

ECONOMICAL BEHAVIOUR AND ECONOMIC RELATIONS

In the late 40-ies of XX c., Claude Shannon developed the formula for the information unit, the bit. Since then, the problem concerning the informative essence of the economic processes and the phenomena in general initiated a new direction in science. However, the information theory has still remained undeveloped. The current article makes a modest attempt to make clarifications about the said theoretical direction.

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Economical behaviour is inherent to all living creatures. It is a precondition for their existence. The energy efficiency is the factor for the existence of the species and individuals. This is entirely valid for the man and society as well. The economical behaviour seems to be genetically determined and affects all human activities. In other words, it is not merely a relation of production but a mode of behaviour affecting all spheres of human activity. Besides being the precondition for the existence of man, it is a basic precondition for development in general.

It is well known from physics (thermodynamics) that in every *action*, some energy destructs and converts into heat due to which it can not be used for useful work. The efficiency is always smaller than one. So, the question arises as to what are the foundations of development, how are obtained the additional energy resources for the live of society. Where does the roots of evolution hide? The reason for that is *interaction*. The degree of order increases with each interaction. However, here we should be very precise in each statement. The degree of order in the affected object increases during the interaction but the entropy around it increases too. In other words, in every interaction there is an action, which means an increase of disorder, of chaos, of entropy. So whenever some kind of order is established, disorder, entropy increases in much higher degree.

Let us leave aside the increase of entropy; we will talk about it later, and focus on the affected object. As a result of the impact, the order of the elements in it increases. The order is a consequence of the impact and, exactly due to that, it bears the characteristics of the affecting object. The order reflects the affecting power. So, still here, we may define it as *reflected order*. It is no coincidence that we highlight this moment – *the reflected order*. Every object, living creature, in case we treat them as a system, bears in itself a certain order of molecules, atoms, cells and various other elements or subsystems. However, we are not speaking of this. The word is about the new order that is acquired as a result of the external impact. And exactly this new order bears the characteristics of the affecting system. Precisely due to that fact, it is reflected

order, which is the beginning of the beginnings. This is the key to development in general. There is no and can not exist diversity, i.e. development, if the affecting power does not cause the appearance of new structures, forms or qualities in the object it makes an impact on. All we have mentioned by now is summed up by the term *reflected order*.

Does it mean that the statement negates the internal forces of every self-development? Every self-development is an interaction with the surroundings. Every living creature will survive, if it is able to adjust to the changing external conditions of life, i.e. to adopt their impact as reflected order. In this sense, every adaptation, mimicry, adjustment to the changing external conditions means reflected order.

Up to the moment, we have focused on *reflection*. Now, we will pay attention to *order*.

When somewhere order increases due to whatever cause this means that some energy has been saved. Energy saving is the base for any structural changes in the surroundings. There is not and can not exist structural changes, i.e. development, if there is no surplus of energy, if there are no energy resources.

It is necessary to draw quite an important conclusion that will serve as a basis for our further arguments. The energy *actions* lead to reduction in the energy resources that may be involved in useful work. Energy resources are created in the process of interaction as well as energy is saved. And the reason for this is that the order in the interacting objects increases. Questions as what order, order of what etc. may arise immediately. We can have order of elements, of particles, of objects, of thoughts, of ideas etc. The type and form of the order are predetermined by the material-energetic or information characteristics of the interacting objects.

We should leave the energy actions and consider the interaction as an *information process*. What does this mean? We have new information whenever something new appears, in the sense of something *different*, like a new structure, new object, new thought etc. Remember, the thing that changes in every interaction is the form of substance or energy. But they remain the same as quantity. What is the new thing, then? The new thing is the *different* form, structure, order, which is the new information now. On these grounds, we can give a common definition of information – *reflected order*. Being a *reflection*, it bears the characteristics of the surroundings; it reflects the impact of the external object, but it bears these characteristics as its own order. The morning sunrays lit up a mountain peak. The peak reflects them but they have already acquired its structure. It is admiring how the sunrays fall on the wavering lake. However, this is the order of the reflection, of the sunrays that bear with them the image of the peak. Every order as a potential is saving of energy. The sunrays have warmed the rock. The energy is new for the rock and may cause structural changes, upheavals, landslips, disintegration,

disproportion etc. So, information is a reflection of the surroundings and at the same time a new degree of order, of energy saving. It is the factor of development, of changes both in terms of reflection and energy saving.

Therefore, *the economical behaviour* results from the characteristics of the development, from the interaction between the objects, i.e. this is a common characteristic of the non-living, living and social spheres. As the term "behaviour" is used here and it is irrelevant as far as the inorganic nature is concerned let it be assumed as a feature, as a characteristic etc.

