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## What Is Economic 'Knowledge'?

By E. C. HARWOOD

THAT ECONOMISTS FREQUENTLY DO NOT AGREE has become so commonplace that some economists no longer seem to be troubled by the suggestion that such a state of affairs is scandalous. That many economists do agree on certain analyses and conclusions is equally scandalous from the viewpoint of modern science, however, because that agreement rests on methods of inquiry that have been found unreliable and have been discarded by capable scientists. The fact that a few conclusions on which some economists agree do have adequate scientific bases emphasizes by contrast the more fundamental disagreement among economists generally regarding the methods of inquiry that can be expected to yield useful results.

In short, one important—perhaps *the* most important—reason for their divergent and conflicting analyses is that economists have not yet agreed upon the tests that economic inquiry should meet. In a manner of speaking, economists have not answered the question, What is acceptable economic “knowledge”?

For the most part economists seem to have accepted uncritically the notion that everyone knows what “knowledge” is and that “knowledge” can readily be found by using the procedures of common sense, of elementary Aristotelian logic, of intuition, of revelation or otherwise according to the inclinations of the individual inquirers. That “knowledge” acquired by such diverse means and accepted without generally agreed-upon tests or standards should be unreliable, contradictory, and apparently useless in large part should surprise no one; only the credulous who assume that the age of miracles still continues would expect otherwise.

Nevertheless, in fairness to economists generally, it should be noted that the answer to the question, What is acceptable as economic "knowledge," is not so simple as may be supposed. The economists have not usually claimed to be expert knowers about "knowledge"; that task, imposingly labeled epistemology, has been left for the most part to the philosophers, and they have not as yet agreed on this aspect of their studies. When we turn to the philosophers for enlightenment, we find the following:

Knowledge: In current employment this word is too wide and vague to be a *name* of anything in particular. The butterfly "knows" how to mate, presumably without learning; the dog "knows" its master through learning; man "knows" through learning how to do an immense number of things in the way of arts and abilities; he also "knows" physics, and "knows" mathematics; he knows *that, what, and how*. . . The issues that must be faced before firm use is gained are: Does the word "knowledge" indicate something the organism possesses or produces? Or does it indicate something the organism confronts or with which it comes into contact? Can either of the viewpoints be coherently maintained? If not, what change in preliminary description must be sought?<sup>1</sup>

This seems to leave the economists where they were before, up a tree, or rather up many different trees in a number of different forests. There is in the quotation no light illuminating a path leading to common ground.

Fortunately, Dewey and Bentley have not left us up a tree; they have descended to firm ground where they have identified some objects that may be helpful. However, before discussing these objects, brief comment on Dewey and Bentley's method is advisable.

#### Knowing as an Aspect of Human Behavior

IN THEIR ATTEMPT to know more about "knowledge," Dewey and Bentley have regarded knowing as an aspect of human behavior. No inner knower, or mind, or soul that does the knowing is assumed. They take man as they find him behaving in his cosmos or universe, never apart from it. Likewise they take whatever is known in the cosmos or universe as they find it, never in isolation from it.<sup>2</sup>

<sup>1</sup> John Dewey and Arthur F. Bentley, *Knowing and the Known*, Boston, Beacon Press, 1949, p. 296.

<sup>2</sup> This procedure is called the "transactional" approach. Economists to whom this terminology at first seems unfamiliar might benefit by reflecting on a similar approach to a particular supply-demand situation in a market place. If study of such a problem included all significant aspects in their relations to one another, the behavior of the buyer, the seller, the items exchanged, and the effects of bids and offers on the behavior of other potential buyers and sellers in the market, then the transaction in all its pertinent ramifications would be under consideration and the result would be a transactional approach to the problem.

As a result of applying this procedure in their inquiry into "knowledge," Dewey and Bentley describe knowings as the observed language behavior of men concerned with naming or designating. And an integral part of the naming transaction is the known.<sup>3</sup> In brief and as a preliminary statement, we may say that knowing and the known refer to the same transaction as naming and the named, or knowing refers to naming behavior and known refers to that which is named.

