thinking. All changes are to be comprehended as motions subject to the laws of mechanics.

The champions of mechanicalism do not bother about the still unsolved problems of the logical and epistemological basis of the principles of causality and imperfect induction. In their eyes these principles are sound because they work. The fact that experiments in the laboratory bring about the results predicted by the theories and that machines in the factories run in the way predicted by technology proves, they say, the soundness of the methods and findings of modern natural science. Granted that science cannot give us truth—and who knows what truth really means?—at any rate it is certain that it works in leading us to success.

But it is precisely when we accept this pragmatic point of view that the emptiness of the panphysicalist dogma becomes manifest. Science, as has been pointed out above, has not succeeded in solving the problems of the mind-body relations. The panphysicalists certainly cannot contend that the procedures they recommend have ever worked in the field of interhuman relations and of the social sciences. But it is beyond doubt that the principle according to which an *Ego* deals with every human being as if the other were a thinking and acting being like himself has evidenced its usefulness both in mundane life and in scientific research. It cannot be denied that it works.

It is beyond doubt that the practice of considering fellow men as beings who think and act as I, the Ego, do has turned out well; on the other hand the prospect seems hopeless of getting a similar pragmatic verification for the postulate requiring them to be treated in the same manner as the objects of the natural sciences. The epistemological problems raised by the comprehension of other people's behavior are no less intricate than those of causality and incomplete induction. It may be admitted that it is impossible to provide conclusive evidence for the propositions that my logic is the logic of all other people and by all means absolutely the only human logic and that the categories of my action are the categories of all other people's action and by all means absolutely the categories of all human action. However, the pragmatist must remember that these propositions work both in practice and in science, and the positivist must not overlook the fact that in addressing his fellow men he presupposes —tacitly and implicitly— the intersubjective validity of logic and thereby the reality of the realm of the alter Ego's thought and action, of his eminent human character.[8]

8. Cf. Alfred Schütz, *Der sinnhafte Aufbau der sozialen Welt* (Vinna, 1932), p. 18.

Thinking and acting are the specific human features of man. They are peculiar to all human beings. They are, beyond membership in the zoological species homo sapiens, the characteristic mark of man as man. It is not the scope of praxeology to investigate the relation of thinking and acting. For praxeology it is enough to establish the fact that there is only one logic that is intelligible to the human mind, and that there is only one mode of action which is human and comprehensible to the human mind. Whether there are or can be somewhere other beings—superhuman or subhuman—who think and act in a different way, is beyond the reach of the human mind. We must restrict our endeavors to the study of human action.

This human action which is inextricably linked with human thought is conditioned by logical necessity. It is impossible for the human mind to conceive logical relations at variance with the logical structure of our mind. It is impossible for the human mind to conceive a mode of action whose categories would differ from the categories which determine our own actions.

There are for man only two principles available for a mental grasp of reality, namely, those of teleology and causality. What cannot be brought under either of these categories is absolutely hidden to the human mind. An event not open to an interpretation by one of these two principles is for man inconceivable and mysterious. Change can be conceived as the outcome either of the operation of mechanistic causality or of purposeful behavior; for the human mind there is no third way available.[9] It is true, as has already been mentioned, that teleology can be viewed as a variety of causality. But the establishment of this fact does not annul the essential differences between the two categories.

The panmechanistic world view is committed to a methodological monism; it acknowledges only mechanistic causality because it attributes to it alone any cognitive value or at least a higher cognitive value than teleology. This is a metaphysical superstition. Both principles of cognition—causality and teleology—are, owing to the limitations of human reason, imperfect and do not convey ultimate knowledge. Causality leads to a *regressus in infinitum* which reason can never exhaust. Teleology is found wanting as soon as the question is raised of what moves the prime mover. Either method stops short at an ultimate given which cannot be analyzed and interpreted. Reasoning and scientific inquiry can never bring full ease of mind, apodictic certainty, and perfect cognition of all things. He who seeks this must

9. Cr. Karel Englis, *Begründung der Teleologie als Form des empirischen Erkennens* (Brünn, 1930), pp. 15 ff.

apply to faith and try to quiet his conscience by embracing a creed or a metaphysical doctrine.

If we do not transcend the realm of reason and experience, we cannot help acknowledging that our fellow men act. We are not free to disregard this fact for the sake of a fashionable prepossession and an arbitrary opinion. Daily experience proves not only that the sole suitable method for studying the conditions of our nonhuman environment is provided by the category of causality; it proves no less convincingly that our fellow men are acting beings as we ourselves are. For the comprehension of action there is but one scheme of interpretation and analysis available, namely, that provided by the cognition and analysis of our own purposeful behavior.

The problem of the study and analysis of other people's action is in no way connected with the problem of the existence of a *soul* or of an *immortal soul*. As far as the objections of empiricism, behaviorism, and positivism are directed against any variety of the soul-theory, they are of no avail for our problem. The question we have to deal with is whether it is possible to grasp human action intellectually if one refuses to comprehend it as meaningful and purposeful behavior aiming at the attainment of definite ends. Behaviorism and positivism want to apply the methods of the empirical natural sciences to the reality of human action. They interpret it as a response to stimuli. But these stimuli themselves are not open to description by the methods of the natural sciences. Every attempt to describe them must refer to the meaning which acting men attach to them. We may call the offering of a commodity for sale a "stimulus." But what is essential in such an offer and distinguishes it from other offers cannot be described without entering into the meaning which the acting parties attribute to the situation. No dialectical artifice can spirit away the fact that man is driven by the aim to attain certain ends. It is this purposeful behavior—viz., action—that is the subject matter of our science. We cannot approach our subject if we disregard the meaning which acting man attaches to the situation, i.e., the given state of affairs, and to his own behavior with regard to this situation.

It is not appropriate for the physicist to search for final causes because there is no indication that the events which are the subject matter of physics are to be interpreted as the outcome of actions of a being, aiming at ends in a human way. Nor is it appropriate for the praxeologist to disregard the operation of the acting being's volition and intention; they are undoubtedly given facts. If he were to disregard it, he would cease to study human action. Very often—but not always—the events concerned can be investigated both

from the point of view of praxeology and from that of the natural sciences. But he who deals with the discharging of a firearm from the physical and chemical point of view is not a praxeologist. He neglects the very problems which the science of purposeful human behavior aims to clarify.

On the Serviceableness of Instincts

The proof of the fact that only two avenues of approach are available for human research, causality or teleology, is provided by the problems raised in reference to the serviceableness of instincts. There are types of behavior which on the one hand cannot be thoroughly interpreted with the causal methods of the natural sciences, but on the other hand cannot be considered as purposeful human action. In order to grasp such behavior we are forced to resort to a makeshift. We assign to it the character of a quasi-action; we speak of serviceable instincts.

We observe two things: first the inherent tendency of a living organism to respond to a stimulus according to a regular pattern, and second the favorable effects of this kind of behavior for the strengthening or preservation of the organism's vital forces. If we were in a position to interpret such behavior as the outcome of purposeful aiming at certain ends, we would call it action and deal with it according to the teleological methods of praxeology. But as we found no trace of a conscious mind behind this behavior, we suppose that an unknown factor—we call it *instinct*—was instrumental. We say that the instinct directs quasi-purposeful animal behavior and unconscious but nonetheless serviceable responses of human muscles and nerves. Yet, the mere fact that we hypostatize the unexplained element of this behavior as a force and call it instinct does not enlarge our knowledge. We must never forget that this word instinct is nothing but a landmark to indicate a point beyond which we are unable, up to the present at least, to carry our scientific scrutiny.

Biology has succeeded in discovering a "natural," i.e., mechanistic, explanation for many processes which in earlier days were attributed to the operation of instincts. Nonetheless many others have remained which cannot be interpreted as mechanical or chemical responses to mechanical or chemical stimuli. Animals display attitudes which cannot be comprehended otherwise than through the assumption that a directing factor was operative.

The aim of behaviorism to study human action from without with the methods of animal psychology is illusory. As far as animal behavior goes beyond mere physiological processes like breathing and metabolism, it can only be investigated with the aid of the meaning-concepts developed by praxeology. The behaviorist

approaches the object of his investigations with the human notions of purpose and success. He unwittingly applies to the subject matter of his studies the human concepts of serviceableness and perniciousness. He deceives himself in excluding all verbal reference to consciousness and aiming at ends. In fact his mind searches everywhere for ends and measures every attitude with the yardstick of a garbled notion of serviceableness. The science of human behavior—as far as it is not physiology—cannot abandon reference to meaning and purpose. It cannot learn anything from animal psychology and the observation of the unconscious reactions of newborn infants. It is, on the contrary, animal psychology and infant psychology which cannot renounce the aid afforded by the science of human action. Without praxeological categories we would be at a loss to conceive and to understand the behavior both of animals and of infants.

The observation of the instinctive behavior of animals fills man with astonishment and raises questions which nobody can answer satisfactorily. Yet the fact that animals and even plants react in a quasi-purposeful way is neither more nor less miraculous than that man thinks and acts, that in the inorganic universe those functional correspondences prevail which physics describes, and that in the organic universe biological processes occur. All this is miraculous in the sense that it is an ultimate given for our searching mind.

Such an ultimate given is also what we call animal instinct. Like the concepts of motion, force, life, and consciousness, the concept of instinct too is merely a term to signify an ultimate given. To be sure, it neither "explains" anything nor indicates a cause or an ultimate cause.[10]

The Absolute End

In order to avoid any possible misinterpretation of the praxeological categories it seems expedient to emphasize a truism.

Praxeology, like the historical sciences of human action, deals with purposeful *human* action. If it mentions *ends*, what it has in view is the ends at which acting men aim. If it speaks of *meaning*, it refers to the meaning which acting men attach to their actions.

Praxeology and history are manifestations of the human mind and as such are conditioned by the intellectual abilities of mortal men. Praxeology and history do not pretend to know anything about the intentions of an absolute and objective mind, about an objective meaning inherent in the course of events and of historical evolution, and about the plans which God or Nature or Weltgeist

10."La vie est une cause premiere qui nous échappe comme toutes les causes premières et dont la science expérimentale n'a pas à se préoccuper." Claude Bernard, *Law Science expérimentale* (Paris, 1878), p. 137.

or Manifest Destiny is trying to realize in directing the universe and human affairs. They have nothing in common with what is called philosophy of history. They do not, like the works of Hegel, Comte, Marx, and a host of other writers, claim to reveal information about the true, objective, and absolute meaning of life and history.[11]

Vegetative Man

Some philosophies advise men to seek as the ultimate end of conduct the complete renunciation of any action. They look upon life as an absolute evil full of pain, suffering, and anguish, and apodictically deny that any purposeful human effort can render it tolerable. Happiness can be attained only by complete extinction of consciousness, volition, and life. The only way toward bliss and salvation is to become perfectly passive, indifferent, and inert like the plants. The sovereign good is the abandonment of thinking and acting.

Such is the essence of the teachings of various Indian philosophies, especially of Buddhism, and of Schopenhauer. Praxeology does not comment upon them. It is neutral with regard to all judgments of value and the choice of ultimate ends. Its task is not to approve or to disapprove, but to describe what is.

The subject matter of praxeology is human action. It deals with acting man, not with man transformed into a plant and reduced to a merely vegetative existence.

11.On the philosophy of history, cf. Mises, *Theory and History* (New Haven, 1957), pp. 159. ff.

II. THE EPISTEMOLOGICAL PROBLEMS OF THE SCIENCES OF HUMAN ACTION

1. Praxeology and History

THERE are two main branches of the sciences of human action: praxeology and history. History is the collection and systematic arrangement of all the data of experience concerning human action. It deals with the concrete content of human action. It studies all human endeavors in their infinite multiplicity and variety and all individual actions with all their accidental, special, and particular implications. It scrutinizes the ideas guiding acting men and the outcome of the actions performed. It embraces every aspect of human activities. It is on the one hand general history and on the other hand the history of various narrower fields. There is the history of political and military action, of ideas and philosophy, of economic activities, of technology, of literature, art, and science, of religion, of mores and customs, and of many other realms of human life. There is ethnology and anthropology, as far as they are not a part of biology, and there is psychology as far as it is neither physiology nor epistemology nor philosophy. There is linguistics as far as it is neither logic nor the physiology of speech.[1]

The subject matter of all historical sciences is the past. They cannot teach us anything which would be valid for all human actions, that is, for the future too. The study of history makes a man wise and judicious. But it does not

1. Economic history, descriptive economics, and economic statistics are, of course, history. The term *sociology* is used in two different meanings. Descriptive sociology deals with those historical phenomena of human action which are not viewed in descriptive economics; it overlaps to some extent the field claimed by ethnology and anthropology. General sociology, on the other hand, approaches historical experience from a more nearly universal point of view than that of the other branches of history. History proper, for instance, deals with people or with a certain geographical area. Max Weber in his main treatise (*Wirtschaft und Gesellschaft* [Tübingen, 1922], pp. 513-600) deals with the town in general, i.e., with the whole historical experience concerning towns without any limitation to historical periods, geographical areas, or individual peoples, nations, races, and civilizations.

by itself provide any knowledge and skill which could be utilized for handling concrete tasks.

The natural sciences too deal with past events. Every experience is an experience of something passed away; there is no experience of future happenings. But the experience to which the natural sciences owe all their success is the experience of the experiment in which the individual elements of change can be observed in isolation. The facts amassed in this way can be used for induction, a peculiar procedure of inference which has given pragmatic evidence of its expediency, although its satisfactory epistemological characterization is still an unsolved problem.

The experience with which the sciences of human action have to deal is always an experience of complex phenomena. No laboratory experiments can be performed with regard to human action. We are never in a position to observe the change in one element only, all other conditions of the event remaining unchanged. Historical experience as an experience of complex phenomena does not provide us with facts in the sense in which the natural sciences employ this term to signify isolated events tested in experiments. The information conveyed by historical experience cannot be used as building material for the construction of theories and the prediction of future events. Every historical experience is open to various interpretations, and is in fact interpreted in different ways.

The postulates of positivism and kindred schools of metaphysics are therefore illusory. It is impossible to reform the sciences of human action according to the pattern of physics and the other natural sciences. There is no means to establish an a posteriori theory of human conduct and social events. History can neither prove nor disprove any general statement in the manner in which the natural sciences accept or reject a hypothesis on the ground of laboratory experiments. Neither experimental verification nor experimental falsification of a general proposition is possible in its field.

Complex phenomena in the production of which various causal chains are interlaced cannot test any theory. Such phenomena, on the contrary, become intelligible only through an interpretation in terms of theories previously developed from other sources. In the case of natural phenomena the interpretation of an event must not be at variance with the theories satisfactorily verified by experiments. In the case of historical events there is no such restriction. Commentators would be free to resort to quite arbitrary explanations. Where there is something to explain, the human mind has never been at a loss to invent ad hoc some imaginary theories, lacking any

logical justification.

In the field of human history a limitation similar to that which the experimentally tested theories enjoin upon the attempts to interpret and elucidate individual physical, chemical, and physiological events is provided by praxeology. Praxeology is a theoretical and systematic, not a historical, science. Its scope is human action as such, irrespective of all environmental, accidental, and individual circumstances of the concrete acts. Its cognition is purely formal and general without reference to the material content and the particular features of the actual case. It aims at knowledge valid for all instances in which the conditions exactly correspond to those implied in its assumptions and inferences. Its statements and propositions are not derived from experience. They are, like those of logic and mathematics, a priori. They are not subject to verification or falsification on the ground of experience and facts. They are both logically and temporally antecedent to any comprehension of historical facts. They are a necessary requirement of any intellectual grasp of historical ev ents. Without them we should not be able to see in the course of events anything else than kaleidoscopic change and chaotic muddle.

2. The Formal and Aprioristic Character of Praxeology

A fashionable tendency in contemporary philosophy is to deny the existence of any a priori knowledge. All human knowledge, it is contended, is derived from experience. This attitude can easily be understood as an excessive reaction against the extravagances of theology and a spurious philosophy of history and of nature. Metaphysicians were eager to discover by intuition moral precepts, the meaning of historical evolution, the properties of soul and matter, and the laws governing physical, chemical, and physiological events. Their volatile speculations manifested a blithe disregard for matter-of-fact knowledge. They were convinced that, without reference to experience, reason could explain all things and answer all questions.

The modern natural sciences owe their success to the method of observation and experiment. There is no doubt that empiricism and pragmatism are right as far as they merely describe the procedures of the natural sciences. But it is no less certain that they are entirely wrong in their endeavors to reject any kind of a priori knowledge and to characterize logic, mathematics, and praxeology either as empirical and experimental disciplines or as mere tautologies.

With regard to praxeology the errors of the philosophers are due to their

complete ignorance of economics[2] and very often to their shockingly insufficient knowledge of history. In the eyes of the philosopher the treatment of philosophical issues is a sublime and noble vocation which must not be put upon the low level of other gainful employments. The professor resents the fact that he derives an income from philosophizing; he is offended by the thought that he earns money like the artisan and the farm hand. Monetary matters are mean things, and the philosopher investigating the eminent problems of truth and absolute eternal values should not soil his mind by paying attention to problems of economics.

The problem of whether there are or whether there are not a priori elements of thought—i.e., necessary and ineluctable intellectual conditions of thinking, anterior to any actual instance of conception and experience—must not be confused with the genetic problem of how man acquired his characteristically human mental ability. Man is descended from nonhuman ancestors who lacked this ability. These ancestors were endowed with some potentiality which in the course of ages of evolution converted them into reasonable beings. This transformation was achieved by the influence of a changing cosmic environment operating upon succeeding generations. Hence the empiricist concludes that the fundamental principles of reasoning are an outcome of experience and represent an adaptation of man to the conditions of his environment.

This idea leads, when consistently followed, to the further conclusion that there were between our prehuman ancestors and homo sapiens various intermediate stages. There were beings which, although not yet equipped with the human faculty of reason, were endowed with some rudimentary elements of ratiocination. Theirs was not yet a logical mind, but a prelogical (or rather imperfectly logical) mind. Their desultory and defective logical functions evolved step by step from the prelogical state toward the logical state. Reason, intellect, and logic are historical phenomena. There is a history of logic as there is a history of technology. Nothing suggests that logic as we know it is the last and final stage of intellectual evolution. Human logic is a historical phase between prehuman nonlogic on the one hand and

2. Hardly any philosopher had a more universal familiarity with various branches of contemporary knowledge than Bergson. Yet a casual remark in his last great book clearly proves that Bergson was completely ignorant of the fundamental theorem of the modern theory of value and exchange. Speaking of exchange he remarks "l'on ne peut le pratiquer sans s'être demandé si les deux objets échangés sont bien de même valeur, c'est-à-die échangeables contre un même troisième." (*Les Deux Sources de law morale et de la religion* [Paris, 1932], p. 68.)

superhuman logic on the other hand. Reason and mind, the human beings' most efficacious equipment in their struggle for survival, are embedded in the continuous flow of zoological events. They are neither eternal nor unchangeable. They are transitory.

Furthermore, there is no doubt that every human being repeats in his personal evolution not only the physiological metamorphosis from a simple cell into a highly complicated mammal organism but no less the spiritual metamorphosis from a purely vegetative and animal existence into a reasonable mind. This transformation is not completed in the prenatal life of the embryo, but only later when the newborn child step by step awakens to human consciousness. Thus every man in his early youth, starting from the depths of darkness, proceeds through various states of the mind's logical structure.

Then there is the case of the animals. We are fully aware of the unbridgeable gulf separating our reason from the reactive processes of their brains and nerves. But at the same time we divine that forces are desperately struggling in them toward the light of comprehension. They are like prisoners anxious to break out from the doom of eternal darkness and inescapable automatism. We feel with them because we ourselves are in a similar position: pressing in vain against the limitation of our intellectual apparatus, striving unavailingly after unattainable perfect cognition.

But the problem of the a priori is of a different character. It does not deal with the problem of how consciousness and reason have emerged. It refers to the essential and necessary character of the logical structure of the human mind.

The fundamental logical relations are not subject to proof or disproof. Every attempt to prove them must presuppose their validity. It is impossible to explain them to a being who would not possess them on his own account. Efforts to define them according to the rules of definition must fail. They are primary propositions antecedent to any nominal or real definition. They are ultimate unanalyzable categories. The human mind is utterly incapable of imagining logical categories at variance with them. No matter how they may appear to superhuman beings, they are for man inescapable and absolutely necessary. They are the indispensable prerequisite of perception, apperception, and experience.

They are no less an indispensable prerequisite of memory. There is a tendency in the natural sciences to describe memory as an instance of a more general phenomenon. Every living organism conserves the effects of earlier stimulation, and the present state of inorganic matter is shaped by the effects

of all the influences to which it was exposed in the past. The present state of the universe is the product of its past. We may, therefore, in a loose metaphorical sense, say that the geological structure of our globe conserves the memory of all earlier cosmic changes, and that a man's body is the sedimentation of his ancestors' and his own destinies and vicissitudes. But memory is something entirely different from the fact of the structural unity and continuity of cosmic evolution. It is a phenomenon of consciousness and as such conditioned by the logical a priori. Psychologists have been puzzled by the fact that man does not remember anything from the time of his existence as an embryo and as a suckling. Freud tried to explain this absence of recollection as brought about by suppression of undesired reminiscences. The truth is that there is nothing to be remembered of unconscious states. Animal automatism and unconscious response to physiological stimulations are neither for embryos and sucklings nor for adults material for remembrance. Only conscious states can be remembered.

The human mind is not a tabula rasa on which the external events write their own history. It is equipped with a set of tools for grasping reality. Man acquired these tools, i.e., the logical structure of his mind, in the course of his evolution from an amoeba to his present state. But these tools are logically prior to any experience.

Man is not only an animal totally subject to the stimuli unavoidably determining the circumstances of his life. He is also an acting being. And the category of action is logically antecedent to any concrete act.

The fact that man does not have the creative power to imagine categories at variance with the fundamental logical relations and with the principles of causality and teleology enjoins upon us what may be called *methodological apriorism.*

Everybody in his daily behavior again and again bears witness to the immutability and universality of the categories of thought and action. He who addresses fellow men, who wants to inform and convince them, who asks questions and answers other people's questions, can proceed in this way only because he can appeal to something common to all men—namely, the logical structure of human reason. The idea that *A* could at the same time be *non-A* or that to prefer *A* to *B* could at the same time be to prefer *B* to *A* is simply inconceivable and absurd to a human mind. We are not in the position to comprehend any kind of prelogical or metalogical thinking. We cannot think of a world without causality and teleogy.

It does not matter for man whether or not beyond the sphere accessible

to the human mind there are other spheres in which there is something categorially different from human thinking and acting. No knowledge from such spheres penetrates to the human mind. It is idle to ask whether things-in-themselves are different from what they appear to us, and whether there are worlds which we cannot divine and ideas which we cannot comprehend. These are problems beyond the scope of human cognition. Human knowledge is conditioned by the structure of the human mind. If it chooses human action as the subject matter of its inquiries, it cannot mean anything else than the categories of action which are proper to the human mind and are its projection into the external world of becoming and change. All the theorems of praxeology refer only to these categories of action and are valid only in the orbit of their operation. They do not pretend to convey any information about never dreamed of and unimaginable worlds and relations.

Thus praxeology is human in a double sense. It is human because it claims for its theorems, within the sphere precisely defined in the underlying assumptions, universal validity for all human action. It is human moreover because it deals only with human action and does not aspire to know anything about nonhuman—whether subhuman or superhuman—action.

The Alleged Logical Heterogeneity of Primitive Man

It is a general fallacy to believe that the writings of Lucien Levy-Bruhl give support to the doctrine that the logical structure of mind of primitive man was and is categorially different from that of civilized man. On the contrary, what Levy-Bruhl, on the basis of a careful scrutiny of the entire ethnological material available, reports about the mental functions of primitive man proves clearly that the fundamental logical relations and the categories of thought and action play in the intellectual activities of savages the same role they play in our own life. The content of primitive man's thoughts differs from the content of our thoughts, but the formal and logical structure is common to both.

