much as the collective or the plural. Matrimony is neither eternal in future or past, nor short-lived for one day or week. No sex-relation of one carnival night has anything to do with the chronometer set in motion by the real devotion of two human beings. A couple living together loyally and faithfully all their life and bringing up their children in common husbandry certainly can claim to be married, even though the sheriff may not have assisted their wed-

ding. The hypocrisy of modern society goes farthest in that direction where sex-relations with a wanton woman and the loyalties of two people sharing their full life are both stigmatized as "immoral," whereas a divorce after one or two years of married life is accepted as legitimate. Marriage organizes the self-conscious half of our existence on earth. In committing herself to a friendship, in falling in love with a great cause, in getting betrothed to a bridegroom, a human being makes the attempt to organize the whole of her conscious life into one unity! The dual does not apply where this decision for better, for worse is not made. An acquaintance is not a friend, an election is not a life's service given to your country, and a honeymoon ending in Reno never was a marriage. For the man did not give up his status as an individual to get back his new status of one out of two. Lincoln could not have divorced the United States; Dante was unable to leave Beatrice. Their wooing meant a transformation of status. To be a bachelor and to be married are different statuses. The dual is a striving for polar unity. It could exist and it practically exists in many lives which know nothing of sex relations. Ever since St. Paul showed that the physical relation between a man and woman in matrimony was but a weak simile of the relation between Christ and his church, the dual stands out as an adventure of its own.

Consciousness and knowledge are responsible for the dual. We are slated for the attempt to organize our conscious period of life into a dual, because all knowledge is tainted with the mark of dialectic contradictions. In thinking, man is compelled to oppose one thing by its contrast; black calls for white, male for female, yes for no, and so on *ad infinitum*. Man would be unable to overcome his hairsplitting method of yes and no without the dual. The dual transforms two contradictions into the foci of one ellipse. The man who comes to "know" his wife learns the relativity of opposites. Man and wife are opposites, yes; the statesman and his nation are opposites; Christ and his church are opposites, and often Christ is on the side of martyrs suffering from his church. And

though the conflicts between the sexes, between the Church and the individual soul, between a genius and his material, may be heartrending, these conflicts are not the last secret in the mutual relation of these pairs. The mutuality is more prominent than the suffering; the two conflicting elements are dignitaries of one life. The Roman consuls were con-suls, that is to say, con-silients, or co-jumpers. This office of consulate, then, can show how, at the cradle of democracy, the dual played a bigger part than the plural. The VicePresident of the United States is, in a mutilated form, a dualistic magistrate. In any marriage the absent husband is represented by his wife.

The dual enables us to overcome the endless paradoxes of our reason. Antagonisms and puzzling conflicts are re-translated into polarities of a higher unity. Without the dual we all would go mad after some years of doubt and discussion. It allows us to exchange ourselves with somebody else without losing our personal identity! When I address somebody as "my friend," I have paved the road for his reply, "my friend." The title which I gave him was no statement concerning him only. It included myself. The mother speaking of the father includes herself in his title. She is the mother because he is the father. And he is my friend because I am his friend. In a genuine dual the other is my second self. We can exchange roles, and yet remain ourselves. The processes of chemistry are impenetrable for mechanics. The relations in a dual are impenetrable for a brain solely trained for the plural.

This should have far-reaching legal and social consequences. The two relations which are abused today by pluralists are marriage and religion. The church is explained as an association of some hundreds or thousands of old-fashioned people and marriage is called a contract between two partners.

Difficile est satiram non scribere. In a sale the two partners to the contract think of their own advantage. The whole content of a real marriage might be summed up in the statement that the two who are partners are each expected to care more for the

other partner's happiness than for their own! No marriage could survive twenty-four hours if the couple should apply the rule of the law of contracts to their common life. While in business everybody minds his own business. In any dual one partner minds the other partner's business. A wife shall care for her man's health more than for her own, and her husband shall care more for her comfort than for his own. To judge a marriage on the basis of the law of contract is an aberration from logical thinking. There is another side to the question. The duties derived from a contract are fixed in the beginning. The duties in any true partnership are in permanent flux; they are the result not of the words spoken at the beginning but of the actions of the partners to the relationship while it lasts. These actions have a polarizing effect upon the two. The more you become my friend, the more I shall become yours. The mutual dependence is graded, and in the normal evolution of dual relations the two individuals are more and more encircled and transformed into the foci of one ellipse. Consequently, the action of each partner is shaping the form of the dual. The polarity is established more definitely each time. Finally, the two are agents of a corporated body for which they stand, for from it they derive their activities. This becomes very clear in cases of absence or death of one partner. Then not only does one try to represent the other but also the general reaction of the partner who is left behind is that of stressing the point of view, the line of action, and the interest of the partner who has passed away. In a contract, however, I am free when the other party ceases to exist. It is a pluralistic or individualistic arrangement. Under the dual I am spellbound by the law of polarization. I remain the other half the more my second self is in decline or is prevented from taking his place.

So we can say that a contract by which one party surrenders to the other would be void. Contracts are and must remain temporary arrangements for the individual forms of our existence, fleeting conglomerations for work and against nature outside. But in

matrimony a wife surrenders her beauty and health to her husband for better, for worse. And the man surrenders his adventures, his infinite chances. How can such a perilous exposure of the whole being be treated as the result of a willful arrangement between two individuals? In a contract I try to get as much as possible, and to remain as unchanged as possible. In any partnership I throw in my lot today without knowing where I shall be tomorrow.

The modern legal and social theory on marriage is legalizing sex relations between individuals. Is it legalized prostitution, as a pessimist called it? I don't think so. This is simply the outcome of the tyranny under which modern men have to live, the tyranny of molecularity. The realm of pluralism is so powerful in the factory age that this exchange of interest—I for you, you for me—is deemed impossible.