Now it is obvious that nothing just said enables economists or anyone else to use the word "knowledge" for the purpose of specifying (scientifically naming) anything in particular. But the economists can at least climb down their various trees of "knowledge" and survey the relatively firm ground of knowing behavior and the known. Evidently this is not the *last* step toward common ground, but it may prove to be an essential first step.

For untold thousands of years man's knowing behavior has been in the process of advance or development from primitive beginnings. However, the behaviors of newly-born babies are as primitive as that of infants born ages ago. Consequently, we can gain some understanding of the development of man's knowing behavior in spite of the fact that no records of the beginnings were made or, if made, were lost in remote antiquity. Not only do the knowing behaviors of infants progress through the successive stages of man's knowing behavior, but also the present knowing behaviors of adult men in primitive tribes throw light on the problem.

The distinguished anthropologist, Bronislaw Malinowski, conducted certain penetrating studies of knowing behavior in primitive tribes. The paragraphs that immediately follow are a paraphrased and otherwise shortened version of his report.<sup>4</sup>

In its primitive forms, language should be studied against the related background of human activities in each instance and as an aspect of human behavior. Language functions as a link in concerted human activity and is a mode of action.

Dr. Malinowski describes situations illustrating such primitive uses of language. One example describes a fishing expedition participated in by a large group:

<sup>3</sup> *Ibid.*, p. 296, where knowings are specifically designated "the organic phases of transactionally observed behaviors," and p. 297, where the known is designated the "environmental phase (as distinguished from the behavioral phase) of transactionally observed behaviors."

<sup>4</sup> Bronislaw Malinowski, "Supplement I" to *The Meaning of Meaning* by K. C. Ogden and I. A. Richards, New York, Harcourt Brace, 1938.

The canoes glide slowly and noiselessly, punted by men especially good at this task. . . . Customary signs, or sounds or words are uttered. Sometimes a sentence full of technical references to the channels or patches on the lagoon has to be spoken. . . . Again, a word of command is passed here and there, a technical expression or explanation which serves to harmonize their behavior towards other men. . . . All the language used during such a pursuit is full of technical terms, short references to surroundings, rapid indications of change—all based on customary types of behavior. . . . The structure of all this linguistic material is inextricably mixed up with, and dependent upon, the course of the activity in which the utterances are embedded. The vocabulary, the meaning of the particular words used in their characteristic technicality is not less subordinate to action. . . . It is a mode of action and not an instrument of reflection.<sup>5</sup>

Perhaps more illuminating because it is within the scope of the personal experiences of everyone is the primitive language of infants. We may use Malinowski's observations to refresh our own memories.<sup>6</sup>

This manner of formation of meaning we must now proceed to analyse. . . . And it will be best done . . . by an analysis of infantile uses of words, of primitive forms, . . . and of pre-scientific language among ourselves.

. . . Concentrating our attention for the moment on infantile utterances . . . it can be said that each sound . . . has a certain significance; and that it is correlated with the outer situation surrounding and comprising the child's organism. . . . All this is true of the non-articulate sounds emitted by an infant, such as gurgling, wailing, squalling, crowing and weeping. . . . Emission of sounds is . . . one of the child's main activities, persistent and passionate, as every parent knows from pleasant and unpleasant experiences alike!

. . . The child *acts* by sound at this stage, and acts in a manner which is both adapted to the outer situation, to the child's mental state and which is also intelligible to the surrounding adults. Thus the significance of sound, the meaning of an utterance is here identical with the active response to surroundings. . . .

When sound begins to articulate, the child's mind develops in a parallel manner and becomes interested in isolating objects from its surroundings. . . . At the same time, the child becomes aware of the sounds produced by the adults and the other children of its surroundings, and it develops a tendency to imitate them . . . and this paves the way to a clearer, more articulate enunciation.

. . . whether the child acquires some of its early vocabulary by a spontaneous process or whether all its words come to it from the outside, the manner in which the first items of articulate speech are used is the point which is really interesting and relevant for us in this connection.

The earliest words—*mama*, *dada*, or *papa*, expressions for food, water, certain toys or animals—are not simply imitated and used to describe,

<sup>5</sup> *Ibid.*, p. 311.

