

## MAN AS A SUBJECT OF INTERDISCIPLINARY STUDIES

The problem of man falls into a category of problems of human knowledge that are both 'eternal' and ever new. Countless legends, myths, philosophical systems, religious doctrines, scientific conceptions and fantastic visions have been the fruit of man's ungovernable desire to know himself, to know his essence, his purpose in the world, his fate, his future. Not to mention the ingenious hypotheses and Utopian fantasies, scientific truths and galling mistakes, bold projects and cowardly superstitions handed on by human civilization in its indefatigable search for the 'magic crystal' which would at last reveal man's true nature. All periods have made their contribution in this everlasting quest and all have relied on the few parcels of truth gleaned by humanity at earlier stages of development. Our times, the most dramatic and revolutionary of all, are by no means an exception and can be distinguished from the rest only by the exceptional acuity and urgency of the problem.

What is it that makes the problem of man so particularly relevant today? First of all, our period has become an era of worldwide revolutionary renewal, of radical socio-economic and

Translated by Nina Godneff and Barbara Thompson

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political change, which has considerably augmented the role of the human factor in all spheres of social activity, and consequently substantially strengthened the value of man as the principal actor in the historical process in all the essential fields—production, society, development of intellectual life.

Secondly, the scientific and technical revolution—perhaps the most dynamic phenomenon of our times—has entailed such far-reaching transformations in the technical and technological data of production that man is now exposed to psycho-physiological, moral and professional, technical and cultural demands in his working life to an unprecedented degree. And he too has become extremely demanding where the organization and conditions of production are concerned. But his demands will not be filled properly unless the manifold aspects of the changing role and the place of man in the evolution of contemporary production are given thorough study.

Thirdly, the amazing intensification of all that makes up social life and the incredible acceleration of its rate of development have upset the century-old equilibrium in socio-economic, technical, cultural and ecological conditions of human existence. The inevitable consequence of the new historical reality has been to increase strain and accordingly aggravate such evils as depressive, cardiovascular, neuro-psychiatric and probably oncological diseases, removing to a totally new plane both the study of the resources of the human body and the conditions most favorable for their development, as well as the study of suitable ways of providing proper scientific and rational protection of man's health as the supreme value of society.

Fourthly, man's power over his natural environment is incomparably greater now than it ever was before as regards geological factors, the biosphere, already polluted with industrial waste, saturated with chemical substances and ionizing radiation..., not only damaging man's health but also endangering his future, and pleads more and more for a deeper examination of the many particularities and trends in the interplay of man and his environment, of the role of man as an ecological factor.

The vital urgency of the problem of modern man can lastly be explained by the fact that the different mathematical, cybernetic, physical, chemical, biological and other discoveries have led to

the invention of nuclear missiles, chemical and biological weapons aiming at mass destruction and threatening not only the lives of individuals but of whole peoples, and human civilization itself. It therefore becomes particularly important to clarify the role of socio-ethical criteria in assessing man's behavior, his daily activities, his spiritual and moral life and his responsibility towards his contemporaries and towards future generations.

These five points of view (others could be mentioned) show to what extent the need for a scientific, multilateral and truly humanistic understanding of the problem of man is a present one today and also bring out the need for new approaches to the human phenomenon and the particulars of human existence in the contemporary world. The essential feature of these new approaches, imperatively dictated by the character of the times, is their complexity, because modern man strives to find support both from without—in society and nature—and from within, in order to look with more confidence on the ways of achieving his aims and ideals.

In addition to these five aspects of contemporary development which, taken as a whole, provide the objective cause of the increased value—both in theory and practice—of the knowledge of man, other factors press for a fuller, more diversified, more complex study of man, notably contemporary science, which has made giant strides ahead, yet in the main tends more and more to converge on man. There would no longer appear to be any doubt that the problem of man inevitably turns into a general problem of scientific knowledge, of science as a whole, not only the human sciences but also the natural and the technical sciences. Similarly, it would be hard to deny that the general differentiation of scientific knowledge in the last few decades has considerably substantiated the narrow specialization of other disciplines, especially with regard to the study of the various—sometimes quite new—aspects of the general problem of man. Finally, it would be even harder to deny that the constant progress of scientific knowledge and the aims assigned to the accelerated development of science by human needs have considerably accentuated the tendency to associate several sciences, with their specific methods and data, in order to study man in more depth. The outcome of all this has been the creation and spectacular development of

heterogeneous scientific systems, which have already obtained appreciable practical results in the study of human life and activity, and of complex scientific approaches to the problem of man viewed as the principal force of production in society, as the object of education, as an original psycho-physiological phenomenon, as the essential motor of the historical process and so on...