But any personal loyalty belongs to the realm of polarity. It is comforting to find true polar relations in the midst of business itself. The dual is not limited to the zone of sentiments. In the heart of the city partnership is flourishing today. For a firm in which the two associates would limit their mutual services to the stipulations of their contract would be doomed. It would liquidate as quickly as possible since A and B would withhold their best energies from it. They would move morally outside their own firm instead of inside of it.

The perpetuation of any body—a firm, a home, a kingdom, a college—into the future is quite different from the fulfillment of the conditions of a contract or plan. Under a plan everybody has to behave according to his stated self-interest (wages, profits, goods, fame). In education we try to become something new and unknown now. In the perpetuation of the kind or of any social form two problems have to be solved. In distinction to the growth of the educated and in distinction to the finite behavior of the employee, he who is married or has embraced a cause is trying to regenerate it by his devotion. The human body or the body politic he is in love with is all here at present. But since it is

a body, it would run down and die off without regeneration. The dual is the form of our existence by which we insure the regeneration of the bodies we love. The business would not go on beyond its founder if there could not be found one soul who believed in it and would embrace it wholeheartedly. And what is true in business is truer about all the integrating forms of life. Sex-relations between individuals lead to the suppression of progeny, because in a sex relation I am loving myself only and satisfying my own needs only. Labor relations between co-workers lead to the suppression of output. And mere mass relations at meetings and party conventions lead to the disintegration of government.

The reproduction of the kind and the reproduction of any social form present a problem of how to produce self-forgetfulness. The bipolar dual is the means of wresting from man this devotion which is against his self-interest and against his instinct for self-support and independence. Propagation, then, is in contradiction to self-interest. It will be the more efficient the greater the self-interest it has to overcome and the greater its power of overcoming it indeed. The weakling is not a good father, nor is the criminal. But the vigorous fighter who is overcome in spite of his rugged individualism is the best match.

The longer the way to overcome the self-interest of the two who shall be melted together, the more promising is the process. That is why in nature and society all duals are based on a long period of courtship! It is the touchstone of real dualistic processes that they cannot be entered upon at any time, but must wait for ripeness and the once forever. The resistance of the two individuals must be genuine and deep to make the result valuable. The physicians are concerned with our chromosomes today, but the difference between a weak and a vigorous scion may be much more firmly based on the degree of intensity in the courtship between the two partners, the depth of the alliance, the intensity of the focussing process, the good breeding in marriage, the original solution brought about in a political issue. Today, with marriage at

twenty, the world seems slated for the drab imitation of the workshop's pluralism. The distinction between contract and attraction is ironed out. The factory system is pervading the realm of polar relations.

As all primitives in life and language knew about the dual, it seems not hopeless to rediscover the eternal truth that there is an abyss between two on one side and three or more on the other. And it is just as well to discover this truth outside the realm of eugenics as a truth of thought and speech and actual behavior, in a far wider field of human action, than to begin with a practical attack on modern matrimony. It is one of the boring mistakes of the Christian moralist that he tackles the relations between man and wife as something divorced from the rest of our life. If the dual existed in matrimony only, marriage would be unable to stand the strain of an anti-dualistic environment.

Fortunately, the numbers two and three can yield their secrets to us without any peeping upon the limited problem of sex-relations. Two and three are not at all figures following each other in a series running from zero up to infinity. They are separated from each other as molecularity is from polarity. Between two a mutual dialectical process is bringing out the qualities of one and the other by a perpetual correlation. In any dual one partner is producing the other continuously by becoming more himself.

The dual is able to free us from our self-centered and localized consciousness. It means the giving up of our native, inborn, natural consciousness. We acquire a new status and a new character by being vested with the partnership in a body containing us and somebody else. Our body is now replaced by this body politic into which we have been thrust with our partner.

The partial extinction of the dual is best shown by the dying off of an old expression for the preparatory steps of such a copulation. Since the old-timers were aware of the extraordinary forces needed for the mating of two individuals, they called the attempt of conjuring up these forces "wooing." Wooing and courtship are

old-fashioned terms for the ways of bringing about a dual. Sex relations replacing marriage have ridiculed extended courtship and long-time wooing. People will marry tomorrow, after having met today. There is time neither for reconsideration nor for breaking down the walls of individuality. But the formal marriage after twenty-four hours of acquaintance, by overlooking the problem of courtship completely, has only shifted the issue from the period before formal marriage to a later phase of matrimonial development. Nature cannot be scorned. And nature is using so many extraordinary means of color, smell, and music to overcome the fears of the two who make love to each other that it is obvious that the dual is something adventurous, dangerous, and overwhelming. The wooing in the old days took a bride from a father's house, from his religion, standards, and convictions. She had no other gods beside him and his gods. She was not exposed to any other man's doctrines or ideals or values. Today, this has changed completely. The natural monotheism of a good daughter, looking up to her father as the priest of her creed, is gone. She now hears in school and college lots of things which belong to antagonistic creeds and values. Many teachers, many movies are moving and influencing her imagination. A modern girl's education is polytheistic. The more polytheistic it is, the more we feel proof against polytheism today. But with the breakdown of the family, any girl has lost the simple reliance on her father's creed. And nothing is polytheism more truly than just this exposure of a girl to scores of contradictory ideas and standards.

Thus, a modern man is not marrying one man's daughter, but many men's pupil. Modern marriage sets out, at best, with a man who has conquered himself (very few have) and is thereby monotheistic again, but usually with a wife who has been educated in college, that is to say, by an unknown number of gods, deities, ideals, demons, powers.

The reproduction of the kind in nature and in society as well depends on the intensification of "courtship".

In nature the wonderful colors of blossom and feather, the iridescence of a shell, are attempts to produce this surrender through which the life of a kind can be wrested from the individuals. They are meant to pierce through the fears and self-interest of the egocentric individual and push him into taking over responsibility for the kind. That is why in a real dualism an "I" and a "thou" challenge each other. It is a selective process by which one man and one woman are singled out and sealed together as one unique constellation in time, never to be repeated.

