Visual Presentation of Social Matters

Michael Polanyi

[Editor's Note: This June 1936 lecture, delivered to the Association for Education in Citizenship, is published with the permission of John Polanyi, literary executor for Michael Polanyi. The lecture (included in Box 25, Folder 9 of the Papers of Michael Polanyi in the Department of Special Collections, Regenstein Library, University of Chicago) is clear, but is not a well-groomed text that Polanyi planned for publication. We have not tried to polish it, apart from suggesting words in brackets that respond to what seem to be a few obvious typographical errors. This text incorporates the few handwritten redactions in the archival typed lecture. In the context of presenting his lecture, Polanyi showed a four-minute French film titled, "The New Europe." He also used slides of three diagrams. Although the places for these materials are indicated in the lecture, only one of the diagrams survives, Figure 2, which Polanyi attached to the end of his text with a note that is included here. The key words and abstract have been added by the Editor.]

Key words: Michael Polanyi, economics, films, economics education, film as diagrammatic writing

ABSTRACT

"Visual Presentation of Social Matters" is a 1936 Polanyi lecture, delivered to the Association for Education in Citizenship, which lies in the background of Polanyi's 1940 film Unemployment and Money. *Polanyi argues that the complex modern market system is misunderstood by ordinary citizens who subscribe to economic fallacies; this misunderstanding has contributed to violence and turmoil in the twentieth century. Polanyi proposes a program to discover a dynamic visual symbolism ("moving picture writing") that he believes can clearly represent modern economic life, releasing ordinary people from economic fallacies and exasperation and creating "economic consciousness." This economic enlightenment is part of Polanyi's effort to rehabilitate liberalism. He envisions an economic order in which there is freedom and "complete co-ordination" which he suggests already exists in the domain of scientific research*.

Heroism and Happiness

The dictators of Germany and Italy have repudiated the utilitarian idea and following the lead of some philosophers of the past century have proclaimed that heroism stands above utility. They despise base comfort and aspire to noble tragedy.

There might be truth in this philosophy, yet it is as inappropriate in a statesman as it would be in a doctor. Both have to do their best to improve the condition of those entrusted to their care and not to cause their destruction for the sake of making them fulfill a nobler fate.

But the statesman might well reject the utilitarian doctrine on other grounds; not because it wants to make people happy but because it gravely misjudges the conditions of human contentment. This doctrine assumes that people are content if they are given the means to satisfy their needs. Unfortunately, this is not so. Even more than they need goods, people want for their contentment a full understanding of their condition. None can find comfort in a position which he fails to comprehend, and protracted perplexity leads to mental derangement.

Perplexity of Rats and Dogs

Even rats and dogs cannot live in perplexity. Take three sets of rats: give one set a meal a day; give the other set the same meal only every second day; and restrict the third group to a meal on every third day. All three groups will thrive; the rich, the middle-class and the poor will get on equally well. But take a fourth set of rats and feed them at periods varying irregularly between one and three days and you will see the rats of this set die. They get more than the poor rats, yet while those prosper on their meager diet they perish because their organism is thrown into a state of confusion, all their reflexes of digestion are dislocated, they die of perplexity.

Dogs are more human than rats, and so the experiment by which Pavlov drove his dogs mad shows us even more closely what is wrong with ourselves. He trained a dog to expect food when a luminous circle appeared on a screen, and to recognize that no food would come when a flat ellipse with a ratio of semiaxis 2:1 was produced. The dog learned to differentiate precisely between the circle and the ellipse, showing signs of appetite when the former, not when the latter was shown. The shape of the ellipse was then approximated by stages to that of the circle (ratios of the semiaxis 3:2, 4:3 and so on) and the training of discrimination continued through the successive ellipses. The dog found it increasingly difficult to distinguish between the ellipses and the circle and finally, when the ellipse was given a ratio of 9:8 he became quite uncertain in his discrimination. But Pavlov tried to educate him to the limit and continued with this experiment for three weeks. The result, however, was no improvement in the dog's training but a total breakdown of his discriminating power. At the end he could not see the difference even between the flat 2:1 ellipse and the circle. The dog's behaviour also underwent a complete change. It began to squeal in its stand, kept wriggling about, tore off with his teeth the apparatus and bit through various tubes. In short, as Pavlov says, it fell into the condition of an acute neurosis.