It is true that Levy-Bruhl himself maintains that the mentality of primitive peoples is essentially "mystic and prelogical" in character; primitive man's collective representations are regulated by the "law of participation" and are consequently indifferent to the law of contradiction. However, Levy-Bruhl's distinction between prelogical and logical thinking refers to the content and not to the form and categorial structure of thinking. For he declares that also among peoples like ourselves ideas and relations between ideas governed by the "law of participation" exist, more or less independently, more or less impaired, but yet ineradicable, side by side, with those subject to the law of

reasoning. "The prelogical and the mystic are co-existent with the logical"[3]

Levy-Bruhl relegates the essential teachings of Christianity to the realm of the prelogical mind.[4] Now, many objections can possibly be raised and have been raised against the Christian doctrines and their interpretation by theology. But nobody ever ventured to contend that the Christian fathers and philosophers—among them St. Augustine and St. Thomas—had minds whose logical structure was categorially different from that of our contemporaries. The dispute between a man who believes in miracles and another who does not refers to the content of thought, not to its logical form. A man who tries to demonstrate the possibility and reality of miracles may err. But to unmask his error is —as the brilliant essays of Hume and Mill show— Certainly no less logically intricate than to explode any philosophical or economic fallacy.

Explorers and missionaries report that in Africa and Polynesia primitive man stops short at his earliest perception of things and never reasons if he can in any way avoid it.[5] European and American educators sometimes report the same of their students. With regard to the Mossi on the Niger Levy-Bruhl quotes a missionary's observation: "Conversation with them turns only upon women, food, and (in the rainy season) the crops."[6] What other subjects did many contemporaries and neighbors of Newton, Kant, and Levy-Bruhl prefer?

The conclusion to be drawn from Levy-Bruhl's studies is best expressed in his own words: "The primitive mind, like our own, is anxious to find the reasons for what happens, but it does not seek these in the same direction as we do."[7]

A peasant eager to get a rich crop may—according to the content of his ideas—choose various methods. He may perform some magical rites, he may embark upon a pilgrimage, he may offer a candle to the image of his patron saint, or he may employ more and better fertilizer. But whatever he does, it is always action, i.e., the employment of means for the attainment of ends. Magic is in a broader sense a variety of technology. Exorcism is a deliberate purposeful action based on a world view which most of our contemporaries condemn as superstitious and therefore as inappropriate. But the concept of action does not imply that the action is guided by a correct theory and a technology promising success and that it attains the end aimed at. It only implies that the performer of the action believes that the means applied will produce the desired effect.

3. Lévy-Bruhl, *How Natives Think*, trans. by L.A. Clare (New York, 1932), p. 386.
4. *Ibid.*, p. 377.
5. Lévy-Bruhl, *Primitive Mentality*, trans. by L.A. Clare (New York, 1923), pp. 27-29.
6. *Ibid.*, p. 27.
7. *Ibid.*, p. 437.

No facts provided by ethnology or history contradict the assertion that the logical structure of mind is uniform with all men of all races, ages, and countries.[8]

3. The A Priori and Reality

Aprioristic reasoning is purely conceptual and deductive. It cannot produce anything else but tautologies and analytic judgments. All its implications are logically derived from the premises and were already contained in them. Hence, according to a popular objection, it cannot add anything to our knowledge.

All geometrical theorems are already implied in the axioms. The concept of a rectangular triangle already implies the theorem of Pythagoras. This theorem is a tautology, its deduction results in an analytic judgment. Nonetheless nobody would contend that geometry in general and the theorem of Pythagoras in particular do not enlarge our knowledge. Cognition from purely deductive reasoning is also creative and opens for our mind access to previously barred spheres. The significant task of aprioristic reasoning is on the one hand to bring into relief all that is implied in the categories, concepts, and premises and, on the other hand, to show what they do not imply. It is its vocation to render manifest and obvious what was hidden and unknown before.[9]

In the concept of money all the theorems of monetary theory are already implied. The quantity theory does not add to our knowledge anything which is not virtually contained in the concept of money. It transforms, develops, and unfolds; it only analyzes and is therefore tautological like the theorem of Pythagoras in relation to the concept of the rectangular triangle. However, nobody would deny the cognitive value of the quantity theory. To a mind not enlightened by economic reasoning it remains unknown. A long line of abortive attempts to solve the problems concerned shows that it was certainly not easy to attain the present state of knowledge.

It is not a deficiency of the system of aprioristic science that it does not convey to us full cognition of reality. Its concepts and theorems are mental tools opening the approach to a complete grasp of reality; they are, to be sure, not in themselves already the totality of factual knowledge about all things. Theory and the

8. Cf. the brilliant statements of Ernst Cassirer, *Philosophie der symbolischen Formen* (Berlin, 1925), II, 78.

9. Science, says Meyerson is "l'acte per lequel nous ramenons à l'identique ce qui nous a, tout d'abord, paru n'être pas tel." (*De L'Explication dans dles sciences* [Paris, 1927], p. 154). Cf. also Morris R. Cohen, *A Preface to Logic* (New York, 1944), pp. 11-14.

comprehension of living and changing reality are not in opposition to one another. Without theory, the general aprioristic science of human action, there is no comprehension of the reality of human action.

The relation between reason and experience has long been one of the fundamental philosophical problems. Like all other problems of the critique of knowledge, philosophers have approached it only with reference to the natural sciences. They have ignored the sciences of human action. Their contributions have been useless for praxeology.

It is customary in the treatment of the epistemological problems of economics to adopt one of the solutions suggested for the natural sciences. Some authors recommend Poincaré's conventionalism.[10] They regard the premises of economic reasoning as a matter of linguistic or postulational convention.[11] Others prefer to acquiesce in ideas advanced by Einstein. Einstein raises the question: "How can mathematics, a product of human reason that does not depend on any experience, so exquisitely fit the objects of reality? Is human reason able to discover, unaided by experience through pure reasoning the features of real things?" And his answer is: "As far as the theorems of mathematics refer to reality, they are not certain, and as far as they are certain, they do not refer to reality."[12]

However, the sciences of human action differ radically from the natural sciences. All authors eager to construct an epistemological system of the sciences of human action according to the pattern of the natural sciences err lamentably.

The real thing which is the subject matter of praxeology, human action, stems from the same source as human reasoning. Action and reason are congeneric and homogeneous; they may even be called two different aspects of the same thing. That reason has the power to make clear through pure ratiocination the essential features of action is a consequence of the fact that action is an offshoot of reason. The theorems attained by correct praxeological reasoning are not only perfectly certain and incontestable, like the correct mathematical theorems. They refer, moreover, with the full rigidity of their apodictic certainty and incontestability to the reality of action as it appears in life and history. Praxeology conveys exact and precise knowledge of real things.

The starting point of praxeology is not a choice of axioms and a decision about methods of procedure, but reflection about the essence of action. There is no action in which the praxeological categories do not appear fully and

10. Henri Poincaré, *La Science et l'hypothése* (Paris, 1918), p. 69.

11. Felix Kaufmann, *Methodology of the Social Sciences* (London, 1944), pp. 46-47.

12. Albert Eistein, *Geometrie und Erfahrung* (Berlin, 1923), p. 3.

perfectly. There is no mode of action thinkable in which means and ends or costs and proceeds cannot be clearly distinguished and precisely separated. There is nothing which only approximately or incompletely fits the economic category of an exchange. There are only exchange and nonexchange; and with regard to any exchange all the general theorems concerning exchanges are valid in their full rigidity and with all their implications. There are no transitions from exchange to nonexchange or from direct exchange to indirect exchange. No experience can ever be had which would contradict these statements.

Such an experience would be impossible in the first place for the reason that all experience concerning human action is conditioned by the praxeological categories and becomes possible only through their application. If we had not in our mind the schemes provided by praxeological reasoning, we should never be in a position to discern and to grasp any action. We would perceive motions, but neither buying nor selling, nor prices, wage rates, interest rates, and so on. It is only through the utilization of the praxeological scheme that we become able to have an experience concerning an act of buying and selling, but then independently of the fact of whether or not our senses concomitantly perceive any motions of men and of nonhuman elements of the external world. Unaided by praxeological knowledge we would never learn anything about media of exchange. If we approach coins without such preexisting knowledge, we would see in them only round plates of metal, nothing more. Experience concerning money requires familiarity with the praxeological category *medium of exchange*.

Experience concerning human action differs from that concerning natural phenomena in that it requires and presupposes praxeological knowledge. This is why the methods of the natural sciences are inappropriate for the study of praxeology, economics and history.

In asserting the a priori character of praxeology we are not drafting a plan for a future new science different from the traditional sciences of human action. We do not maintain that the theoretical science of human action should be aprioristic, but that it is and always has been so. Every attempt to reflect upon the problems raised by human action is necessarily bound to aprioristic reasoning. It does not make any difference in this regard whether the men discussing a problem are theorists aiming at pure knowledge only or statesmen, politicians, and regular citizens eager to comprehend occurring changes and to discover what kind of public policy or private conduct would best suit their own interests. People may begin arguing about the significance

of any concrete experience, but the debate inevitably turns away from the accidental and environmental features of the event concerned to an analysis of fundamental principles, and imperceptibly abandons any reference to the factual happenings which evoked the argument. The history of the natural sciences is a record of theories and hypotheses discarded because they were disproved by experience. Remember for instance the fallacies of older mechanics disproved by Galileo or the fate of the phlogiston theory. No such case is recorded by the history of economics. The champions of logically incompatible theories claim the same events as the proof that their point of view has been tested by experience. The truth is that the experience of a complex phenomenon—and there is no other experience in the realm of human action—can always be interpreted on the ground of various antithetic theories. Whether the interpretation is considered satisfactory or unsatisfactory depends on the appreciation of the theories in question established beforehand on the ground of aprioristic reasoning.[13]

History cannot teach us any general rule, principle, or law. There is no means to abstract from a historical experience a posteriori any theories or theorems concerning human conduct and policies. The data of history would be nothing but a clumsy accumulation of disconnected occurrences, a heap of confusion, if they could not be clarified, arranged, and interpreted by systematic praxeological knowledge.

4. The Principle of Methodological Individualism

Praxeology deals with the actions of individual men. It is only in the further course of its inquiries that cognition of human cooperation is attained and social action is treated as a special case of the more universal category of human action as such.

This methodological individualism has been vehemently attacked by various metaphysical schools and disparaged as a nominalistic fallacy. The notion of an individual, say the critics, is an empty abstraction. Real man is necessarily always a member of a social whole. It is even impossible to imagine the existence of a man separated from the rest of mankind and not connected with society. Man as man is the product of a social evolution. His most eminent feature, reason, could only emerge within the framework of social mutuality. There is no thinking which does not depend on the concepts and notions of language. But speech is manifestly a social phenomenon. Man

13. Cf. E.P. Cheyney, *Law in History and Other Essays* (New York, 1927), p. 27.

is always the member of a collective. As the whole is both logically and temporally prior to its parts or members, the study of the individual is posterior to the study of society. The only adequate method for the scientific treatment of human problems is the method of universalism or collectivism.

Now the controversy whether the whole or its parts are logically prior is vain. Logically the notions of a whole and its parts are correlative. As logical concepts they are both apart from time.

No less inappropriate with regard to our problem is the reference to the antagonism of realism and nominalism, both these terms being understood in the meaning which medieval scholasticism attached to them. It is uncontested that in the sphere of human action social entities have real existence. Nobody ventures to deny that nations, states, municipalities, parties, religious communities, are real factors determining the course of human events. Methodological individualism, far from contesting the significance of such collective wholes, considers it as one of its main tasks to describe and to analyze their becoming and their disappearing, their changing structures, and their operation. And it chooses the only method fitted to solve this problem satisfactorily.

First we must realize that all actions are performed by individuals. A collective operates always through the intermediary of one or several individuals whose actions are related to the collective as the secondary source. It is the meaning which the acting individuals and all those who are touched by their action attribute to an action, that determines its character. It is the meaning that marks one action as the action of an individual and another action as the action of the state or of the municipality. The hangman, not the state, executes a criminal. It is the meaning of those concerned that discerns in the hangman's action an action of the state. A group of armed men occupies a place. It is the meaning of those concerned which imputes this occupation not to the officers and soldiers on the spot, but to their nation. If we scrutinize the meaning of the various actions performed by individuals we must necessarily learn everything about the actions of collective wholes. For a social collective has no existence and reality outside of the individual members' actions. The life of a collective is lived in the actions of the individuals constituting its body. There is no social collective conceivable which is not operative in the actions of some individuals. The reality of a social integer consists in its directing and releasing definite actions on the part of individuals. Thus the way to a cognition of collective wholes is through an analysis of the individuals' actions.

As a thinking and acting being man emerges from his prehuman existence already as a social being. The evolution of reason, language, and cooperation is the outcome of the same process; they were inseparably and necessarily linked together. But this process took place in individuals. It consisted in changes in the behavior of individuals. There is no other substance in which it occurred than the individuals. There is no substratum of society other than the actions of individuals.

That there are nations, states, and churches, that there is social cooperation under the division of labor, becomes discernible only in the actions of certain individuals. Nobody ever perceived a nation without perceiving its members. In this sense one may say that a social collective comes into being through the actions of individuals. That does not mean that the individual is temporally antecedent. It merely means that definite actions of individuals constitute the collective.

There is no need to argue whether a collective is the sum resulting from the addition of its elements or more, whether it is a being suigeneris, and whether it is reasonable or not to speak of its will, plans, aims, and actions and to attribute to it a distinct "soul." Such pedantic talk is idle. A collective whole is a particular aspect of the actions of various individuals and as such a real thing determining the course of events.

It is illusory to believe that it is possible to visualize collective wholes. They are never visible; their cognition is always the outcome of the understanding of the meaning which acting men attribute to their acts. We can see a crowd, i.e., a multitude of people. Whether this crowd is a mere gathering or a mass (in the sense in which this term is used in contemporary psychology) or an organized body or any other kind of social entity is a question which can only be answered by understanding the meaning which they themselves attach to their presence. And this meaning is always the meaning of individuals. Not our senses, but understanding, a mental process, makes us recognize social entities.

Those who want to start the study of human action from the collective units encounter an insurmountable obstacle in the fact that an individual at the same time can belong and—with the exception of the most primitive tribesmen—really belongs to various collective entities. The problems raised by the multiplicity of coexisting social units and their mutual antagonisms can be solved only by methodological individualism.[14]

14. See below, pp. 145-153, the critique of the collectivist theory of society.

I and We

The *Ego* is the unity of the acting being. It is unquestionably given and cannot be dissolved or conjured away by any reasoning or quibbling.

The *We* is always the result of a summing up which puts together two or more *Egos*. If somebody says *I*, no further questioning is necessary in order to establish the meaning. The same is valid with regard to the *Thou* and, provided the person in view is precisely indicated, with regard to the *He*. But if a man says *We*, further information is needed to denote who the Egos are who are comprised in this *We*. It is always single individuals who say *We*; even if they say it in chorus, it yet remains an utterance of single individuals.

The *We* cannot act otherwise than each of them acting on his own behalf. They can either all act together in accord, or one of them may act for them all. In the latter case the cooperation of the others consists in their bringing about the situation which makes one man's action effective for them too. Only in this sense does the officer of a social entity act for the whole; the individual members of the collective body either cause or allow a single man's action to concern them too.

The endeavors of psychology to dissolve the *Ego* and to unmask it as an illusion are idle. The praxeological *Ego* is beyond any doubts. No matter what a man was and what he may become later, in the very act of choosing and acting he is an *Ego*.

From the pluralis logicus (and from the merely ceremonial pluralis majestaticus) we must distinguish the pluralis gloriosus. If a Canadian who never tried skating says, "We are the world's foremost ice hockey players," or if an Italian boor proudly contends, "We are the world's most eminent painters," nobody is fooled. But with reference to political and economic problems the pluralis gloriosus evolves into the pluralis imperialis and as such plays a significant role in paving the way for the acceptance of doctrines determining international economic policies.

5. The Principle of Methodological Singularism

No less than from the action of an individual praxeology begins its investigations from the individual action. It does not deal in vague terms with human action in general, but with concrete action which a definite man has performed at a definite date and at a definite place. But, of course, it does not concern itself with the accidental and environmental features of this action and with what distinguishes it from all other actions, but only with what is necessary and universal in its performance.

The philosophy of universalism has from time immemorial blocked

access to a satisfactory grasp of praxeological problems, and contemporary universalists are utterly incapable of finding an approach to them. Universalism, collectivism, and conceptual realism see only wholes and universals. They speculate about mankind, nations, states, classes, about virtue and vice, right and wrong, about entire classes of wants and of commodities. They ask, for instance: Why is the value of "gold" higher than that of "iron"? Thus they never find solutions, but antinomies and paradoxes only. The best-known instance is the value-paradox which frustrated even the work of the classical economists.

Praxeology asks: What happens in acting? What does it mean to say that an individual then and there, today and here, at any time and at any place, acts? What results if he chooses one thing and rejects another?

The act of choosing is always a decision among various opportunities open to the choosing individual. Man never chooses between virtue and vice, but only between two modes of action which we call from an adopted point of view virtuous or vicious. A man never chooses between "gold" and "iron" in general, but always only between a definite quantity of gold and a definite quantity of iron. Every single action is strictly limited in its immediate consequences. If we want to reach correct conclusions, we must first of all look at these limitations.

Human life is an unceasing sequence of single actions. But the single action is by no means isolated. It is a link in a chain of actions which together form an action on a higher level aiming at a more distant end. Every action has two aspects. It is on the one hand a partial action in the framework of a further-stretching action, the performance of a fraction of the aims set by a more far-reaching action. It is on the other hand itself a whole with regard to the actions aimed at by the performance of its own parts.

It depends upon the scope of the project on which acting man is intent at the instant whether the more far-reaching action or a partial action directed to a more immediate end only is thrown into relief. There is no need for praxeology to raise questions of the type of those raised by *Gestaltpsychologie*. The road to the performance of great things must always lead through the performance of partial tasks. A cathedral is something other than a heap of stones joined together. But the only procedure for constructing a cathedral is to lay one stone upon another. For the architect the whole project is the main thing. For the mason it is the single wall, and for the bricklayer the single stones. What counts for praxeology is the fact that the

only method to achieve greater tasks is to build from the foundations step by step, part by part.

6. The Individual and Changing Features of Human Action

The content of human action, i.e., the ends aimed at and the means chosen and applied for the attainment of these ends, is determined by the personal qualities of every acting man. Individual man is the product of a long line of zoological evolution which has shaped his physiological inheritance. He is born the offspring and the heir of his ancestors, and the precipitate and sediment of all that his forefathers experienced are his biological patrimony. When he is born, he does not enter the world in general as such, but a definite environment. The innate and inherited biological qualities and all that life has worked upon him make a man what he is at any instant of his pilgrimage. They are his fate and destiny. His will is not "free" in the metaphysical sense of this term. It is determined by his background and all the influences to which he himself and his ancestors were exposed.

Inheritance and environment direct a man's actions. They suggest to him both the ends and the means. He lives not simply as man in abstracto; he lives as a son of his family, his race, his people, and his age; as a citizen of his country; as a member of a definite social group; as a practitioner of a certain vocation; as a follower of definite religious, metaphysical, philosophical, and political ideas; as a partisan in many feuds and controversies. He does not himself create his ideas and standards of value; he borrows them from other people. His ideology is what his environment enjoins upon him. Only very few men have the gift of thinking new and original ideas and of changing the traditional body of creeds and doctrines.

Common man does not speculate about the great problems. With regard to them he relies upon other people's authority, he behaves as "every decent fellow must behave," he is like a sheep in the herd. It is precisely this intellectual inertia that characterizes a man as a common man. Yet the common man does choose. He chooses to adopt traditional patterns or patterns adopted by other people because he is convinced that this procedure is best fitted to achieve his own welfare. And he is ready to change his ideology and consequently his mode of action whenever he becomes convinced that this would better serve his own interests.

Most of a man's daily behavior is simple routine. He performs certain

acts without paying special attention to them. He does many things because he was trained in his childhood to do them, because other people behave in the same way, and because it is customary in his environment. He acquires habits, he develops automatic reactions. But he indulges in these habits only because he welcomes their effects. As soon as he discovers that the pursuit of the habitual way may hinder the attainment of ends considered as more desirable, he changes his attitude. A man brought up in an area in which the water is clean acquires the habit of heedlessly drinking, washing, and bathing. When he moves to a place in which the water is polluted by morbific germs, he will devote the most careful attention to procedures about which he never bothered before. He will watch himself permanently in order not to hurt himself by indulging unthinkingly in his traditional routine and his automatic reactions. The fact that an action is in the regular course of affairs performed spontaneously, as it were, does not mean that it is not due to a conscious volition and to a deliberate choice. Indulgence in a routine which possibly could be changed is action.

Praxeology is not concerned with the changing content of acting, but with its pure form and its categorial structure. The study of the accidental and environmental features of human action is the task of history.

7. The Scope and the Specific Method of History

The study of all the data of experience concerning human action is the scope of history. The historian collects and critically sifts all available documents. On the ground of this evidence he approaches his genuine task.

It has been asserted that the task of history is to show how events actually happened, without imposing presuppositions and values (*wertfrei*, i.e., neutral with regard to all value judgments). The historian's report should be a faithful image of the past, an intellectual photograph, as it were, giving a complete and unbiased description of all facts. It should reproduce before our intellectual eye the past with all its features.

Now, a real reproduction of the past would require a duplication not humanly possible. History is not an intellectual reproduction, but a condensed representation of the past in conceptual terms. The historian does not simply let the events speak for themselves. He arranges them from the aspect of the ideas underlying the formation of the general notions he uses in their presentation. He does not report facts as they happened, but only *relevant* facts. He does not approach the documents

without presuppositions, but equipped with the whole apparatus of his age's scientific knowledge, that is, with all the teachings of contemporary logic, mathematics, praxeology, and natural science.

It is obvious that the historian must not be biased by any prejudices and party tenets. Those writers who consider historical events as an arsenal of weapons for the conduct of their party feuds are not historians but propagandists and apologists. They are not eager to acquire knowledge but to justify the program of their parties. They are fighting for the dogmas of a metaphysical, religious, national, political or social doctrine. They usurp the name of history for their writings as a blind in order to deceive the credulous. A historian must first of all aim at cognition. He must free himself from any partiality. He must in this sense be neutral with regard to any value judgments.

This postulate of *Wertfreiheit* can easily be satisfied in the field of the aprioristic science-logic, mathematics, and praxeology-and in the field of the experimental natural sciences. It is logically not difficult to draw a sharp line between a scientific, unbiased treatment of these disciplines and a treatment distorted by superstition, preconceived ideas, and passion. It is much more difficult to comply with the requirement of valuational neutrality in history. For the subject matter of history, the concrete accidental and environmental content of human action, is value judgments and their projection into the reality of change. At every step of his activities the historian is concerned with value judgments. The value judgments of the men whose actions he reports are the substratum of his investigations.

It has been asserted that the historian himself cannot avoid judgments of value. No historian—not even the naive chronicler or newspaper reporter—registers all facts as they happen. He must discriminate, he must select some events which he deems worthy of being registered and pass over in silence other events. This choice, it is said, implies in itself a value judgment. It is necessarily conditioned by the historian's world view and thus not impartial but an outcome of preconceived ideas. History can never be anything else than distortion of facts; it can never be really scientific, that is neutral with regard to values and intent only upon discovering truth.

There is, of course, no doubt that the discretion which the selection of facts places in the hands of the historian can be abused. It can and does happen that the historian's choice is guided by party bias. However, the problems involved are much more intricate than this popular doctrine would have us believe. Their solution must be sought on the ground of a much more

thorough scrutiny of the methods of history.

In dealing with a historical problem the historian makes use of all the knowledge provided by logic, mathematics, the natural sciences, and especially by praxeology. However, the mental tools of these nonhistorical disciplines do not suffice for his task. They are indispensable auxiliaries for him, but in themselves they do not make it possible to answer those questions he has to deal with.

The course of history is determined by the actions of individuals and by the effects of these actions. The actions are determined by the value judgments of the acting individuals, i.e., the ends which they were eager to attain, and by the means which they applied for the attainment of these ends. The choice of the means is an outcome of the whole body of technological knowledge of the acting individuals. It is in many instances possible to appreciate the effects of the means applied from the point of view of praxeology or of the natural sciences. But there remain a great many things for the elucidation of which no such help is available.