The risk of mating one with one differs from the social risk of working together within the social molecule. Three or more in work remain individuals. The love between you and me lays bare the life of the kind behind our existence as specimens. The real problem of good breeding is therefore to induce two specimens to dissolve their individuality, to tear down the proud walls of their respective personalities, and to represent nothing but the kind.

It is true, the period of courtship in a man's or a woman's life asks for a new interpretation. Along with the word the old forms of courtship more or less disappeared. And nobody will be sorry that diamonds and the splendor of the paternal home are no longer the symbols of courtship. It is the great innovation of our time that courtship is becoming a spiritual problem only to be seen and solved long after the wedding.

The great adventure of mankind in the present period is women's emancipation. Women, the residents and the defenders of human houses through the ages, are being made members, residents, and queens of that one united house of nature which modern economics and technique are building around us. One economy, one household, is replacing millions of separate husbandries. The earth is becoming one great second house for the restitution of nature. The blind elements and the raw materials are being organized by an effort of science and skill which can be glorified as *natura renaturata*, nature renaturalized. Man's fireplace and hearth, the kitchen and the barn of private economies, are giving way to

a much bigger economy in which men and women are going to cooperate on a continent-wide scale. That is what makes the women as much at home in it as the men. Since the world has been made into one great house for mankind, there is no reason why women should not be the queens and presiding officers of this house.

Since we have based our system on the assumption that industrialization will some day be complete, we can foresee the time when the daughters of men, having become daughters of the industrial revolution, will all definitely be transformed into mothers, daughters, sisters, and housewives of mankind, of society as a whole. In the old days a father would never have allowed his daughter to worship Freud, Gandhi, Marx, Admiral Byrd, or Leslie Howard. He would have been a jealous god. Modern women are trying out many deities, many doctrines, and many cooking recipes before they marry. The place of the father, the one great personal authority for values, is taken by an anonymous contemporaneity. Girls are exposed to a destruction of their sound instinct by all the false prophets of a golden-calf society. But they react in a very healthy way. They take their boy and marry. This is a decision which preserves them from the worst results of molecularity. It opens a way into the future.

Because only now courtship begins. During the next seven or eight years man and wife seek out their real gods. They single out which tradition, which creed, which belief, and which value shall be restored, which can be dropped. By a process of synthesis the couple selects its gods. The girl is no longer the heiress of her physical father's kingdom. Instead, she and her husband rediscover the kingdom of the spirit in which they met. Together, boy and girl can achieve what the cut-off and roving half is never able to accomplish: they can find God.

Mutual responsibility is the self-forgetting principle of any true marriage. It is the simple principle which destroys all the nightmares of sect, superstition, and the slogans of the day. He

who sees with the eyes of the race sees the ends for which man has been created. He who learns to renounce his individuality for the sake of somebody else gets it back a thousandfold. This man discovers a new secret every day; he begins to grow. Existence ceases to be a repetition and becomes a permanent growth and change. In a true marriage the common search carried on by man and wife should lead imperceptibly to a fuller and fuller desire for the race. And if the phase of social pressure is successfully overcome, birth control will reveal itself not as a question of rationalizing matrimony, but of building it up from courtship to real parenthood. As in the Virgin Mary's day, the real bride will be the young wife who now, like her husband, throws off the yoke of the experimental stage and welcomes her manifest destiny as the handmaid of the Lord; and her husband will, if they have not wasted their time, be a responsible member of a group outside in the community. In acting for the kind, man becomes responsible. His mind changes. It pierces through space, it thinks in terms of generations. And the length of the experimental stage will have steeled him against divorce. The one with whom you have fought the false demons, with whom you have paved the road into the life of the kind, is your natural partner for the rest of your life.

Once these parents have experienced a common faith and established a community which tries to obey the commandments of this faith, their progeny is legitimate. A child whose parents are not united by a common faith remains illegitimate. Civil law has no influence on this premise of good breeding. With a common faith won in a common campaign, parents will easily regain the power of educating their children. They will ignore the silly inhibitions of parents who do not know what to tell their children. The telling, it is true, is not the important thing. A common faith is something which permeates and pervades a nursery without the need of words; it gives power and security to future generations.

Such a couple has rediscovered a real law; they have overcome the factory demon of today, who is whispering divorce and

hourly relations in their ear. By a new use of their life between twenty and thirty the young generation is going to establish the third ecodynamic law. For the propagation of mankind the old equation persists: *Two equals One*.

VI
The Singular of Man:
The Fourth Ecodynamic Law

You must work. You must grow. You must love. These three equations demand fulfillment. But in each of the three the alleged singular "Man" has turned out not to be a singular at all. Plurals, collectives and duals occupied the seat of the driver against all the liberal concepts of the classroom thinkers. *One equals three and more* was the contraption of the world of nature and technique for building man into its frame of endless processes. Compared to the unceasing struggle of powers and matter in the physical world, three and more had to take the place of the real "man" who kept the watch against the chaos. Not one man but society is keeping the watch against nature. In society the individuals do not count except as many, as a plural. Three at least are needed for expressing a plural.

It was the short timespans, hour, piece of work, day, month, and year which we found to be at the bottom of this imagination. The microscopical point of view which is able to analyze things, objects, means is at work whenever working hours, working power, wages, and goods are organized.

The second equation pointed in the opposite direction. *One equals all*, or $1 = \infty$, looks at man regardless of time or immediate efficiency. The collective point of view serves us best when we wish to idealize man as a member of eternal groups and as a representative of the future. After the factory system and its stop-watch for seconds and minutes of output, the collectivistic equation "Labor" or "Youth" was taking us far away from present day reality up to the galaxy of ruling forms and final orders. It was, then, somewhat like using the telescope in search of the galaxy when we turned from the costing office of a cotton mill to

the dreams of Labor's universal calling. Any collective use of a man or a class of men means their exaltation and even deification because it is essential for any such ideal Type to transcend the momentary situation by far. This vision is always aggrandizing, telescopical.