The objective process of the social, political, economic, scientific and technical and spiritual development of human civilization in our critical period, the increase of the role of the human factor, inseparable from it, and man's progress in self-knowledge are reflected in scientific conceptions, works of art and ethical systems. This means that the traditional aspects of the knowledge of man must be completed by the new features, linked with the special character of human existence at present.

If it was possible formerly to press no further than the study of the correlations in the dynamics of man/nature, man/society, man/culture etc., it is plain that this is no longer enough today and that it has become more and more necessary to extend the study of the increasingly complex systems of interdependence such as man/science, man/technique, man and society/earth and cosmos, man/government, man/mass communication, man/politics etc... But in all these systems, whether 'old' systems traditionally studied by science or 'new' systems in which science has only taken comparatively recent interest, the center of attention has always been man, the principal actor in all contemporary dramas—social, scientific and technological, ecological. It is towards man that the great highways of research in the social, natural and technical sciences and the entire sphere of contemporary scientific knowledge lead more and more and quite often cross.

These then are the circumstances that dictate an interdisciplinary approach to the problem of man, an approach in which the methods and ideas of the different sciences meet and intertwine, in which the fundamental conquests of the ones eventually cause the transformation of the applications of the others. To take an example, on the border between psychology and sociology the interpenetration of the specific methods of both sciences has produced social psychology, just as the integrating interplay of the fundamental scientific ideas of political economy, sociology and psychology (including social psychology) has brought forth

a social science devoted to the content and importance of the human factor in industry: industrial sociology.

It is not unusual for the concatenations carrying fundamental scientific ideas towards their practical applications to involve several stages, and to pass from the natural sciences to the technical sciences then on to the social sciences, for example. Thus by relying on the fundamental ideas in the theory of probabilities, the theory of information, of mathematical logic, the theory of algorism and the theory of automats, cybernetics produced a fundamentally new approach to the problem of man—the cybernetic approach—viewing man as the most complex of self-regulating and self-correcting systems, an approach which would have been unthinkable without the mathematization and technicization of anthropology. Effective anthropological research can now no longer even be imagined without active and ever-wider recourse to mathematical, physical and chemical methods and means and a whole series of technical sciences. What is more, the cyberneticization of anthropology is matched by the anthropologization of the content of cybernetics. Today, anthropologists apply the means and methods of cybernetics to man, studying him with the utmost attention and in detail as an autonomous system of a superior type, this or that function of which scientists and engineers seek to reproduce in automats.

As a result of the interpenetration of the sciences, typical of scientific knowledge in the 20th century when the methods and principles of one branch of study infiltrate the actual fabric of another although they very often belong to sciences far removed at their earlier stages of development, we now witness the meeting and mutual enrichment of technical and anthropological sciences in two essential areas of human activity: work and communication, more concretely in the automatic regulation of production processes and in communication techniques.

Such evolution promises new discoveries about the means applicable to the study of man as the essential productive force in society. This primary aspect of human activity has long been studied by political economy, which views the fundamental manifestations of properly human forces in their association with the forces of production as part of a specific system of production relationships. An economics approach allows it to be understood

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why man, in the system of material production, not only completes a given product, but also accomplishes his own subjective activity, ultimately fulfilling himself; the more production is socialized (humanized), the more the social nature of man is revealed and developed within the operation of the production system. The great question arising at this level is how, by what ways and means, man regarded as a socially and economically determined entity in the system of economic relationships may at the same time escape univocal rigid determination.