This dog broke down when his powers of understanding were overstrained. They were overstrained when it became too difficult for him to distinguish between the symbols signifying food and hunger. His happiness was destroyed, not by need of supplies but by what Pavlov describes as a conflict between excitation and inhibition which its brain found too difficult to resolve.

The misery of this dog lies beyond the scope of utilitarian principles and so does the misery of our times. I believe that the twenty-two years of wars and revolutions which lie behind us have been mainly caused by a mental derangement arising from a state of continued perplexity—a perplexity which is so fatal to society because it not merely relates to food as that of the dog, but involves the very basis of moral relations from man to man.

Fallacies, Paradoxes and Moral Conflicts

What is the reason for our perplexities?

In the past two centuries an economic system has developed which we fail to comprehend. In the last fifty years this industrial marketing system has come to encompass the major part of western populations. While growing in mass the system grew in complexity and became increasingly confusing. The spreading of literacy and the coming of newspapers conveyed no satisfactory interpretation of the new system but only spread economic fallacies which made confusion more general. Political franchise could not give the people control over an economic system which they could not understand but only increased the repercussions of the rapidly growing confusion by committing the fate of the community to the exasperated minds of the masses.

From the very beginning of the industrial marketing system the popular mind became entangled in economic fallacies. A century ago the French economist, Bastiat, collected three volumes of fallacies. Using verbatim quotations from the protectionist arguments of leading politicians he managed to compose a convincing document demanding that the light of the sun should be shut out from the sky so as to stimulate the candle industry of France and thus to create increased employment to the great benefit of general prosperity.

Future historians might find out [our] actual practice even more absurd than the ironic ideas of Bastiat. Great nations up in arms exacting reparations from another country while staunchly refusing to receive such payment. Wrecking the world by the double exertion of forcing that country to throw its goods on the world market and of defending those markets against the inflow of the same goods.

And yet such illusions which bid us to defeat our own aims are not the most demoralising consequences of our blindness, since owing to our blindness we often fail to realise what has happened. It is even more harmful to the balance of the popular mind when people have to abide suffering which seems unreasonable. The Rumanian peasant submits to fate when his crop is destroyed by hail but revolts when he is ruined because for reasons far beyond his scope the price of wheat has fallen on the world market. Men who held out patiently through the war will rise up against an inexplicable state of unemployment, which by comparison with war is a mild inconvenience. They might even let themselves be led into war as a diversion from unemployment.

But the most dangerous consequences of our blindness to our economic position lie in the moral conflicts in which that blindness involves us. This is where the utilitarians made their greatest mistake. The supreme principle in which they gloried, the Invisible Hand praised by Adam Smith which ordains that self-seeking of each leads to the common good of all has turned out to be a curse.

The system of general laisser [laissez] faire cannot work if people have no means to distinguish between such self-seeking which the Invisible Hand turns into the service of the community and the other forms of self-seeking which are destructive to the community. So long as the working of the economic system and the supreme hand directing it remain invisible, even the most useful form of self-seeking will be performed in a callous, narrow-minded spirit, and such a spirit will permeate the whole community, breaking it up into groups of rival interests ready to use all their economic and political powers to fight against the others.

There is a story in my country that the village lads make a notch on their knives about an inch above the point. They have a rule that they must not stab beyond that mark so long as they are only making fun. Only if they are in earnest are they allowed to push their knives in deeper; but it is understood that the distinction is unreliable in practice.

So long as we live in a dark turmoil, governed by an invisible hand, the distinction between self-seeking which is, in effect social, and self-seeking which is destructive to society will remain as unreliable as the mark between fun and earnest on the knives of the village lads.

No wonder that men revolt against the domination of such an undiscriminating acquisitive spirit. In reaction against it they demand to realize fully their social responsibilities and to act with a direct view to the social purpose. The rush of early capitalism benumbed moral needs for a time, but when the pace of expansion slowed down the demand for a consciously social order rapidly became urgent. In the last twenty years it has broken out in a wave of revolutions and counter-revolutions which all profess to satisfy this demand.