The notion of "economic relations" substantially differs from the notion of "economical behaviour". Economic relations are the relations people establish in the production of material goods. In literature, these relations usually are regarded as economic. Still in my first book named "Production as interaction among property, labour and economic relations" (1965), I made a clear differentiation among the three different types of the relations of production. In other word, the economic relations do not cover and exhaust the rich content of the relations of production. As an economist I consider three different types of social relations and dependencies in the production in terms of character and functions. Probably, sociologists, psychologists and political scientists would see much greater variety of dependencies, links and relations.

Above all, the production of material goods represents strictly determined property-energetic proportion ratios. For example, to make a male suit it is necessary to have a certain amount of cloth that is produced from a certain amount of wool that in its turn is obtained of certain amount of sheep etc. As these property dependencies are implemented through the production activities of people, they can be defined as *property* relations of production. In the frame of the social production, these mandatory property relations are accomplished in social scale with our without plan (through the market). From another perspective, these are the material balances of the social production. It is a well-known fact that large amounts of production is being destroyed in periods of economic crises in order to be reached the necessary proportion ratio between production and consumption expressed as a proportion ratio between supply and solvent demand of the produced commodities. The property relations, these mandatory material proportion ratios and dependences that result from the natural character of the produced goods and the real needs for them are the material basis of production.

As a superstructure above the property relations, there emerge also the quantitative proportion ratios in the distribution of labour force among the different industries and types of production. This forms certain distribution of labour force by occupation and spheres of expertise that are production proportion ratios of the labour force and are predetermined by the material production itself. At the same time, however, these quantitative proportion ratios of the labour input also depend on the increase of the social productivity of labour by sex and age. These correlations among the people are *labour* production relations.

The *property* and *labour* dependencies among people have productive character. The material production, the creation of material wealth for society, is accomplished through them. Usually, they are defined as *productive forces* of society.

The third group of relations that emerge due to the material production are the *economic* relations among people. They are not related to the production of the material wealth; such relations are the material and labour ones. The economic relations concern *appropriation* of the produced material wealth. Thus, the issue about the ownership emerges, which issue, as we have already pointed out, is not related to the creation of wealth but to its appropriation. It is quite difficult to differentiate historically the two moments. At first sight, the situation looks as: "I have produced something therefore it is mine". But this is a quite superficial explanation about the origin and essence of ownership and ownership relations.

In the primitive societies, as well as in some Eskimo communities, labour is collective and production is collectively owned due above all to the low productivity of labour. In such production conditions, ownership relations could be hardly established. Often, this proposition arouses elementary objections such as clothes, personal weapons, home etc. are private, not collective property. There has always existed and will exist personal "ownership" of the immediate objects the individual uses. Here, we are not speaking about the things for personal consumption, but about the means by which the production of material goods is accomplished. It is accomplished by the collective through mutual labour, even with the more narrow specialization of some labour activities. Exactly due to that, the production is commonly owned and is distributed according to rules set up by tradition.

Consequently, the first precondition for the origin of the economic relations is the relatively higher level of social labour productivity that creates, said provisionally, surplus over the necessities for the continuation of life in society. This surplus is the source of new expansion both in production and consumption. The second precondition is the surplus, the excessive quantity of material goods, to be turned into "wealth" that may provide further wealth. Here is the key to accumulation. This surplus has already lost its immediate characteristic as usefulness and besides its consumer characteristics has turned into wealth. Wealth is "wealth"; it is quantity besides its material definiteness. And exactly due to that fact, it may be declared private by an individual or a collective (set up by the society). Appropriation is possible just because we are speaking of "surplus", i.e. of wealth that exceeds the immediate needs of the society. In other words, some of the wealth created by the whole labour society are appropriated *privately* – "this has already become mine, it is not yours" – this is *property*. Wealth is appropriated and turned into private property regardless of its natural form – land, real estates, money, factories – and regardless whether it has been appropriated by an individual or

by a certain group from the society. Usually, the appropriated thing is in the form of production means or their monetary equivalent because this is the best way to outline the so-called surplus – the excess that is over the necessities for consumption.

So, the economic relations are relations of appropriation, of *ownership*. The historic development is determined by the development of the forms of appropriation, of ownership. These forms, on their part, are determined by the level of development of the productive forces. In a careful study of the historically diverse forms of appropriation, a primary dependence on the level of the development of the productive forces will appear. We should not be enslaved to the definite regularity in defining the different social-economic formations but this does not mean to ignore the key decisive relation between the level of development of the productive forces and the forms of ownership.