It becomes more and more obvious that such a complex problem with so many different aspects cannot be studied effectively without the aid of cybernetics, industrial psychology and ergonomics, three disciplines which made their appearance about the middle of the 20th century and developed in spectacular fashion. Cybernetics and its specific approach to the problem of man has already been discussed. Here we can attempt to discern the essential features of industrial psychology. As a technical discipline, this approach studies machines, equipment and mechanisms from the special point of view of the demands production techniques and technology place on man. As a psychological discipline, it examines the particularities of man's thought, sensibility and will, but again from a special angle: endeavoring to ascertain to what extent the individual particularities revealed in the personal character of psychic processes such as perception, reflection, memory and attention correspond to the profession chosen by the individual and what means can be applied to specify and develop professional aptitudes and 'raise' them to the level of the ever-increasing demands of technology in full evolution.

The study of man as a productive force, viewed in his relationships with the material data of the other forces of production (technical and technological) in the actual process of work, tends more and more to involve an entirely new branch of scientific knowledge—ergonomics, which can be defined as the science of human labor. Ergonomics studies the possibilities of man at work in accordance with psychological, physiological and socio-economic criteria of the effectiveness of human labor under certain technical conditions. Furthermore, it studies techniques and technology both as material and socio-economic tools of working

life, tools acting as the amplifiers and transformers of the psychophysiological functions of man.

Bordering on ergonomics comes design, a synthesis of artistic activity and engineering. Theoretically, design is first and foremost applied science viewing man in relation to a 'second nature' or the world of man-made things. The important factor here is the appearance and development of technological and aesthetic norms in human activity, of their application in the objectal universe man has created, of their mutual influence and above all their interpenetration in the actual course of man's material activity under increasingly technicized conditions of production, and lastly of the influence exerted by the product on man's subjective world, on his thought and his feelings, on his relationships with the objective world about him.

However, although man is the major productive force and creates material values through his work, he also creates intellectual values. What is more, he himself appears as the highest, most important value in a society moving towards the achievement of humanist ideals and principles in all fields of social life. This means that if his role as an essential productive force, as a creator of material and intellectual values, and as the supreme value of society is to be properly understood further scientific study must be given to the process of socialization, or rather the complex many-sided process whereby man becomes a fully valid and active member of society under the influence of specific social conditions and deliberately guided educational work. The full range of the components and manifestations of this process are dealt with in sociology, which views man both as the object and the subject of social endeavor, or in the active interplay of the individual and the environment. Man as an object of sociological study is integrated in a specific system of social relationships (society, group, individual etc.) and therefore appears as a combination of those relationships in his particular reality.

In order to appreciate the degree of socialization of the individual and the beneficial character of socialization on human development, sociology applies the following basic criteria:

a) the power of the social influences of the environment (mainly the social environment) on individual motivations;

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b) the degree of individual insertion in the relational system of the environment through acts and behavior;  
c) the degree of social activity, the special type of nonsymmetrical interplay between person and society (the community) consisting in an exchange of intellectual and material values, social data, etc... Individual social activity, which can only find real possibilities of development and enrichment in a society that regards man as the supreme value, can be characterized by:

- 1) deliberate readiness to fill social and individual needs;
- 2) motivation for action coming mainly from within, or action guided by an inner scale of values;
- 3) 'supranormality' of the subject's activity, or definitely 'above average' straining, an intensity, a persistence and rigor carrying the effort beyond the levels established according to traditional norms, and;
- 4) the creative character of that activity, duly channelled towards new results, new ways and new methods of social behavior.

Sociology studies man in the full variety of his relationships with the social conditions of existence, viewed dynamically not statically, and in the course of development of the different aspects of his multiple activity, by striving to elucidate the influence exerted by the concrete motives spurring him on to action, which vary fundamentally with the stages of the historical process. In short, sociology puts forward a phylogenetic theory of man, examining the historical process of the education and development of the individual in his various socio-economic contexts, analysing social types in their concrete historical relationships with society and culture. This amounts to saying that sociology touches upon and even merges with political economy and history in certain respects.

History looks at man from the point of view of his genesis and his human development and, particularly important, through the historical forms of his practical material activity. 'Man is his history' said Marx. That is why history does not stop at the study of individual anthropological development but also studies the truly human forms of practical activity. Furthermore, history is bent on showing how the development of its subject is achieved



in time and space (the two existential dimensions of things), it attempts to define the real determinants, the motives conditioning the activity of men (and man) together with the rights enjoyed by (or limiting) the individual in accomplishing actions which by their scale and social scope can be qualified as historical. In approaching man as a subject of the historical process history consequently borders on legal science.