The third equation denied again the reality of any singular in man. In starting the correlation, *Two equals One*, the third ecodynamic law made any one individual into one half of a whole. It did not deny the temporary fact of man's loneliness and oneness, but it treated it as meaningless in itself. To the dualist and to the dialectician and to the phylogenist, man's determination lies in mating. His isolated existence must be judged from his later marriage. The thesis and antithesis have no significance outside the final synthesis.

One of the realistic sides of this dualistic conception was the size of its timespan. All genuine duals, friendship, patriotism, the relation between Christ and his church, and foremost, matrimony, are concerned with the great time-span of the conscious half of a life. In marriage the dual covers the time-span of one generation from the wedding day on. In the bridal relation between Christ and his Church, the whole unconscious half of the life of mankind which preceded the Christian era is not envisualized. The simile comprehends nothing but the self-conscious period of mankind during which man is making a purposeful effort towards unity and universality. Patriotism is not the simple dependence of a child upon his environment. It is the response of the feeling, thinking, and reflecting citizen upon his duties to his country.

All these spontaneous alliances with a cause, then, happen in the midst of an evolution. They mark the moment of a definite awakening of self-consciousness. The partners in a dual are mature people. They are able to speak their minds and to pledge themselves for the rest of their lives. It deserves our attention that the dual is neither microscopical nor telescopical in its vision. It is shorter than the whole life of the organism because it is omitting the un-

conscious half of two partners. It is far longer than the off-hand arrangements of our behavior in the struggle against nature. Society in us, our pluralistic side, is simply interested in immediate adaptations to our environment. In our work we are all behaviorists. We are faced by matter and react as matter against matter. But in mating, we are creators of a new environment. The dual is nothing but the choice of our next environment. Therefore shall a man leave his father and mother and shall cleave unto his wife. The dual is creating the new environment in which the daily life of work, adaptation, and meaningful behavior will be contrived again.

The three possible timespans, three to five years, generation, and eternity, seem to be exhausted by the three ecodynamic equations. Where, then, do we meet man in his singular? The question turns out to be puzzling indeed. For the naive thought of the period between the French Revolution and the World War, from Kant to John Dewey, never felt any difficulty in dealing with the singular of man as the clearest and safest unit for reasoning. To us the situation is the reverse. Anything is more easily understood than the reality of such a unit or unity. This bundle of nerves, this receptacle of collective slogans, this changing lover and suitor of all faiths and causes, why should he not be split? Why should he not become somebody else during his life-time? Are the Hindoos right who think of man as undergoing a permanent *metempsychosis*?

I hope I have succeeded in shaking the naive faith in the *a priori* character of man's personality.

This naive and rationalistic faith blinded the sociologists and, more so, the humanists, to the most obvious facts in society. It is not natural that man is a singular and unique being. Perhaps he is one. But if so, it is an unnatural and most astounding fact which did not occur to us on our trips to the factory, the political movements, and the conjugal home. If every man is a unique and a clear-cut person, he will have to be discovered elsewhere. He will come to us not as a self-evident truth, but as a surprise. Aye, I should not be surprised if he were nothing but a surprise.

Society is averse to man's being taken as a singular. The ideals of our group and class, the usefulness in our productive capacity, the sexual thorn in our flesh, all these forces are making us into parts of larger units, of a work group, of an inspired collective, or of a pair. The naive liberal faith in the ubiquity of our oneness cannot be maintained. Our singularity has to be re-stated. It is no longer self-explaining.

How then, did it come to pass that a hundred years ago nobody doubted in the least the reality of the individual—that individual who today, under the hands of physicians, psychologists, the economic order and political warfare, or revolutions, is more and more dissolved?

In those days self-reliance was preached and the self-made man, the middle-class Napoleon, was the idol of the citizen. Everybody wished to become self-supporting and more than self-supporting; he had reasonable hope of becoming rich or influential or both. It was less of a statement than it was a velleity, a desire and a tendency which our forefathers expressed by presuming the Robinson Crusoe character of the human being. And if you had asked them what, in their eyes, made a man, they would have answered: his power of reasoning, his intelligence.

Is it true that reason makes a man? Are we unique, singular, irrepeatable specimens on account of our intelligence and self-consciousness? Let us ponder over that assertion. In following it to its roots we might discover considerably more about the plot of Reason and its success during the last centuries on one side, and the causes of its rapid decline in our days.

If thought can mold a man into one being, a real singular, his first childhood and his late senility would not count in his biography. Both chapters could be cut off from his biography without really damaging the image of the person concerned. The first twenty years hardly belong to the thinker. The true thinker and rationalist cannot help feeling that the years of infantile idiocy are a kind of waste. Childhood and decrepitude subtract from the great

man's time-span, portions which he otherwise might have used for better work. What is worse, the period of childhood is not simply waste for intelligent work. It fills the world in every generation with wrong notions, misunderstandings, childish fears, and fairy tales and therewith prevents progress. No sooner have the adults learned their lesson than youth with all the vestiges of primitivism is plunging into all the old fallacies again. This is no exaggeration. And there exists in the history of the human mind a great episode by which this aversion against childhood and u nconscious or preconscious life was emphasized forever.