Now, let us have a look at the issue whether the economic relations are eternal. First, they appear at a certain level of relatively high development of the productive forces. Second, appropriation has a historical sense only when this high development of the productive forces is extremely insufficient to provide general prosperity for the working people. There is appropriation when society is dominated by general poverty. The ones that appropriate become rich while the rest stay poor. The economic relations make it easier for the rich to become richer while the poor become poorer. Third, an aspect that is quite important as a characteristic of the economic relations, wealth is appropriated but it is a product of labour, materialized labour, materialized knowledge and work experience. Material and materialized wealth is appropriated; objects, commodities, money and capital are appropriated. It is impossible to appropriate knowledge, creative work or thoughts if they are not materialized, if they are not products of labour. Knowledge and creative works cannot be appropriated; they are acquired by others but without being expropriated from their author. Appropriation supposes taking away, expropriating i.e. turning into property. Consequently, the products of the material production, the labour products can be appropriated.

The economic relation are materialized form the productive forces. This key formulation of Karl Marx should be never forgotten. The productive forces are the essence of production while the economic relations are their materialized, disguised form. And exactly due to that, the latter create wrong impression. They look like essential characteristics of production, like something eternal and constantly inherent to the material production. Virtually, these are not the economic relations but the economical ones that are not merely productive. As we have already pointed out, they are common characteristics of the overall behaviour of men in all the spheres of their activities. Man always chooses the shorter way when moving from one point to another, saves water, electricity, clothes, food etc. The economical attitude is not only a social relation; it is also inherent to the entire animal world. The

species that survive are the ones that spend their energy most economically. However, the economical attitude is a more general approach or principle that is also inherent to the phenomena in the inorganic nature.

The latter statement requires more profound argumentation. The Entropy Law of thermodynamics is well known. In every physical action, part of the consumed energy converts into heat i.e. in such energy that cannot be employed in useful work. This is some destructed, chaotic energy. That's why the efficiency is always smaller than one. Entropy is a general principle of the processes in the Universe expressed in its expansion. Despite the action of entropy for billions of years, billions of galaxies originate in the Universe, each of them containing billions of stars. This means that in certain moments, parallel to the expansion, in certain places there occurs contraction, structuring and ordering. This is a process reverse to entropy, this is information. If entropy originates in action, then information originates in interaction. Whenever one system makes an impact on another one, the latter bears some new order, bears the characteristics of the affecting system. Information is reverse to entropy. It is a new degree of order of the elements of any system. And we emphasize again that information in its essence is a degree of order. It is not a explicitly determined substance or energy. Information has two basic forms of expression as reflection of external impact. It is a *message* for the characteristics of the system that has made an impact i.e. it announces something to the outer world. At the same time, as a degree of order, as a reverse side of entropy, information is *energy saving*. So in every action, entropy increases or the loss of useful energy while in every interaction, a new order occurs, i.e. energy saving. That is why the principle of "energy efficiency" is common to both the organic and inorganic nature. This principle is accomplished through information, through every interaction, through the appearance of new order, i.e. of saving.

The *economical* aspect is a characteristic of the interaction in general. It is an expression of a new order; it is opposed to entropy as destruction of energy. The economical aspect in society manifests as a common human behaviour, as saving of wealth; but it always has some monetary equivalent. This finds its materialized expression in the economic relations. The monetary equivalent of the saved wealth is nobody's possession, i.e. this is an economic relation. Economic relations create the stimulus for the appropriation of the saved wealth; but they are not relations of saving. As far as they stimulate economy in general, it is due to the ownership of wealth that should always increase. The accumulation of wealth is a characteristic of the economic relations exactly as relations of ownership. Historically, the accumulation of wealth takes the form of accumulation of capital. Capitalism as a socio-economic formation may exist and develop only in the conditions of constant accumulation of capital. So, capital, respectively the capitalist economic system, is the supreme (or ultimate) form of existence and development of the economic relation.

The very negation of capital is hidden exactly in its own accumulation, and with that the negation of the economic relations. Karl Marx saw the liquidation of the capitalist ownership in the process of accumulation of capital, a process in which the proletariat unites relatively and absolutely, which motivates carrying out a revolution and establishing of proletariat dictatorship. This is the political decision for the liquidation of capital and capitalism. But this process may be seen from another perspective. In order to have accumulation of capital in a progressive degree, it is necessary that the means of production should be improved and this should be done in such a way that the labour costs be reduced. The more perfect the technical equipment and technologies are, the less is the involvement of the living labour force in the material production. For example, if at the beginning of 20th century the involvement of the labour force in the industry of the United States was 80%, it became no more than 10% to 12 % at the end of the century. The role of the service sector has increased extremely and it has absorbed about 75 % of the total labour force. Now, the manpower in industry is replaced by robots and automated production lines that are operated by computers. The trend in the sphere of the material production is that will labour, i.e. the materialization of the human labour force. The manpower that still remains occupied in the automated material production is engaged to control and manage the processes. It does not materialize immediately, i. e. the basic characteristics of labour – *the materialization drops out*. So, the labour in the material production drops out, but men are still engaged in its control and management.

