

THE AMBIGUITY
OF THE SCIENCES OF MAN

At the conference on scientific psychology held in Strasbourg in the autumn of 1956, Professor Leontiev of the U.S.S.R. gave a highly anticipated report on the present trends of Russian psychology. He emphasized the now recognized necessity of going beyond the simplistic schemas of Pavlov and of studying complex systems of adaptation, which are the constitutive elements of the mental life in its richness and which are expressed particularly on the speech level. The elite of the French scientific psychologists listened to him in a kind of anguished confusion, mixed with admiration. One of them, expressing the general feeling, exclaimed: "You tell us that we must not hesitate to approach that formidable domain, before which we shrink back—the conscious . . ." And one knew not whether to laugh or to cry at the sight of psychologists thus confronted with a subject so unusual for them as to be quite out of the question.

In Italy in the spring of 1958, another conference was held, this one

Translated by Wells Chamberlin.

on social psychology. An American leader in this field, Professor Viteles, declared, taking into account his long personal studies, that the time of "human relations" had passed and that we were about to enter the time of the "humanities." This scholar had perfected a new method for improving businessmen, managers, and directors of all kinds. Until then these men, already mature and having reached important posts, had been offered technical training periods intended to put them in touch with new developments in their professional areas. Now the eminent expert from overseas advocated training periods of a completely different nature. Businessmen were to be relieved of their tasks and put out to pasture in a quiet spot for a period of ten months. This time was to be devoted to directed studies whose essential character was to have no connection with the technical, industrial, or commercial activities of the trainees. They would, for example, study Shakespeare, Greek tragedy, the *Iliad* and the *Odyssey*, or Napoleon, German Romanticism, abstract painting, and so on. The experiment proves that, after ten months have been devoted to the close study of one or another of these topics, the behavior of the individuals is modified; they do not react in the same way to series of tests which are given them at the beginning and at the end of the period under consideration. Although it is obviously not certain that the modification has as its direct result an increase in productivity, it does nevertheless seem to imply a new understanding of human relationships, and, in the American view, the idea of change tends to be confused with the idea of progress.

Here again the unprejudiced observer remains perplexed. And, if this experiment were not presented with authority by one of the recognized masters of an eminently serious discipline, we might fear that it is a friendly hoax. Quite the contrary; we are dealing here with a characteristic aspect of American civilization. Indeed it requires the perspicacity of a great scholar already well along in years to discover that American businessmen, armed with financial, commercial, and industrial techniques and long subjected to an intensive professional activity, are suffering from an initial deficiency: they have never known the leisure of general culture. And the rudiments of culture from which they belatedly benefit can have a considerable influence on the very foundations of their personalities. This is an unexpected revenge reaped by the most unselfish literary studies, which thus impose a recognition of their value in a system in which they are considered in principle as null and void.

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These two examples give significant indications concerning the spiritual situation of our era. They reveal the absurdity of the scientific and technical inflation from which Western culture is suffering. In France, especially, with the blessing of those in public office, an intensive propaganda campaign is being spread practically everywhere, in favor of scientific training. We lack mathematicians; we lack engineers. We must produce them at all costs, in massive quantities, and immediately. The champions of this crusade preach that we must give up Greek, an exotic and useless language, reserve Latin for a few retrograde minds, and even limit the study of the national tongue to the vital minimum of Basic French. A good citizen, today, must live to add and subtract, to cultivate the electron, or to manipulate a transistor. *Noblesse oblige*: the most gifted young people must be, willy-nilly, oriented toward the sciences. As for the ungifted, it is equally necessary to orient them toward mathematics. For we are given to understand that there is no need to be intelligent to do mathematics, at least to absorb it in a sufficient quantity. This is in the country's interest: the powers of the day, the Americans and the Russians, owe their superiority to their astounding density of engineers per square mile.

This transcendent illiteracy represents one of the most pernicious forms of contemporary nihilism. The most magnificent illustration of it might be found in the case of the atomic scientists, those heroes of scientific and technological obscurantism. The most distinguished of these specialists oscillate with a significant regularity between mental depression and high treason. Stuffed with equations, hallucinated by figures and construction diagrams, they quite literally no longer know what they are doing. And when the least perverted of them, those who have not definitively lost all presence of mind, eventually discover the implications and the ends of their researches, they demonstrate their good faith by escaping by the only avenues which remain open to them. It would have been better for everyone if they had reflected a little beforehand. But the progress of scientific conquests does not favor general culture. And, in the same way, the famous scientist Robert Oppenheimer, one of the godfathers of the atomic cataclysms, while still continuing his calculations, has finally discovered the road to peace of mind in the wisdom of India, which teaches precisely the vanity of calculations and the ontological nullity of the technical adventure. If he were not so respectable a personality, and one whose genius is a symbol of our time, one might wonder if an attitude which consists in playing

both camps at once gives evidence of a solid intellectual and moral equilibrium.