The specific task of history for which it uses a specific method is the study of these value judgments and of the effects of the actions as far as they cannot be analyzed by the teachings of all other branches of knowledge. The historian's genuine problem is always to interpret things as they happened. But he cannot solve this problem on the ground of the theorems provided by all other sciences alone. There always remains at the bottom of each of his problems something which resists analysis at the hand of these teachings of other sciences. It is these individual and unique characteristics of each event which are studied by the *understanding.*

The uniqueness or individuality which remains at the bottom of every historical fact, when all the means for its interpretation provided by logic, mathematics, praxeology, and the natural sciences have been exhausted, is an ultimate datum. But whereas the natural sciences cannot say anything about their ultimate data than that they are such, history can try to make its ultimate data intelligible. Although it is impossible to reduce them to their causes—they would not be ultimate data if such a reduction were possible—the historian can understand them because he is himself a human being. In the philosophy of Bergson this understanding is called an intuition, viz., "la sympathie par laquelle on se transporte a l'interieur d'un objet pour coïncider avec ce qu'il a d'unique et par consequent d'inexprimable."[15] German epistemology calls this act *das spezifische Verstehen der*

15. Henri Bergson, *La Penseé et le mouvant* (4th ed. Paris, 1934), p. 205.

Geisteswissenschaften or simply *Verstehen.* It is the method which all historians and all other people always apply in commenting upon human events of the past and in forecasting future events. The discovery and the delimitation of understanding was one of the most important contributions of modern epistemology. It is, to be sure, neither a project for a new science which does not yet exist and is to be founded nor the recommendation of a new method of procedure for any of the already existing sciences.

The understanding must not be confused with approval, be it only conditional and circumstantial. The historian, the ethnologist, and the psychologist sometimes register actions which are for their feelings simply repulsive and disgusting; they understand them only as actions, i.e., in establishing the underlying aims and the technological and praxeological methods applied for their execution. To understand an individual case does not mean to justify or to excuse it.

Neither must understanding be confused with the act of aesthetic enjoyment of a phenomenon. Empathy (*Einfühlung*) and understanding are two radically different attitudes. It is a different thing, on the one hand, to understand a work of art historically, to determine its place, its meaning, and its importance in the flux of events, and, on the other hand, to appreciate it emotionally as a work of art. One can look at a cathedral with the eyes of a historian. But one can look at the same cathedral either as an enthusiastic admirer or as an unaffected and indifferent sightseer. The same individuals are capable of both modes of reaction, of the aesthetic appreciation and of the scientific grasp of understanding.

The understanding establishes the fact that an individual or a group of individuals have engaged in a definite action emanating from definite value judgments and choices and aiming at definite ends, and that they have applied for the attainment of these ends definite means suggested by definite technological, therapeutical, and praxeological doctrines. It furthermore tries to appreciate the effects and the intensity of the effects brought about by an action; it tries to assign to every action its relevance, i.e., its bearing upon the course of events.

The scope of understanding is the mental grasp of phenomena which cannot be totally elucidated by logic, mathematics, praxeology, and the natural sciences to the extent that they cannot be cleared up by all these sciences. It must never contradict the teachings of these other branches of knowledge.[16] The real corporeal existence of the devil is attested by innu-

16. Cf. Ch. V. Langlois and Ch. Seignobos, *Introduction to the Study of History*, trans. by G.G. Berry (London, 1925), pp. 205-208.

merable historical documents which are rather reliable in all other regards. Many tribunals in due process of law have on the basis of the testimony of witnesses and the confessions of defendants established the fact that the devil had carnal intercourse with witches. However, no appeal to understanding could justify a historian's attempt to maintain that the devil really existed and interfered with human events otherwise than in the visions of an excited human brain.

While this is generally admitted with regard to the natural sciences, there are some historians who adopt another attitude with regard to economic theory. They try to oppose to the theorems of economics an appeal to documents allegedly proving things incompatible with these theorems. They do not realize that complex phenomena can neither prove nor disprove any theorem and therefore cannot bear witness against any statement of a theory. Economic history is possible only because there is an economic theory capable of throwing light upon economic actions. If there were no economic theory, reports concerning economic facts would be nothing more than a collection of unconnected data open to any arbitrary interpretation.

8. Conception and Understanding

The task of the sciences of human action is the comprehension of the meaning and relevance of human action. They apply for this purpose two different epistemological procedures: conception and understanding. Conception is the mental tool of praxeology; understanding is the specific mental tool of history.

The cognition of praxeology is conceptual cognition. It refers to what is necessary in human action. It is cognition of universals and categories.

The cognition of history refers to what is unique and individual in each event or class of events. It analyzes first each object of its studies with the aid of the mental tools provided by all other sciences. Having achieved this preliminary work, it faces its own specific problem; the elucidation of the unique and individual features of the case by means of the understanding.

As was mentioned above, it has been asserted that history can never be scientific because historical understanding depends on the historian's subjective value judgments. Understanding, it is maintained, is only a euphemistic term for arbitrariness. The writings of historians are always one-sided and partial; they do not report the facts; they distort them.

It is, of course, a fact that we have historical books written from various points of view. There are histories of the Reformation written from the Catholic point of view and others written from the Protestant point of view. There are "proletarian" histories and "bourgeois" histories, Tory historians and Whig historians; every nation, party, and linguistic group has its own historians and its own ideas about history.

But the problem which these differences of interpretation offer must not be confused with the intentional distortion of facts by propagandists and apologists parading as historians. Those facts which can be established in an unquestionable way on the ground of the source material available must be established as the preliminary work of the historian. This is not a field for understanding. It is a task to be accomplished by the employment of the tools provided by all nonhistorical sciences. The phenomena are gathered by cautious critical observation of the records available. As far as the theories of the nonhistorical sciences on which the historian grounds his critical examination of the sources are reasonably reliable and certain, there cannot be any arbitrary disagreement with regard to the establishment of the phenomena as such. What a historian asserts is either correct or contrary to fact, is either proved or disproved by the documents available, or vague because the sources do not provide us with sufficient information. The experts may disagree, but only on the ground of a reasonable interpretation of the evidence available. The discussion does not allow any arbitrary statements.

However, the historians very often do not agree with regard to the teachings of the nonhistorical sciences. Then, of course, disagreement with regard to the critical examination of the records and to the conclusions to be drawn from them can ensue. An unbridgeable conflict arises. But its cause is not an arbitrariness with regard to the concrete historical phenomenon. It stems from an undecided issue referring to the nonhistorical sciences.

An ancient Chinese historian could report that the emperor's sin brought about a catastrophic drought and that rain fell again when the ruler had atoned for his sin. No modern historian would accept such a report. The underlying meteorological doctrine is contrary to uncontested fundamentals of contemporary natural science. But no such unanimity exists in regard to many theological, biological, and economic issues. Accordingly historians disagree.

A supporter of the racial doctrine of Nordic-Aryanism will disregard as fabulous and simply unbelievable any report concerning intellectual and moral achievements of "inferior" races. He will treat such reports in the same

way in which all modern historians deal with the above-mentioned Chinese report. No agreement with regard to any phenomenon of the history of Christianity can be attained between people for whom the gospels are Holy Writ and people in whose eyes they are human documents. Catholic and Protestant historians disagree about many questions of fact because they start from different theological ideas. A Mercantilist or Neo-Mercantilist must necessarily be at variance with an economist. An account of German monetary history in the years 1914 to 1923 is conditioned by the author's monetary doctrines. The facts of the French Revolution are presented in a quite different manner by those who believe in the sacred rights of the anointed king and those who hold other views.

The historians disagree on such issues not in their capacity as historians, but in their application of the nonhistorical sciences to the subject matter of history. They disagree as agnostic doctors disagree in regard to the miracles of Lourdes with the members of the medical committee for the collection of evidence concerning these miracles. Only those who believe that facts write their own story into the tabula rasa of the human mind blame the historians for such differences of opinion. They fail to realize that history can never be studied without presuppositions, and that dissension with regard to the presuppositions, i.e., the whole content of the nonhistorical branches of knowledge, must determine the establishment of historical facts.

These presuppositions also determine the historian's decision concerning the choice of facts to be mentioned and those to be omitted as irrelevant. In searching for the causes of a cow's not giving milk a modern veterinarian will disregard entirely all reports concerning a witch's evil eye; his view would have been different three hundred years ago. In the same way the historian selects from the indefinite multitude of events that preceded the fact he is dealing with those which could have contributed to its emergence—or have delayed it —and neglects those which, according to his grasp of the nonhistorical sciences, could not have influenced it.

Changes in the teachings of the nonhistorical sciences consequently must involve a rewriting of history. Every generation must treat anew the same historical problems because they appear to it in a different light. The theological world view of older times led to a treatment of history other than the theorems of modern natural science. Subjective economics produces historical works very different from those based on mercantilist doctrines.

As far as divergences in the books of historians stem from these disagreements, they are not an outcome of alleged vagueness and precariousness in historical studies. They are, on the contrary, the result of the lack of unanimity in the realm of those other sciences which are popularly called certain and exact.

To avoid any possible misunderstanding it is expedient to emphasize some further points. The divergences referred to above must not be confused:

1. With purposeful ill-intentioned distortion of facts.

2. With attempts to justify or to condemn any actions from a legal or moral point of view.

3. With the merely incidental insertion of remarks expressing value judgments in a strictly objective representation of the state of affairs. A treatise on bacteriology does not lose its objectivity if the author, accepting the human viewpoint, considers the preservation of human life as an ultimate end and, applying this standard, labels effective methods of fighting germs good and fruitless methods bad. A germ writing such a book would reverse these judgments, but the material content of its book would not differ from that of the human bacteriologist. In the same way a European historian dealing with the Mongol invasions of the thirteenth century may speak of "favorable" and "unfavorable" events because he takes the standpoint of the European defenders of Western civilization. But this approval of one party's standard of value need not necessarily interfere with the material content of his study. It may—from the viewpoint of contemporary knowledge—be absolutely objective. A Mongolian historian could endorse it completely but for such casual remarks.

4. With a representation of one party's action in diplomatic or military antagonisms. The clash of conflicting groups can be dealt with from the point of view of the ideas, motives, and aims which impelled either side's acts. For a full comprehension of what happened it is necessary to take account of what was done on both sides. The outcome was the result of the interaction of both parties. But in order to understand their actions the historian must try to see things as they appeared to the acting men at the critical time, not only as we wee them now from the point of view of our present-day knowledge. A history of Lincoln's policy in the weeks and months preceding the outbreak of the Civil War is of course incomplete. But no historical study is complete. Regardless of whether the historian sympathizes with the Unionists or with the Confederates or whether he is absolutely neutral, he

can deal in an objective way with Lincoln's policy in the spring of 1861. Such an investigation is an indispensable preliminary to answering the broader question of how the Civil War broke out.

Now finally, having settled these problems, it is possible to attack the genuine question: Is there any subjective element in historical understanding, and, if so, in what manner does it determine the result of historical studies?

As far as the task of understanding is to establish the facts that people were motivated by definite value judgments and aimed at definite means, there cannot be any disagreement among true historians, i.e., people intent upon cognition of past events. There may be uncertainty because of the insufficient information provided by the sources available. But this has nothing to do with understanding. It refers to the preliminary work to be achieved by the historian.

But understanding has a second task to fulfill. It must appraise the effects and the intensity of the effects brought about by an action; it must deal with the relevance of each motive and each action.

Here we are faced with one of the main differences between physics and chemistry on the one hand and the sciences of human action on the other. In the realm of physical and chemical events there exist (or, at least, it is generally assumed that there exist) constant relations between magnitudes, and man is capable of discovering these constants with a reasonable degree of precision by means of laboratory experiments. No such constant relations exist in the field of human action outside of physical and chemical technology and therapeutics. For some time economists believed that they had discovered such a constant relation in the effects of changes in the quantity of money upon commodity prices. It was asserted that a rise or fall in the quantity of money in circulation must result in proportional changes of commodity prices. Modern economics has clearly and irrefutably exposed the fallaciousness of this statement.[17] Those economists who want to substitute "quantitative economics" for what they call "qualitative economics" are utterly mistaken. There are, in the field of economics, no constant relations, and consequently no measurement is possible. If a statistician determines that a rise of 10 per cent in the supply of potatoes in Atlantis at a definite time was followed by a fall of 8 per cent in the price, he does not establish anything about what happened or may happen with a change in the supply of potatoes in another country or at another time. He has not

17. See below, pp. 412-414.

"measured" the "elasticity of demand" of potatoes. He has established a unique and individual historical fact. No intelligent man can doubt that the behavior of men with regard to potatoes, and every other commodity is variable. Different individuals value the same things in a different way, and valuations change with the same individuals with changing conditions.[18]

Outside of the field of economic history nobody ever ventured to maintain that constant relations prevail in human history. It is a fact that in the armed conflicts fought in the past between Europeans and backward peoples of other races, one European soldier was usually a match for several native fighters. But nobody was ever foolish enough to "measure" the magnitude of European superiority.

The impracticability of measurement is not due to the lack of technical methods for the establishment of measure. It is due to the absence of constant relations. If it were only caused by technical insufficiency, at least an approximate estimation would be possible in some cases. But the main fact is that there are no constant relations. Economics is not, as ignorant positivists repeat again and again, backward because it is not "quantitative." It is not quantitative and does not measure because there are no constants. Statistical figures referring to economic events are historical data. They tell us what happened in a nonrepeatable historical case. Physical events can be interpreted on the ground of our knowledge concerning constant relations established by experiments. Historical events are not open to such an interpretation.

The historian can enumerate all the factors which cooperated in bringing about a known effect and all the factors which worked against them and may have resulted in delaying and mitigating the final outcome. But he cannot coordinate, except by understanding, the various causative factors in a quantitative way to the effects produced. He cannot, except by understanding, assign to each of *n* factors its role in producing the effect *P*. Understanding is in the realm of history the equivalent, as it were, of quantitative analysis and measurement.

Technology can tell us how thick a steel plate must be in order not to be pierced by a bullet fired at a distance of 300 yards from a Winchester rifle. It can thus answer the question why a man who took shelter behind a steel plate of a known thickness was hurt or not hurt by a shot fired. History is at a loss to explain with the same assurance why there was a rise in the price of milk of 10 per cent or why President Roosevelt defeated Governor Dewey

18. Cf. below, p. 351.

in the election of 1944 or why France was from 1870 to 1940 under a republican constitution. Such problems do not allow any treatment other than that of understanding.

To every historical factor understanding tries to assign its relevance. In the exercise of understanding there is no room for arbitrariness and capriciousness. The freedom of the historian is limited by his endeavor to provide a satisfactory explanation of reality. His guiding star must be the search for truth. But there necessarily enters into understanding an element of subjectivity. The understanding of the historian is always tinged with the marks of his personality. It reflects the mind of its author.

The a priori sciences-logic, mathematics, and praxeology—aim at a knowledge unconditionally valid for all beings endowed with the logical structure of the human mind. The natural sciences aim at a cognition valid for all those beings which are not only endowed with the faculty of human reason but with human senses. The uniformity of human logic and sensation bestows upon these branches of knowledge the character of universal validity. Such at least is the principle guiding the study of the physicists. Only in recent years have they begun to see the limits of their endeavors and, abandoning the excessive pretensions of older physicist, discovered the "uncertainty principle." They realize today that there are unobservables whose unobservability is a matter of epistemological principle.[19]

Historical understanding can never produce results which must be accepted by all men. Two historians who fully agree with regard to the teachings of the nonhistorical sciences and with regard to the establishment of the facts as far as they can be established without recourse to the understanding of relevance, may disagree in their understanding of the relevance of these facts. They may fully agree in establishing that the factors *a*, *b*, and *c* worked together in producing the effect *P*; nonetheless they can widely disagree with regard to the relevance of the respective contributions of *a*, *b*, and *c* to the final outcome. As far as understanding aims at assigning its relevance to each factor, it is open to the influence of subjective judgments. Of course, these are not judgments of value, they do not express preferences of the historian. They are judgments of relevance.[20]

19. Cf. A. Eddington, *The Philosophy of Physical Science* (New York, 1939), pp. 28-48.

20. As this is not a dissertation on general epistemology, but the indispensiable foundation of a treatise of economics, there is no need to stress the analogies between the understanding of historical relevance and the tasks to be accomplished by a diagnosing physician. The epistemology of biology is outside of the scope of our inquiries.

Historians may disagree for various reasons. They may hold different views with regard to the teachings of the nonhistorical sciences; they may base their reasoning on a more or less complete familiarity with the records; they may differ in the understanding of the motives and aims of the acting men and of the means applied by them. All these differences are open to a settlement by "objective" reasoning; it is possible to reach a universal agreement with regard to them. But as far as historians disagree with regard to judgments of relevance it is impossible to find a solution which all sane men must accept.

The intellectual methods of science do not differ in kind from those applied by the common man in his daily mundane reasoning. The scientist uses the same tools which the layman uses; he merely uses them more skillfully and cautiously. Understanding is not a privilege of the historians. It is everybody's business. In observing the conditions of his environment everybody is a historian. Everybody uses understanding in dealing with the uncertainty of future events to which he must adjust his own actions. The distinctive reasoning of the speculator is an understanding of the relevance of the various factors determining future events. And—let us emphasize it even at this early point of our investigations—action necessarily always aims at future and therefore uncertain conditions and thus is always speculation. Acting man looks, as it were, with the eyes of a historian into the future.

Natural History and Human History

Cosmogony, geology, and the history of biological changes are historical disciplines as they deal with unique events of the past. However, they operate exclusively with the epistemological methods of the natural sciences and have no need for understanding. They must sometimes take recourse to only approximate estimates of magnitudes. But such estimates are not judgments of relevance. They are a less perfect method of determining quantitative relations than is "exact" measurement. They must not be confused with the state of affairs in the field of human action which is characterized by the absence of constant relations.

If we speak of history, what we have in mind is only the history of human action, whose specific mental tool is understanding.

The assertion that modern natural science owes all its achievements to the experimental method is sometimes assailed by referring to astronomy. Now, modern astronomy is essentially an application of the physical laws, experimentally discovered on the earth, to the celestial bodies. In earlier days astronomy was mainly based on the assumption that the movements of the celestial bodies would not change their course. Copernicus and Kepler

simply tried to guess in what kind of curve the earth moves around the sun. As the circle was considered the "most perfect" curve, Copernicus chose it for his theory. Later, by similar guesswork, Kepler substituted the ellipse for the circle. Only since Newton's discoveries has astronomy become a natural science in the strict sense.

9. On Ideal Types

History deals with unique and unrepeatable events, with the irreversible flux of human affairs. A historical event cannot be described without reference to the persons involved and to the place and date of its occurrence. As far as a happening can be narrated without such a reference, it is not a historical event but a fact of the natural sciences. The report that Professor X on February 20, 1945, performed a certain experiment in his laboratory is an account of a historical event. The physicist believes that he is right in abstracting from the person of the experimenter and the date and place of the experiment. He relates only those circumstances which, in his opinion, are relevant for the production of the result achieved and, when repeated, will produce the same result again. He transforms the historical event into a *fact* of the empirical natural sciences. He disregards the active interference of the experimenter and tries to imagine him as an indifferent observer and relater of unadulterated reality. It is not the task of praxeology to deal with the epistemological issues of this philosophy.

Although unique and unrepeatable, historical events have one common feature: they are human action. History comprehends them as human actions; it conceives their meaning by the instrumentality of praxeological cognition and understands their meaning in looking at their individual and unique features. What counts for history is always the meaning of the men concerned: the meaning that they attach to the state of affairs they want to alter, the meaning they attach to their actions, and the meaning they attach to the effects produced by the actions.

The aspect from which history arranges and assorts the infinite multiplicity of events is their meaning. The only principle which it applies for the systemization of its objects—men, ideas, institutions, social entities, and artifacts—is meaning affinity. According to meaning affinity it arranges the elements into ideal types.

Ideal types are specific notions employed in historical research and in the representation of its results. They are concepts of understanding. As such they are entirely different from praxeological categories and con-

cepts and from the concepts of the natural sciences. An ideal type is not a class concept, because its description does not indicate the marks whose presence definitely and unambiguously determines class membership. An ideal type cannot be defined: it must be characterized by an enumeration of those features whose presence by and large decides whether in a concrete instance we are or are not faced with a specimen belonging to the ideal type in question. It is peculiar to the ideal type that not all its characteristics need to be present in any one example. Whether or not the absence of some characteristics prevents the inclusion of a concrete specimen in the ideal type in question, depends on a relevance judgment by understanding. The ideal type itself is an outcome of an understanding of the motives, ideas, and aims of the acting individuals and of the means they apply.

An ideal type has nothing at all to do with statistical means and averages. Most of the characteristics concerned are not open to a numerical determination, and for this reason alone they could not enter into a calculation of averages. But the main reason is to be seen in something else. Statistical averages denote the behavior of the members of a class or a type, already constituted by means of a definition or characterization referring to other marks, with regard to features not referred to in the definition or characterization. The membership of the class or type must be known before the statistician can start investigating special features and use the result of this investigation for the establishment of an average. We can establish the average age of the United States Senators or we can reckon averages concerning the behavior of an age class of the population with regard to a special problem. But it is logically impossible to make the membership of a class or type depend upon an average.

No historical problem can be treated without the aid of ideal types. Even when the historian deals with an individual person or with a single event, he cannot avoid referring to ideal types. If he speaks of Napoleon, he must refer to such ideal types as commander, dictator, revolutionary leader; and if he deals with the French Revolution he must refer to ideal types such as revolution, disintegration of an established regime, anarchy. It may be that the reference to an ideal type consists merely in rejecting its applicability to the case in question. But all historical events are described and interpreted by means of ideal types. The layman too, in dealing with events of the past or of the future, must always make use of ideal types and unwittingly always does so.

Whether or not the employment of a definite ideal type is expedient and

conducive to an adequate grasp of phenomena can only be decided by understanding. It is not the ideal type that determines the mode of understanding; it is the mode of understanding that requires the construction and use of corresponding ideal types.

The ideal types are constructed with the use of ideas and concepts developed by all nonhistorical branches of knowledge. Every cognition of history is, of course, conditioned by the findings of the other sciences, depends upon them, and must never contradict them. But historical knowledge has another subject matter and another method than these other sciences, and they in turn have no use for understanding. Thus the ideal types must not be confused with concepts of the nonhistorical sciences. This is valid also with regard to the praxeological categories and concepts. They provide, to be sure, the indispensable mental tools for the study of history. However, they do not refer to the understanding of the unique and individual events which are the subject matter of history. An ideal type can therefore never be a simple adoption of a praxeological concept.

It happens in many instances that a term used by praxeology to signify a praxeological concept serves to signify an ideal type for the historian. Then the historian uses *one* word for the expression of two different things. He applies the term sometimes to signify its praxeological connotation, but more often to signify an ideal type. In the latter case the historian attaches to the word a meaning different from its praxeological meaning; he transforms it by transferring it to a different field of inquiry. The economic concept "entrepreneur" belongs to a stratum other than the ideal type "entrepreneur" as used by economic history and descriptive economics. (On a third stratum lies the legal term "entrepreneur.") The economic term "entrepreneur" is a precisely defined concept which in the framework of a theory of market economy signifies a clearly integrated function.[21] The historical ideal type "entrepreneur" does not include the same members. Nobody in using it thinks of shoe-shine boys, cab drivers who own their cars, small businessmen, and small farmers. What economics establishes with regard to entrepreneurs is rigidly valid for all members of the class without any regard to temporal and geographical conditions and to the various branches of business. What economic history establishes for its ideal types can differ according to the particular circumstances of various ages, countries, branches of business, and many other conditions. History has little use for a general ideal type of entrepreneur. It is more concerned with such types as: the American entrepreneur of the time of Jefferson, German heavy

21. See below, pp. 251-255.

industries in the age of William II, New England textile manufacturing in the last decades preceding the first World War, the Protestant *haute finance* of Paris, self-made entrepreneurs, and so on.

Whether the use of a definite ideal type is to be recommended or not depends entirely on the mode of understanding. lt is quite common nowadays to employ two ideal types: Left-Wing Parties (Progressives) and Right_Wing Parties (Fascists). The former includes the Western democracies, some Latin American dictatorships, and Russian Bolshevism; the latter Italian Fascism and German Nazism. This typification is the outcome of a definite mode of understanding. Another mode would contrast Democracy and Dictatorship. Then Russian Bolshevism, Italian Fascism, and German Nazism belong to the ideal type of dictatorial government, and the Western systems to the ideal type of democratic government.

It was a fundamental mistake of the Historical School of *Wirtschaftliche Staatswissenshaften* in Germany and of Institutionalism in America to interpret economics as the characterization of the behavior of an ideal type, the *homo oeconomicus*. According to this doctrine traditional or orthodox economics does not deal with the behavior of man as he really is and acts, but with a fictitious or hypothetical image. It pictures a being driven exclusively by "economic" motives, i.e., solely by the intention of making the greatest possible material or monetary profit. Such a being, say these critics, does not have and never did have a counterpart in reality; it is a phantom of a spurious armchair philosophy. No man is exclusively motivated by the desire to become as rich as possible; many are not at all influenced by this mean craving. It is vain to refer to such an illusory homunculus in dealing with life and history.

Even if this really were the meaning of classical economics, the homo oeconomicus would certainly not be an ideal type. The ideal type is not an embodiment of one side or aspect of man's various aims and desires. It is always the representation of complex phenomena of reality, either of men, of institutions, or of ideologies.