I can never read without a smile the sincere complaint of the great philosopher René Descartes, the Frenchman of whom La Fontaine said that the ancients would have considered him a god. He identified existence and thinking by his famous, "*Cogito, ergo sum*." I exist because I think. No wonder that this same man added in the second part of the Discourse on Method, "Since we all have been children before we are men, it is almost impossible that our judgments be as pure or solid as they would be if we had had our reason from the moment of our birth." Descartes certainly had the courage of his convictions. He clearly put the thinker Cartesius first within his person. And he separated himself as a Philosopher from the human being, René Descartes, who lived from 1598 to 1650. The two people are not identical. Cartesius cogitator and René Descartes are to him two different units, a fact well expressed by the Latinization which, in his days a scholar would use for his name in the international republic of scholars. The thinker Cartesius is by no means the whole man. Deduct from the natural man his childhood, his sleeping time, his emotions, prejudices, fears, and passions, or temptations and what is left is the proprietor of thoughts, the thinker, the man who can base existence on thinking. It follows that we cannot mistake the mind, the subject of philosophizing within ourselves, for that empirical unit which connects the hour of birth with the hour of last agony. Various names were used in former days to discriminate between the real human being and his functioning

as a servant of "brain-hood," of mindfulness, or "reason," who we confess to be when we try to think scientifically. For the self-conscious being within man, "ego" is frequently used.

Without discussing the details of this problem, we can say that the name of the worshiper and servant and representative of the deity Reason within ourselves does not matter very much. Let this deity be called Reason and our priesthood "mind", or "ego," noetic subject, consciousness—this partial functioning in the service of reason is nowhere on all fours with the unity which is assigned to us by our neighbors and which we attribute to ourselves instinctively.

This unity, and this is our first certainty about it, must be a biographic unity and extend from our death back to our birthday despite our complete ignorance of our beginnings. It must comprehend our idiotic and mindless, our unreasonable phases. Never do we more vehemently address ourselves by our proper names than after having committed a serious blunder. After an action of imprudence, rashness, passion, we will talk to ourselves, "James, James, how could you do such a horrible thing?" as if the foolish and irresponsible being within ourselves was under our special care and had to be caught again within the normal frame. Thus, it is safe to say that this biographical unity is not constituted by thought, since it is so often thoughtless, not by the mind, because it needs so often re-minding, not by the Ego, since it is so often an It. The mind is not our principle of individuation. It may be that we do not really exist because we do not really think. Descartes held that we participated in existing only by thinking. It may be that we are nightmares and shadows only in so far as we do not think.

But in this case, we can at least distinguish what thinking is as compared to our poor person. The "Mind" has as much and as little to do with myself as "Labor" or "Proletariat" has with a single worker, or as "Youth" has to do with one college boy of twenty. "Mind" is precisely that type of abstract term which we analyzed when we looked into Labor, Youth, Beauty. Reason is an intensify-

ing collective for one specific quality of man. Reason is a tendential word, driving man to the side of "minding only," of cutting loose the purified mind from all other "impure" allegiances within himself. To go in for reason means to push back the concrete individual with his massive and stolid inertia, thirst for power, envy, faith. The transcendental "ego" of the reasonable man transcends, like Labor, or Citizenship, like all other ideas or collectives, every one of its mortal representatives among mankind. It classifies man into the special clan of the worshipers of thought and reason. Nobody can help working, nobody can help passing through his youth; similarly, nobody can omit to pay his tribute to reason. The Age of Reason gave preponderance to this peculiar allegiance of the adult man to his goddess. It is superseded today by a century of equal onesidedness in which preponderance is given to the god of youth or workmanship or service. That is why the thinker himself is compelled today to recognize his own clannishness lest the new clans fail to tolerate him at all. The clan of thinking and reasoning has to compromise today with the other powers who are eager to take possession of man's interest and loyalties.

The mind is one bright light in the sky of mankind, but it is only one among the powerful and influential stars the guidance of which is desired by our weakness.

By relegating reason to its proper place as one of the planets which are influential upon man's biography, we have paved the road for a direct access to this biographical unit, man. Who survives all the phases from the cradle to the grave? who passes through all the various possibilities of living a collective, a molecular, or a bipolar life? To survive and to permeate different phases, different aggregate statuses, different blends, childhood, work, play, politics, momentary sensations, and long-time sufferings is the essential quality of the human soul. The soul is just man's power of fighting his way through different situations, different forms of existence, different convictions and social relations. Man cannot avoid passing through many appearances and

semblances. It is hard for him not to get tangled in one or the other as though he were nothing else. It is in those moments of extreme danger, when a man might be mistaken for nothing but one in the many, that his soul begins to move and to persuade him that he is not doomed with his environment. When everything seems to be calculable in a social setup, this one soul remains incalculable.

The first application of our reclaiming the existence of the human soul is, of course, that she has nothing to do with the mind. It is true, for the last three hundred years, mind and soul were mixed up all the time. Many books were written, studied and quoted in which the pet phrase "mind and body" alternated with "soul and body." Many people simply cannot tell mind and soul from one another.

The second application may profitably look back to the youth of Descartes himself. His soul, we may state, is precisely the power which was capable of connecting his thoughtless youth to his mature age. It was neither one nor the other but precisely the rhythm which pervaded both.

At the end of our survey, then, the singular proves serviceable again. The soul outlasts the permanent shifting from plural to dual, to collective—all these troublesome changes of forms of existence and contents of consciousness. Man has many forms of appearing in this world but just one soul. That soul is no external form itself, because it is his power of overcoming death and change and coining meaning out of catastrophes and havoc. What is the meaning of a sonata? It is neither in the many sounds, nor in any one melody, nor in a special harmony. But nobody can doubt that the sonata has a character, a meaning, a singular uniqueness.

The biography of a real human being includes a deeper secret than the fulfillment of one ideal or one philosophical system. Ripeness is everything. To take every step in life at the proper time is man's great personal mission, the mission which will link together his work and his passions, his natural needs and his historical role. The ages through which man passes are his soil. His first twenty years, as we have described them, are only a prelude

to the biographical wealth implicit in the various ages and steps of the remaining fifty years of his life. Our lives represent the great elemental forces. Man has his seasons, spring-time and harvest, like his mother earth. He has his low and high tide, like the ocean. Fire and air are familiar to man; revolutionary terror and tender poetry. Man is the microcosm. Nothing earthly or heavenly can remain foreign to him. But the microcosm is gifted with a sense unknown, as it seems, to the macrocosm. He is the founder of time and the determiner of ending and beginning.