I recently visited Sweden. A happy country, and a prosperous one; the country, no doubt, in Europe and perhaps in the world, where the general level of life is the highest. A country without misery and without poverty; a country which has been officially deproletarized. All this is admirable, assuredly. Bathrooms, refrigerators, television sets, electric razors, automobiles, comfortable housing for all—it's like a dream. But here's the rub: these fortunate Swedes are not happy. Champions of comfort and productivity, they are also champions in suicide and divorce, in mental illness, in alcoholism, and in juvenile delinquency. They have solved all the problems—the economic problem, the technical problem, the social problem. Yet there is one problem which they forgot, so eager were they to rush to the laboratories and to the factories: the problem of human existence, the problem of values. Or, rather, they had imagined that questions of this order were somehow understood but not expressed and that one could solve them without asking them, by being content with straightening out the technical, economic, and social difficulties. The rest was supposed to follow automatically. Experience has given the lie to their expectation, and the Swedes have discovered a new wretchedness, which cannot be cured by the very means which have engendered it. One cannot build a civilization by ignoring human reality; the problem of civilization is essentially a human problem. It is permissible to think that all those who, by system or by absence of system, by dialectic or by naïveté, refuse to admit this to themselves, will someday, whether they are Russians or Americans, come up against the same insurmountable contradictions, if they are not doing so already.

Man is not a question which can be resolved. The human condition cannot be reduced to a problem which a few calculations would allow us to treat once and for all, after it has been set up in a sufficiently clever equation, facilitated by a cybernetic installation in the style of the times. These assertions, which are commonplace enough in appearance, sum up the failure of scientist endeavors to formalize human experience according to the schemas which are in force in the area of the sciences of matter. In fact, the already age-old evidence of the history of the sciences of man, of his trials and errors, as well as of his successes, brings us to analogous conclusions. And the serene ignorance, the complete indifference of today's specialists in reference to the attempts of

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their predecessors is not the smallest paradoxical element in the present situation. It is the same obscurantism, ostensibly defending the rights of pure science or of pure philosophy, which prevails almost everywhere.

For all that, we need only to consider the present state of the human sciences to ascertain that they are in complete confusion. They are developing, most certainly, and they are multiplying their works, but the technicians of the various disciplines usually do not know precisely what they want nor what they are doing.

Psychology, for example, despite its ambitions—and even despite its successes—has not succeeded in understanding itself and in defining itself in a precise way. The very careers of the founders of experimental psychology leave at times a curious impression of failure. William James, for example, became discouraged; he gave up psychology, which had disappointed him, and devoted himself to philosophy. In France, Théodule Ribot, founder and defender of an “experimental” psychology which he himself never practiced, came finally to a kind of eclecticism. And in 1914, two years before his death, he wrote a preface for the *Treatise on Psychology* which his pupil Georges Dumas was preparing. He claimed then that “psychology is . . . a part of the science of life or of biology. . . . The experimental psychologist is a naturalist of a certain kind. . . . If psychology is only a part of biology, it cannot continue to be, it cannot be, a part of philosophy.”¹ However, the *Treatise*, in two thick volumes, which Georges Dumas was supervising, grouped together a certain number of collaborators whose extremely varied contributions were in no way comprised within the limits set by Ribot: some were pure physiologists, and it was difficult to see by what right they assumed the title of psychologists; others were sociologists, even philosophers, so that the unity of this *Treatise on Psychology* seemed to lie primarily in the existence of a common cover. And consequently Georges Dumas was soon to widen the scope of a project which had no doubt been found inadequate; he assumed the direction of a *New Treatise on Psychology*, more complete than the first, and running to ten volumes. Naturally, the composite and heteroclitic character of the first work is again accentuated in the second. We find a curious indication of this in the definition of psychology proposed by Georges Dumas himself:

1. Georges Dumas (ed.), *Traité de psychologie* (Paris: Alcan, 1923), I, ix.

If we had to formulate a definition of psychology which might win the approval of almost all, if not all, of the contributors to this *Treatise*, we should say that it is a science in which introspection plays an essential and preliminary role, in the description of facts and in the analysis of mental mechanisms, in which biology and sociology study the biological roots and the social evolution of the psychic functions, and in which pathological psychology, mental pathology, and nerve pathology bring us the most valuable contribution, through the analysis of sensory-motor and mental disturbances, which are elementary or complex, and through the analysis of psychoses, of nervous disorders, and of their cerebro-organic conditions.²

The reading of such a "definition" leaves the reader perplexed, since the unity of psychology is presented as one might explain the unity of a certain number of people talking together but saying things which do not agree and which are often contradictory. The existence of psychologists is perhaps one proof of the existence of psychology, but it does not allow us to characterize the latter or to give any idea, even a remote one, of its unity. The importance which has been assumed, over several decades, by psychoanalysis, by the various depth psychologies, by social psychology, and by the therapeutic techniques derived from these doctrines has incontestably increased the effective importance of psychology in contemporary civilization. Moreover, the various forms of psychotechnique and the batteries of tests advocated by the different methodological schools also exert no small influence. The reality of psychology is a fact both of an epistemological order and of a social order; we cannot help but believe it. But the nature of psychology and the sense of its unity are not at all assured, and we can only be astonished at the serene indifference of most of the specialists—with a few honorable exceptions³—in respect to the fundamental questions about the status of their subject.

We could make analogous remarks about the present state of anthropology. A recent American summary offers, under the title *Anthropology Today*,⁴ the present status of anthropological studies. This massive anthology assembles the contributions of a hundred world-wide specialists, arranged in divisions and subdivisions according to the questions which concern them, from prehistory to climatology. And,

2. Georges Dumas, *Nouveau traité de psychologie* (Paris: Alcan, 1930), I, 339.

3. Cf. particularly Politzer, *Critique des fondements de la psychologie* (Rieder, 1929), and D. Lagache, *L'Unité de la psychologie* (Paris: Presses Universitaires de France, 1949).

4. A. L. Kroeber (ed.), *Anthropology Today* (Chicago: University of Chicago Press, 1953), extended by a volume of discussions: Sol Tax et al. (eds.), *An Appraisal of Anthropology Today* (Chicago: University of Chicago Press, 1953).