The classical economist sought to explain the formation of prices. They were fully aware of the fact that prices are not a product of the activities of a special group of people, but the result of an interplay of all members of the market society. This was the meaning of their statement that demand and supply determine the formation of prices. However, the classical economists failed in their endeavors to provide a satisfactory theory of value. They were at a loss to find a solution for the apparent paradox of value. They were

puzzled by the alleged paradox that "gold" is more highly valued than "iron," although the latter is more "useful" than the former. Thus they could not construct a general theory of value and could not trace back the phenomena of market exchange and of production to their ultimate sources, the behavior of the consumers. This shortcoming forced them to abandon their ambitious plan to develop a general theory of human action. They had to satisfy themselves with a theory explaining only the activities of the businessman without going back to the choices of everybody as the ultimate determinants. They dealt only with the actions of businessmen eager to buy in the cheapest market and to sell in the dearest. The consumer was left outside the field of their theorizing. Later the epigones of classical economics explained and justified this insufficiency as an intentional and methodologically necessary procedure. It was, they asserted, the deliberate design of economists to restrict their investigations to only one aspect of human endeavor—namely, to the "economic" aspect. It was their intention to use the fictitious image of a man driven solely by "economic" motives and to neglect all others although they were fully aware of the fact that real men are driven by many other, "noneconomic" motives. To deal with these other motives, one group of these interpreters maintained, is not the task of economics but of other branches of knowledge. Another group admitted that the treatment of these "noneconomic" motives and their influence on the formation of prices was a task of economics also, but they believed that it must be left to later generations. It will be shown at a later stage of our investigations that this distinction between "economic" and "noneconomic" motives of human action is untenable.[22] At this point it is only important to realize that this doctrine of the "economic" side of human action utterly misrepresents the teachings of the classical economists. They never intended to do what this doctrine ascribes to them. They wanted to conceive the real formation of prices—not fictitious prices as they would be determined if men were acting under the sway of hypothetical conditions different from those really influencing them. The prices they try to explain and do explain—although without tracing them back to the choices of the consumers—are real market prices. The demand and supply of which they speak are real factors determined by all motives instigating men to buy or to sell. What was wrong with their theory was that they did not trace demand back to the choices of the consumers; they lacked a satisfactory theory of demand. But it was not their idea that demand as they used this concept in their dissertations was

22. See below, pp. 232-234 and 239-244.

exclusively determined by "economic" motives as distinguished from "non-economic" motives. As they restricted their theorizing to the actions of businessmen, they did not deal with the motives of the ultimate consumers. Nonetheless their theory of prices was intended as an explanation of real prices irrespective of the motives and ideas instigating the consumers.

Modern subjective economics starts with the solution of the apparent paradox of value. It neither limits its theorems to the actions of businessmen alone nor deals with a fictitious homo oeconomicus. It treats the inexorable categories of everybody's action. Its theorems concerning commodity prices, wage rates, and interest rates refer to all these phenomena without any regard to the motives causing people to buy or to sell or to abstain from buying or selling. It is time to discard entirely any reference to the abortive attempt to justify the shortcoming of older economists through the appeal to the homo oeconomicus phantom.

10. The Procedure of Economics

The scope of praxeology is the explication of the category of human action. All that is needed for the deduction of all praxeological theorems is knowledge of the essence of human action. It is a knowledge that is our own because we are men; no being of human descent that pathological conditions have not reduced to a merely vegetative existence lacks it. No special experience is needed in order to comprehend these theorems, and no experience, however rich, could disclose them to a being who did not know a priori what human action is. The only way to a cognition of these theorems is logical analysis of our inherent knowledge of the category of action. We must bethink ourselves and reflect upon the structure of human action. Like logic and mathematics, praxeological knowledge is in us; it does not come from without.

All the concepts and theorems of praxeology are implied in the category of human action. The first task is to extract and to deduce them, to expound their implications and to define the universal conditions of acting as such. Having shown what conditions are required by any action, one must go further and define—of course, in a categorial and formal sense—the less general conditions required for special modes of acting. It would be possible to deal with this second task by delineating all thinkable conditions and deducing from them all inferences logically permissible. Such an all-comprehensive system would provide a theory referring not only to human action as it is under the conditions and circumstances given in the real world in

which man lives and acts. It would deal no less with hypothetical acting such as would take place under the unrealizable conditions of imaginary worlds.

But the end of science is to know reality. It is not mental gymnastics or a logical pastime. Therefore praxeology restricts its inquiries to the study of acting under those conditions and presuppositions which are given in reality. It studies acting under unrealized and unrealizable conditions only from two points of view. It deals with states of affairs which, although not real in the present and past world, could possibly become real at some future date. And it examines unreal and unrealizable conditions if such an inquiry is needed for a satisfactory grasp of what is going on under the conditions present in reality.

However, this reference to experience does not impair the aprioristic character of praxeology and economics. Experience merely directs our curiosity toward certain problems and diverts it from other problems. It tells us what we should explore, but it does not tell us how we could proceed in our search for knowledge. Moreover, it is not experience but thinking alone which teaches us that, and in what instances, it is necessary to investigate unrealizable hypothetical conditions in order to conceive what is going on in the real world.

The disutility of labor is not of a categorial and aprioristic character. We can without contradiction think of a world in which labor does not cause uneasiness, and we can depict the state of affairs prevailing in such a world.[23] But the real world is conditioned by the disutility of labor. Only theorems based on the assumption that labor is a source of uneasiness are applicable for the comprehension of what is going on in this world.

Experience teaches that there is disutility of labor. But it does not teach it directly. There is no phenomenon that introduces itself as disutility of labor. There are only data of experience which are interpreted, on the ground of aprioristic knowledge, to mean that men consider leisure—i.e., the absence of labor—other things being equal, as a more desirable condition than the expenditure of labor. We see that men renounce advantages which they could get by working more—that is, that they are ready to make sacrifices for the attainment of leisure. We infer from this fact that leisure is valued as a good and that labor is regarded as a burden. But for previous praxeological insight, we would never be in a position to reach this conclusion.

A theory of indirect exchange and all further theories built upon it —as the theory of circulation credit—are applicable only to the interpretation of events within a world in which indirect exchange is practiced. In a world of

23. See below, pp. 131-133.

barter trade only it would be mere intellectual play. It is unlikely that the economists of such a world, if economic science could have emerged at all in it, would have given any thought to the problems of indirect exchange, money, and all the rest. In our actual world, however, such studies are an essential part of economic theory.

The fact that praxeology, in fixing its eye on the comprehension of reality, concentrates upon the investigation of those problems which are useful for this, does not alter the aprioristic character of its reasoning. But it marks the way in which economics, up to now the only elaborated part of praxeology, presents the results of its endeavors.

Economics does not follow the procedure of logic and mathematics. It does not present an integrated system of pure aprioristic ratiocination severed from any reference to reality. In introducing assumptions into its reasoning, it satisfies itself that the treatment of the assumptions concerned can render useful services for the comprehension of reality. It does not strictly separate in its treatises and monographs pure science from the application of its theorems to the solution of concrete historical and political problems. It adopts for the organized presentation of its results a form in which aprioristic theory and the interpretation of historical phenomena are intertwined.

It is obvious that this mode of procedure is enjoined upon economics by the very nature and essence of its subject matter. It has given proof of its expediency. However, one must not overlook the fact that the manipulation of this singular and logically somewhat strange procedure requires caution and subtlety, and that uncritical and superficial minds have again and again been led astray by careless confusion of the two epistemologically different methods implied.

There are no such things as a historical method of economics or a discipline of institutional economics. There is economics and there is economic history. The two must never be confused. All theorems of economics are necessarily valid in every instance in which all the assumptions presupposed are given. Of course, they have no practical significance in situations where these conditions are not present. The theorems referring to indirect exchange are not applicable to conditions where there is no indirect exchange. But this does not impair their validity.[24]

The issue has been obfuscated by the endeavors of governments and

24. Cf. F.H. Knight, *The Ethics of Competition and Other Essays* (New York, 1935), p. 139.

powerful pressure groups to disparage economics and to defame the economists. Despots and democratic majorities are drunk with power. They must reluctantly admit that they are subject to the laws of nature. But they reject the very notion of economic law. Are they not the supreme legislators? Don't they have the power to crush every opponent? No war lord is prone to acknowledge any limits other than those imposed on him by a superior armed force. Servile scribblers are always ready to foster such complacency by expounding the appropriate doctrines. They call their garbled presumptions "historical economics." In fact, economic history is a long record of government policies that failed because they were designed with a bold disregard for the laws of economics.

It is impossible to understand the history of economic thought if one does not pay attention to the fact that economics as such is a challenge to the conceit of those in power. An economist can never be a favorite of autocrats and demagogues. With them he is always the mischief-maker, and the more they are inwardly convinced that his objections are well founded, the more they hate him.

In the face of all this frenzied agitation it is expedient to establish the fact that the starting point of all praxeological and economic reasoning, the category of human action, is proof against any criticisms and objections. No appeal to any historical or empirical considerations whatever can discover any fault in the proposition that men purposefully aim at certain chosen ends. No talk about irrationality, the unfathomable depths of the human soul, the spontaneity of the phenomena of life, automatisms, reflexes, and tropisms, can invalidate the statement that man makes use of his reason for the realization of wishes and desires. From the unshakable foundation of the category of human action praxeology and economics proceed step by step by means of discursive reasoning. Precisely defining assumptions and conditions, they construct a system of concepts and draw all the inferences implied by logically unassailable ratiocination. With regard to the results thus obtained only two attitudes are possible; either one can unmask logical errors in the chain of the deductions which produced these results, or one must acknowledge their correctness and validity.

It is vain to object that life and reality are not logical. Life and reality are neither logical nor illogical; they are simply given. But logic is the only tool available to man for the comprehension of both. It is vain to object that life and history are inscrutable and ineffable and that human reason can never penetrate to their inner core. The critics contradict themselves in uttering

words about the ineffable and expounding theories—of course, spurious theories—about the unfathomable. There are many things beyond the reach of the human mind. But as far as man is able to attain any knowledge, however limited, he can use only one avenue of approach, that opened by reason.

No less illusory are the endeavors to play off understanding against the theorems of economics. The domain of historical understanding is exclusively the elucidation of those problems which cannot be entirely elucidated by the nonhistorical sciences. Understanding must never contradict the theories developed by the nonhistorical sciences. Understanding can never do anything but, on the one hand, establish the fact that people were motivated by certain ideas, aimed at certain ends, and applied certain means for the attainment of these ends, and, on the other hand, assign to the various historical factors their relevance so far as this cannot be achieved by the nonhistorical sciences. Understanding does not entitle the modern historian to assert that exorcism ever was an appropriate means to cure sick cows. Neither does it permit him to maintain that an economic law was not valid in ancient Rome or in the empire of the Incas.

Man is not infallible. He searches for truth—that is, for the most adequate comprehension of reality as far as the structure of his mind and reason makes it accessible to him. Man can never become omniscient. He can never be absolutely certain that his inquiries were not misled and that what he considers as certain truth is not error. All that man can do is to submit all his theories again and again to the most critical reexamination. This means for the economist to trace back all theorems to their unquestionable and certain ultimate basis, the category of human action, and to test by the most careful scrutiny all assumptions and inferences leading from this basis to the theorem under examination. It cannot be contended that this procedure is a guarantee against error. But it is undoubtedly the most effective method of avoiding error.

Praxeology—and consequently economics too—is a deductive system. It draws its strength from the starting point of its deductions, from the category of action. No economic theorem can be considered sound that is not solidly fastened upon this foundation by an irrefutable chain of reasoning. A statement proclaimed without such a connection is arbitrary and floats in midair. It is impossible to deal with a special segment of economics if one does not encase it in a complete system of action.

The empirical sciences start from singular events and proceed from the unique and individual to the more universal. Their treatment is subject to specialization. They can deal with segments without paying attention to the

whole field. The economist must never be a specialist. In dealing with any problem he must always fix his glance upon the whole system.

Historians often sin in this respect. They are ready to invent theorems ad hoc. They sometimes fail to recognize that it is impossible to abstract any causal relations from the study of complex phenomena. Their pretension to investigate reality without any reference to what they disparage as preconceived ideas is vain. In fact they unwittingly apply popular doctrines long since unmasked as fallacious and contradictory.

11. The Limitations on Praxeological Concepts

The praxeological categories and concepts are devised for the comprehension of human action. They become self-contradictory and nonsensical if one tries to apply them in dealing with conditions different from those of human life. The naive anthropomorphism of primitive religions is unpalatable to the philosophic mind. However, the endeavors of philosophers to define, by the use of praxeological concepts, the attributes of an absolute being, free from all the limitations and frailties of human existence, are no less questionable.

Scholastic philosophers and theologians and likewise Theists and Deists of the Age of Reason conceived an absolute and perfect being, unchangeable, omnipotent, and omniscient, and yet planning and acting, aiming at ends and employing means for the attainment of these ends. But action can only be imputed to a discontented being, and repeated action only to a being who lacks the power to remove his uneasiness once and for all at one stroke. An acting being is discontented and therefore not almighty. If he were contented, he would not act, and if he were almighty, he would have long since radically removed his discontent. For an all-powerful being there is no pressure to choose between various states of uneasiness; he is not under the necessity of acquiescing in the lesser evil. Omnipotence would mean the power to achieve everything and to enjoy full satisfaction without being restrained by any limitations. But this is incompatible with the very concept of action. For an almighty being the categories of ends and means do not exist. He is above all human comprehension, concepts, and understanding. For the almighty being every “means” renders unlimited services, he can apply every “means” for the attainment of any ends, he can achieve every end without the employment of any means. It is beyond the faculties of the human mind to think the concept of almightiness consistently to its ultimate logical consequences. The paradoxes are insoluble. Has the almighty being

the power to achieve something which is immune to his later interference? If he has this power, then there are limits to his might and he is no longer almighty; if he lacks this power, he is by virtue of this fact alone not almighty.

Are omnipotence and omniscience compatible? Omniscience presupposes that all future happenings are already unalterably determined. If there is omniscience, omnipotence is inconceivable. Impotence to change anything in the predetermined course of events would restrict the power of any agent.

Action is a display of potency and control that are limited. It is a manifestation of man who is restrained by the circumscribed powers of his mind, the physiological nature of his body, the vicissitudes of his environment, and the scarcity of the external factors on which his welfare depends. It is vain to refer to the imperfections and weaknesses of human life if one aims at depicting something absolutely perfect. The very idea of absolute perfection is in every way self-contradictory. The state of absolute perfection must be conceived as complete, final, and not exposed to any change. Change could only impair its perfection and transform it into a less perfect state; the mere possibility that a change can occur is incompatible with the concept of absolute perfection. But the absence of change—i.e., perfect immutability, rigidity and immobility—is tantamount to the absence of life. Life and perfection are incompatible, but so are death and perfection.

The living is not perfect because it is liable to change; the dead is not perfect because it does not live.

The language of living and acting men can form comparatives and superlatives in comparing degrees. But absoluteness is not a degree; it is a limiting notion. The absolute is indeterminable, unthinkable and ineffable. It is a chimerical conception. There are no such things as perfect happiness, perfect men, eternal bliss. Every attempt to describe the conditions of a land of Cockaigne, or the life off the Angels, results in paradoxes. Where there are conditions, there are limitations and not perfection; there are endeavors to conquer obstacles, there are frustration and discontent.

After the philosophers had abandoned the search for the absolute, the utopians took it up. They weave dreams about the perfect state. They do not realize that the state, the social apparatus of compulsion and coercion, is an institution to cope with human imperfection and that its essential function is to inflict punishment upon minorities in order to protect majorities against the detrimental consequences of certain actions. With “perfect” men there would not be any need for compulsion and coercion. But utopians do not

pay heed to human nature and the inalterable conditions of human life. Godwin thought that man might become immortal after the abolition of private property.[25] Charles Fourier babbled about the ocean containing lemonade instead of salt water.[26] Marx's economic system blithely ignored the fact of the scarcity of material factors of production. Trotsky revealed that in the proletarian paradise "the average human type will rise to the heights of an Aristotle, a Goethe, or a Marx. And above this ridge new peaks will rise."[27]

Nowadays the most popular chimeras are stabilization and security. We will test these catchwords later.

25.William Godwin, *An Enquiry Concerning Political Justice and Its Influence on General Virtue and Happiness* (Dublin, 1793), II, 393-403.

26. Charles Fourier, *Théorie des quatre mouvements* (Oeuvres complètes, 3d ed. Paris, 1846), I, 43.

27. Leon Trotsky, *Literature and Revolution*, trans. by R. Strunsky (London, 1925), p. 256.

III. ECONOMICS AND THE REVOLT AGAINST REASON

1. The Revolt Against Reason

IT is true that some philosophers were ready to overrate the power of human reason. They believed that man can discover by ratiocination the final causes of cosmic events, the inherent ends the prime mover aims at in creating the universe and determining the course of its evolution. They expatiated on the "Absolute" as if it were their pocket watch. They did not shrink from announcing eternal absolute values and from establishing moral codes unconditionally binding on all men.

Then there was the long line of utopian authors. They drafted schemes for an earthly paradise in which pure reason alone should rule. They failed to realize that what they called absolute reason and manifest truth was the fancy of their own minds. They blithely arrogated to themselves infallibility and often advocated intolerance, the violent oppression of all dissenters and heretics. They aimed at dictatorship either for themselves or for men who would accurately put their plans into execution. There was, in their opinion, no other salvation for suffering mankind.

There was Hegel. He was a profound thinker and his writings are a treasury of stimulating ideas. But he was laboring under the delusion that *Geist*, the Absolute, revealed itself through his words. There was nothing in the universe that was hidden to Hegel. It was a pity that his language was so ambiguous that it could be interpreted in various ways. The right-wing Hegelians interpreted it as an endorsement of the Prussian system of autocratic government and of the dogmas of the Prussian Church. The Left-wing Hegelians read out of it atheism, intransigent revolutionary radicalism, and anarchistic doctrines.

There was Auguste Comte. He knew precisely what the future had in store for mankind. And, of course, he considered himself as the supreme legislator. For example, he regarded certain astronomical studies as useless and wanted to prohibit them. He planned to substitute a new religion for Christianity, and selected a lady who in this new church was destined to

replace the Virgin. Comte can be exculpated, as he was insane in the full sense which pathology attaches to this term. But what about his followers?

Many more facts of this kind could be mentioned. But they are no argument against reason, rationalism, and rationality. These dreams have nothing at all to do with the question of whether or not reason is the right and only instrument available for man in his endeavors to attain as much knowledge as is accessible to him. The honest and conscientious truth-seekers have never pretended that reason and scientific research can answer all questions. They were fully aware of the limitations imposed upon the human mind. They cannot be taxed with responsibility for the crudities of the philosophy of Haeckel and the simplism of the various materialist schools.

The rationalist philosophers themselves were always intent upon showing the boundaries both of aprioristic theory and of empirical research.[1] The first representative of British political economy, David Hume, the Utilitarians, and the American Pragmatists are certainly not guilty of having exaggerated the power of man to attain truth. It would be more justifiable to blame the philosophy of the last two hundred years for too much agnosticism and skepticism than for overconfidence in what could be achieved by the human mind.

The revolt against reason, the characteristic mental attitude of our age, was not caused by a lack of modesty, caution, and self-examination on the part of the philosophers. Neither was it due to failures in the evolution of modern natural science. The amazing achievements of technology and therapeutics speak a language which nobody can ignore. It is hopeless to attack modern science, whether from the angle of intuitionism and mysticism, or from any other point of view. The revolt against reason was directed against another target. It did not aim at the natural sciences, but at economics. The attack against the natural sciences was only the logically necessary outcome of the attack against economics. It was impermissible to dethrone reason in one field only and not to question it in other branches of knowledge also.

The great upheaval was born out of the historical situation existing in the middle of the nineteenth century. The economists had entirely demolished the fantastic delusions of the socialist utopiaSns. The deficiencies of the classical system prevented them from comprehending why every socialist plan must be unrealizable; but they knew enough to demonstrate the futility of all socialist schemes produced up to their time. The communist ideas were done for. The socialists were absolutely unable to raise any objection to the

1. Cf., for instance, Louis Rougier, *Les Paralogismes du rationalisme* (Paris, 1920).

devastating criticism of their schemes and to advance any argument in their favor. It seemed as if socialism was dead forever.

Only one way could lead the socialists out of this impasse. They could attack logic and reason and substitute mystical intuition for ratiocination. It was the historical role of Karl Marx to propose this solution. On the basis of Hegel's dialectic mysticism, he blithely arrogated to himself the ability to predict the future. Hegel pretended to know that Geist, in creating the universe, wanted to bring about the Prussian monarchy of Frederick William III. But Marx was better informed about Geist's plans. He knew that the final cause of historical evolution was the establishment of the socialist millennium. Socialism is bound to come "with the inexorability of a law of nature." And as, according to Hegel, every later stage of history is a higher and better stage, there cannot be any doubt that socialism, the final and ultimate stage of mankind's evolution, will be perfect from any point of view. It is consequently useless to discuss the details of the operation of a socialist commonwealth. History, in due time, will arrange everything for the best. It does not need the advice of mortal men.

There was still the main obstacle to overcome: the devastating criticism of the economists. Marx had a solution at hand. Human reason, he asserted, is constitutionally unfitted to find truth. The logical structure of mind is different with various social classes. There is no such thing as a universally valid logic. What mind produces can never be anything but "ideology," that is, in the Marxian terminology, a set of ideas disguising the selfish interests of the thinker's own social class. Hence, the "bourgeois" mind of the economists is utterly incapable of producing more than an apology for capitalism. The teachings of "bourgeois" science, an offshoot of "bourgeois" logic, are of no avail for the proletarians, the rising class destined to abolish all classes and to convert the earth into a Garden of Eden.

But, of course, the logic of the proletarians is not merely a class logic. "The ideas of proletarian logic are not party ideas, but emanations of logic pure and simple."[2] Moreover, by virtue of a special privilege, the logic of certain elect bourgeois is not tainted with the original sin of being bourgeois. Karl Marx, the son of a well-to-do lawyer, married to the daughter of a Prussian noble, and his collaborator Frederick Engels, a wealthy textile manufacturer, never doubted that they themselves were above the law and, notwithstanding their bourgeois background, were endowed with the power to discover absolute truth.

2. Cf. Joseph Dietzgen *Briefe über Logik, speziell demokratisch-proletarische Logik* (2nd ed. Stuttgart, 1903), p. 112.

It is the task of history to describe the historical conditions which made such a crude doctrine popular. Economics has another task. It must analyze both Marxian polylogism and the other brands of polylogism formed after its pattern, and expose their fallacies and contradictions.

2. The Logical Aspect of Polylogism

Marxian polylogism asserts that the logical structure of the mind is different with the members of various social classes. Racial polylogism differs from Marxian polylogism only in so far as it ascribes to each race a peculiar logical structure of mind and maintains that all members of a definite race, no matter what their class affiliation may be, are endowed with this peculiar logical structure.

There is no need to enter here into a critique of the concepts *social class* and *race* as applied by these doctrines. It is not necessary to ask the Marxians when and how a proletarian who succeeds in joining the ranks of the bourgeoisie changes his proletarian mind into a bourgeois mind. It is superfluous to ask the racists to explain what kind of logic is peculiar to people who are not of pure racial stock. There are much more serious objections to be raised.

Neither the Marxians nor the racists nor the supporters of any other brand of polylogism ever went further than to declare that the logical structure of mind is different with various classes, races, or nations. They never ventured to demonstrate precisely in what the logic of the proletarians differs from the logic of the bourgeois, or in what the logic of the Aryans differs from the logic of the non-Aryans, or the logic of the Germans from the logic of the French or the British. In the eyes of the Marxians the Ricardian theory of comparative cost is spurious because Ricardo was a bourgeois. The German racists condemn the same theory because Ricardo was a Jew, and the German nationalists because he was an Englishman. Some German professors advanced all these three arguments together against the validity of Ricardo's teachings. However, it is not enough to reject a theory wholesale by unmasking the background of its author. What is wanted is first to expound a system of logic different from that applied by the criticized author. Then it would be necessary to examine the contested theory point by point and to show where in its reasoning inferences are made which—although correct from the point of view of its author's logic—are invalid from the point of view of the proletarian, Aryan, or German logic. And finally. it should be explained what kind of conclusions the replacement of the author's vicious inferences by the correct inferences of the critic's

own logic must lead to. As everybody knows, this never has been and never can be attempted by anybody.