On the Use of Symbols

We have found ample sources both in our intellectual and moral position towards our industrial marketing system which give rise to what Pavlov calls a conflict between excitation and inhibition which the brain finds too difficult to resolve. Let us now return once more to the dog which he so successfully maddened by such conflicts.

The dog went mad when the symbols signifying his food became indistinct and finally incomprehensible to him. I suggest that our own trouble is exactly the same. The symbols by which we try to represent our economic surroundings are entirely inadequate and the only chance for us is to discover a new set of symbols which are appropriate to the purpose.

I believe that it has never been fully realized to what extent our mental powers depend on symbols. Words are symbolic carriers of meaning which combined into patterns make us grasp our own feelings and the situations immediately facing us; the use of numerals lends us the powers to organize quantities: drawings are other implements of thought by which we can handle complex objects, utterly baffling to the unaided mind, and with a map before us we command large areas of which we could have no idea without them.

These symbols by which we realize the contents of our own minds and govern our surroundings do not fall to us from the sky but are created by the labours of human genius. In the Middle Ages men could not enjoy the beauties of nature. The poet Petrarca [Petrarch], who was one of the first men in modern times to climb a mountain, stood at its top overwhelmed but dumb, because there were no words to give expression to his feelings. It took centuries to invent those words which now run so fluently from the pen of every schoolboy. It took more centuries, from Van Eyck to Cezanne, to discover the visual symbols which convey air, depth and brightness of the landscape. Beauty was surrounding us through all the centuries before but as we had not been taught to grasp it, we might as well have walked through a desert. Millions go out to-day into the country to enjoy the discoveries of past geniuses. Our inheritance of symbols makes us see, feel and delight in places which before were drab and empty.

All our civilization, its legal system, its business, its crafts, its science are based on the use of ingenious symbols: speech, writing, calculating, drawing, mapping. A modern community robbed of these implements of thought would be more grievously stranded than Robinson [Crusoe] without tools.

Ever since Francis Bacon made his exciting speculations on the possibilities of new mechanical contrivances our imagination has been constantly alive to the scope of mechanical progress. We must now realize that the need of our present social crisis is the invention of new tools of the mind.

I submit that there is no task that is more important to the present generation than the discovery of symbols embodying relevant economic elements, which combined into a pattern would represent economic life and would express its meaning to us. Fallacies would vanish, paradoxes would be unraveled and the moral conflict of self-seeking and social purpose would be resolved in a synthetic view of both. Indeed, as I will try to explain later, the very nature of our economic system would be lifted to a higher plane not only in spirit but in fact.

Diagrammatic Films

Let us now pause for a moment. While I feel convinced that the task I have pointed out is our most vital need, I know that my further suggestions are only tentative. I will try to outline the nature of the

symbols which we have to invent and the examples which I can show you are very crude. They are only meant as an illustration of the idea.

Anyhow, I can proceed a few steps further in my argument without much uncertainty. Of the three main sets of symbols, verbal, mathematical and visual, it seems obvious that the visual symbol will be the most useful one.

Words are powerless to convey a description of complex things which are far out of sight; mathematics are too intricate to become popular. Give a man a full description of England, not illustrated by maps and ask him to plan an itinerary from Manchester to London. The man is a genius if he succeeds in a year. Present him with a list of numbers stating the latitudes and longitudes of all the places in England and if he knows his geometry he will work out the route in a month. But give a child of ten a map of England and he will read to you directly all the alternative routes.

What is true for the land must hold for the economic system spread out over the land. To represent it we have to invent a new kind of map. That is, the symbols must be graphic, the presentation mainly visual.

A map, however, is a stationary diagram; while the economic system is essentially dynamic. It is a method for finding out what to do so as to satisfy variable needs under changing conditions. It is composed of a multitude of choices which can be understood only if our picture includes the situation before and after the choice takes place.

It follows that graphic symbols presenting economic life must be in motion; the symbolism must be a diagrammatic motion picture.