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moreover, neither philologists nor historians nor doctors were invited to participate. We cannot avoid remarking that these eminent scientists do not understand one another because they do not have a common language. In addition, we can ask ourselves, not without some concern, if they have anything to say to one another. Each one pursues his inquiry in the area of his specialty without worrying about the others, aside from the few colleagues who are concerned with the same problems but who profess generally conflicting opinions. We get the impression from these accumulated statements that the editors might just as well have invited everyone to give evidence. We wonder who, up to a certain point, is not working in anthropology; without too much exaggeration, it seems that anthropologists are people whose common characteristic is that they all talk on different subjects. Anthropology, their common denominator, appears much more to be a common divisor. As the expeditor of the project, A. L. Kroeber, says, "the subject of anthropology is limited only by man,"⁵ with the result that anthropology constitutes a "coordinating science," which retains participation in all sorts of enterprises of knowledge.⁶ This opinion is confirmed by that of another eminent American specialist, Ralph Linton, according to whom "anthropology is a focal point for other sciences."⁷ One of his colleagues goes him one better: "I do not think that anthropology exists as a distinct entity as physics does. It exists merely as a meeting ground of people interested in man."⁸

The unfortunate thing is that these "definitions" here again strongly resemble an admission of epistemological impotence. They say much too much and not enough, because, once it has been admitted that anthropology is a science of man, one wonders what really can distinguish it from all the other human sciences. The same epistemological mishap befalls the most intelligent of the historians, who see the object of their research losing all consistency. There is no historical reality, observes Raymond Aron: "Historical reality, because it is human, is ambiguous and inexhaustible. Its ambiguous aspect is the plurality of the intellectual universes through which human existence unfolds, the

5. *Anthropology Today*, p. xiii.

6. *Ibid.*, p. xiv.

7. *An Appraisal of Anthropology Today*, p. 154.

8. William Straus, *ibid.*, p. 153; cf. Claude Lévi-Strauss, *ibid.*, p. 154: "We all agree that anthropology has a close relationship with the humanites, the social sciences, and the natural sciences."

diversity of the wholes in which elementary ideas and actions take place. Its inexhaustible aspect is the meaning of man for man, of the work for the interpreters, of the past for the successive presents.”⁹

This dissolving of the historical object appears under the clearest light in the methodological reflection of a man like Lucien Febvre, according to whom history, once a science of facts, is no longer anything but a “study, scientifically conducted, of the diverse activities and of the diverse creations of the men of former times, selected at their dates, in the framework of extremely varied societies, and nevertheless comparable to each other . . . with which they have filled the surface of the earth and the succession of the ages. . . .” In this view, it appears that men are the “only objects of history—of a history which takes its place in the group of human disciplines of all orders and all degrees, beside anthropology, psychology, linguistics, etc.” The historian’s task will therefore be to study these “men endowed with multiple functions, with diverse activities, with varied concerns and aptitudes—which are all mingled together, which collide with each other, oppose each other, and finally conclude among themselves a compromise peace, a *modus vivendi* which is called life. . . .”¹⁰ And, in the first lesson of his course at the Collège de France, the distinguished historian developed these views in the following terms:

History, Science of Man . . . Science of the perpetual changing of human societies, of their perpetual and necessary readjustments to new conditions of material, political, ethical, religious, intellectual existence. Science of that agreement which is negotiated, of that harmony which is established, perpetually and spontaneously in all ages, between the diverse and synchronic conditions of the existence of men: material conditions, technical conditions, spiritual conditions. . . .¹¹

Moreover, Febvre advises the artisans of living history not to let themselves be spellbound by the prestige of a superseded past: “in order to study history, turn your back resolutely on the past, and start living.”¹²

To put it differently, history, like the other human sciences, appears to have its center everywhere and its circumference nowhere. It is impossible to fix precise limits for it in the direction of sociology, of psychology, of philosophy, of cultural anthropology, or even of geography.

9. Raymond Aron, *Introduction à la philosophie de l'histoire* (Paris: Presses Universitaires de France), p. 120.

10. Lucien Febvre, “Vivre l'histoire,” in *Mélanges d'histoire sociale*, 1943, p. 6.

11. *Combats pour l'histoire* (Paris: Colin, 1953), p. 31.

12. *Ibid.*, p. 32.

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Upon reflection, moreover, there is nothing so surprising in that: since the human sciences all have the same object, which is living man, the constitutive unity of the human being must show through when we strive to isolate, to determine separately, any given one of its expressions. The plurality of epistemological perspectives has reality only in the first analysis: it fades out as soon as research comes close to the individual himself as a seat of intentions, of representations, and as action centers: the psychologist's man, the sociologist's man, the historian's man, the philologist's man, and so on, represent as many aspects of a concrete personality which asserts itself as quite whole in each of its manifestations.

It is quite evident that the researches and published results of any science, whatever it is, will remain subject to caution as long as that discipline is not clearly fixed in reference to its object and its methods. The crisis of the human sciences stems from this basic indetermination of the conditions and of the meaning of the undertaking. Mathematics, physics, and chemistry explore well delimited intellectual areas, for which the interferences, if there are any, can be precisely defined. The human sciences, however, appeared much more tardily. More than two centuries separate Galileo from Dilthey, who saw the first years of the twentieth century. Mathematicians and physicists live upon traditions, upon mental habits, which go back to Euclid and to Archimedes. The psychologists, sociologists, and historians have at their disposal only a defective intellectual equipment, which is approximative and, above all, inconsistent.