Then there is the fact that there is disagreement concerning essential problems among people belonging to the same class, race, or nation. Unfortunately there are, say the Nazis, Germans who do not think in a correct german way. But if a German does not always necessarily think as he should, but may think in the manner of a man equipped with a non-German logic, who is to decide which German's ideas are truly German and which un-German? Says the late Professor Franz Oppenheimer; "The individual errs often in looking after his interests; a class never errs in the long run."[3] This would suggest the infallibility of a majority vote. However, the Nazis rejected decision by majority vote as manifestly un-German. The Marxians pay lip service to the democratic principle of majority vote.[4] But whenever it comes to a test they favor minority rule, provided it is the rule of their own party. Let us remember how Lenin dispersed by force the Constituent Assembly elected, under the auspices of his own government, by adult franchise, because only about one-fifth of its members were Bolshevik.

A consistent supporter of polylogism would have to maintain that ideas are correct because their author is a member of the right class, nation, or race. But consistency is not one of their virtues. Thus the Marxians are prepared to assign the epithet "proletarian thinker" to everybody whose doctrines they approve. All the others they disparage either as foes of their class or as social traitors. Hitler was even frank enough to admit that the only method available for him to sift the true Germans from the mongrels and the aliens was to enunciate a genuinely German program and to see who were ready to support it.[5] A dark-haired man whose bodily features by no means fitted the prototype of the fair-haired Aryan master race, arrogated to himself the gift of discovering the only doctrine adequate to the German mind and of expelling from the ranks of the Germans all those who did not accept this doctrine whatever their bodily characteristics might be. No further proof is needed of the insincerity of the whole doctrine.

3. The Praxeological Aspect of Polylogism

An ideology in the Marxian sense of this term is a doctrine which, although erroneous from the point of view of the correct logic of the

3. Cf. Franz Oppenheimer, *System der Soziologie* (Jena, 1926), II. 559.

4. It must be emphasized that the case for democracy is not based on the assumption that majorities are always right, still less that they are infallible. Cf. below, pp. 149-151.

5. Cf. his speech on the Party Convention in Nuremberg, September 3, 1933 (*Frankfurter Zeitung*, September 4, 1933, p. 2).

proletarians, is beneficial to the selfish interests of the class which has developed it. An ideology is objectively vicious, but it furthers the interests of the thinker's class precisely on account of its viciousness. Many Marxians believe that they have proved this tenet by stressing the point that people do not thirst for knowledge only for its own sake. The aim of the scientist is to pave the way for successful action. Theories are always developed with a view to practical application. There are no such things as pure science and the disinterested search for truth.

For the sake of argument we may admit that every effort to attain truth is motivated by considerations of its practical utilization for the attainment of some end. But this does not answer the question why an "ideological"—i.e., a false—theory should render better service than a correct one. The fact that the practical application of a theory results in the outcome predicted on the basis of this theory is universally considered a confirmation of its correctness. It is paradoxical to assert that a vicious theory is from any point of view more useful than a correct one.

Men use firearms. In order to improve these weapons they developed the science of ballistics. But, of course, precisely because they were eager to hunt game and to kill one another, a correct ballistics. A merely "ideological" ballistics would not have been of any use.

For the Marxians the view that scientists labor for knowledge alone is nothing but an "arrogant pretense" of the scientists. Thus they declare that Maxwell was led to his theory of electromagnetic waves by the craving of business for wireless telegraphs.[6] It is of no relevance for the problem of ideology whether this is true or not. The question is whether the alleged fact that nineteenth-century industrialism considered telegraphy without wires "the philosopher's stone and the elixir of youth"[7] impelled Maxwell to formulate a correct theory or an ideological superstructure of the selfish class interests of the bourgeoisie. There is no doubt that bacteriological research was instigated not only by the desire to fight contagious diseases, but also by the desire of the producers of wine and of cheese to improve their methods of production. But the result obtained was certainly not "ideological" in the Marxian sense.

What induced Marx to invent his ideology-doctrine was the wish to sap the prestige of economics. He was fully aware of his impotence to refute the objections raised by the economists to the practicability of the socialist

6. Cf. Lancelot Hogben, *Science for the Citizen* (New York, 1938), pp. 726-728.
7. *Ibid*., p. 726.

schemes. In fact he was so fascinated by the theoretical system of British classical economics that he firmly believed in its impregnability. He either never learned about the doubts that the classical theory of value raised in the minds of judicious scholars, or, if he ever heard of them, he did not comprehend their weight. His own economic ideas are hardly more than a garbled version of Ricardianism. When Jevons and Menger inaugurated a new era of economic thought, his career as an author of economic writings had already come to an end; The first volume of *Das Kapital* had already been published several years previously. Marx's only reaction to the marginal theory of value was that he postponed the publication of the later volumes of his main treatise. They were made accessible to the public only after his death.

In developing the ideology-doctrine Marx exclusively aims at economics and the social philosophy of Utilitarianism. His only intention was to destroy the reputation of economic teachings which he was unable to refute by means of logic and ratiocination. He gave to his doctrine the form of a universal law valid for the whole historical age of social classes because a statement which is applicable only to one individual historical event could not be considered as a law. For the same reasons he did not restrict its validity to economic thought only, but included every branch of knowledge.

The service which bourgeois economics rendered to the bourgeoisie was in Marx's eyes twofold. It aided them first in their fight against feudalism and royal despotism and then later again in their fight against the rising proletarian class. It provided a rational and moral justification for capitalist exploitation. It was, if we want to use a notion developed after Marx's death, a rationalization of the claims of the capitalists.[8] The capitalists, in their subconsciousness ashamed of the mean greed motivating their own conduct and anxious to avoid social disapproval, encouraged their sycophants, the economists, to proclaim doctrines which could rehabilitate them in public opinion.

Now, recourse to the notion of rationalization provides a psychological description of the incentives which impelled a man or a group of men to formulate a theorem or a whole theory. But it does not predicate anything about the validity or invalidity of the theory advanced. If it is proved that

8. Although the term rationalization is new, the thing itself was known long ago; Cr., for instance, the words of Benjamin Franklin: "So convenient a thing it is to be a *reasonable creature*, since it enables one to find or make a reason for every thing one has a mind to do." (*Autobiography*, ed. New York, 1944, p. 41.)

the theory concerned is untenable, the notion of rationalization is a psychological interpretation of the causes which made their authors liable to error. But if we are not in a position to find any fault in the theory advanced, no appeal to the concept of rationalization can possibly explode its validity. If it were true that the economists had in their subconsciousness no design other than that of justifying the unfair claims of the capitalists, their theories could nevertheless be quite correct. Their is no means to expose a faulty theory other than to refute it by discursive reasoning and to substitute a better theory for it. In dealing with the theorem of Pythagoras or with the theory of comparative cost, we are not interested in the psychological factors that impelled Pythagoras and Ricardo to construct these theorems, although these things may be important for the historian and the biographer. For science the only relevant question is whether or not these theorems can stand the test of rational examination. The social or racial background of their authors is beside the point.

It is a fact that people in the pursuit of their selfish interests try to use doctrines more or less universally accepted by public opinion. Moreover, they are eager to invent and to propagate doctrines which they could possibly use for furthering their own interests. But this does not explain why such doctrines, favoring the interests of a minority and contrary to the interests of the rest of the people, are endorsed by public opinion. No matter whether such "ideological" doctrines are the product of a "false consciousness," forcing a man to think unwittingly in a manner that serves the interests of his class, or whether they are the product of a purposeful distortion of truth, they must encounter the ideologies of other classes and try to supplant them. Then a rivalry between antagonistic ideologies emerges. The Marxians explain victory and defeat in such conflicts as an outcome of the interference of historical providence. Geist, the mythical prime mover, operates according to a definite plan. He leads mankind through various preliminary stages to the final bliss of socialism. Every stage is the product of a certain state of technology; all its other characteristics are the necessary ideological superstructure of this technological state. Geist causes man to bring about in due time the technological ideas adequate to the stage in which he lives, and to realize them. All the rest is an outgrowth of the state of technology. The hand-mill made feudal society; the steam-mill made capitalism.[9] Human

9. "Le moulin à bras vous donnera la société avec le souzerain; le moulin à vapeur, la société avec le capitaliste industriel." Marx, *Misére de la philosophie* (Paris and Brussels, 1847), p. 100.

will and reason play only an ancillary role in these changes. The inexorable law of historical development forces men-independently of their wills-to think and to behave according to the patterns corresponding to the material basis of their age. Men fool themselves in believing that they are free to choose between various ideas and between what they call truth and error. They themselves do not think; it is historical providence that manifests itself in their thoughts.

This is a purely mystical doctrine. The only proof given in its support is the recourse of Hegelian dialectics. Capitalistic private property is the first negation of individual private property. It begets, with the inexorability of a law of nature, its own negation, namely common ownership of the means of production.[10] However, a mystical doctrine based on intuition does not lose its mysticism by referring to another no less mystical doctrine. This makeshift by no means answers the question why a thinker must necessarily develop an ideology in accordance with the interests of his class. For the sake of argument we may admit that man's thoughts must result in doctrines beneficial to his interests. But are a man's interests necessarily identical with those of his whole class? Marx himself had to admit that the organization of the proletarians into a class, and consequently into a political party, is continually being upset again by the competition between the workers themselves.[11] It is an undeniable fact that there prevails an irreconcilable conflict of interests between those workers who are employed at union wage rates and those who remain unemployed because the enforcement of union rates prevents the demand for and the supply of labor from finding the appropriate price for meeting. It is no less true that the interests of the workers of the comparatively overpopulated countries and those of the comparatively underpopulated countries are antagonistic with regard to migration barriers. The statement that the interests of all proletarians uniformly require the substitution of socialism for capitalism is an arbitrary postulate of Marx and the other socialists. It cannot be proved by the mere assertion that the socialist idea is the emanation of proletarian thought and therefore certainly beneficial to the interests of the proletariat as such.

A popular interpretation of the vicissitudes of British foreign trade policies, based on the ideas of Sismondi, Frederick List, Marx, and the German Historical School, runs this way: In the second part of the eighteenth century and in the greater part of the nineteenth century the class interests of the British bourgeoi-

10. Marx, *Das Kapital* (7th ed. Hamburg, 1914), I, 728-729.
11. *The Communist Manifesto*, I.

sie required a free trade policy. Therefore British political economy elaborated a free trade doctrine, and the British manufacturers organized a popular movement which finally succeeded in abolishing protective tariffs. Then later conditions changed. The British bourgeoisie could no longer stand the competition of foreign manufacturing and badly needed protective tariffs. Consequently the economists substituted a theory of protection for the antiquated free trade ideology, and Great Britain returned to protectionism.

The first error in this interpretation is that it considers the "bourgeoisie" as a homogeneous class composed of members whose interests are identical. A businessman is always under the necessity of adjusting the conduct of his business to the institutional conditions of his country. In the long run he is, in his capacity as entrepreneur and capitalist, neither favored nor injured by tariffs or the absence of tariffs. He will turn to the production of those commodities which under the given state of affairs he can most profitably produce. What may hurt or further his short-run interests are only *changes* in the institutional setting. But such changes do not affect the various branches of business and the various enterprises in the same way and to the same extent. A measure that benefits one branch or enterprise may be detrimental to other branches or enterprises. What counts for a businessman is only a limited number of customs items. And with regard to these items the interests of various branches and firms are mostly antagonistic.

The interests of every branch or firm can be favored by all kinds of privileges granted to it by the government. But if privileges are granted to the same extent also to the other branches and firms, every businessman loses—not only in his capacity as consumer, but also in his capacity as buyer of raw materials, half-finished products, machines and other equipment—on the one hand as much as he profits on the other. Selfish group interests may impel a man to ask for protection for his own branch or firm. They can never motivate him to ask for universal protection for all branches or firms if he is not sure to be protected to a greater extent than the other industries or enterprises.

Neither were the British manufacturers from the point of view of their class concerns more interested in the abolition of the Corn Laws than other British citizens. The landowners were opposed to the repeal of these laws because a lowering of the prices for agricultural products reduced the rent of land. A special class interest of the manufacturers can only be construed on the basis of the long since discarded iron law of wages and the no less untenable doctrine

that profits are an outcome of the exploitation of the workers.

Within a world organized on the basis of the division of labor, every change must in one way or another affect the short-run interests of many groups. It is therefore always easy to expose every doctrine supporting an alteration of existing conditions as an "ideological" disguise of the selfish interests of a special group of people. The main occupation of many present-day authors is such unmasking. Marx did not invent this procedure. It was known long before him. Its most curious manifestation was the attempts of some eighteenth-century writers to explain religious creeds as a fraudulent deception on the part of the priests eager to gain power and wealth both for themselves and for their allies, the exploiters. The Marxians endorsed this statement in labeling religion "opium for the masses."[12] It never occurred to the supporters of such teachings that where there are selfish interests pro there must necessarily be selfish interests contra too. It is by no means a satisfactory explanation of any event that it favored a special class. The question to be answered is why the rest of the population whose interests it injured did not succeed in frustrating the endeavors of those favored by it.

Every firm and every branch of business is in the short run interested in increased sales of its products. In the long run, however, there prevails a tendency toward an equalization of returns in the various branches of production. If demand for the products of a branch increases and raises profits, more capital flows into it and the competition of the new enterprises cuts down the profits. Returns are by no means higher in the sale of socially detrimental articles than in the sale of socially beneficial articles. If a certain branch of business is outlawed and those engaged in it risk prosecution, penalties, and imprisonment, gross profits must be high enough to compensate for the risks involved. But this does not interfere with the height of net returns.

The rich, the owners of the already operating plants, have no particular class interest in the maintenance of free competition. They are opposed to confiscation and expropriation of their fortunes, but their vested interests are rather in favor of measures preventing newcomers from challenging their position. Those fighting for free enterprise and free competition do not defend the interests of

12. The meaning that contemporary Marxism attaches to this phrase, viz., that the religious drug has been purposely administered to the people, may have been the meaning of Marx too. But it was not implied in the passage in which—in 1843—Marx coined this phrase. Df., R.P. Case, *Religion in Russia* (New York, 1946), pp. 67-69.

those rich today. They want a free hand left to unknown men who will be the entrepreneurs of tomorrow and whose ingenuity will make the life of coming generations more agreeable. They want the way left open to further economic improvements. They are the spokesmen of material progress.

The nineteenth-century success of free trade ideas was effected by the theories of classical economics. The prestige of these ideas was so great that those whose selfish class interests they hurt could not hinder their endorsements by public opinion and their realization by legislative measures. It is ideas that make history, and not history that makes ideas.

It is useless to argue with mystics and seers. They base their assertions on intuition and are not prepared to submit them to rational examination. The Marxians pretend that what their inner voice proclaims is history's self-revelation. If other people do not hear this voice, it is only a proof that they are not chosen. It is insolence that those groping in darkness dare to contradict the inspired ones. Decency should impel them to creep into a corner and keep silent.

However, science cannot abstain from thinking although it is obvious that it will never succeed in convincing those who dispute the supremacy of reason. Science must emphasize that the appeal to intuition cannot settle the question which of several antagonistic doctrines is the right one and which are wrong. It is an undeniable fact that Marxism is not the only doctrine advanced in our time. There are other "ideologies" besides Marxism. The Marxians assert that the application of these other doctrines would hurt the interests of the many. But the supporters of these doctrines say precisely the same with regard to Marxism.

Of course, the Marxians consider a doctrine vicious if its author's background is not proletarian. But who is proletarian? Doctor Marx, the manufacturer and "exploiter" Engels, and Lenin, the scion of the Russian gentry, were certainly not of proletarian background. But Hitler and Mussolini were genuine proletarians and spent their youth in poverty. The conflict of the Bolsheviks and the Mensheviks or that between Stalin and Trotsky cannot be presented as class conflicts. They were conflicts between various sects of fanatics who called one another traitors.

The essence of Marxian philosophy is this: We are right because we are the spokesmen of the rising proletarian class. Discursive reasoning cannot invalidate our teachings, for they are inspired by the supreme power that determines the destiny of mankind. Our adversaries are wrong because they lack the intuition that guides our minds. It is, of course, not their fault that

on account of their class affiliation they are not equipped with the genuine proletarian logic and are blinded by ideologies. The unfathomable decrees of history that have elected us have doomed them. The future is ours.

4. Racial Polylogism

Marxian polylogism is an abortive makeshift to salvage the untenable doctrines of socialism. Its attempt to substitute intuition for ratiocination appeals to popular superstitions. But it is precisely this attitude that places Marxian polylogism and its offshoot, the so-called "sociology of knowledge," in irreconcilable antagonism to science and reason.

It is different with the polylogism of the racists. This brand of polylogism is in agreement with fashionable, although mistaken, tendencies in present-day empiricism. It is an established fact that mankind is divided into various races. The races differ in bodily features. Materialist philosophers assert that thoughts are a secretion of the brain as bile is a secretion of the gall-bladder. It would be inconsistent for them to reject beforehand the hypothesis that the thought-secretion of the various races may differ in essential qualities. The fact that anatomy has not succeeded up to now in discovering anatomical differences in the brain cells of various races cannot invalidate the doctrine that the logical structure of mind is different with different races. It does not exclude the assumption that later research may discover such anatomical peculiarities.

Some ethnologists tell us that it is a mistake to speak of higher and lower civilizations and of an alleged backwardness of alien races. The civilizations of various races are different from the Western civilization of the peoples of Caucasian stock, but they are not inferior. Every race has its peculiar mentality. It is faulty to apply to the civilization of any of them yardsticks abstracted from the achievements of other races. Westerners call the civilization of China an arrested civilization and that of the inhabitants of New Guinea primitive barbarism. But the Chinese and the natives of New Guinea despise our civilization no less than we despise theirs. Such estimates are judgments of value and hence arbitrary. Those other races have a different structure of mind. Their civilizations are adequate to their mind as our civilization is adequate to our mind. We are incapable of comprehending that what we call backwardness does not appear such to them. It is, from the point of view of their logic, a better method of coming to a satisfactory arrangement with given natural conditions of life than is our progressivism.

These ethnologists are right in emphasizing that it is not the task of a historian—and the ethnologist too is a historian—to express value judgments. But they are utterly mistaken in contending that these other races have been guided in their activities by motives other than those which haver actuated the white race. The Asiatics and the Africans no less than the peoples of European descent have been eager to struggle successfully for survival and to use reason as the foremost weapon in these endeavors. They have sought to get rid of the beasts of prey and of disease, to prevent famines and to raise the productivity of labor. There can be no doubt that in the pursuit of these aims they have been less successful than the whites. The proof is that they are eager to profit from all achievements of the West. Those ethnologists would be right, if Mongols or Africans, tormented by a painful disease, were to renounce the aid of a European doctor because their mentality or their world view led them to believe that it is better to suffer than to be relieved of pain. Mahatma Gandhi disavowed his whole philosophy when he entered a modern hospital to be treated for appendicitis.

The North American Indians lacked the ingenuity to invent the wheel. The inhabitants of the Alps were not keen enough to construct skis which would have rendered their hard life much more agreeable. Such shortcomings were not due to a mentality different from those of the races which had long since used wheels and skis; they were failures, even when judged from the point of view of the Indians and the Alpine mountaineers.

However, these considerations refer only to the motives determining concrete actions, not to the only relevant problem of whether or not there exists between various races a difference in the logical structure of mind. It is precisely this that the racists assert.[13]

We may refer to what has been said in the preceding chapters about the fundamental issues of the logical structure of mind and the categorial principles of thought and action. Some additional observations will suffice to give the finishing stroke to racial polylogism and to any other brand of polylogism.

The categories of human thought and action are neither arbitrary products of the human mind nor conventions. They are not outside of the universe and of the course of cosmic events. They are biological facts and have a definite function in life and reality. They are instruments in man's struggle for existence and in his endeavors to adjust himself as much as possible to the real state of the universe and to remove uneasiness as much as it is in his power to do so.

13. Cf. L.G. Tirala, *Rasse, Geist und Seele* (Munich, 1935), pp. 190 ff.

They are therefore appropriate to the structure of the external world and reflect properties of the world and of reality. They work, and are in this sense true and valid.

It is consequently incorrect to assert that aprioristic insight and pure reasoning do not convey any information about reality and the structure of the universe. The fundamental logical relations and the categories of thought and action are the ultimate source of all human knowledge. They are adequate to the structure of reality, they reveal this structure to the human mind and, in this sense, they are for man basic ontological facts.[14] We do not know what a superhuman intellect may think and comprehend. For man every cognition is conditioned by the logical structure of his mind and implied in this structure. It is precisely the satisfactory results of the empirical sciences and their practical application that evidence this truth. Within the orbit in which human action is able to attain ends aimed at there is no room left for agnosticism.

If there had been races which had developed a different logical structure of the mind, they would have failed in the use of reason as an aid in the struggle for existence. The only means for survival that could have protected them against extermination would have been their instinctive reactions. Natural selection would have eliminated those specimens of such races that tried to employ reasoning for the direction of their behavior. Those individuals alone would have survived that relied upon instincts only. This means that only those would have had a chance to survive that did not rise above the mental level of animals.

The scholars of the West have amassed an enormous amount of material concerning the high civilizations of China and India and the primitive civilizations of the Asiatic, American, Australian, and African aborigines. It is safe to say that all that is worth knowing about the ideas of these races is known. But never has any supporter of polylogism tried to use these data for a description of the allegedly different logic of these peoples and civilizations.

5. Polylogism and Understanding

Some supporters of the tenets of Marxism and racism interpret the epistemological teachings of their parties in a peculiar way. They are ready to admit that the logical structure of mind is uniform for all races, nations, and classes. Marxism or racism, they assert, never intended to deny this

14. Cf. Morris R. Cohen, *Reason and Nature* (New York, 1931), pp. 202-205; *A Preface to Logi* (New York, 1944), pp. 42-44, 54-56, 92, 180-187.

undeniable fact. What they really wanted to say was that historical understanding, aesthetic empathy, and value judgments are conditioned by a man's background. It is obvious that this interpretation cannot be supported on the basis of the writings of the champions of polylogism. However, it must be analyzed as a doctrine of its own.

There is no need to emphasize again that a man's value judgments and his choice of ends reflect his inborn bodily features and all the vicissitudes of his life.[15] But it is a far cry from the acknowledgment of this fact to the belief that racial inheritance or class affiliation ultimately determines judgments of value and the choice of ends. The fundamental discrepancies in world view and patterns of behavior do not correspond to differences in race, nationality, or class affiliation.

There is hardly any greater divergence in value judgments than that between ascetics and those eager to enjoy life lightheartedly. An unbridgeable gulf separates devout monks and nuns from the rest of mankind. But there have been people dedicated to the monkish ideals among all races, nations, classes, and castes. Some of them were sons and daughters of kings and wealthy noblemen, others were beggars. St. Francis, Santa Clara, and their ardent followers were natives of Italy, whose other inhabitants cannot be described as weary of temporal things. Puritanism was Anglo-Saxon, but so was the lasciviousness of the British under the Tudors, the Stuarts, and the Hanoverians. The nineteenth century's outstanding champion of asceticism was Count Leo Tolstoy, a wealthy member of the profligate Russian aristocracy. Tolstoy saw the pith of the philosophy he attacked embodied in Beethoven's Kreutzer Sonata, a masterpiece of the son of extremely poor parents.

It is the same with aesthetic values. All races and nations have had both classic and romantic art. With all their ardent propaganda the Marxians have not succeeded in bringing about a specifically proletarian art or literature. The "proletarian" writers, painters, and musicians have not created new styles and have not established new aesthetic values. What characterizes them is solely their tendency to call everything they detest "bourgeois" and everything they like "proletarian."

Historical understanding both of the historian and of the acting man always reflects the personality of its author.[16] But if the historian and the politician are imbued with the desire for truth, they will never let themselves be deluded by party bias, provided they are efficient and not inept. It is

15. Cf. above, pp. 46-47.
16. Cf. above, pp. 57-58.

immaterial whether a historian or a politician considers the interference of a certain factor beneficial or detrimental. He cannot derive any advantage from underrating or overrating the relevance of one of the operating factors. Only clumsy would-be historians believe that they can serve their cause by distortion.

This is no less true of the statesman's understanding. What use could a champion of Protestantism derive from misunderstanding the tremendous power and prestige of Catholicism, or a liberal from misunderstanding the relevance of socialist ideas? In order to succeed a politician must see things as they are; whoever indulges in wishful thinking will certainly fail. Judgments of relevance differ from judgments of value in that they aim at the appraisal of a state of affairs not dependent on the author's arbitrariness. They are colored by their author's personality and can therefore never be unanimously agreed upon by all people. But here again we must raise the question: What advantage could a race or class derive from an "ideological" distortion of understanding?