Diagrammatic films have been already used successfully to illustrate scientific ideas such as the spreading of electromagnetic waves, the thermal agitation of molecules and the like. Recently, the presentation of territorial changes has also been attempted by this technique. I will show you as an example of a moving diagram a film representing the frontier changes caused by the war. I do not think that the contents of the film are valuable as a presentation of social life. The peoples of Europe are already far too much inclined to regard the map of their country as a symbol of the nation. Popular imperialism is fired by an imagination fascinated by the map. The integrity of certain patches on the map is valued higher than the lives of the people inhabiting those patches; the inhabitants are readily sacrificed to the integrity of the patches. Our aim must not be to emphasize the map even further but rather to oust it from the place which it now takes in popular emotions by truer symbols of national life so as to destroy the map's dangerous command over our social consciousness.

By the film which I show you I only mean to demonstrate the technique of diagrammatic motion pictures which, I believe, must form the basis of the new symbolism to be created for the representation of economic life.

("The New Europe") Film four minutes.

This film shows clearly the esthetic possibilities of moving symbols. We are reminded of the beauty of Arabic and Chinese scripts. The artistic scope of diagrams is enhanced by motion, and emotional power is added to beauty when the shapes directly indicate their meaning, forming, as it were, a picture writing of forces which act in our own midst and bear on our own fate.

In saying this, I am not suggesting that the imagery of our future economic film will be purely diagrammatic. It might rather resemble the primitive maps on which the pictures of towns, scenery and man were sketched out upon a purely geographic background. Using such populated diagrams we can dispense with the commentary such as accompanied the film which I have just shown you. Instead we will see the figures act and hear them talking. We should see our social life symbolically projected, happening before us on the screen on an artistic plane of its own, directly significant, like the symbolic drama of the Middle Ages or the comic cartoons of Walt Disney.

The Stage of Economic Drama

It will take a long time to develop the film of economic life. A series of great efforts will be needed until, from the first outlines which can be suggested to-day, the new literature of social life will emerge. But this is no reason for delaying our attack on the task.

I have tried myself, to sketch out an economic film although I know that none can be more lacking in natural ability for such an attempt than I am. It seemed the only way to explore the idea and to explain it. My film is a very crude effort and besides, it has not been produced, so I cannot show it. But I can give you the outlines of an essential feature of this unborn film. I will try to explain at least part of the stage on which economic life might be symbolically enacted.

To understand the stage of economic drama we must first see clearly the fundamental purpose of the economic system. This picture of a well known electric machine might help to explain it.

(SLIDE [#1 of electric motor]).

Some of you will call this an electric motor and some of you will call it a dynamo, and both parties will be right because it is both one and the other. It serves as an electric motor if you drive it by electricity to produce mechanical power, or it serves alternatively as a dynamo if you drive it by mechanical power to produce electricity.

Now, obviously, such a machine is useless until you know which way to run it. Technically it is considered just as efficient in both opposing directions, but this is meaningless. If, under given conditions, the conversion of mechanical power into electricity is useful then under the same conditions the opposite process must be destructive. We convert A into B only because B is more valuable than A, but then the opposite process by which B is made into A is sheer destruction. When you see this electric machine running at a great speed you might stand back in admiration, believing it to be a source of wealth while it actually might be devastating our resources as efficiently as a bombing plane. No engineer can tell you whether it is doing one or the other.

The purpose of an economic system is to determine which way our machine has to be run. By the use of an economic system it is possible to find out which is more valuable under given conditions, mechanical power or electricity, and which, therefore, should be converted into the other.

An economic system is, in general, a method to make a choice between the various uses of our materials and tools; a way to find out what we should do with things.

In a marketing system the choice is made by watching the prices of things. If, for example, at some time in some place mechanical power is cheaper than electricity then we will convert power into electricity while we will do the converse if electricity is cheaper than power.

However, things are not created by Heaven with their prices attached to them, nor do we know the price of a man-made thing until it has been brought to market and has been bargained for. The purpose of the market is to give prices to things by which we can judge what to do with them.

When a man makes a dearer thing out of a cheaper thing he makes money. He makes money in wages if he is employed or in profits if he is an owner. Hence a marketing system is a community of money makers. With the money they get, people buy the things they want for themselves and also pay for raw materials and for labour.