Here the essential difficulty arises from the fact that the working-out of the epistemology cannot precede the development of knowledge but accompanies its acquisition. It is not possible to fix in advance the frame into which the mass of learning will eventually fit. The rules of the method stand out, little by little, from the acquired experience. All periods of beginning are periods of groping in which one does not really know what one seeks or what one finds. It is in this way that the idea of science emerged, in the West, beginning with the works of the mathematicians and the scholars of the mechanist school early in the seventeenth century. A progressive consciousness of the intelligibility schemas operating in the interpretation of the exterior world allowed men, from Galileo to Newton, to perfect an epistemological pattern which corresponded to the obtained results and which condensed the

records of the validly conducted experiments, the precedent of which could constitute an authority for the experiments to come.

The model of learning thus codified, however, imposed itself so thoroughly upon the intelligence and the imagination of men that they saw in it the prototype of all certainty. Why should that which has proved itself in a certain field not succeed equally well in all the others? When the curiosity of scientists is shifted from Nature to man, the positivist ideal finds itself transferred from its native soil to a new intellectual area which must now be explored. Positivism, freed *ex post facto* from physical knowledge, is supposed to constitute authority for the knowledge of human reality which is yet to come. This is counting one's chickens before they hatch. From this there arises a kind of false initial meaning, all the more dangerous because the prefabricated methodology prevents the establishing of a methodology built to measure. And what is still more important is the fact that as a result of this bad orientation of thought the very essence of the phenomena under study is ignored.

The right of seniority of the sciences which are already established, and which are considered as models for the sciences to come, corresponds to a kind of inertia of thought, which allows itself to be carried along by the acquired speed, as if the results already obtained in one order of things could constitute a system of laws for the areas still to be explored. This creates a kind of oversimplification, because the subjects which are developed first are the most simple, and learning progresses in an order of increasing complexity. Thus the prestige of mathematics comes from its primogeniture as well as from its intelligibility. And no doubt this privilege of intelligibility, already recognized by the Pythagoreans, favors the development of knowledge and alienates in advance its non-concordant possibilities. An unexpected pliability, an arbitrary gratuitousness, thus intervene in the working-out of the structures of what is apparently the most rigorous learning: the terminology, the precise formulae borrowed by the youngest disciplines from the oldest, no longer have any value other than a symbolic one, which is illusory to the extent that these disciplines turn research away from its authentic vocation.

And so, contrary to what we might think, the history of knowledge does not by itself constitute a logic of knowledge. The chronological spread in the acquisition of learning is not without importance in what concerns the structure of learning. But time does not work of absolute

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necessity in the service of reason. It can very well work against it. Scientist-positivism seems to be the false interpretation of a reason which is deceived about itself because it is deceived about the implication of the results which were obtained earlier. For example, the Belgian psychologist Delboeuf, professor at the University of Liège, wrote at the end of the last century: "For my part, I think, and I affirm, that as long as a phenomenon, whatever it may be, physical or mental, has not been translated into numbers, it always leaves something mysterious in the mind." The American Titchener quotes this statement as an epigraph to the fourth volume of his treatise *Experimental Psychology: A Manual of Laboratory Practice*, published in New York in 1915. As a matter of fact, such a formula expresses perfectly the ambition of a certain experimental psychology, naïvely convinced that, once the life of the mind has been evaporated into a cloud of equations, there will be no more problems. Now the remark we have quoted means nothing: the mystery of human reality is not at all dissipated because, in one way or another, figures have been set in correlation with certain aspects of the mental life. As if a figure, all by itself, meant anything! This superstition of the figure, invested with a radical explicative privilege, represents one of the modern forms of magic. It is unfortunately not certain that all the contemporary technicians of the various human sciences are truly free of it.

No doubt we should analyze in depth this naïve faith in the power of numbers, which are supposed to offer a sure refuge to certainty, outside of any metaphysical option. Scientism believes it is approaching the real when it writes a mathematical relationship, and all that which does not allow itself to be reduced to formulae of this order is considered null and void. Such is still today the assertion of the "physicalists" of the Vienna school who, having emigrated into the Anglo-Saxon world, have to a great extent made their doctrines dominant in it. According to them, the only expressions worthy of interest are logical propositions—which are reduced moreover to tautologies—and the propositions of the sciences of reality, corresponding to the records of experiments done according to rigorous laboratory procedures. Everything that men can think, outside of the area so defined, has its source in nonsense or in fantasy and could not claim to pass as a truth properly so called. Human reality cannot be recognized except to the extent that it lets itself be projected according to the order of the physical determinations. Man, the creator of science, is caught in the trap of his creation, is the

dupe of the idol he has built. For the old adage according to which the man is the measure of the thing, there has been substituted the new rule, by virtue of which the thing is the measure of the man.

In fact we find nonsense among the physicalists themselves; while claiming to eliminate metaphysics forever, they have granted an ontological validity to physical experiment, endowed, by an exorbitant privilege, with an absolute validity. As if the figures stood all alone! As if man were made for physics, and not physics made by and for man! Nothing is more natural than for the methodology resulting from physical researches to act as authority in the area of physical reality. That is a self-evident truth. But to claim that this same methodology shall impose itself in the study of the human world is a senseless assertion, for it reduces the human being to the elements and to the physicochemical or other forces of which his organism is constituted. It is as absurd to talk about a man in the way one would talk about a stone as it is to talk about a stone in the way one would talk about a man. If, as Louis Rougier points out, scientific optics is the whole truth about the human field of vision, then each color is nothing more than a wave length in reference to the others. However, "the scientist knows of colors only what a blind man can know of them,"¹³ and the physicalist philosopher who follows his lead acts like someone who would put out his eyes in order to see in a perfectly objective manner.