As has already been pointed out, the serious discrepancies to be found in historical studies are an outcome of differences in the field of the nonhistorical sciences and not in various modes of understanding.

Today many historians and writers are imbued with the Marxian dogma that the realization of the socialist plans is both unavoidable and the supreme good, and that the labor movement is entrusted with the historical mission of accomplishing this task by a violent overthrow of the capitalistic system. Starting from this tenet, they take it as a matter of course that the parties of the "Left," the elect, in the pursuit of their policies, should resort to acts of violence and to murder. A revolution cannot be consummated by peaceful methods. It is not worthwhile to dwell upon such trifles as the butchering of the four daughters of the last Tsar, of Leon Trotsky, of tens of thousands of Russian bourgeois and so on. "You can't make an omelet without breaking eggs"; why explicitly mention the eggs broken? But, of course, it is different if one of those assailed ventures to defend himself or even to strike back. Few only mention the acts of sabotage, destruction, and violence committed by strikers. But all authors enlarge upon the attempts of the companies to protect their property and the lives of their employees and their customers against such onslaughts.

Such discrepancies are due neither to judgments of value nor to differences in understanding. They are the outcome of antagonistic theories of

economic and historical evolution. If the coming of socialism is unavoidable and can be achieved only by revolutionary methods, murders committed by the "progressives" are minor incidents of no significance. But the self-defense and counterattacks of the "reactionaries" which can possibly delay the final victory of socialism are of the greatest importance. They are remarkable events, while the revolutionary acts are simply routine.

6. The Case for Reason

Judicious rationalists do not pretend that human reason can ever make man omniscient. They are fully aware of the fact that, however knowledge may increase, there will always remain things ultimately given and not liable to any further elucidation. But, they say, as far as man is able to attain cognition, he must rely upon reason. The ultimate given is the irrational. The knowable is, as far as it is known already, necessarily rational. There is neither an irrational mode of cognition nor a science of irrationality.

With regard to unsolved problems, various hypotheses are permissible provided they do not contradict logic and the uncontested data of experience. But these are hypotheses only.

We do not know what causes the inborn differences in human abilities. Science is at a loss to explain why Newton and Mozart were full of creative genius and why most people are not. But it is by all means an unsatisfactory answer to say that a genius owes his greatness to his ancestry or to his race. The question is precisely why such a man differs from his brothers and from the other members of his race.

It is a little bit less faulty to attribute the great achievements of the white race to racial superiority. Yet this is no more than vague hypothesis which is at variance with the fact that the early foundations of civilization were laid by peoples of other races. We cannot know whether or not at a later date other races will supplant Western civilization.

However, such a hypothesis must be appraised on its own merits. It must not be condemned beforehand because the racists base on it their postulate that there is an irreconcilable conflict between various racial groups and that the superior races must enslave the inferior ones. Ricardo's law of association has long since discarded this mistaken interpretation of the inequality of men.[17] It is nonsensical to fight the racial hypothesis by negating obvious facts. It is vain to deny that up to now certain races have contributed nothing

17. See below, pp. 158-163.

or very little to the development of civilization and can, in this sense, be called inferior.

If somebody were eager to distill at any cost a grain of truth out of the Marxian teachings, he could say that emotions influence a man's reasoning very much. Nobody ever ventured to deny this obvious fact, and Marxism cannot be credited with its discovery. But it is without any significance for epistemology. There are many sources both of success and of error. It is the task of psychology to enumerate and to classify them.

Envy is a widespread frailty. It is certain that many intellectuals envy the higher income of prosperous businessmen and that these feelings drive them toward socialism. They believe that the authorities of a socialist commonwealth would pay them higher salaries than those that they earn under capitalism But to prove the existence of this envy does not relieve science of the duty of making the most careful examination of the socialist doctrines. Scientists are bound to deal with every doctrine as if its supporters were inspired by nothing else than the thirst for knowledge. The various brands of polylogism substitute for a purely theoretical examination of opposite doctrines the unmasking of the background and the motives of their authors. Such a procedure is incompatible with the first principles of ratiocination.

It is a poor makeshift to dispose of a theory by referring to its historical background, to the "spirit" of its time, to the material conditions of the country of its origin, and to any personal qualities of its authors. A theory is subject to the tribunal of reason only. The yardstick to be applied is always the yardstick of reason. A theory is either correct or incorrect. It may happen that the present state of our knowledge does not allow a decision with regard to its correctness or incorrectness. But a theory can never be valid for a bourgeois or an American if it is invalid for a proletarian or a Chinese.

If the Marxians and the racist were right, it would be impossible to explain why those in power are anxious to suppress dissenting theories and to persecute their supporters. The very fact that there are intolerant governments and political parties intent upon outlawing and exterminating dissenters, is a proof of the excellence of reason. It is not a conclusive proof of a doctrine's correctness that its adversaries use the police, the hangman, and violent mobs to fight it. But it is a proof of the fact that those taking recourse to violent oppression are in their subconsciousness convinced of the untenability of their own doctrines.

It is impossible to demonstrate the validity of the a priori foundations of

logic and praxeology without referring to these foundations themselves. Reason is an ultimate given and cannot be analyzed or questioned by itself. The very existence of human reason is a nonrational fact. The only statement that can be predicated with regard to reason is that it is the mark that distinguishes man from animals and has brought about everything that is specifically human.

To those pretending that man would be happier if he were to renounce the use of reason and try to let himself be guided by intuition and instincts only, no other answer can be given than an analysis of the achievements of human society. In describing the genesis and working of social cooperation, economics provides all the information required for an ultimate decision between reason and unreason. If man reconsiders freeing himself from the supremacy of reason, he must know what he will have to forsake.

IV. A FIRST ANALYSIS OF THE CATEGORY OF ACTION

1. Ends and Means

THE result sought by an action is called its end, goal, or aim. One uses these terms in ordinary speech also to signify intermediate ends, goals, or aims; these are points which acting man wants to attain only because he believes that he will reach his ultimate end, goal or aim in passing beyond them. Strictly speaking the end, goal, or aim of any action is always the relief from a felt uneasiness.

A means is what serves to the attainment of any end, goal, or aim. Means are not in the given universe; in this universe there exist only things. A thing becomes a means when human reason plans to employ it for the attainment of some end and human action really employs it for this purpose. Thinking man sees the serviceableness of things, i.e., their ability to minister to his ends, and acting man makes them means. It is of primary importance to realize that parts of the external world become means only through the operation of the human mind and its offshoot, human action. External objects are as such only phenomena of the physical universe and the subject matter of the natural sciences. It is human meaning and action which transform them into means. Praxeology does not deal with the external world. but with man's conduct with regard to it. Praxeological reality is not the physical universe, but man's conscious reaction to the given state of this universe. Economics is not about things and tangible material objects; it is about men, their meanings and actions. Goods, commodities, and wealth and all the other notions of conduct are not elements of nature; they are elements of human meaning and conduct. He who wants to deal with them must not look at the external world; he must search for them in the meaning of acting men.

Praxeology and economics do not deal with human meaning and action as they should be or would be if all men were inspired by an absolutely valid philosophy and equipped with a perfect knowledge of technology. For such notions as absolute validity and omniscience there is no room in the frame

of a science whose subject matter is erring man. An end is everything which men aim at. A means is everything which acting men consider as such.

It is the task of scientific technology and therapeutics to explode errors in their respective fields. It is the task of economics to expose erroneous doctrines in the field of social action. But if men do not follow the advice of science, but cling to their fallacious prejudices, these errors are reality and must be dealt with as such. Economists consider foreign exchange control as inappropriate to attain the ends aimed at by those who take recourse to it. However, if public opinion does not abandon its delusions and governments consequently resort to foreign exchange control, the course of events is determined by this attitude. Present-day medicine considers the doctrine of the therapeutic effects of mandrake as a fable. But as long as people took this fable as truth, mandrake was an economic good and prices were paid for its acquisition. In dealing with prices economics does not ask what things are in the eyes of other people, but only what they are in the meaning of those intent upon getting them. For it deals with real prices, paid and received in real transactions, not with prices as they would be if men were different from what they really are.

Means are necessarily always limited, i.e., scarce with regard to the services for which man wants to use them. If this were not the case, there would not be any action with regard to them. Where man is not restrained by the insufficient quantity of things available, there is no need for any action.

It is customary to call the end the ultimate good and the means goods. In applying this terminology economists mainly used to think as technologists and not as praxeologists. They differentiated between *free goods* and *economic goods.* They called free goods those things which, being available in superfluous abundance, do not need to be economized. Such goods are, however, not the object of any action. They are general conditions of human welfare; they are parts of the natural environment in which man lives and acts. Only the economic goods are the substratum of action. They alone are dealt with in economics.

Economic goods which in themselves are fitted to satisfy human wants directly and whose serviceableness does not depend on the cooperation of other economic goods, are called consumers' goods or goods of the first order. Means which can satisfy wants only indirectly when complemented by cooperation of other goods are called producers' goods or factors of production or goods of a remoter or higher order. The services rendered by a producers' good consist

in bringing about, by the cooperation of complementary producers' goods, a product. This product may be a consumers' good; it may be a producers' good which when combined with other producers' goods will finally bring about a consumers' good. It is possible to think of the producers' goods as arranged in orders according to their proximity to the consumers' good for whose production they can be used. Those producers' good which are nearest to the production of a consumers' good are ranged in the second order, and accordingly those which are used for the production of goods of the second order in the third order and so on.

The purpose of such an arrangement of goods in orders is to provide a basis for the theory of value and prices of the factors of production. It will be shown later how the valuation and the prices of the goods of higher orders are dependent on the valuation and the prices of the goods of lower orders produced by their expenditure. The first and ultimate valuation of external things refers only to consumers' goods. All other things are valued according to the part they play in the production of consumers' goods.

It is therefore not necessary actually to arrange producers' goods in various orders from the second to the *n*th. It is no less superfluous to enter into pedantic discussions of whether a concrete good has to be called a good of the lowest order or should rather be attributed to one of the higher orders. Whether raw coffee beans or roast coffee beans or ground coffee or coffee prepared for drinking or only coffee prepared and mixed with cream and sugar are to be called a consumers' good ready for consumption is of no importance. It is immaterial which manner of speech we adopt. For with regard to the problem of valuation, all that we say about a consumers' good can be applied to any good of a higher order (except those of the highest order) if we consider it as a product.

An economic good does not necessarily have to be embodied in a tangible thing. Nonmaterial economic goods are called services.

2. The Scale of Value

Acting man chooses between various opportunities offered for choice. He prefers one alternative to others.

It is customary to say that acting man has a scale of wants or values in his mind when he arranges his actions. On the basis of such a scale he satisfies what is of higher value, i.e., his more urgent wants, and leaves unsatisfied what is of lower value, i.e., what is a less urgent want. There is no objection to such a

presentation of the state of affairs. However, one must not forget that the scale of values or wants manifests itself only in the reality of action. These scales have no independent existence apart from the actual behavior of individuals. The only source from which our knowledge concerning these scales is derived is the observation of a man's actions. Every action is always in perfect agreement with the scale of values or wants because these scales are nothing but an instrument for the interpretation of a man's acting.

Ethical doctrines are intent upon establishing scales of value according to which man should act but does not necessarily always act. They claim for themselves the vocation of telling right from wrong and of advising man concerning what he should aim at as the supreme good. They are normative disciplines aiming at the cognition of what ought to be. They are not neutral with regard to facts; they judge them from the point of view of freely adopted standards.

This is not the attitude of praxeology and economics. They are fully aware of the fact that the ultimate ends of human action are not open to examination from any absolute standard. Ultimate ends are ultimately given, they are purely subjective, they differ with various people and with the same people at various moments in their lives. Praxeology and economics deal with the means for the attainment of ends chosen by the acting individuals. They do not express any opinion with regard to such problems as whether or not sybaritism is better than asceticism. They apply to the means only one yardstick, viz., whether or not they are suitable to attain the ends at which the acting individuals aim.

The notions of abnormality and perversity therefore have no place in economics. It does not say that a man is perverse because he prefers the disagreeable, the detrimental, and the painful to the agreeable, the beneficial, and the pleasant. It says only that he is different from other people; that he likes what others detest; that he considers useful what others want to avoid; that he takes pleasure in enduring pain which others avoid because it hurts them. The polar notions normal and perverse can be used anthropologically for the distinction between those who behave as most people do and outsiders and atypical exceptions; they can be applied biologically for the distinction between those whose behavior preserves the vital forces and those whose behavior is self-destructive; they can be applied in an ethical sense for the distinction between those who behave correctly and those who act otherwise than they should. However, in the frame of a theoretical science of human action, there is no room for such a distinction. Any

examination of ultimate ends turns out to be purely subjective and therefore arbitrary.

Value is the importance that acting man attaches to ultimate ends. Only to ultimate ends is primary and original value assigned. Means are valued derivatively according to their serviceableness in contributing to the attainment of ultimate ends. Their valuation is derived from the valuation of the respective ends. They are important for man only as far as they make it possible for him to attain some ends.

Value is not intrinsic, it is not in things. It is within us; it is the way in which man reacts to the conditions of his environment.

Neither is value in words and doctrines. It is reflected in human conduct. It is not what a man or groups of men say about value that counts, but how they act. The oratory of moralists and the pompousness of party programs are significant as such. But they influence the course of human events only as far as they really determine the actions of men.

3. The Scale of Needs

Notwithstanding all declarations to the contrary, the immense majority of men aim first of all at an improvement of the material conditions of well-being. They want more and better food, better homes and clothes, and a thousand other amenities. They strive after abundance and health. Taking these goals as given, applied physiology tries to determine what means are best suited to provide as much satisfaction as possible. It distinguishes, from this point of view, between man's "real" needs and imaginary and spurious appetites. It teaches people how they should act and what they should aim at as a means.

The importance of such doctrines is obvious. From his point of view the physiologist is right in distinguishing between sensible action and action contrary to purpose. He is right in contrasting judicious methods of nourishment from unwise methods. He may condemn certain modes of behavior as absurd and opposed to "real" needs. However, such judgments are beside the point for a science dealing with the reality of human action. Not what a man should do, but what he does, counts for praxeology and economics. Hygiene may be right or wrong in calling alcohol and nicotine poisons. But economics must explain the prices of tobacco and liquor as they are, not as they would be under different conditions.

There is no room left in the field of economics for a scale of needs different from the scale of values as reflected in man's actual behavior.

Economics deals with real man, weak and subject to error as he is, not with ideal beings, omniscient and perfect as only gods could be.

4. Action as an Exchange

Action is an attempt to substitute a more satisfactory state of affairs for a less satisfactory one. We call such a willfully induced alteration an exchange. A less desirable condition is bartered for a more desirable. What gratifies less is abandoned in order to attain something that pleases more. That which is abandoned is called the price paid for the attainment of the end sought. The value of the price paid is called costs. Costs are equal to the value attached to the satisfaction which one must forego in order to attain the end aimed at.

The difference between the value of the price paid (the costs incurred) and that of the goal attained is called gain or profit or net yield. Profit in this primary sense is purely subjective, it is an increase in the acting man's happiness, it is a psychical phenomenon that can be neither measured nor weighed. There is a more and a less in the removal of uneasiness felt; but how much one satisfaction surpasses another one can only be felt; it cannot be established and determined in an objective way. A judgment of value does not measure, it arranges in a scale of degrees, it grades. It is expressive of an order of preference and sequence, but not expressive of measure and weight. Only the ordinal numbers can be applied to it, but not the cardinal numbers.

It is vain to speak of any calculation of values. Calculation is possible only with cardinal numbers. The difference between the valuation of two states of affairs is entirely psychical and personal. It is not open to any projection into the external world. It can be sensed only by the individual. It cannot be communicated or imparted to any fellow man. It is an intensive magnitude.

Physiology and psychology have developed various methods by means of which they pretend to have attained a substitute for the unfeasible measurement of intensive magnitudes. There is no need for economics to enter into an examination of these rather questionable makeshifts. Their supporters themselves realize that they are not applicable to value judgments. But even if they were, they would not have any bearing on economic problems. For economics deals with action as such, and not with the psychical facts that result in definite actions.

It happens again and again that an action does not attain the end sought.

Sometimes the result, although inferior to the end aimed at, is still an improvement when compared with the previous state of affairs; then there is still a profit, although a smaller one than that expected. But it can happen that the action produces a state of affairs less desirable than the previous state it was intended to alter. Then the difference between the valuation of the result and the costs incurred is called loss.

V. TIME

1. Time as a Praxeological Factor

THE notion of change implies the notion of temporal sequence. A rigid, eternally immutable universe would be out of time, but it would be dead. The concepts of change and of time are inseparably linked together. Action aims at change and is therefore in the temporal order. Human reason is even incapable of conceiving the ideas of timeless existence and of timeless action.

He who acts distinguishes between the time before the action, the time absorbed by the action, and the time after the action has been finished. He cannot be neutral with regard to the lapse of time.

Logic and mathematics deal with an ideal system of thought. The relations and implications of their system are coexistent and interdependent. We may say as well that they are synchronous or that they are out of time. A perfect mind could grasp them all in one thought. Man's inability to accomplish this makes thinking itself an action, proceeding step by step from the less satisfactory state of insufficient cognition to the more satisfactory state of better insight. But the temporal order in which knowledge is acquired must not be confused with the logical simultaneity of all parts of an aprioristic deductive system. Within such a system the notions of anteriority and consequence are metaphorical only. They do not refer to the system, but to our action in grasping it. The system itself implies neither the category of time nor that of causality. There is functional correspondence between elements, but there is neither cause nor effect.

What distinguishes epistemologically the praxeological system from the logical system is precisely that it implies the categories both of time and of causality. The praxeological system too is aprioristic and deductive. As a system it is out of time. But change is one of its elements. The notions of sooner and later and of cause and effect are among its constituents. Anteriority and consequence are essential concepts of praxeological reasoning. So is the irreversibility of events. In the frame of the praxeological system any reference to functional correspondence is no less metaphorical and misleading than is the

reference to anteriority and consequence in the frame of the logical system.[1]

2. Past, Present, and Future

It is acting that provides man with the notion of time and makes him aware of the flux of time. The idea of time is a praxeological category.

Action is always directed toward the future; it is essentially and necessarily always a planning and acting for a better future. Its aim is always to render future conditions more satisfactory than they would be without the interference of action. The uneasiness that impels a man to act is caused by a dissatisfaction with expected future conditions as they would probably develop if nothing were done to alter them. In any case action can influence only the future, never the present that with every infinitesimal fraction of a second sinks down into the past. Man becomes conscious of time when he plans to convert a less satisfactory present state into a more satisfactory future state.

For contemplative meditation time is merely duration, "la durée pure, dont l'écoulement est continu, et où l'on passe, par gradations insensibles, d'un etat a l'autre: Continuité réellement vécue."[2] The "now" of the present is continually shifted to the past and is retained in the memory only. Reflecting about the past, say the philosophers, man becomes aware of time.[3] However, it is not recollection that conveys to man the categories of change and of time, but the will to improve the conditions of his life.

Time as we measure it by various mechanical devices is always past, and time as the philosophers use this concept is always either past or future. The present is, from these aspects, nothing but an ideal boundary line separating the past from the future. But from the praxeological aspect there is between the past and the future a real extended present. Action is as such in the real present because it utilizes the instant and thus embodies its reality.[4] Later retrospective reflection discerns in the instant passed away first of all the

1. In a treatise on economics there is no need to enter into a discussion of the endeavors to construct mechanics as an exiomatic system in which the concept of function is substituted for that of cause and effect. It will be shown later that axiomatic mechanics cannot serve as a model for the treatment of the economic system. Cf. below, pp. 353-357.

2. Henri Bergson, *Matière et mémoire* (7th ed. Paris, 1911), p. 205.

3. Edmund Husserl, "Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins," *Jahrbuch Fü Philosophie und Phänomenologische Forschung,* IX (1928), 391ff.; A. Schütz, *loc cit.*, pp. 45 ff.

4. "Ce que j'appelle mon présent, c'est mon attitute vis-à-vix de l'avenir immédiat, c'est action imminente." Bergson, *op. cit.*, p. 152.

action and the conditions which it offered to action. That which can no longer be done or consumed because the opportunity for it has passed away, contrasts the past with the present. That which cannot yet be done or consumed, because the conditions for undertaking it or the time for its ripening have not yet come, contrasts the future with the past. The present offers to acting opportunities and tasks for which it was hitherto too early and for which it will be hereafter too late.

The present qua duration is the continuation of the conditions and opportunities given for acting. Every kind of action requires special conditions to which it must be adjusted with regard to the aims sought. The concept of the present is therefore different for various fields of action. It has no reference whatever to the various methods of measuring the passing of time by spatial movements. The present encloses as much of the time passed away as still is actual, i.e., of importance for acting. The present contrasts itself, according to the various actions one has in view, with the Middle Ages, with the nineteenth century, with the past year, month, or day, but no less with the hour, minute, or second just passed away. If a man says: Nowadays Zeus is no longer worshipped, he has a present in mind other than that the motorcar driver who thinks: *Now* it is still too early to turn.

As the future is uncertain it always remains undecided and vague how much of it we can consider as *now* and present. If a man had said in 1913: At present—now—in Europe freedom of thought is undisputed, he would have not foreseen that this present would very soon be a past.

3. The Economization of Time

Man is subject to the passing of time. He comes into existence, grows, becomes old, and passes away. His time is scarce. He must economize it as he economizes other scarce factors.

The economization of time has a peculiar character because of the uniqueness and irreversibility of the temporal order. The importance of these facts manifests itself in every part of the theory of action.

Only one fact must be stressed at this point. The economization of time is independent of the economization of economic goods and services. Even in the land of Cockaigne man would be forced to economize time, provided he were not immortal and not endowed with eternal youth and indestructible health and vigor. Although all his appetites could be satisfied immediately

without any expenditure of labor, he would have to arrange his time schedule, as there are states of satisfaction which are incompatible and cannot be consummated at the same time. For this man, too, time would be scarce and subject to the aspect of *sooner* and *later*.

4. The Temporal Relation Between Actions

Two actions of an individual are never synchronous; their temporal relation is that of sooner and later. Actions of various individuals can be considered as synchronous only in the light of the physical methods for the measurement of time. Synchronism is a praxeological notion only with regard to the concerted efforts of various acting men.[5]

A man's individual actions succeed one another. They can never be effected at the same instant; they can only follow one another in more or less rapid succession. There are actions which serve several purposes at one blow. It would be misleading to refer to them as a coincidence of various actions.

People have often failed to recognize the meaning of the term "scale of value" and have disregarded the obstacles preventing the assumption of synchronism in the various actions of an individual. They have interpreted a man's various acts as the outcome of a scale of value, independent of these acts and preceding them, and of a previously devised plan whose realization they aim at. The scale of value and the plan to which duration and immutability for a certain period of time were attributed, were hypostatized into the cause and motive of the various individual actions. Synchronism which could not be asserted with regard to various acts was then easily discovered in the scale of value and in the plan. But this overlooks the fact that the scale of value is nothing but a constructed tool of thought. The scale of value manifests itself only in real acting; it can be discerned only from the observation of real acting. It is therefore impermissible to contrast it with real acting and to use it as a yardstick for the appraisal of real actions.

It is no less impermissible to differentiate between rational and allegedly irrational acting on the basis of a comparison of real acting with earlier drafts and plans for future actions. It may be very interesting that yesterday goals were set for today's acting other than those really aimed at today. But

5. In order to avoid any possible misunderstanding it may well be expedient to emphasize that this theorem has nothing at all to do with Einstein's theorem concerning the temporal relation of spatially distant events.

yesterday's plans do not provide us with any more objective and nonarbitrary standard for the appraisal of today's real acting than any other ideas and norms.

The attempt has been made to attain the notion of a nonrational action by this reasoning: If *a* is preferred to *b* and *b* to *c*, logically *a* should be preferred to *c*. But if actually *c* is preferred to *a*, we are faced with a mode of acting to which we cannot ascribe consistency and rationality.[6] This reasoning disregards the fact that two acts of an individual can never be synchronous. If in one action *a* is preferred to *b* and in another action *b* to *c*, it is, however short the interval between the two actions may be, not permissible to construct a uniform scale of value in which *a* precedes *b* and *b* precedes *c*. Nor is it permissible to consider a later third action as coincident with the two previous actions. All that the example proves is that value judgments are not immutable and that therefore a scale of value, which is abstracted from various, necessarily nonsynchronous actions of an individual, may be self-contradictory.[7]

One must not confuse the logical concept of consistency (viz., absence of contradiction) and the praxeological concept of consistency (viz., constancy or clinging to the same principles). Logical consistency has its place only in thinking, constancy has its place only in acting.