All this remains hazy so long as you just talk about it, but it becomes clearer when you draw a diagram of the process. This diagram, (Figure 2 [attached at the end of the lecture]) I believe, could be the stage, or at least, part of the stage of the economic drama. You see that this stage is curiously different from the stage of the theatre. It has a circular structure. As on the round surface of the Earth you can get from one place to another either by going to the East or going to the West, so in economic life there are two accesses to every point according to the direction in which you travel. We will see that these two directions represent two complementary aspects of any economic fact. A circular stage gives a synthetic view of these two aspects which otherwise are not easily united in our minds.

The Introductory Picture is designed on the assumption that everyone lives in one small section called "Homes", while all the work and all the business takes place in the rest of the area included in the circle. The various stages of work and business are marked by symbols and inscriptions. The long black arrows indicate the goods flowing from one stage to the next. The fat raw-material arrows become split up after the goods have passed the raw-material market, into a number of thinner arrows signifying the distribution of the raw materials to the various factories, and at the next and again at the stage further on the arrows become increasingly numerous as the differentiation, into finished goods and the distribution to the "Shops" covers the flow of goods to be split up into innumerable paths.

The thin arrows travelling in a reverse direction signify the flow of money which is handed on in exchange for the goods. The thin arrows originate in the "Shops" where the money is paid in by the customers. The counterflow of money becomes weaker and weaker all the way as it progresses since at each stage some is kept back to pay the profits and wages of those who are employed at that stage.

The man is shown setting out to work. With a hammer in the right hand and a brief case in the left he represents jointly the workers and the businessmen. He is that synthetic being which the new Soviet constitution calls a toiler. The masses of toilers proceed to settle down in their various sections. They take the farmer's plough or the miner's pickaxe. Some go as dealers in raw materials to the offices on the Raw Material Market. The largest number enters the factories: some go as wholesale traders or as their employees to do business on the Wholesale Commodity Market, and finally there are the shopkeepers and Shop Assistants travelling far to their shops to wait on customers.

Each toiler goes to work because he wants to provide for his needs. But he does not choose a particular task on account of the particular needs he wishes to satisfy. He might think of setting a mackintosh, a hairbrush and a fountain pen; yet he goes to a factory which produces sulphuric acid. Mackintoshes, hairbrushes and fountain pens are made up of many elements and for all the toiler knows sulphuric acid might be needed, to make all or none of these articles. He does not care. What the businessman and workers actually look for when choosing their tasks is the greatest return in money, i.e. in profits or wages, which the task will yield.

Now the mechanism of a perfect market assures it that when each toiler chooses the job which pays the best the result leads to the best satisfaction of the toilers' joint needs.

This can be properly shown only by a moving picture, but the diagram shows the scene on which it happens. While the toiler sets out Westwards with a hammer and a brief case his wife, carrying in mind the needs of the family and in her bag the money of the family, goes out in the opposite direction. She approaches the "Field of Work" going Eastwards and enters the "Shops." Here she produces the money and tries to get the best value for it. She makes her choice, offering money for what goods she prefers and no money or less money for what goods she needs or likes less. Her selection promptly comes to the notice of the wholesalers who find that some of their piles of goods are being sold out while others remain on their hands. They, accordingly, will put up the price for the articles which are more in demand and reduce the price of the others.

By doing so they transmit the process of selection to the factories, since these now can get better prices for goods which have proved more saleable. Factories producing these goods will become more profitable and will offer to employ more workers, while others will dismiss workers. From the factories the process of selection spreads to the dealers who supply their raw materials and from there to the sources where the raw materials are produced.

At the end there will be a readjustment of prices, wages and profits all over the "Field of Work," leading to an increased production of the articles for which the toilers have expressed a preference through their shopping wives, and to a reduced production of other things.

In a film one would see this happening with all the various participants acting their parts. It would appear that the process amounts to a direction of all work by taking a vote on what is to be done. By the money which they bring to the shops the wives vote for such goods as they prefer. The money is their voting card. On the result of this primary vote the wholesalers in their turn vote for such factories which produce the preferred goods most efficiently. So the vote is carried on stage by stage, each toiler trying to comply with the vote by producing things for which he gets most votes, that is, most money.

In the evening each toiler takes home the voting cards which he has managed to secure and the next morning each is rewarded in proportion to the votes which he gets for his work since he can use the voting cards to buy at the shops a corresponding share of goods.