Moreover, the assertions of the Vienna school, for all their ignoring of the specific nature of the human domain, do not seem to express more fully the real nature of scientific learning. When physicalists grant to physical propositions the privilege of absolute validity, they forget the hypothetical and precarious character of scientific theorems and theories. Their epistemology seems to perpetuate that resolute optimism which could dominate nineteenth-century scientists, before the adventures of non-Euclidean geometries, of relativity, of atomic physics, and of the axiomatical. "The exigencies of reason," Rougier writes, "result in most part from former theories which have petrified."¹⁴ The formula applies perfectly to today's scientists, who remain true to an already fossilized conception of knowledge. In what concerns mathematical logic itself, that is to say, the area in which the requirement of a perfectly rigorous learning reaches its highest point, the axiomatic effort has become aware

13. Louis Rougier, *Traité de la connaissance* (Paris: Gauthier-Villars, 1955), p. 298.

14. *Ibid.*, p. 369.

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of its limitations with the theorem of Gödel, who established in 1929 the impossibility of achieving a perfect formal system. Rougier observes:

Metamathematical demonstrations put off the problem without solving it, for, to the extent to which they are successful, they open the way to a process of infinite regression. Once the non-contradiction of mathematics has been demonstrated by means of metamathematics, it will be necessary to formalize metamathematics, as was done for arithmetic, and to demonstrate its non-contradiction by resorting to a meta-metamathematics, and so on indefinitely.¹⁵

The axiomatic method represents the masterpiece of rigorous science, the most perfect explanation to which a reducing intelligibility can lay claim. But it suffers itself from a radical organic defect: "Any use of the axiomatic method," writes Piaget, "supposes logic, and to assure the foundation of logic axiomatically consists in founding logic upon itself in an inexorably vicious circle."¹⁶ And so the absolute of logical truth is also only a false absolute, and the Vienna school finds itself beaten on the very ground where it thought itself the strongest: "On properly so-called axiomatic ground itself, one could no longer speak legitimately about the tautological nature of logicomathematical connections."¹⁷ Not only is the logicomathematical schema of rigorous truth unable to claim to reduce the human domain to obedience, but also it appears itself, under analysis, as a dependent of that domain from which it must borrow its points of departure and its points of arrival. The logical universe is open to extrinsic influences: "Axiomatization," Cavallès writes, "refers doubly to one datum: exteriorly, datum of the system from which it borrows its concepts; interiorly, datum of an operative unit which it merely characterizes."¹⁸ The mirage of immaculate cognition goes up in smoke. Instead of drawing man to fit a ready-made truth, which would be foreign to him, it will be necessary to define truth itself in reference to man and to the human rule which it sanctions.

Scientist-positivism entertains the curious ambition of establishing a science of man without man. A deceived ambition, since, as we might have expected, it appeared that the science of knowledge itself led back to man. The attempt, so often repeated, to make the determinisms of

15. *Ibid.*, p. 107.

16. Jean Piaget, *Traité de logique* (Paris: Colin, 1949), p. 292.

17. Piaget, *Introduction à l'épistémologie génétique, Vol. 1, La Pensée mathématique* (Paris: Presses Universitaires de France, 1950), p. 316.

18. Jean Cavallès, *Méthode axiomatique et formalisme* (Paris: Hermann, 1938), p. 88.

physics, of chemistry, or of biology prevail in the human area, under the control of mathematical formulae, obeys this unnatural desire to deny the specific quality of the human being by referring him to norms which are not his. The triumph of knowledge would be the equivalent of intellectual and spiritual suicide, the scientist feeling a masochistic satisfaction in denying himself as a man at the very moment when he asserts the highest success of the human genius. Such an attitude in thinkers who, moreover, believe themselves to be the intrepid champions of reason remind us rather of the exploits of Simple Simon or the Little King.

The intellectual area of a science, of no matter what science, is still a human area, dependent upon human intentions and expressions. All facts, of whatever order they may be, are created in it by mental structures, by laws of associations which often project themes and images which have come from elsewhere into the epistemological field of rigorous knowledge. Leibniz' principle of continuity and the Newtonian theory of gravitation furnished the eighteenth century with directing ideas which led to all sorts of disciplines quite far removed from the metaphysics of Leibniz or the physics of Newton. Darwin the naturalist borrowed from the amateur economist Malthus the myth of the increasing insufficiency of food and the "law" of population, out of which he fashioned a guideline to natural history. In the same way, the concepts of "determinism," of "progress," of "evolution," and of "dialectic" correspond much more closely to myths than to explicative principles worthy of the name. And this is precisely why they are so widely used. Each epistemological area thus effects a compromise, in variable proportions, between an explicative axiomatic method, put into logical form and more or less mathematized—and figurative elements, meanings borrowed from fundamental human reality. The sciences of man are no exception. They also seek axiomatization, they use the instrument of mathematics, and they attempt to perfect epistemological models. Operational research, in sociology and elsewhere, is able to utilize complex mathematical elements. These procedures are perfectly justified, provided the mathematical technique is always considered as a means and not as an end.