A major issues stands out here – what is labour? Undoubtedly, it is a human activity. But could we define every human activity as labour? Not every human activity is labour but only the one that is related to the production of material goods and is materialized in it. Labour, as have already pointed out, is physical, mental, creative, intellectual etc. activity, but *materialized*. The material result of the labour activity is a material product, an object, something tangible. The mental activity results in a new idea, thought, creative work, for example a song, a composition, a picture, a novel etc. This activity that finds external expression is not labour; it is creation. In that way, we reach to the paradoxical statement that composers, artists, writer, philosophers do not labour. Yes, actually they do not labour, they create things; the activity they are involved in is creation; it is not in the sphere of the material production. They are in the sphere of the intellectual production and their activity does not express in materialization of material goods. They create intellectual goods. This activity is not labour.

This definition of labour contradicts the common civil usage of the term “labour”. In worldly practice, every or almost every human activity usually is defined as labour.

Here there is an attempt to differentiate labour as a strictly defined human activity on the basis of theoretically determined criteria and taking into

consideration common practice. This differentiation is necessary due to the changes that are occurring now, in the era of the development of information technologies.

The second global change that occurred in the sphere of the social production is that material production gave up its leading role to intellectual production. Science and its products dominate in the social relations. Here is an example: The book value of an IT company specialized in the development of applications for Internet with about 50 employees is 80 million US Dollars. It comprises the expenses for the premises, computers, equipment together with all other objects necessary for the production activity of the team. The market price of the company is 3 billion US Dollars. What is bought and what is sold in this case? It is evident that what is bought is neither a finished product nor a material object. Actually, what is bought is the intellectual power, the intellectual potential of this working team. And here immediately we may ask the question: after the company is acquired, what kind of property will its new owner possess? It is up to the extent of its book value - 80 million US Dollars. We see that ownership as an economic relation of appropriation of materialized labour has disappeared for the rest of the amount up to 3 billion US Dollars. In this case, could we say that the new owner of the company will possess as such the future applications for Internet created by the working team? Absolutely not! There is no ownership where there does not occur a relation of appropriation, respectively expropriation. It is impossible to expropriate the knowledge, the talent or the potential opportunities for creative work involved in the further applications to be developed by the team.

Despite these theoretical arguments, there are such relations in practice where the scientific innovation is the major product and it is sold and the owner of the company appropriates its equivalence, i.e. the scientific product is the thing that is appropriated and taken into possession. Yes, things are still like that! But more and more often, the market is dominated by small companies where the scientific team creates innovations but the team works for itself. The internal organization of such type of enterprises is horizontal, i.e. each member is in charge of the work they do but the members may solve the common problems only as a team. Here the ownership relations disappear as the earned income belongs to the people who generate it; and there is not "appropriation" of materialized labour. From such a perspective, the economic aspect in these relations of production disappears the way we defined it. Therefore, the private appropriation of the scientific product on the basis of the private ownerships of the conditions of production is a phenomenon that will be disappearing with the development of globalization.

The question arises: "If the innovation created by the team has a price, this price is supposed to generate income, aren't that really economic relations? No, they are not! What is the classic price? According to the political economy, it is a monetary expression of the value of the commodity. Well, but

this “commodity” has no value, as there is no materialized labour in it; it involves only knowledge. That knowledge does not have strictly defined material form. It may be written on paper; it may be shot as a film; or it may be merely a model of a future device etc. It may take various material expressions. After it does not have value, what defines its price? The benefit it may bring. The buyer takes into consideration the costs and the possible income; so here we do not look for the economic aspect but for the economical one, for efficiency. From this example it is quite evident that the economic aspect is merely a transformed expression of the economical one that is the essential social and natural relation.

In the end, I will repeat that globalization is a hard self-contradictory social process. The information relations really dominate all over the world; science dominates over material production due to which the ownership relations decline; the economic aspect declines too. The future features of a new social system have been outlined. This system will evolve together with development of the information society. But at the same time, as we have already mentioned, the differentiation between the developed and developing countries is growing deeper; social inequality increase. Globalization is charged with social explosion.

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