I am not trying here to make propaganda for Capitalism.

Actually, the marketing system has ceased to be a characteristic of Capitalism, since the Soviets have rediscovered its usefulness and Stalin has put down the Leftist opposition which protested against its revival. It would certainly be safer to-day to praise the Market in Moscow than it would be to praise it in Berlin, where the Nazis still retain a strain of their revolutionary attack on money-mindedness.

However, I am not even advocating, at the moment, the marketing system be it called 'Socialistic' or 'Capitalist.' I merely wish to suggest that important comprehensive features of economic life which cannot be conveyed to the general public by verbal explanation might be easily made clear through a moving picture enacted on such a stage as our diagram presents.

Destruction of Fallacies and the Rise of Economic Consciousness

For the following I wish you to bear clearly in mind that it is only the stage of economic life which I wanted to explain by the sketch which I have shown you. I could only hint at the drama which represents life itself. Even the stage is quite incomplete. You have seen no foreign trade, no labour exchange, no unemployed and no banks. The extension of the stage including all these essential elements I cannot show to-day.

So I feel that I am presuming a good deal when skipping over all these unaccomplished phases of visual presentation. I go on to draw my conclusions as to the events arising from its possible perfection.

It seems certain that when verbal accounts of economic matters are substituted by a visual presentation based on moving diagrams the economic fallacies now ruling the popular mind will be eliminated. Economic fallacies are based on a sectional aspect of economic life. As Bastiat pointed out a long time ago in his essay entitled, "What We See and What We Do Not See" they arise from the fact that the immediate consequences of an economic measure are obvious and impressive at the point where it first takes effect, but its effects on economic life as a whole are not traceable to the ordinary mind. A new tariff immediately helps some home industry by cutting imports; its effects on the price level which damages the exporting capacity of the country and the consequent impairment of the whole national economy are difficult to follow and remain unseen. The reason is that a verbal account of such an event must try to trace the various channels through which the action in one place of the economic system spreads out to its totality; and this is extremely difficult. If you throw a stone into a pond you will never get an idea of the result by trying to trace the drops of water which have been thrust away by its impact. You must be able to see the pond as a whole, and then you cannot miss the fact that its level has risen to the same extent as if you had poured in a quantity of water equal in volume to that of the stone, whatever the several paths of the displaced drops of water might be. It is impossible to draw a diagram of the event which will miss this point.

The diagrammatic picture might be crude or wrong but it cannot be illogical. Discussing in words a complex matter which is out of sight you can contradict yourself endlessly without noticing it. Ask two people who are not experts at playing chess blindfold[ed] and let them have a game together indicating their steps in chess language. After a few moves they will be putting figures into places already occupied, contradicting themselves with the greatest assurance. In a diagram as on a chessboard, these inconsistencies cannot occur, because they cannot be carried out.

If you trace an itinerary on a map you might make mistakes and if the map is crude and faulty the result might be useless, but no one would trace itineraries on a map which lead around in circles, while a man lost in a fog will walk round and round till he drops down from exhaustion.

I contend, therefore, that a general economic education based on diagrammatic symbols will be free of all the current fallacies and will only contain self-consistent views.

Such a set of self-consistent views will firstly incorporate the wide field of concepts on which economists are agreed. It will also represent those important alternative views on which they disagree and make the elements of their conflicting cases accessible to intelligent general discussion. Thus, we will be made free from the vicious arguments which are at present distracting our minds.

The next effect of the economic film will be to make us feel conscious of the community of work of which we are members. This economic consciousness will be based on the balance of two complemen-

tary attitudes: the one conservative and the other progressive. The first will start from a recognition of the power and usefulness of our economic machinery, reducing the importance of its shortcomings to their true proportion.

We do not constantly quarrel with the engine of our car because it fails to convert more than 30% of the fuel energy into driving power. We recognize that there are at present limits to its efficiency, and are prepared to admire its working even within those limits. Such will become our attitude towards our economic system when we understand it.

Next we will recognize the necessity of a good deal of inequality in a marketing system. All inequality must be resented by the poor so long as its necessity cannot be understood. If a community understands that inequality is useful to it it justifies inequality. Futile revolt against necessary inequality will be appeased.