This makes man the tiller of his life. Industry, though it mechanize agriculture, must nevertheless invite us to farm the unique soil of man himself. Living in an industrialized world, he can survive only if he is treated as if he were a special kind of soil. This is a reconciliation of agrarianism and industry by which man and nature exchange roles. Nature has become chemical, electric, inorganic. Human life, as an organism of growth and change which endures seventy years, is an organic matter. Humanity does not center in an abstract conviction or a will of steel. The nucleus of our humanity is the deep faith which leads us on amid the encircling gloom from phase to phase and from age to age, and which makes us discover with increasing reverence the elemental changes in our nature. If we are going to organize man in his reality, if we shift from hiring a hand by the hour to organizing the lifetime of a worker in industry, we must take into account the organic changes in a man's convictions, ideas, and economic tastes and values. It is no adequate ideal to establish everybody in one place for all time. School, camp, factory, decentralized group in the country, must follow each other at reasonable intervals. Children should grow up in the country. Put a young couple under the rigid discipline of big business at its highest speed, then they will be glad to retire again from the turmoil. The solution must be planned so that as many people as possible are enabled to pass through three or four environments of completely different, aye, antagonistic, economic character. But each phase would require to be lived in-

tensely. The most loyal devotion to the duties of this period would lead on naturally to the next. There would be no contradiction between abstract programs or ideas; instead, the human organism farmed by industry would complete his course with high determination. Manifest destiny would not mean a mere adventure in space, but also, which is more, an adventure in time. Those who had the courage to cross the Atlantic were bold enough to lead two lives, one before, the other after, their landing, two lives with completely different values. The sons and grandsons will have to learn to risk as much as their ancestors, because crossing the ocean once during one's life was the foundation on which this country was built. It was not simply Europeans who came to the New World, but Europeans who were resolved to begin a new life.

And thus, the very radicalism of the changes during their life-time deepened the unity of their biography. They were not split into fragments; they became personalities at peace with themselves. How is a man's torn-to-pieces-hood in labor teams, growing movements, love and friendships ever unified? As long as a man remains able to hear his name called out with the full vigor of his first day, he has not disintegrated into a bundle of contradictions. For when the name is called for the right thing at the right moment, a man's mind lights up, his legs move, his heart beats, his whole being is shot through with new life in every direction. Then it becomes clear that we are not composed of parts, of separate blocks. The opposite is true, a latent unity is now asserting itself on those various ways as our hand, our mind, our heart, our genitals signify. A man's name has an electric effect on all his members since he is called upon as this man and no other. Thus a man comes into his own, because the alternation of his ways is his own truest expression, his biography.

And in reliving in every phase of life all the vital forces of his being, he states successfully the truth of the fourth ecodynamic law. In the organization of humanity's work, *Three equals One*! In the matrimonies of the race, *Two equals One*. In the pursuit of

common ideals like the brotherhood of man, the solidarity of work and science, youth or beauty, *All equals One*. But all this has to give way before the majesty of the soul. The experienced life of mankind is based on man's liberty to proclaim: *One equals One*.

America was the frontier of Western civilization for centuries. As Europe's New World she was able to rely on the elixir for man's singular which is contained in the *Wanderjahre*, in migration. European poets are making us conscious of this exilir of the human heart only now.

Jean Giradoux, in his play "Siegfried" (Paris, 1928), described a soldier of the World War who from a shell-shock had forgotten his French antecedents and had become a political leader in post-war Germany. When his double allegiance is discovered, people ask him to make a clear decision in favor of one of his two allegiances, France or Germany.

As though exploring a new continent for the human soul, Siegfried gives this unexpected answer, "I shall try to bear the two names and the two destinies which an accident bestowed upon me with honor. A man's life is not a worm. It is not enough to cut it into two halves so that each part becomes a perfect whole. There are no sufferings so contradictory, no experiences so hostile that they should not fuse one day into one single life; for the heart of man is still the most powerful cross-breeder. I myself refuse to build up trenches right across my inner self. I am not going to return to France like the last prisoners of war leaving the German prison camps. I am returning as the first beneficiary either of a new science or of a new heart!"

". . . A new science and a new heart": ought these not to be the fruits of thirty years of world-wide convulsions?

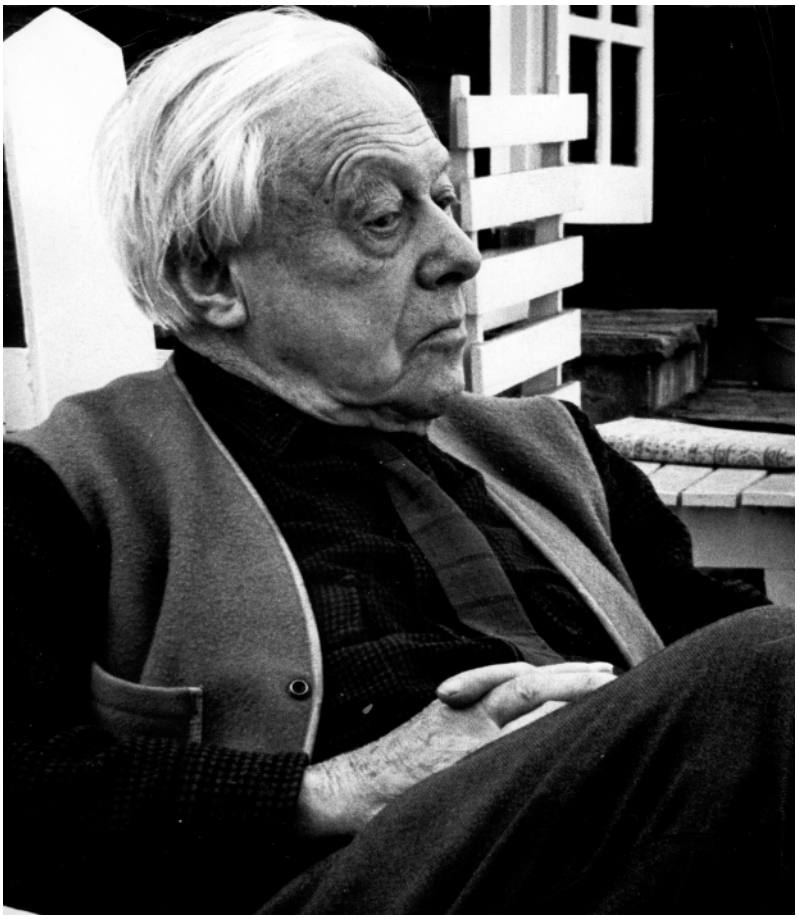
The old science of man made the fatal mistake of treating man himself either as an invariable or as completely indeterminable. Man never is one thing. He is and remains one thing plus something else. We found him involved in a perpetual hide-and-seek between several invariants. While he struggles for his