Constancy and rationality are entirely different notions. If one's valuations have changed, unremitting faithfulness to the once espoused principles of action merely for the sake of constancy would not be rational but simply stubborn. Only in one respect can acting be constant: in preferring the more valuable to the less valuable. If the valuations change, acting must change also. Faithfulness, under changed conditions, to an old plan would be nonsensical. A logical system must be consistent and free of contradictions because it implies the coexistence of all its parts and theorems. In acting, which is necessarily in the temporal order, there cannot be any question of such consistency. Acting must be suited to purpose, and purposefulness requires adjustment to changing conditions.

Presence of mind is considered a virtue in acting man. A man has presence of mind if he has the ability to think and to adjust his acting so quickly that

6. Cf. Felix Kaufmann, "On the Subject-Matter of Economic Science," *Economica*, XIII, 390.

7. Cf. P.H. Wicksteed, *The Common Sense of Political Economy*, ed. Robbins (London, 1933), I, 32 ff.; L. Robbins, *An Essay on the Nature and Significance of Economic Science* (2d ed. London, 1935), pp. 91 ff.

the interval between the emergence of new conditions and the adaptation of his actions to them becomes as short as possible. If constancy is viewed as faithfulness to a plan once designed without regard to changes in conditions, then presence of mind and quick reaction are the very opposite of constancy.

When the speculator goes to the stock exchange, he may sketch a definite plan for his operations. Whether or not he clings to this plan, his actions are rational also in the sense which those eager to distinguish rational acting from irrational attribute to the term "rational." This speculator in the course of the day may embark upon transactions which an observer, not taking into account the changes occurring in market conditions, will not be able to interpret as the outcome of constant behavior. But the speculator is firm in his intention to make profits and to avoid losses. Accordingly he must adjust his conduct to the change in market conditions and in his own judgment concerning the future development of prices.[8]

However one twists things, one will never succeed in formulating the notion of "irrational" action whose "irrationality" is not founded upon an arbitrary judgment of value. Let us suppose that somebody has chosen to act inconstantly for no other purpose than for the sake of refuting the praxeological assertion that there is no irrational action. What happens here is that a man aims at a peculiar goal, viz., the refutation of a praxeological theorem, and that he accordingly acts differently from what he would have done otherwise. He has chosen an unsuitable means for the refutation of praxeology, that is all.

8. Plans too, of course, may be self-contradictory. Sometimes their contradictions may be the effect of mistaken judgment. But sometimes such contradictions may be intentional and serve a definite purpose. If, for instance, a publicized program of a government or a political party promises high prices to the producers and at the same time low prices to the consumers., the purpose of such an espousal of incompatible goals may be demagogic. Then the program, the publicized plan, is self-contradictory; but the plan of its authors who wanted to attain a definite end through the endorsement of incompatible aims and their public announcement is free of any contradiction.

VI. UNCERTAINTY

1. Uncertainty and Acting

THE uncertainty of the future is already implied in the very notion of action. That man acts and that the future is uncertain are by no means two independent matters. They are only two different modes of establishing one thing.

We may assume that the outcome of all events and changes is uniquely determined by eternal unchangeable laws governing becoming and development in the whole universe. We may consider the necessary connection and interdependence of all phenomena, i.e., their causal concatenation, as the fundamental and ultimate fact. We may entirely discard the notion of undetermined chance. But however that may be, or appear to the mind of a perfect intelligence, the fact remains that to acting man the future is hidden. If man knew the future, he would not have to choose and would not act. He would be like an automaton, reacting to stimuli without any will of his own.

Some philosophers are prepared to explode the notion of man's will as an illusion and self-deception because man must unwittingly behave according to the inevitable laws of causality. They may be right or wrong from the point of view of the prime mover or the cause of itself. However, from the human point of view action is the ultimate thing. We do not assert that man is "free" in choosing and acting. We merely establish the fact that he chooses and acts and that we are at a loss to use the methods of the natural sciences for answering the question why he acts this way and not otherwise.

Natural science does not render the future predictable. It makes it possible to foretell the results to be obtained by definite actions. But it leaves unpredictable two spheres: that of insufficiently known natural phenomena and that of human acts of choice. Our ignorance with regard to these two spheres taints all human actions with uncertainty. Apodictic certainty is only within the orbit of the deductive system of aprioristic theory. The most that can be attained with regard to reality is probability.

It is not the task of praxeology to investigate whether or not it is permissible to consider as certain some of the theorems of the empirical

natural sciences. This problem is without practical importance for praxeological considerations. At any rate, the theorems of physics and chemistry have such a high degree of probability that we are entitled to call them certain for all practical purposes. We can practically forecast the working of a machine constructed according to the rules of scientific technology. But the construction of a machine is only a part in a broader program that aims at supplying the consumers with the machine's products. Whether this was or was not the most appropriate plan depends on the development of future conditions which at the time of the plan's execution cannot be forecast with certainty. Thus the degree of certainty with regard to the technological outcome of the machine's construction, whatever it may be, does not remove the uncertainty inherent in the whole action. Future needs and valuations, the reaction of men to changes in conditions, future scientific and technological knowledge, future ideologies and policies can never be foretold with more than a greater or smaller degree of probability. Every action refers to an unknown future. It is in this sense always a risky speculation.

The problems of truth and certainty concern the general theory of human knowledge. The problem of probability, on the other hand, is a primary concern of praxeology.

2. The Meaning of Probability

The treatment of probability has been confused by the mathematicians. From the beginning there was an ambiguity in dealing with the calculus of probability. When the Chevalier de Mere consulted Pascal on the problems involved in the games of dice, the great mathematician should have frankly told his friend the truth, namely, that mathematics cannot be of any use to the gambler in a game of pure chance. Instead he wrapped his answer in the symbolic language of mathematics. What could easily be explained in a few sentences of mundane speech was expressed in a terminology which is unfamiliar to the immense majority and therefore regarded with reverential awe. People suspected that the puzzling formulas contain some important revelations, hidden to the uninitiated; they got the impression that a scientific method of gambling exists and that the esoteric teachings of mathematics provide a key for winning. The heavenly mystic Pascal unintentionally became the patron saint of gambling. The textbooks of the calculus of probability gratuitously propagandize for the gambling casinos precisely because they are sealed books to the layman.

No less havoc was spread by the equivocations of the calculus of

probability in the field of scientific research. The history of every branch of knowledge records instances of the misapplication of the calculus of probability which, as John Stuart Mill observed, made it "the real opprobrium of mathematics."[1]

The problem of probable inference is much bigger than those problems which constitute the field of the calculus of probability. Only preoccupation with the mathematical treatment could result in the prejudice that probability always means frequency.

A further error confused the problem of probability with the problem of inductive reasoning as applied by the natural sciences. The attempt to substitute a universal theory of probability for the category of causality characterizes an abortive mode of philosophizing, very fashionable only a few years ago.

A statement is probable if our knowledge concerning its content is deficient. We do not know everything which would be required for a definite decision between true and not true. But, on the other hand, we do know something about it; we are in a position to say more than simply *non liquet* or *ignoramus.*

There are two entirely different instances of probability; we may call them class probability (or frequency probability) and case probability (or the specific understanding of the sciences of human action). The field for the application of the former is the field of the natural sciences, entirely ruled by causality; the field for the application of the latter is the field of the sciences of human action, entirely ruled by teleology.

3. Class Probability

Class probability means: We know or assume to know, with regard to the problem concerned, everything about the behavior of a whole class of events or phenomena; but about the actual singular events or phenomena we know nothing but that they are elements of this class.

We know, for instance, that there are ninety tickets in a lottery and that five of them will be drawn. Thus we know all about the behavior of the whole class of tickets. But with regard to the singular tickets we do not know anything but that they are elements of this class of tickets.

We have a complete table of mortality for a definite period of the past in a definite area. If we assume that with regard to mortality no changes will occur, we may say that we know everything about the mortality of the whole population in question. But with regard to the life expectancy of the individ-

1. John Stuart Mill, *A System of Logic Ratiocinative and Inductive* (new impression, London, 1936), p. 353.

uals we do not know anything but that they are members of this class of people.

For this defective knowledge the calculus of probability provides a presentation in symbols of the mathematical terminology. It neither expands nor deepens nor complements our knowledge. It translates it into mathematical language. Its calculations repeat in algebraic formulas what we knew beforehand. They do not lead to results that would tell us anything about the actual singular events. And, of course, they do not add anything to our knowledge concerning the behavior of the whole class, as this knowledge was already perfect—or was considered perfect—at the very outset of our consideration of the matter.

It is a serious mistake to believe that the calculus of probability provides the gambler with any information which could remove or lessen the risk of gambling. It is, contrary to popular fallacies, quite useless for the gambler, as is any other mode of logical or mathematical reasoning. It is the characteristic mark of gambling that it deals with the unknown, with pure chance. The gambler's hopes for success are not based on substantial considerations. The nonsuperstitious gambler thinks: "There is a slight chance [or, in other words: 'it is not impossible'] that I may win; I am ready to put up the stake required. I know very well that in putting it up I am behaving like a fool. But the biggest fools have the most luck. Anyway!"

Cool reasoning must show the gambler that he does not improve his chances by buying two tickets instead of one of a lottery in which the total amount of the winnings is smaller than the proceeds from the sale of all tickets. If he were to buy all the tickets, he would certainly lose a part of his outlay. Yet every lottery customer is firmly convinced that it is better to buy more tickets than less. The habitues of the casinos and slot machines never stop. They do not give a thought to the fact that, because the ruling odds favor the banker over the player, the outcome will the more certainly result in a loss for them the longer they continue to play. The lure of gambling consists precisely in its unpredictability and its adventurous vicissitudes.

Let us assume that ten tickets, each bearing the name of a different man, are put into a box. One ticket will be drawn, and the man whose name it bears will be liable to pay 100 dollars. Then an insurer can promise to the loser full indemnification if he is in a position to insure each of the ten for a premium of ten dollars. He will collect 100 dollars and will have to pay the same amount to one of the ten. But if he were to insure one only of them at a rate fixed by the calculus, he would embark

not upon an insurance business, but upon gambling. He would substitute himself for the insured. He would collect ten dollars and would get the chance either of keeping it or of losing that ten dollars and ninety dollars more.

If a man promises to pay at the death of another man a definite sum and charges for this promise the amount adequate to the life expectancy as determined by the calculus of probability, he is not an insurer but a gambler. Insurance, whether conducted according to business principles or according to the principle of mutuality, requires the insurance of a whole class or what can reasonably be considered as such. Its basic idea is pooling and distribution of risks, not the calculus of probability. The mathematical operation that it requires are the four elementary operations of arithmetic. The calculus of probability is mere by-play.

This is clearly evidenced by the fact that the elimination of hazardous risk by pooling can also be effected without any recourse to actuarial methods. Everybody practices it in his daily life. Every businessman includes in his normal cost accounting the compensation for losses which regularly occur in the conduct of affairs. "Regularly" means in this context: The amount of these losses is known as far as the whole class of the various items is concerned. The fruit dealer may know, for instance, that one of every fifty apples will rot in this stock; but he does not know to which individual apple this will happen. He deals with such losses as with any other item in the bill of costs.

The definition of the essence of class probability as given above is the only logically satisfactory one. It avoids the crude circularity implied in all definitions referring to the equiprobability of possible events. In stating that we know nothing about actual singular events except that they are elements of a class the behavior of which is fully known, this vicious circle is disposed of. Moreover, it is superfluous to add a further condition called the absence of any regularity in the sequence of the singular events.

The characteristic mark of insurance is that it deals with the whole class of events. As we pretend to know everything about the behavior of the whole class, there seems to be no specific risk involved in the conduct of the business.

Neither is there any specific risk in the business of the keeper of a gambling bank or in the enterprise of a lottery. From the point of view of the lottery enterprise the outcome is predictable, provided that all tickets have been sold. If some tickets remain unsold, the enterpriser is in the same

position with regard to them as every buyer of a ticket is with regard to the tickets he bought.

4. Case Probability

Case probability means: We know, with regard to a particular event, some of the factors which determine its outcome; but there are other determining factors about which we know nothing.

Case probability has nothing in common with class probability but the incompleteness of our knowledge. In every other regard the two are entirely different.

There are, of course, many instances in which men try to forecast particular future event on the basis of their knowledge about the behavior of the class. A doctor may determine the chances for the full recovery of his patient if he knows that 70 per cent of those afflicted with the same disease recover. If he expresses his judgment correctly, he will not say more than that the probability of recovery is 0.7, that is, that out of ten patients not more than three on the average die. All such predictions about external events, i.e., events in the field of the natural sciences, are of this character. They are in fact not forecasts about the issue of the case in question, but statements about the frequency of the various possible outcomes. They are based either on statistical information or simply on the rough estimate of the frequency derived from nonstatistical experience.

So far as such types of probable statements are concerned, we are not faced with case probability. In fact we do not know anything about the case in question except that it is an instance of a class the behavior of which we know or think we know.

A surgeon tells a patient who considers submitting himself to an operation that thirty out of every hundred undergoing such an operation die. If the patient asks whether this number of deaths is already full, he has misunderstood the sense of the doctor's statement. He has fallen prey to the error known as the "gambler's fallacy." Like the roulette player who concludes from a run of ten red in succession that the probability of the next turn being black is now greater than it was before the run, he confuses case probability with class probability.

All medical prognoses, when based only on general physiological knowledge, deal with class probability. A doctor who hears that a man he does not know has been seized by a definite illness will, on the basis of his general medical experience, say: His chances for recovery are 7 to 3.

If the doctor himself treats the patient, he may have a different opinion. The patient is a young, vigorous man; he was in good health before he was taken with the illness. In such cases, the doctor may think, the mortality figures are lower; the chances for this patient are not 7:3, but 9:1. The logical approach remains the same, although it may be based not on a collection of statistical data, but simply on a more or less exact resume of the doctor's own experience with previous cases. What the doctor knows is always only the behavior of classes. In our instance the class is the class of young, vigorous men seized by the illness in question.

Case probability is a particular feature of our dealing with problems of human action. Here any reference to frequency is inappropriate, as our statements always deal with unique events which as such—i.e., with regard to the problem in question—are not members of any class. We can form a class "American presidential elections." This class concept may prove useful or even necessary for various kinds of reasoning, as, for instance, for a treatment of the matter from the viewpoint of constitutional law. But if we are dealing with the election of 1944—either, before the election, with its future outcome or, after the election, with an analysis of the factors which determined the outcome—we are grappling with an individual, unique, and nonrepeatable case. The case is characterized by its unique merits, it is a class by itself. All the marks which make it permissible to subsume it under any class are irrelevant for the problem in question.

Two football teams, the Blues and the Yellows, will play tomorrow. In the past the Blues have always defeated the Yellows. This knowledge is not knowledge about a class of events. If we were to consider it as such, we would have to conclude that the Blues are always victorious and that the Yellows are always defeated. We would not be uncertain with regard to the outcome of the game. We would know for certain that the Blues will win again. The mere fact that we consider our forecast about tomorrow's game as only probable shows that we do not argue this way.

On the other hand, we believe that the fact that the Blues were victorious in the past is not immaterial with regard to the outcome of tomorrow's game. We consider it as a favorable prognosis for the repeated success of the Blues. If we were to argue correctly according to the reasoning appropriate to class probability, we would not attach any importance to this fact. If we were not to resist the erroneous conclusion of the "gambler's fallacy," we would, on the contrary, argue that tomorrow's game will result in the success of the Yellows.

If we risk some money on the chance of one team's victory, the lawyers would qualify our action as a bet. They would call it gambling if class probability were involved.

Everything that outside the field of class probability is commonly implied in the term probability refers to the peculiar mode of reasoning involved in dealing with historical uniqueness or individuality, the specific understanding of the historical sciences.

Understanding is always based on incomplete knowledge. We may believe we know the motives of the acting men, the ends they are aiming at, and the means they plan to apply for the attainment of these ends. We have a definite opinion with regard to the effects to be expected from the operation of these factors. But this knowledge is defective. We cannot exclude beforehand the possibility that we have erred in the appraisal of their influence or have failed to take into consideration some factors whose interference we did not foresee at all, or not in a correct way.

Gambling, engineering, and speculating are three different modes of dealing with the future.

The gambler knows nothing about the event on which the outcome of his gambling depends. All that he knows is the frequency of a favorable outcome of a series of such events, knowledge which is useless for his undertaking. He trusts to good luck, that is his only plan.

Life itself is exposed to many risks. At any moment it is endangered by disastrous accidents which cannot be controlled, or at least not sufficiently. Every man banks on good luck. He counts upon not being struck by lightning and not being bitten by a viper. There is an element of gambling in human life. Man can remove some of the chrematistic consequences of such disasters and accidents by taking out insurance policies. In doing so he banks upon the opposite chances. On the part of the insured the insurance is gambling. His premiums were spent in vain if the disaster does not occur.[2] With regard to noncontrollable natural events man is always in the position of a gambler.

The engineer, on the other hand, knows everything that is needed for a technologically satisfactory solution of his problem, the construction of a machine. As far as some fringes of uncertainty are left in his power to control, he tries to eliminate them by taking safety margins. The engineer

2. In life insurance the insured's stake spent in vain consists only in the difference between the amount collected and the amount he could have accumulated by saving.

knows only soluble problems and problems which cannot be solved under the present state of knowledge. He may sometimes discover from adverse experience that his knowledge was less complete than he had assumed and that he failed to recognize the indeterminateness of some issues which he thought he was able to control. Then he will try to render his knowledge more complete. Of course he can never eliminate altogether the element of gambling present in human life. But it is his principle to operate only within an orbit of certainty. He aims at full control of the elements of his action.

It is customary nowadays to speak of "social engineering." Like planning, this term is a synonym for dictatorship and totalitarian tyranny. The idea is to treat human beings in the same way in which the engineer treats the stuff out of which he builds bridges, roads, and machines. The social engineer's will is to be substituted for the will of the various people he plans to use for the construction of his utopia. Mankind is to be divided into two classes: the almighty dictator, on the one hand, and the underlings who are to be reduced to the status of mere pawns in his plans and cogs in his machinery, on the other. If this were feasible, then of course the social engineer would not have to bother about understanding other people's actions. He would be free to deal with them as technology deals with lumber and iron.

In the real world acting man is faced with the fact that there are fellow men acting on their own behalf as he himself acts. The necessity to adjust his actions to other people's actions makes him a speculator for whom success and failure depend on his greater or lesser ability to understand the future. Every action is speculation. There is in the course of human events no stability and consequently no safety.

5. Numerical Evaluation of Case Probability

Case probability is not open to any kind of numerical evaluation. What is commonly considered as such exhibits, when more closely scrutinized, a different character.

On the eve of the 1944 presidential election people could have said:

(a) I am ready to bet three dollars against one that Roosevelt will be elected.

(b) I guess that out of the total amount of electors 45 millions will exercise their franchise, 25 millions of whom will vote for Roosevelt.

(c) I estimate Roosevelt's chances as 9 to 1.

(d) I am certain that Roosevelt will be elected.

Statement (d) is obviously inexact. If asked under oath on the witness stand whether he is as certain about Roosevelt's future victory as about the fact that a block of ice will melt when exposed to a temperature of 150 degrees, our man would have answered no. He would have rectified his statement and would have declared: I am personally fully convinced that Roosevelt will carry on. That is my opinion. But, of course, this is not certainty, only the way I understand the conditions involved.

The case of statement (a) is similar. This man believed that he risked very little when laying such a wager. The relation 3:1 is the outcome of the interplay of two factors: the opinion that Roosevelt will be elected and the man's propensity for betting.

Statement (b) is an evaluation of the outcome of the impending event. Its figures refer not to a greater or smaller degree of probability, but to the expected result of the voting. Such a statement may be based on a systematic investigation like the Gallup poll or simply on estimates.

It is different with statement (c). This is a proposition about the expected outcome couched in arithmetical terms. It certainly does not mean that out of ten cases of the same type nine are favorable for Roosevelt and one unfavorable. It cannot have any reference to class probability. But what else can it mean?

It is a metaphorical expression. Most of the metaphors used in daily speech imaginatively identify an abstract object with another object that can be apprehended directly by the senses. Yet this is not a necessary feature of metaphorical language, but merely a consequence of the fact that the concrete is as a rule more familiar to us than the abstract. As metaphors aim at an explanation of something which is less well known by comparing it with something better known, they consist for the most part in identifying something abstract with a better-known concrete. The specific mark of our case is that it is an attempt to elucidate a complicated state of affairs by resorting to an analogy borrowed from a branch of higher mathematics, the calculus of probability. As it happens, this mathematical discipline is more popular than the analysis of the epistemological nature of understanding.

There is no use in applying the yardstick of logic to a critique of metaphorical language. Analogies and metaphors are always defective and logically unsatisfactory. It is usual to search for the underlying *tertium comparationis.* But even this is not permissible with regard to the metaphor we are dealing with. For the comparison is based on a conception which is in itself faulty in the very frame of the calculus of probability, namely the

gambler's fallacy. In asserting that Roosevelt's chances are 9:1, the idea is that Roosevelt is in regard to the impending election in the position of a man who owns 90 per cent of all tickets of a lottery in regard to the first prize. It is implied that this ratio 9:1 tells us something substantial about the outcome of the unique case in which we are interested. There is no need to repeat that this is a mistaken idea.

No less impermissible is the recourse to the calculus of probability in dealing with hypotheses in the field of the natural sciences. Hypotheses are tentative explanations consciously based on logically insufficient arguments. With regard to them all that can be asserted is: The hypothesis does or does not contradict either logical principles or the facts as experimentally established and considered as true. In the first case it is untenable, in the second case it is—under the present state of our experimental knowledge—not untenable. (The intensity of personal conviction is purely subjective.) Neither frequency probability nor historical understanding enters into the matter.

The term hypothesis, applied to definite modes of understanding historical events, is a misnomer. If a historian asserts that in the fall of the Romanoff dynasty the fact that this house was of German background played a relevant role, he does not advance a hypothesis. The facts on which his understanding is founded are beyond question. There was a widespread animosity against Germans in Russia, and the ruling line of the Romanoffs, having for 200 years intermarried exclusively with scions of families of German descent, was viewed by many Russians as a germanized family, even by those who assumed that Tsar Paul was not the son of Peter III. But the question remains what the relevance of these facts was in the chain of events which brought about the dethronement of this dynasty. Such problems are not open to any elucidation other than that provided by understanding.

6. Betting, Gambling, and Playing Games

A bet is the engagement to risk money or other things against another man on the result of an event about the outcome of which we know only so much as can be known on the ground of understanding. Thus people may bet on the result of an impending election or a tennis match. Or they may bet on whose opinion concerning the content of a factual assertion is right and whose is wrong.

Gambling is the engagement to risk money or other things against another man on the result of an event about which we do not know anything more than is known on the ground of knowledge concerning the behavior of the whole class.

Sometimes betting and gambling are combined. The outcome of horse racing depends both on human action—on the part of the owner of the horse, the trainer, and the jockey—and on nonhuman factors—the qualities of the horse. Most of those risking money on the turf are simply gamblers. But the experts believe they know something by understanding the people involved; as far as this factor influences their decision they are betters. Furthermore they pretend to know the horses; they make a prognosis on the ground of their knowledge about the behavior of the classes of horses to which they assign the various competing horses. So far they are gamblers.

Later chapters of this book deal with the methods business applies in handling the problem of the uncertainty of the future. On this point of our reasoning only one more observation must be made.

Embarking upon games can be either an end or a means. It is an end for people who yearn for the stimulation and excitement with which the vicissitudes of a game provide them, or whose vanity is flattered by the display of their skill and superiority in playing a game which requires cunning and expertness. It is a means for professionals who want to make money by winning.

Playing a game can therefore be called an action. But it is not permissible to reverse this statement and to call every action a game or to deal with all actions as if they were games. The immediate aim in playing a game is to defeat the partner according to the rules of the game. This is a peculiar and special case of acting. Most actions do not aim at anybody's defeat or loss. They aim at an improvement in conditions. It can happen that this improvement is attained at some other men's expense. But this is certainly not always the case. It is, to put it mildly, certainly not the case within the regular operation of a social system based on the division of labor.

There is not the slightest analogy between playing games and the conduct of business within a market society. The card player wins money by outsmarting his antagonist. The businessman makes money by supplying customers with goods they want to acquire. There may exist an analogy between the strategy of a card player and that of a bluffer. There is no need to investigate this problem. He who interprets the conduct of business as trickery is on the wrong path.