Lastly, with a comprehension of our economic life the actual parallelism of self-interest and common good praised in vain by the utilitarians might grow into a conscious harmony of purpose. If we can feel that money is really the voting card by which the community directs its work, money gathering might rise at least to the dignity of democratic vote-seeking. If we recognize that the marketing principle is the most democratic representative system of self-government we will desist from attempts to substitute it through mere detestation of money-mindedness or other specious reasons by a so-called planning which makes arbitrary decisions about what we ought to do for ourselves.

But this submission to necessity will only appease false issues and not paralyze our minds, and will rather set them free to go forth towards true aims of progress.

Primitive science persisting in the attempt to transform lead into gold and to construct machines of perpetual motion merely wasted its energies. Only when at last man recognized that the laws of nature preclude the attainment of those aims did he gain power to conquer nature by the use of these same laws.

Similarly, the result of a general comprehension of economic life and of an acquiescence to its necessities will be to create real power of the community over its economic life.

Democratic power swayed by fallacies means only power to destroy. The wisdom of such democracy exhausts itself in refraining to do anything. Transferring of legal rights from one quarter to another, even to the extent of investing them completely in the State does not give power to the community so long as the community does not understand that which it is supposed to govern.

On the other hand the power of an enlightened public opinion would be irresistible even if the public were to possess no political rights whatever. The severity with which the Governments of Russia, Germany and Italy restrict the information available to their peoples proves that all weapons of terror do not make a government feel safe against the power of enlightenment. It is certain that a modern community which clearly perceives an evil in its midst and sees a practicable way to abolish it will overcome the opposition of any minority without even having to fight it.

Publicity, the Fulfillment of Liberalism

I cannot attempt to analyse here in detail the evils which the enlightened people will abolish. I will only outline in a general way the changes which I expect to occur. The new economic consciousness will, before all, set afoot a spirit of enquiry which will not rest until it has made the whole of our economic

activities open to study and, indirectly, public to the community. In effect, this will mean a revolution; not a specious revolution of legal titles but a true fundamental change in the nature of our economic life. I contend that it will achieve the promise of liberalism—freedom associated with complete co-ordination. I cannot try to prove here this contention, but I can illustrate it by an analogy:

There is one sphere of activities in our present times which possesses freedom with complete co-ordination. This is the activity of scientific research. Spread out over the globe it forms a co-operation so close that a future historian will discover not even a seam where wars and revolutions, national and social dictators have tried to disrupt this complete community.

The principle that makes the co-operation of scientists complete and unassailable is the publicity of their work. Every scientist knows precisely what others have done and knowing this, sets himself his own special task appropriate to his own training and personality, based on his own idea. The result is a perfect co-operation of all free efforts.

But publicity in science, as otherwise, is not achieved by the mere will to disclose. It must have at its command a technique of presentation adequate to its object and a public which understands communications presented to it in these terms. It presupposes a spirit of enquiry pervading the public which it addresses.

Similarly, when we possess adequate means of presentation of economic matters and have a public receptive to such presentation we will remove not the legal privacy of Capitalism which, I believe, is irrelevant, but the actual privacy of all economic units, and the result will be independence of each and co-operation of all.

To sum up: the discovery of a symbolism which I believe will consist in moving picture writing, capable of representing economic life will release us from fallacies and exasperation, and will create economic consciousness. A community conscious of its economic life will acquiesce to necessities of an industrial marketing system against which it now revolts in vain.

Its energies will turn to an enquiry which will not desist until it has achieved full enlightenment. Enlightenment will create power to control the structure of economic life; a power which at present is nowhere. This power will reside with the community.

The enlightened people will use their power to enforce publicity. Publicity will fulfill the promise of liberalism, freedom and co-operation.

These are the aims for which I am asking you to join in the task of creating the visual presentation of social matters. A huge task which no man can attack single-handed.

[Diagram and Note Attached at the End of Polanyi's Lecture]

The figures showing the electric machine and the primitive map are not attached to the manuscript. The circular diagram is Figure 2 (see page 17 of Polanyi's manuscript) which was shown in the form of a chart at the lecture.