life, he partly conforms with one or another of these invariants. The laws of ecodynamics defined these invariants of plural and collective, dual and singular.

A new science of the invariants can be established without violating the freedom of the human heart. Between dictatorships over manufactured masses and anarchy of inarticulate individuals, the new science can take its course. Its compass is the unity of the human heart, but its subject matter will be the

Multiformity of Man.

APPENDIX



EUGEN ROSENSTOCK-HUESSY (1888-1973)

Eugen Rosenstock was born in Berlin on July 6, 1888, the son of Theodor and Paula Rosenstock. Theodor was a banker who had been compelled to enter that profession to support his widowed stepmother and stepsister; if he had been able to choose, he would have pursued a scholarly education. In due course, however, Theodor became a member of the prestigious Berlin Stock Exchange. Paula Rosenstock was the daughter of the head of a well-known Jewish school in Wolfenbüttel. Eugen was the fourth child among six sisters.

After several years at a school for children of wealthy families, Eugen Rosenstock transferred to the *Joachimsthaler Gymnasium*, a school known for its rigorous academic standards, particularly in the classics. Following his father's wish, Eugen went on from there to study law at the universities of Zürich, Heidelberg, and Berlin. At age 17 he joined the Protestant Church, which did not seem much of a conversion to him because Christian habits had already become a part of family life. Gradually, however, his faith became central for his work. In 1909, at the age of 21, he received a doctorate in law from the University of Heidelberg. Studying history would have been one of his first choices, and philology (language) was his abiding passion from early on. In 1912, he began to teach constitutional law and the history of law at the University of Leipzig, the youngest *Privatdozent* at the time.

Early in 1914, Rosenstock went to Florence to conduct historical research with his brother-in-law, Ernst Michel, then editor of the German encyclopedia *Brockhaus*. There, he met a young Swiss woman, Margrit Hüssy, who was studying the history

of art in Florence. They married that same year, just before the outbreak of World War I. Drafted at once as a lieutenant in the mounted artillery, he was stationed at or near the Western front throughout the war, including 18 months at Verdun. During this period he organized courses for the troops, replacing the traditional, limited instruction in patriotism with broader topics. In 1916, he and his friend, the Jewish philosopher Franz Rosenzweig, also on active duty, exchanged letters on Judaism and Christianity. That correspondence has since become well known, and much of it is now contained in *Judaism Despite Christianity*.

Rosenstock was keenly aware that World War I was an historical watershed. At the end of the war, not wishing to return to teaching at the University of Leipzig, he sought new options better suited to a changed world. Together with a member of the board of Daimler-Benz, the German car maker, he started and edited the first factory newspaper in Germany, the *Daimler Werkzeitung*. Also, together with Leo Weismantel, Werner Picht, Hans Ehrenberg, Karl Barth, and Viktor von Weizsäcker, he founded the Patmos Verlag, publishing works focused on new religious, philosophical, and social perspectives.

A journal, *Die Kreatur* (1926-1930), followed, edited by Josef Wittig, a Roman Catholic; Martin Buber, a Jew; and Viktor von Weizsäcker, a Protestant. Among the contributors were Nicholas Berdyaev, Lev Shestov, Franz Rosenzweig, Ernst Simon, Hugo Bergmann, Rudolf Hallo, and Florens Christian Rang. Each of these men had, between 1910 and 1932, in one way or another, offered an alternative to the idealism, positivism, and historicism that dominated German universities. Rosenstock himself published *Die Hochzeit des Krieges und der Revolution* (*The Marriage of War and Revolution,* 1920), a collection of current events essays that were full of prophesies and warnings, many of them, unfortunately, to be fulfilled in the years that followed.

In 1921, Margrit and Eugen had a son, Hans. In 1925, they legally changed the name to Rosenstock-Hüssy, but it was not until

after Eugen's emigration to the United States that he used the hyphenated name professionally.

Although never a Marxist, Rosenstock was invited to found and direct the *Akademie der Arbeit* (Academy of Labor) in Frankfurt-am-Main in 1921. This institution offered courses and seminars for blue-collar workers, but he resigned in 1923 over differences with the trade union representatives. Nevertheless, he did not give up his involvement with adult education and his efforts to give industrial workers a voice of their own in society.

In 1924, Rosenstock published *Angewandte Seelenkunde* (Practical Knowledge of the Soul) in which he outlined for the first time his radically new method for the social sciences based on language, the spoken word, and his "grammatical approach," which he later called "metanomics." This method remained at the heart of all his later works and was expanded upon in his two-volume *Soziologie* (1956-1958): Volume I, *On the Forces of Common Life (when space governs)*, and Volume II, *On the Forces of History (when the times are obeyed)*. He further elaborated these ideas in another two-volume book, *Die Sprache des Menschengeschlechts: Eine Leibhaftige Grammatik in Vier Teilen* (*The Speech of Mankind: A Personal Grammar in Four Parts*, 1963-1964).