The characteristic feature of games is the antagonism of two or more players or groups of players.[3] The characteristic feature of business within

3. "Patience" or "Solitaire" is not a one-person game, but a pastime, a means of escaping boredom. It certainly does not represent a pattern for what is going on in a communistic society, as John von Neumann and Oscar Morgenstern (*Theory of Games and Economic Behavior* [Princeton, 1944], p. 86) assert.

a society, i.e., within an order based on the division of labor, is concord in the endeavors of its members. As soon as they begin to antagonize one another, a tendency toward social disintegration emerges.

Within the frame of a market economy competition does not involve antagonism in the sense in which this term is applied to the hostile clash of incompatible interests. Competition, it is true, may sometimes or even often evoke in the competitors those passions of hatred and malice which usually accompany the intention of inflicting evil on other people. Psychologists are therefore prone to confuse combat and competition. But praxeology must beware of such artificial and misleading difference between catallactic competition and combat. Competitors aim at excellence and preeminence in accomplishments within a system of mutual cooperation. The function of competition is to assign to every member of a social system that position in which he can best serve the whole of society and all its members. It is a method of selecting the most able man for each performance. Where there is social cooperation, there some variety of selection must be applied. Only where the assignment of various individuals to various tasks is effected by the dictator's decisions alone and the individuals concerned do not aid the dictator by endeavors to represent their own virtues and abilities in the most favorable light, is there no competition.

We will have to deal at a later stage of our investigations with the function of competition.[4] At this point we must only emphasize that it is misleading to apply the terminology of mutual extermination to the problems of mutual cooperation as it works within a society. Military terms are inappropriate for the description of business operations. It is, e.g., a bad metaphor to speak of the conquest of a market. There is no conquest in the fact that one firm offers better or cheaper products than its competitors. Only in a metaphorical sense is there strategy in business operations.

7. Praxeological Prediction

Praxeological knowledge makes it possible to predict with apodictic certainty the outcome of various modes of action. But, of course, such prediction can never imply anything regarding quantitative matters. Quantitative problems are in the field of human action open to no other elucidation than that by understanding.

4. See below, pp. 273-277.

We can predict, as will be shown later, that—other things being equal—a fall in the demand for *a* will result in a drop in the price of *a*. But we cannot predict the extent of this drop. This question can be answered only by understanding.

The fundamental deficiency implied in every quantitative approach to economic problems consists in the neglect of the fact that there are no constant relations between what are called economic dimensions. There is neither constancy nor continuity in the valuations and in the formation of exchange ratios between various commodities. Every new datum brings about a reshuffling of the whole price structure. Understanding, by trying to grasp what is going on in the minds of the men concerned, can approach the problem of forecasting future conditions. We may call its methods unsatisfactory and the positivists may arrogantly scorn it. But such arbitrary judgments must not and cannot obscure the fact that understanding is the only appropriate method of dealing with the uncertainty of future conditions.

VII. ACTION WITHIN THE WORLD

1. The Law of Marginal Utility

ACTION sorts and grades; originally it knows only ordinal numbers, not cardinal numbers. But the external world to which acting man must adjust his conduct is a world of quantitative determinateness. In this world there exist quantitative relations between cause and effect. If it were otherwise, if definite things could render unlimited services, such things would never be scarce and could not be dealt with as means.

Acting man values things as means for the removal of his uneasiness. From the point of view of the natural sciences the various events which result in satisfying human needs appear as very different. Acting man sees in these events only a more or a less of the same kind. In valuing very different states of satisfaction and the means for their attainment, man arranges all things in *one* scale and sees in them only their relevance for an increase in his own satisfaction. The satisfaction derived from food and that derived from the enjoyment of a work of art are, in acting man's judgment, a more urgent or a less urgent need; valuation and action place them in one scale of what is more intensively desired and what is less. For acting man there exists primarily nothing but various degrees of relevance and urgency with regard to his own well-being.

Quantity and quality are categories of the external world. Only indirectly do they acquire importance and meaning for action. Because every thing can only produce a limited effect, some things are consider scarce and treated as means. Because the effects which things are able to produce are different, acting man distinguishes various classes of things. Because means of the same quantity and quality are apt always to produce the same quantity of an effect of the same quality, action does not differentiate between concrete definite quantities of homogeneous means. But this does not imply that it attaches the same value to the various portions of a supply of homogeneous means. Each portion is valued separately. To each portion its own rank in the scale of value is assigned. But these orders of rank can be ad libitum interchanged among the various portions of the same magnitude.

If acting man has to decide between two or more means of different classes, he grades the individual portions of each of them. He assigns to each portion its special rank. In doing so he need not assign to the various portions of the same means orders of rank which immediately succeed one another.

The assignment of orders of rank through valuation is done only in acting and through acting. How great the portions are to which a single order of rank is assigned depends on the individual and unique conditions under which man acts in every case. Action does not deal with physical or metaphysical units which it values in an abstract academic way; it is always faced with alternatives between which it chooses. The choice must always be made between definite quantities of means. It is permissible to call the smallest quantity which can be the object of such a decision a unit. But one must guard oneself against the error of assuming that the valuation of the sum of such units is derived from the valuation of the units, or that it represents the sum of the valuations attached to these units.

A man owns five units of commodity *a* and three units of commodity *b*. He attaches to the units of *a* the rank-orders 1, 2, 4, 7, and 8, to the units of *b* the rank-orders 3, 5, and 6. This means: If he must choose between two units of *a* and two units of *b*, he will prefer to lose two units of *a* rather than two units of *b*. But if he must choose between three units of *a* and two units of *b*, he will prefer to lose two units of *b* rather than three units of *a*. What counts always and alone in valuing a compound of several units is the utility of this compound as a whole—i.e., the increment in well-being dependent upon it or, what is the same, the impairment of well-being which its loss must bring about. There are no arithmetical processes involved, neither adding nor multiplying; there is a valuation of the utility dependent upon the having of the portion, compound, or supply in question.

Utility means in this context simply: causal relevance for the removal of felt uneasiness. Acting man believes that the services a thing can render are apt to improve his own well-being, and calls this the utility of the thing concerned. For praxeology the term utility is tantamount to importance attached to a thing on account of the belief that it can remove uneasiness. The praxeological notion of utility (*subjective use-value* in the terminology of the earlier Austrian economists) must be sharply distinguished from the technological notion of utility (*objective use-value* in the terminology of the same economists). Use-value in the objective sense is the relation between a thing and the effect it has the capacity to bring about. It is to objective

use-value that people refer in employing such terms as the "heating value" or "heating power"of coal. Subjective use-value is not always based on true objective use-value. There are things to which subjective use-value is attached because people erroneously believe that they have the power to bring about a desired effect. On the other hand there are things able to produce a desired effect to which no use-value is attached because people are ignorant of this fact.

Let us look at the state of economic thought which prevailed on the eve of the elaboration of the modern theory of value by Carl Menger, William Stanly Jevons, and Leon Walras. Whoever wants to construct an elementary theory of value and prices must first think of utility. Nothing indeed is more plausible than to assume that things are valued according to their utility. But then a difficulty appears which presented to the older economists a problem they failed to solve. They observed that things whose "utility' is greater are valued less than other things of smaller utility. *Iron* is less appreciated than *gold*. This fact seems to be incompatible with a theory of value and prices based on the concepts of utility and use-value. The economists believed that they had to abandon such a theory and tried to explain the phenomena of value and market exchange by other theories.

Only late did the economists discover that the apparent paradox was the outcome of a vicious formulation of the problem involved. The valuations and choices that result in the exchange ratios of the market do not decide between *gold* and *iron*. Acting man is not in a position in which he must choose between *all* the gold and *all* the iron. He chooses at a definite time and place under definite conditions between a strictly limited quantity of gold and a strictly limited quantity of iron. His decision in choosing between 100 ounces of gold and 100 tons of iron does not depend at all on the decision he would make if he were in the highly improbable situation of choosing between all the gold and all the iron. What counts alone for his actual choice is whether under existing conditions he considers the direct or indirect satisfaction which 100 ounces of gold could give him as greater or smaller than the direct or indirect satisfaction he could derive from 100 tons of iron. He does not express an academic or philosophical judgment concerning the "absolute" value of gold and of iron; he does not determine whether gold or iron is more important for mankind; he does not perorate as an author of books on the philosophy of history or on ethical principles. He simply chooses between two satisfactions both of which he cannot have together.

To prefer and to set aside and the choices and decisions in which they result are not acts of measurement. Action does not measure utility or value; it chooses between alternatives. There is no abstract problem of total utility or total value.[1] There is no ratiocinative operation which could lead from the valuation of a definite quantity or number of things to the determination of the value of a greater or smaller quantity or number. There is no means of calculating the total value of a supply if only the values of its parts are known. There is no means of establishing the value of a part of a supply if only the value of the total supply is known. There are in the sphere of values and valuations no arithmetical operations; there is no such thing as a calculation of values. The valuation of the total stock of two things can differ from the valuation of parts of these stocks. An isolated man owning seven cows and seven horses may value one horse higher than one cow and may, when faced with the alternative, prefer to give up one cow rather than one horse. But at the same time the same man, when faced with the alternative of choosing between his whole supply of horses and his whole supply of cows, may prefer to keep the cows and to give up the horses. The concepts of total utility and total value are meaningless if not applied to a situation in which people must choose between total supplies. The question whether *gold* as such and *iron* as such is more useful and valuable is reasonable only with regard to a situation in which mankind or an isolated part of mankind must choose between *all* the gold and *all* the iron available.

The judgment of value refers only to the supply with which the concrete act of choice is concerned. A supply is *ex definitione* always composed of homogeneous parts each of which is capable of rendering the same services as, and of being substituted for, any other part. It is therefore immaterial for the act of choosing which particular part forms its object. All parts—units—of the available stock are considered as equally useful and valuable if the problem of giving up *one* of them is raised. If the supply decreased by the loss of one unit, acting man must decide anew how to use the various units of the remaining stock. It is obvious that the smaller stock cannot render all the services the greater stock could. That employment of the various units which under this new disposition is no longer provided for, was in the eyes of acting man the least urgent employment among

1. It is important to note that this chapter does not deal with prices or market values, but with subjective use-value. Prices are derivative of subjective use-value. Cf. below, Chapter XVI.

all those for which he had previously assigned the various units of the greater stock. The satisfaction which he derived from the use of one unit for this employment was the smallest among the satisfactions which the units of the greater stock had rendered to him. It is only the value of this marginal satisfaction on which he must decide if the question of renouncing one unit of the total stock comes up. When faced with the problem of the value to be attached to one unit of a homogeneous supply, man decides on the basis of the value of the least important use he makes of the units of the whole supply; he decides on the basis of marginal utility.

If a man is faced with the alternative of giving up either one unit of his supply of *a* or one unit of his supply of *b*, he does not compare the total value of his total stock of *a* with the total value of his stock of *b*. He compares the marginal values both of *a* and of *b*. Although he may value the total supply of *a* higher than the total supply of *b*, the marginal value of *b* may be higher than the marginal value of *a*.

The same reasoning holds good for the question of increasing the available supply of any commodity by the acquisition of an additional definite number of units.

For the description of these facts economics does not need to employ the terminology of psychology. Neither does it need to resort to psychological reasoning and arguments for proving them. If we say that the acts of choice do not depend on the value attached to a whole class of wants, but on that attached to the concrete wants in question irrespective of the class in which they may be reckoned, we do not add anything to our knowledge and do not trace it back to some better-known or more general knowledge. This mode of speaking in terms of classes of wants becomes intelligible only if we remember the role played in the history of economic thought by the alleged paradox of value. Carl Menger and Bohm-Bawerk had to make use of the term "class of wants" in order to refute the objections raised by those who considered *bread* as such more valuable than *silk* because the class "want of nourishment" is more important than the class "want of luxurious clothing."[2] Today the concept "class of wants" is entirely superfluous. It has no meaning for action and therefore none for the theory of value; it is, moreover, liable to bring about error and confusion. Construction of concepts and classification are mental tools; they acquire meaning and sense only in the

2. Cf. Carl Menger, *Grundsätze der Volkswirtschaftslehre* (Vienna, 1871), pp. 88 ff.; Böhm-Bawerk, *Kapital und Kapitalzins* (3d ed. Innsbruck, 1909), Pt. II, pp. 237 ff.

context of theories which utilize them.[3] It is nonsensical to arrange various wants into "classes of wants" in order to establish that such a classification is of no avail whatever for the theory of value.

The law of marginal utility and decreasing marginal value is independent of Gossen's law of the saturation of wants (first law of Gossen). In treating marginal utility we deal neither with sensuous enjoyment nor with saturation and satiety. We do not transcend the sphere of praxeological reasoning in establishing the following definition: We call that employment of a unit of a homogeneous supply which a man makes if his supply is *n* units, but would not make if, other things being equal, his supply were only *n*-1 units, the least urgent employment or the marginal employment, and the utility derived from it marginal utility. In order to attain this knowledge we do not need any physiological or psychological experience, knowledge, or reasoning. It follows necessarily from our assumptions that people act (choose) and that in the first case acting man has *n* units of a homogeneous supply and in the second case *n*-1 units. Under these conditions no other result is thinkable. Our statement is formal and aprioristic and does not depend on any experience.

There are only two alternatives. Either there are or there are not intermediate stages between the felt uneasiness which impels a man to act and the state in which there can no longer be any action (be it because the state of perfect satisfaction is reached or because man is incapable of any further improvement in his conditions). In the second case there could be only one action; as soon as this action is consummated, a state would be reached in which no further action is possible. This is manifestly incompatible with our assumption that there is action; this case no longer implies the general conditions presupposed in the category of action. Only the first case remains. But then there are various degrees in the asymptotic approach to the state in which there can no longer be any action. Thus the law of marginal utility is already implied in the category of action. It is nothing else than the reverse of the statement that what satisfies more is preferred to what gives smaller satisfaction. If the supply available increases from *n*-1 units to *n* units, the increment can be employed only for the removal of a want which is less urgent or less painful than the least urgent or least painful among all those wants which could be removed by means of the supply *n*-1.

3. Classes are not in the world. It is our mind that classifies the phenomena in order to orgaize our knowledge. The question of whether a certain mode of classifying phenomena is conducive to this end or not is different from the question of whether it is logical permissible or not.

The law of marginal utility does not refer to objective use-value, but to subjective use-value. It does not deal with the physical or chemical capacity of things to bring about a definite effect in general, but with their relevance for the well-being of a man as he himself sees it under the prevailing momentary state of his affairs. It does not deal primarily with the value of things, but with the value of the services a man expects to get from them.

If we were to believe that marginal utility is about things and their objective use-value, we would be forced to assume that marginal utility can as well increase as decrease with an increase in the quantity of units available. It can happen that the employment of a certain minimum quantity—*n* units—of a good *a* can provide a satisfaction which is deemed more valuable than the services expected from one unit of a good *b*. But if the supply of *a* available is smaller than *n*, *a* can only be employed for another service which is considered less valuable than that of *b*. Then an increase in the quantity of *a* from *n*-1 units to *n* units results in an increase of the value attached to one unit of *a*. The owner of 100 logs may build a cabin which protects him against rain better than a raincoat. But if fewer than 100 logs are available, he can only use them for a berth that protects him against the dampness of the soil. As the owner of 95 logs he would be prepared to forsake the raincoat in order to get 5 logs more. As the owner of 10 logs he would not abandon the raincoat even for 10 logs. A man whose savings amount to $100 may not be willing to carry out some work for a remuneration of $200. But if his savings were $2,000 and he were extremely anxious to acquire an indivisible good which cannot be bought for less than $2,100, he would be ready to perform this work for $100. All this is in perfect agreement with the rightly formulated law of marginal utility according to which value depends on the utility of the services expected. There is no question of any such thing as a law of increasing marginal utility.

The law of marginal utility must be confused neither with Bernoulli's doctrine *de mensura sortis* nor with the Weber-Fechner law. At the bottom of Bernoulli's contribution were the generally known and never disputed facts that people are eager to satisfy the more urgent wants before they satisfy the less urgent, and that a rich man is in a position to provide better for his wants than a poor man. But the inferences Bernoulli drew from these truisms are all wrong. He developed a mathematical theory that the increment in gratification diminishes with the increase in a man's total wealth. His statement that as a rule it is highly probable that for a man whose income is 5,000 ducats one ducat means not more than half a ducat for a man with an

income of 2,500 ducats is merely fanciful. Let us set aside the objection that there is no means of drawing comparisons other than entirely arbitrary ones between the valuations of various people. Bernoulli's method is no less inadequate for the valuations of the same individual with various amounts of income. He did not see that all that can be said about the case in question is that with increasing income every new increment is used for the satisfaction of a want less urgently felt than the least urgently felt want already satisfied before this increment took place. He did not see that in valuing, choosing, and acting there is no measurement and no establishment of equivalence, but grading, i.e., preferring and putting aside.[4] Thus neither Bernoulli nor the mathematicians and economists who adopted his mode of reasoning could succeed in solving the paradox of value.

The mistakes inherent in the confusion of the Weber-Fechner law of psychophysics and the subjective theory of value have already been attacked by Max Weber. Max Weber, it is true, was not sufficiently familiar with economics and was too much under the sway of historicism to get a correct insight into the fundamentals of economic thought. But ingenious intuition provided him with a suggestion of a way toward the correct solution. The theory of marginal utility, he asserts, is "not psychologically substantiated, but rather—if an epistemological term is to be applied—pragmatically, i.e., on the employment of the categories: ends and means."[5]

If a man wants to remove a pathological condition by taking a definite quantity of a remedy, the intake of a multiple will not bring about a better effect. The surplus will have either no effect other than the appropriate dose, the optimum, or it will have detrimental effects. The same is true of all kinds of satisfactions, although the optimum is often reached only by the application of a large dose, and the point at which further increments produce detrimental effects is often far away. This is so because our world is a world of causality and of quantitative relations between cause and effect. He who wants to remove the uneasiness caused by living in a room with a temperature of 35 degrees will aim at heating the room to a temperature of 65 or 70 degrees. It has nothing to do with the Weber-Fechner law that he does not aim at a temperature of 180

4. Cf. Daniel Bernoulli, *Versuch einer neuen Theorie zur Bestimmung von Glücksfällen*, trans. by Pringsheim (Leipzib, 1896), pp. 27 ff.

5. Cf. Max Weber, *Gesammelte Aufsätze zur Wissenschaftslehre* (Tübingen, 1922), p. 372; also p. 149. The term "pragmatical" as used by Weber is of course liable to bring about confusion. It is inexpedient to employ it for anything other than the philosophy of Pragmatism. If Weber had known the term "praxeology," he probably would have preferred it.

or 300 degrees. Neither has it anything to do with psychology. All that psychology can do for the explanation of this fact is to establish as an ultimate given that man as a rule prefers the preservation of life and health to death and sickness. What counts for praxeology is only the fact that acting man chooses between alternatives. That man is placed at crossroads, that he must and does choose, is—apart from other conditions—due to the fact that he lives in a quantitative world and not in a world without quantity, which is even unimaginable for the human mind.

The confusion of marginal utility and the Weber-Fechner law originated from the mistake of looking only at the means for the attainment of satisfaction and not at the satisfaction itself. If the satisfaction had been thought of, the absurd idea would not have been adopted of explaining the configuration of the desire for warmth by referring to the decreasing intensity of the sensation of successive increments in the intensity of the stimuli. That the average man does not want to raise the temperature of his bedroom to 120 degrees has no reference whatever to the intensity of the sensation for warmth. That a man does not heat his room to the same degree as other normal people do and as he himself would probably do, if he were not more intent upon buying a new suit or attending the performance of a Beethoven symphony, cannot be explained by the methods of the natural sciences. Objective and open to a treatment by the methods of the natural sciences are only the problems of objective use-value; the valuation of objective use-value on the part of acting man is another thing.

2. The Law of Returns

Quantitative definiteness in the effects brought about by an economic good means with regard to the goods of the first order (consumers' goods): a quantity *a* of cause brings about—either once and for all or piecemeal over a definite period of time—a quantity α of effect. With regard to the goods of the higher orders (producers' goods) it means: a quantity *b* of cause brings about a quantity β of effect, provided the complementary cause *c* contributes the quantity γ of effect; only the concerted effects β and γ bring about the quantity *p* of the good of the first order *D*. There are in this case three quantities: *b* and *c* of the two complementary goods *B* and *C*, and *p* of the product *D*.

With *b* remaining unchanged, we call that value of *c* which results in the highest value of $\frac{p}{c}$ the optimum. If several values of *c* result in this highest value of $\frac{p}{c}$, then we call that the optimum which results also in the highest

value of *p*. If the two complementary goods are employed in the optimal ratio, they both render the highest output; their power to produce, their objective use-value, is fully utilized; no fraction of them is wasted. If we deviate from this optimal combination by increasing the quantity of *C* without changing the quantity of *B*, the return will as a rule increase further, sbut not in proportion to the increase in the quantity of *C*. If it is at all possible to increase the return from *p* to p_1 by increasing the quantity of *one* of the complementary factors only, namely by substituting *cx* for *c*, *x* being greater than 1, we have at any rate: $p_1 > p$ and $p_1 c < pcx$. For if it were possible to compensate any decrease in *b* by a corresponding increase in *c* in such a way that *p* remains unchanged, the physical power of production proper to *B* would be unlimited and *B* would not be considered as scarce and as an economic good. It would be of no importance for acting man whether the supply of *B* available were greater or smaller. Even an infinitesimal quantity of *B* would be sufficient for the production of any quantity of *D*, provided the supply of *C* is large enough. On the other hand, an increase in the quantity of *B* available could not increase the output of *D* if the supply of *C* does not increase. The total return of the process would be imputed to *C*; *B* could not be an economic good. A thing rendering such unlimited services is, for instance, the knowledge of the causal relation implied. The formula, the recipe that teaches us how to prepare coffee, provided it is known, renders unlimited services. It does not lose anything from its capacity to produce however often it is used; its productive power is inexhaustible; it is therefore not an economic good. Acting man is never faced with a situation in which he must choose between the use-value of a known formula and any other useful thing.

The law of returns asserts that for the combination of economic goods of the higher orders (factors of production) there exists an optimum. If one deviates from this optimum by increasing the input of only one of the factors, the physical output either does not increase at all or at least not in the ratio of the increased input. This law, as has been demonstrated above, is implied in the fact that the quantitative definiteness of the effects brought about by any economic good is a necessary condition of its being an economic good.

That there is such an optimum of combination is all that the law of returns, popularly called the law of diminishing returns, teaches. There are many other questions which it does not answer at all and which can only be solved a posteriori by experience.

If the effect brought about by one of the complementary factors is

indivisible, the optimum is the only combination which results in the outcome aimed at. In order to dye a piece of wool to a definite shade, a definite quantity of dye is required. A greater or smaller quantity would frustrate the aim sought. He who has more coloring matter must leave the surplus unused. He who has a smaller quantity can dye only a part of the piece. The diminishing return results in this instance in the complete uselessness of the additional quantity which must not even be employed because it would thwart the design.

In other instances a certain minimum is required for the production of the minimum effect. Between this minimum effect and the optimal effect there is a margin in which increased doses result either in a proportional increase in effect or in a more than proportional increase in effect. In order to make a machine turn, a certain minimum of lubricant is needed. Whether an increase of lubricant above this minimum increases the machine's performance in proportion to the increase in the amount applied, or to a greater extent, can only be ascertained by technological experience.

The law of returns does not answer the following questions: (1) Whether or not the optimum dose is the only one that is capable of producing the effect sought. (2) Whether or not there is a rigid limit above which any increase in the amount of the variable factor is quite useless. (3) Whether the decrease in output brought about by progressive deviation from the optimum and the increase in output brought about by progressive approach to the optimum result in proportional or nonproportional changes in output per unit of the variable factor. All this must be discerned by experience. But the law of returns itself, i.e., the fact that there must exist such an optimum combination, is valid a priori.

The Malthusian law of population and the concepts of absolute overpopulation and under-population and optimum population derived from it are the application of the law of returns to a special problem. They deal with changes in the supply of human labor, other factors being equal. Because people, for political considerations, wanted to reject the Malthusiam law, they fought with passion but with faulty arguments against the law of returns—which, incidentally, they knew only as the law of diminishing returns of the use of capital and labor on land. Today we no longer need to pay any attention to these idle remonstrances. The law of returns is not limited to the use of complementary factors of production on land. The endeavors to refute or to demonstrate its validity by historical and experimental investigations of agricultural production are as needless as they are