In so far as law is a set of norms laid down by the State to govern the conduct of individuals, it allots man a place in its theory. In so far as historical and concrete social relationships rest with him, man finds himself the subject of legal norms reflecting the socio-economic nature of society. He can depart from the legal framework when the law is directed against his existence as a human being, or when it threatens his individuality, and conversely can appeal to the law to defend himself against acts of aggression (those of social institutions as well as those of other men). For a full understanding of the process of socialization (where sociology, history and law unite) it is important to see how law contributes towards the social development of the subject of the historical process—the individual—and how, in its relative autonomy and its complex interplay with the decisive sociopolitical principle in society, it influences the evolution not only of individual and class awareness but of personal relationships within society as well. By studying the legal norms governing men's conduct within specific social systems, law draws near to ethics, designed to elucidate and examine the moral rules (regulators) of human behavior.

As a moral science concerning morality and its place in the sphere of human activity, ethics is definitely directed towards man. Its aim is to approach the institution set up by morals as a social phenomenon, studying its genesis and its nature in actual human activity; the specific character of morals as a regulator of human behavior can therefore be understood only in relation to real circumstances. All ethical problems are ultimately human problems and in order to be solved must be based on an overall comprehension of man as a 'human universe.'

Concrete historical analysis of man, who figures as a subject in the categories of scientific ethics, allows us to understand the moral awareness, the action of that subject. A moral act must

be assessed as a total act, as a unit embracing the aim and its achievement, a unit of design and accomplishment. But this will not be possible unless the act is viewed as a particular moment in man's total social activity. To grasp the fact that man as an ethical problem should be understood mainly through practice, through the power he exerts in the transformation of nature, society, other men and himself, seems of the utmost importance. But concrete historical analysis of man through the prism of the conformity or non-conformity of his conduct with specific moral rules is also closely linked with the study of man according to the methods of psychology, medicine and other sciences.

In so far as man is a collective being not living in solitude, he can be studied in depth by social psychology, which views him in the light of his behavior within the group and in the light of interpersonal relations, but as an active person, not statically, necessarily taking into account the determining factor of individual consciousness and conduct in specific relation to the social conditions of existence. The procedure which allows us to discern the main features of man's conscious activity in a given social structure involves many considerations and is by no means linear. Social psychology examines the influence of socio-psychological processes on the organization, operation and evolution of human behavior in the specific context of material and intellectual production, various social institutions and mass social movements. Under the angle of social psychology man is presented as an integral system, with his socio-organized psyche and his various forms of activity. Their reciprocal influence provides a complex immediate process and it falls to social psychology to study their correlations.

In its major aspects social psychology can nevertheless not normally be applied without considering the fact that man is a biological being as well as a social being. In other words the chain of interdependencies stretches from social psychology to biology, genetics, physics and medicine.

As a biological being, man is a subject for biology, which endeavors to define the laws of his substrato-material development. But as a social being, specific distinct features over which he holds a monopoly by that token become associated with his 'purely' natural and biological properties. If we accept the fact

that man is a bio-social being, the important thing is to ascertain the relationship between the biological and social so that the complex dynamics of the correlation between the two categories of laws can be properly assessed (whether they should be viewed side by side for instance or as they intertwine, in their reciprocal influence). In probing the depths of the human bio-constitution, biology studies the agents which change that constitution, at the micro molecular level as well as on the level of external appearance. But it is also important to define the role of the biological factor in social man, the influence of a biological constitution on the social status and the shape the correlation takes. This is where psychology and ethics rightfully intervene. Biology borders on these two disciplines but in the course of its development has nevertheless brought forth a new specific branch of scientific knowledge—genetics.

The problem of genetics consists in determining the laws which govern heredity, in order to modify the pathology. But there is a reverse side to this science, turned towards morals. Social control over the eventual development of the species (population) implies the possibility of preserving pathological units which protract the anomaly of the species in hereditary evolution. The genetic problem therefore assumes both a socio-philosophical and a scientific dimension and its solution is of an interdisciplinary order, situated in the sphere of the interplay of the different branches of study making up the unique front of the science. In this interplay, the roles of medicine and pedagogy are essential.