Rosenstock was awarded a second doctorate in philosophy from the University of Heidelberg in 1923 for his scholarly medieval study, *Königshaus und Stämme in Deutschland zwischen 911 und 1250* (*The Royal House and the Tribes in Germany between 911 and 1250*), which he had written in Leipzig and published in 1914. He then lectured at the Technical University of Darmstadt in the faculty of social science and social history until he was offered a job at the University of Breslau as a full professor of German legal history, a position he held from 1923 until January 30, 1933.

In Breslau, apart from being an inspiring and admired teacher, Rosenstock became active in many other ways. In response to and

together with some of his students, he helped organize workcamps for students, farmers, and workers to deal with the atrocious life and labor conditions at coal mines in Waldenburg, Silesia.

When Rosenstock's friend, the Catholic priest Josef Wittig, was excommunicated and lost his right to teach church history at the University of Breslau, he stood by Wittig and together they published *Das Alter der Kirche* (*The Age of the Church*, 1927-1928. That work contained two volumes of essays on the life of the Church and a third volume devoted to documenting the events that led to Wittig's excommunication.

In 1931, Rosenstock wrote and published the first of his major works: *Die Europäischen Revolutionen: Volkscharaktere und Staatenbildung* (*The European Revolutions and the Character of the Nations*), one thousand years of European history created in five different European national "revolutions" that collectively came to an end in World War I.

On January 30, 1933, Germany fell to National Socialism, and Rosenstock left Breslau at once. By the end of that year and with the help of C. J. Friedrich, professor of government at Harvard University and the only person Rosenstock knew in the United States, he had been appointed Kuno Francke Lecturer in German Art and Culture at Harvard.

Rosenstock-Huessy frequently mentioned God in class. This grated on the secular beliefs of other Harvard faculty members.[1] Profound differences of opinion ensued and led, in 1935, to his accepting an appointment as professor of social philosophy at Dartmouth College, Hanover, New Hampshire. He made his home in nearby Norwich, Vermont. He taught at Dartmouth until his retirement in 1957, inspiring generations of students.

Despite the "falling out" with Harvard, Rosenstock-Huessy had made important friendships there that helped him when he began to write again. His first effort was to rewrite his earlier book on revolutions in English under the title *Out of Revolution: Autobiography of Western Man* (1938). The Nietzsche scholar

George Allen Morgan assisted him in the preparation of *The Christian Future or the Modern Mind Outrun* (1946). Alfred North Whitehead, also at Harvard, was among Rosenstock-Huessy's admirers.

Rosenstock-Huessy continued his pioneering efforts on behalf of voluntary work service in the United States. At the urging of Eleanor Roosevelt, the journalist Dorothy Thompson, and other prominent figures, President Franklin D. Roosevelt tapped Rosenstock-Huessy to lead the creation of a special Civilian Conservation Corps camp in the woods of Vermont. Involving mainly students from Dartmouth, Radcliffe, and Harvard, its purpose was to train young leaders to expand the seven-year-old CCC from a program for unemployed youth into a work service that would accept volunteers from *all* walks of life. It was called Camp William James because of that philosopher's search for a "moral equivalent of war." It was disbanded when the United States entereed World War II. Rosenstock-Huessy's writings about voluntary work service have often been cited as influential in the design and development of the Peace Corps.

After the war and continuing through his retirement from Dartmouth, Rosenstock-Huessy was a frequent guest professor at many universities in Germany and the United States. He remained active in lecturing and writing until his final years. His output comprises more than 500 essays, articles, and monographs, including 40 books.

Margrit Rosenstock-Huessy died in 1959. In 1960, Freya von Moltke came to share Rosenstock-Huessy's life. (Her husband Helmuth had been a student of Rosenstock's in Breslau and a participant in the original Silesian workcamps; a leader of the German resistante to National Socialism, he was executed by the Nazis in 1945.)

Rosenstock-Huessy died on February 24, 1973. His extraordinary insights continue to inspire people from all walks of life.

About Argo Books and the Eugen Rosenstock-Huessy Fund

Argo Books is an activity of the Eugen Rosenstock-Huessy Fund. The Fund began in the early 1950's as a line item of the Tucker Foundation at Dartmouth College, when students taping Rosenstock-Huessy's class lectures needed to raise $1,000 for tape stock. They had started recording lectures in 1949 and stopped when Rosenstock-Huessy retired from Dartmouth in 1957. Many of these same people also took up the task of keeping Rosenstock-Huessy's works in print, using several imprints: Beachhead, Four Wells, and Argo Books. Two 33-rpm disks sets were released, using material from the lectures recorded at Dartmouth. The current Eugen Rosenstock-Huessy Fund grew out of these early initiatives and was established as a Vermont non-profit corporation in 1976.

The Eugen Rosenstock-Huessy Fund and its supporters have underwritten translations and assisted in their publication in France, Poland, and Russia. The Fund has also transcribed, published, and remastered the lectures Rosenstock-Huessy's students had recorded. This latter effort has added 7,000 new pages to Rosenstock-Huessy's bibliography. As a result, lectures given at Dartmouth in the 1950's and various University of California campuses in the 1960's are now being heard and read in the United States, Germany, Holland, Poland, Canada, Australia, and Hong Kong. Currently the Fund is developing its presence on the Internet to bring together the worldwidegroup of people interested in Rosenstock-Huessy's works.

The Fund serves the interest in his work, and its programs are entirely dependent on private contributions. We welcome your support of our efforts.

ROSENSTOCK-HUESSY ON THE INTERNET

The Transnational Institute has initiated an Internet web page on Rosenstock-Huessy. Its address is:

http://www.valley.net/~transnat/erh.html

The web page contains an on-line version of the Argo catalog and accepts orders; the site also provides a biography of Rosenstock-Huessy, excerpts from his work, and links to related web sites. We hope to have a bulletin board available soon.

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