A recent, highly official report takes into account the failure of American attempts to study the whole of vast social fields:

Admirably supported by an army of sociologists, of specialists in "political sci-

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ence," with every material and human means for conducting excellent researches at their disposal, the American researchers are disappointed by the results of this effort which, from the outside, appears to be so magnificent. What has been lacking, what will be lacking for a long time in their experiments which are concentrated upon the study of what appears only momentarily, is the help of geographers, historians, and accredited philosophers. There has been a neglect of three essential points of view: philosophy, bringing in the conditions which are indispensable for a logical construction; history (in its new tendencies, which are not much liked in the United States), introducing the notion of deep movements of long duration, which are elements of any social explanation; geography, substituting a living notion for the too schematized notion of the ecological envelope. Now in our case, these additions are within easy reach. . . .¹⁹

A sign of the times, perhaps—the philosopher, all too often considered a useless voice, now sees his place recognized in the organization of the sciences of man. And the technicians of the various specialties are accepting their mutual dependency: "anthropology, history, psychology, sociology," writes Charles Morazé, "could not be, from our point of view, distinct disciplines, but are all required together for setting in motion a logic of the sciences of man. . . . All the sciences work both for their own progress and for the progress of the sciences of man. The sciences of man include not only anthropology, history, psychology, sociology, but all sciences. . . ." ²⁰ Perhaps these remarks herald a new state of mind, characterized by the concern for synthesis, by the recognition of the mutuality of the human sciences, and by the idea that this synthesis presupposes a total conception of the human condition. Here it is not a question of again imposing a philosophic imperialism, under the form of some doctrine or other. Scientists and technicians must continue to work in their own fields and according to their particular methodologies. All that is asked of them is that they become aware of the horizon to which their researches are being pursued, and that they accept the thought that they are not the masters of an autonomous intellectual space. The density and the plurality of human reality are accessible only to a widened and comprehensive intelligence, for which technical questions and technical solutions, instead of closing upon themselves, are but the instants of an immense inquiry on man, whatever intellectual tools may be employed. And the mathematical proto-

19. *La Recherche scientifique et le progrès technique* (Report to the President of the Council of Ministers and to the General Planning Commission, June, 1957), p. 117.

20. Charles Morazé, "La Synthèse dans les sciences humaines," in *Travail et méthodes* (Paris: Editions Science et Industrie, 1958), p. 191.

type of knowledge which is adopted, consciously or unconsciously, by the researchers must give way before the prototype of human intelligibility, according to which concrete man represents the fundamental counting unit.

The renewal of epistemological intelligence, through the rejection of prejudices which are henceforth outdated, is, moreover, already appearing in contemporary thought, where certain thinkers are repudiating a separatism which is disastrous for both philosophers and scientists. Merleau-Ponty, for example, asserts the necessity of cross-fertilizing sociology and philosophy instead of setting them against each other; philosophy would then have the task of enlightening and fecundating positive investigation: "Philosophy is indispensable because it reveals to us the movement by which lives become truths, and the circular situation of this singular being who, in a certain sense, is already all that he happens to think about."²¹ From this derives the necessary complementary nature of science and philosophy. Merleau-Ponty writes:

Learning will be founded upon this irrecusable fact that we are not in the situation as an object is in objective space, and that the situation is for us a principle of curiosity, of investigation, of interest for the other situations, as variants of ours. It is then of interest to our own life, enlightened by the others, and considered this time as a variant of the others, and considered finally as that which links us to the totality of human experience, no less than that which separates us from it. . . .²²

We must rejoice when we see certain philosophers finally abandoning the splendid isolation to which an abusive tradition used to confine them. But it is particularly among the technicians that the new state of mind can have happy consequences. Since we are not able to review all the disciplines here, we shall be content to select a few examples of this widening of the intellectual field. Biology and medicine became sciences of man at the moment when we gave up opposing, inside man, the physical and the mental as two autonomous systems. The negation of the determinism of the physical to the physical, of the mental to the

21. M. Merleau-Ponty, "La Philosophie et la sociologie," *Cahiers internationaux de sociologie*, X (1951), 69. Cf. A. de Waelhens, "Sciences humaines, horizon ontologique et rencontre," in *Rencontre* (Utrecht: Spectrum, 1957), p. 496: "All the sciences of man refer originally to an experience, actual at least implicitly, the explanation of which they will furnish on a certain plane. The mode of being which, in this attempted explanation, they will be likely to attribute to man is the same as that which would be revealed by a phenomenological analysis of the actual experience, undertaken with the purpose of showing this mode of existence."

22. Merleau-Ponty, *op. cit.*, p. 65.

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mental, has allowed us to define a new intelligibility, founded upon the mutuality of psychology and physiology. The discoveries of Freud contributed greatly, as we know, to impose the new schema of psychosomatic medicine, whose principle is found in the recognition of the human unit as the principle which imposes upon causal series a kind of superdetermination.

At the same time, the practitioner's attitude must itself be modified. The anatomoclinical method, perfected in the nineteenth century, strove to trace symptoms and to group them in precise semeiological charts so as to permit the application of the appropriate technique. These gains are not useless, but today we will strive to reach a total grasp of the malady, or rather of the patient, in a concrete situation: the psychological or physiological disturbance appears then as an unsuccessful effort at adaptation. It shows the deficiency of the subject faced with the task of assuming his own life. The neurobiology of Monakov and of Goldstein and the physiology of Selye have permitted us in this direction an important enlargement of the medical interpretation. In the same way, in the field of psychiatry, Paul Guiraud insists upon the necessity of deepening our individual knowledge of the patient. The practitioner reaches this only "after a slow and patient task of analysis, followed by a synthetical reconstruction, which requires not only intellectual knowledge, but above all a kind of liaison, of psychic fusion with the subject, which permits one to 'co-live' his illness."²³