Medicine is concerned with the accomplishment of the bio-social status of man both in normal and in pathological conditions. Its essential task is to study the liquidation process of human pathologies. One of its most important features is the study of the conditions (socio-material of existence, production, etc.) in which man is likely to depart from the normal (illness) or show a pathology. Its socio-philosophical problem lies in the determination of the circumstances most conducive to the prevention of diseases etc.

The scientific and philosophical side of medicine consists in the detailed study (taking into account the data of other sciences, therefore synthetically) of the nature of man (including his pathological variants) in order to further his favorable develop-

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ment. But there is also a moral side to certain medical problems (organ transplants, etc...) which should be borne in mind. All of which indicates that the philosophical dimension of man is quite legitimate where medicine is concerned.

Pedagogy studies man as an object of education and views him as an individual entity altering in the course of study and apprenticeship. In so far as man, inserted in the social system, assimilates the values it has to offer (material and spiritual), what is important is to know how they are assimilated, or how he progresses, how he perceives them and applies them in his activity. Pedagogy studies socio-intellectual processes and puts them into practice with reference to a body of principles. Its great problem is to know how the individual develops (his thought, activity, adequateness, penetration of the object) and also how he is educated (improvement of moral awareness, psychic qualities, rules of conduct in his relationship with society). The general problems of pedagogy consist in wondering whether (and if so, how) teaching and received knowledge exert an influence on the system of personal values (human, family, etc.). This question needs study at several levels, not solely from the pedagogical point of view, because it affects psychological, socio-moral, aesthetic and other aspects as much as purely gnosiological considerations (theory of knowledge). In this light, pedagogy approaches philosophy, law, morals, aesthetics and the other sciences devoted to the study of man, each with its specific methods.

Thus man, a unique phenomenon in his manysidedness, would appear to be the object of different sciences, each of which only studies one or a few of the various features displayed by the human personality, yet at the same time he offers himself up to the inquisitive gaze of the researcher in his entirety, his entity.

As an 'entity' man is as much the object of the natural sciences (since he is essentially physical) as of the social sciences (because he is the actual reflection of the social universe in which he lives, as are the results of his activity). But while the natural sciences (biology, chemistry, physics etc.) are only interested in his constitution (his organic being) and the human sciences (history, sociology etc.) are mainly interested in the social components of his human personality, philosophy views man in an integrative way (assuming his organic being) and above all penetrates his

social nature. Marx proposed a formula for an accurate and scientific understanding of man as an entity, in other words for an understanding of his social being; 'The essence of man is not something abstract, something inherent in the individual as such, it is actually all social relationships in their entirety.' This interpretation of man enters his metaphysical status (his unalterable essence) once and for all and enables us to understand man in his history, as a concrete historical subject and is of considerable methodological value for approaching the problem of man from the point of view of the human sciences.

The philosophy of man is the theory of his essence—what he has been, what he is and what he will be—in his history. Man creates the world and expresses himself as a man in his activity and in the products and results of that activity. But man not only creates the world, he also creates himself, by fulfilling himself in the objects of his existence.

Therefore, scientific philosophy based on the data of the natural sciences (theories of the organic existence of man), Marxist philosophy, assumes the biological basis of man but does not explain the essence of man according to that basis; it maintains that the essence of man is to be found in ordinary relations as a whole, in the concrete subject of history. It enables us to understand and explain man's activity, development and real status. In this philosophy, man figures as thinking nature, not the whole of nature in its universality, but 'humanized nature' in its history. The indissoluble link between man and nature allows us to see that man is truly capable of penetrating nature (by his material activity), that he can distinguish the object of knowledge from practice, that he can develop as a subject of history. From the point of view of scientific philosophy, man is not brought down to his spiritual principle—conscience, nor to his corporeal organization, although both the one and the other are essential. He unites the natural and the social, the physical and the spiritual, the inherited and the evolved in the course of existence.

The study of man as an active and intelligent being is the most urgent problem of philosophy and it can be solved by appealing to an integrative knowledge of man. Philosophy itself provides the methodological basis on which the scientific interplay of the different disciplines in the study of man should rest.