The neologism "co-live" illustrates quite well the renewal of intelligence in this science of man which is called "psychopathology." The practitioner is not neutral; he himself belongs to the epistemological field and uses his own experience as he would use a means of knowledge. In other words, the human sciences are rediscovering that ancient truth that, to know another person, one must know himself. "The sciences of man," Mannoni writes, "constitute a field of research in which, no doubt more than in other fields, one is always doing more than one knows. That really means that most progress consists particularly in making clear the attitudes which the researcher had first adopted for obscure reasons. One always learns something, and not only about oneself, but also about the object of research, by becoming aware of these attitudes and by analysing their reasons."²⁴

23. Paul Guiraud, *Psychiatrie générale* (Le François, 1950), p. 514.

24. O. Mannoni, "La Psychanalyse et la notion d'objectivité dans les sciences de l'homme," *Revue de métaphysique et de morale*, 1957, p. 210.

Sociology, as well, must find a renewal of its meanings in a new epistemological spirit. One might find examples of this new orientation in functional sociology, in the structural anthology of the Anglo-Saxons, or again in the therapy of the psychodrama developed by Moreno. In France, Mauss had shown the way and Levi-Strauss's *Structural Anthropology* furnished an instrument of analysis appropriate to an elucidation of the concrete situations in which human reality is asserted. Georges Gurvitch has strongly insisted upon the necessity of a good understanding between philosophy and sociology. He writes:

Sociology, and more comprehensively, the sciences of man, find themselves in closer contact with philosophic knowledge than to the sciences of nature, including the biological sciences. . . . Sociology is the science of human freedom and of all the obstacles which the latter encounters and partially overcomes. The other human sciences (whether we call them economics, law, science of behavior, anthropology, human geography, demography, etc.) are distinguished from sociology only by the limitation of the direction of effort and by the corresponding choice of the obstacle to overcome. The reality which all these sciences study is the same: the human condition, considered under a particular light and constructed into a particular object by a specific method.²⁵

It is consequently no longer a matter of perfecting systems a priori, by speculating in the abstract. The human condition serves as a condensing pattern for all the orders of knowledge, the investigation of which must obey the norms of a critical empiricism which alone is fertile because it is respectful of the human datum.

Finally, the present situation of political economy offers another illustration of the humanistic restoration or of the metaphysical renewal in the sciences of man. For economics is still a human science, in spite of the inevitable illusions born of the application of quantitative methodology. The temptations of scientism finally produced the mathematized schemas of the *homo economicus* or the pitiless time measurings of the Taylor method. The real man found himself caught here in the trap of numerical relationships and laws which were all the more rigorous because they asserted themselves in an intellectual area from which human presence had been excluded. Now monetary value is a fiduciary value—which means a human value—and technical activity has been revealed to the astonished investigators as human activity, or work,

25. Georges Gurvitch, "Réflexions sur les rapports entre philosophie et sociologie," *Cahiers internationaux de sociologie*, XXII (1957), 10.

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which cannot be reduced to purely quantitative determinisms. The study of the evolution of needs, of standards of living; the development of research in industrial psychosociology; and the more precise knowledge of human relations and of their multiple modalities have shown that the economic life cannot be understood except as a function of the whole human reality. In the final analysis, money exchanges, like technical operations, bring us back to a comprehension of man by man which bases all intelligibility in the human domain.

The human sciences are the "sciences of freedom." Gurvitch's formula, in its apparent paradox, can serve us as a conclusion. Indeed, science was formerly the negation of freedom, and it took a somewhat masochistic sort of pleasure in denying freedom. Today it appears that science can and must come to terms with freedom. The sciences of man constitute present humanity's best instrument of liberation, to the extent that they themselves designate the limitations of the conditionings which they impose.

In each human life there is, indeed, at the same time more and less than in the science of man, the interpreting schemas of which are always approximative. No life can exhaust all the possible schemas, but each in its decisions enriches the schemas it utilizes. All the anthropological disciplines thus furnish means of approaching a knowledge of the personality; they contribute to a theory of human entireties by setting up backgrounds against which the reality of each one of us is affirmed. A social and historical predetermination of the human being is thus outlined, furnishing him, in an initial approximation, materials for the knowledge he is called upon to acquire about himself. Each science of man contributes, for its part, by sketching this preintelligibility of the human form in a vital space and in a given period. It is no longer a question of denying or reducing the person, but only of situating it. For the metaphysical idea of a freedom without condition is substituted the positive idea of a freedom in condition.

That is why the sciences of man, contrary to a thesis which is too widespread, do not in any way constitute attacks upon the dignity of man. There are techniques of existence which, far from threatening existence, offer it on the contrary efficacious means of fulfilment. But the opposite attitude, which expects the definitive solution of all human problems from the human sciences, is also false, and no less dangerous. Scientific research cannot impose itself as an end in itself; a part of

man, it returns to man and remains subject to his rule. In obeying science, man obeys only himself. Here, as everywhere, knowledge permits action to be enlightened. Man, who institutes research, situates himself by that very fact beyond the research which concerns him, and it would be absurd for him to abdicate before the results which are obtained. Research is a function of man; man is not a function of research.

This locating of the epistemological perspectives offers the best answer to naïve protests against the violation of personality in the manipulation of the masses by techniques inspired by the human sciences. For example, people denounce the abusive practice of the psychotherapies, the abuses of advertising and propaganda, the establishment of a rational organization of labor, which might facilitate technical and social alienation. Behind these virtuous, indignant expressions is being asserted the nostalgia for an inviolate integrity of the person, who should float in a pure heaven of values, foreign to any compromising, in the perpetual miracle of a rational freedom. The unfortunate thing is that this virginity which we would preserve at all cost does not exist and never has existed. And besides, should the case occur, it would have been, or it would be, like the virgins devoted to the Lord, perfectly sterile. There have always been techniques of the spiritual. Those same good souls who deplore today's violation of the personality, admit without further consideration the activities of directors of the conscience, admire the *Spiritual Exercises* of Ignatius of Loyola, or even go into ecstasies over the crusade preachers who skilfully manipulated the throngs of mediaeval Christianity. Labor was not better protected—in fact, it wasn't protected at all—before the rationalization of labor. All religions, from primitive shamanism on, from the religion of the Chinese to that of Philip II or of Louis XIV, have defined their liturgies and rituals, a ceremonial which in practice corresponded to an awareness of the techniques of the spiritual which was sometimes very penetrating.

The human sciences and the techniques they inspire permit us in fact to protect the personality efficaciously as well as to alienate it. It is necessary, moreover, that the personality be known and recognized for what it truly is. It is not an abstract entity, closed upon its own intact purity; it is not a principle of negation and escape. It is the concrete structure of that presence in the world which shows itself to be capable of resisting the world. The human sciences permit us to be done with a false and metaphysical idea of freedom, which has haunted the dreams of philosophers from the Christian theologians to Sartre—the man who

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wants to become God, like the frog who wanted to be as big as the ox—and even to the Marxists themselves, with their prophetic and puerile dreams of a total man, totally reconciled in the paradise of classless society. Just as worthless, moreover, is the inverse reduction, which claims that it denies all freedom and dissolves it in an automatism directing human reality according to the model of the material order. Freedom is not everything, and it is not nothing; it is situated precisely between zero and infinity.

A truly positive, experimental attitude allows us to conceive of freedom not as an absolute or as a gracious gift but as an art of the possible. We always get the freedom we deserve and of which we are capable. For freedom is at stake for each of us in this daily transaction, at the cost of which each man tries to show what he is, by using as best he can circumstances which may be favorable or unfavorable. Each one is called upon to gain his life or to lose it, according to the use he makes of the world and of himself. In this labor of liberation which we must undertake anew each day, the human sciences can play an important role in the service of lucidity. They do not at all impose the paralysis of a stereotyped determinism; quite to the contrary, they propose for human decisions theoretical models of a necessity which is merely conditional. If there is one type of obscurantism which refuses to recognize the social sciences and techniques, there is another, no less dangerous, which is to hold steadfastly to sciences and techniques as if they must solve all human problems by themselves.

Recently I presided over a meeting of examiners charged with correcting the philosophy examinations for the baccalaureate degree in the Academy of Strasbourg. What one must do, in such a case, is to give the readers some points of reference before they get down to work. All the papers were there; we selected a few at random, read them, and discussed the respective worth of the samples. This allowed us to establish a sort of initial, provisional grading scale. For a while, the papers on certain subjects had been worthy of mention and sometimes quite good. But then the moment came when we could find nothing but obviously bad essays, some of which showed an infantilism bordering on mental backwardness. Irritated, I urged the readers to look again in their bundles of papers for at least a mediocre one, so that we might judge the possibilities which the proposed subjects offered to a mind of average ability. But with a single voice the readers pointed out to me that it would be useless to look any further. We would find no good

essay in the sets in question, for we were dealing with candidates from the elementary mathematics series. Stuffed with scientific studies, these candidates are totally incapable of personal reflection and of reasoning. Now it is precisely this class in elementary mathematics which is considered today to be the seed-bed of the elite of tomorrow. It is here that the university authorities have placed their dearest hopes, as they light-heartedly drag our society toward that barbarity of the mathematicians which, by dint of measuring everything, completely destroys all sense of measure.

Of course one can study mathematics without behaving like a congenital idiot because of it. But the danger of an education devoted to this kind of exercise is that pure science and its technical extensions do not open into the world of values. They can be infinitely developed from consequence to consequence without ever encountering the contradiction which would make them become aware of their total absurdity. The stake of existence does not lie within the scope of pure knowledge; it is not a matter of isolating in the mind a truth which would initiate the formulation of a definitive equation of the human condition. The ultimate aim of all learning is to effect an equilibrium, to assure the placing of man in the universe. The human function of the human sciences is thus affirmed; they must be the guilty conscience of the manless sciences, the inhuman sciences. The construct of the world is necessarily bound up with the edification of man. Any construct which does not serve this edification of man is deceived, and works toward non-being, if it is preparing the coming of a world which is not measured to man.

In substance, such is the epistemological reform which is asked here of each of the specialists in the various human sciences. This does not mean at all that the specialist is to abandon his own field, or that he is to practice a philosophy which will remain foreign to him. However, while remaining true to the requirements of his subject, he can modify his mental attitude; he can clarify that background of undeveloped thought which cannot be admitted, and is not admitted, which controls the development of his research and the utilization of the results he has obtained. The historian, the sociologist, the economist, the doctor, and the ethnographer remain the masters of their fields, which no one dreams of denying them. The metaphysician merely asks them, beyond the limitations of their specializations, to practice the virtues of curiosity and sympathy. Man is this being who possesses the gift of putting him-

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self under examination and of transforming ever anew meanings which have been established. The enterprise of knowledge is a vast inquiry of man into man; each of the human sciences shares in this adventure which will never end because it is linked to the very essence of the human being. Man is modified with the growth of learning in such a way that the goal slips away indefinitely when we think we have attained it. It would be the same way with a child running after its shadow.