<sup>6</sup> *Ibid.*, pp. 318–25.

name, or identify. . . . Here the word becomes the significant reaction, adjusted to situation, expressive of inner state and intelligible to the human milieu.

This latter fact has another very important set of consequences. The human infant, helpless in itself and unable to cope with the difficulties and dangers of its early life, is endowed with very complete arrangements for care and assistance. . . . The child's action on the surrounding world is done through the parents, on whom the child acts again by its appeal, mainly its verbal appeal . . . its only means of action is to clamour, and a very efficient means of action this proves to the child.

To the child, words are therefore not only means of expression but efficient modes of action. The name of a person uttered aloud in a piteous voice possesses the power of materializing this person. Food has to be called for and it appears—in the majority of cases. Thus infantile experience must leave on the child's mind the deep impression that a name has the power over the person or thing which it signifies.

We find thus that an arrangement biologically essential to the human race makes the early articulated words sent forth by children produce the very effect which these words *mean*. Words are to a child active forces, they give him an essential hold on reality, they provide him with the only effective means of moving, attracting and repulsing outer things and of producing changes in all that is relevant. This of course is not the statement of a child's conscious views about language, but it is the attitude implied in the child's behavior.

. . . In all the child's experience, words *mean*, in so far as they act and not in so far as they make the child understand or appreciate. . . . And all the time, up to a fairly advanced age, the name of an object is the first means resorted to, in order to attract, to materialize this thing. . . .

Again, the same view of meaning results from the active uses of speech among ourselves, even among those of us, who, on comparatively rare occasions, can use language in a scientific or literary manner. The innumerable superstitions—the agnostic's fear of blasphemy or at least reluctance to use it, the active dislike of obscene language, the power of swearing—all this shows that in the normal use of words the bond between symbol and referent is more than a mere convention.

On anyone who has read the brilliant chapters of Ogden and Richards and grasped the main trend of their argument, it will have dawned before now that all the argument of this Section is a sort of foot-note to their fundamental contention that the primitive, magical attitude towards words is responsible for a good deal in the general use and abuse of language, more especially in philosophical speculation. . . . By much of what is incidentally said, we are made to realize how deeply rooted is the belief that a word has some power over a thing, that it participates of the nature of the thing, that it is akin or even identical in its contained "meaning" with the thing or with its prototype.

. . . In studying the infantile formation of meaning and the savage or illiterate meaning, we found this . . . magical attitude towards words.

The word gives power, allows one to exercise an influence over an object or an action. The meaning of a word arises out of familiarity, out of ability to use, out of the faculty of direct clamouring as with the infant, or practically directing as with primitive man. . . . This indeed is nothing more or less than the essence of the theory which underlies the use of verbal magic. And this theory we find based on real psychological experiences in primitive forms of speech.

Before the earliest philosophical speculation sets in, there emerges the practice and theory of magic, and in this, man's natural attitude towards words becomes fixed and formulated by a special lore and tradition. It is through the study of actual spells and verbal magic as well as by the analysis of savage ideas on magic that we can best understand this developed traditional view of the secret power of appropriate words on certain things. Briefly it may be said that such study simply confirms our theoretical analysis of this section. . . .

Thus we arrive at one of man's earliest knowing behaviors, the practice of magic, and with the foregoing in mind, it is not difficult to understand his early adoption and even his continued use of such procedures. As Dr. Malinowski mentions, Ogden and Richards have brilliantly described this aspect of the problem. For much in the paragraphs that immediately follow, I am indebted to them.<sup>7</sup>

From the earliest times the Symbols which men have used to aid the process of thinking and to record their achievements have been a continuous source of wonder and illusion. The whole human race has been so impressed by the properties of words as instruments for the control of objects, that in every age it has attributed to them occult powers. . . . Unless we fully realize the profound influence of superstitions concerning words, we shall not understand the fixity of certain widespread linguistic habits which still vitiate even the most careful thinking. . . .<sup>8</sup>

We may smile at the linguistic illusions of primitive man, but may we forget that the verbal machinery on which we so readily rely, and with which our metaphysicians still profess to probe the Nature of Existence, was set up by him, and may be responsible for other illusions hardly less gross and not more easily eradicable? It may suffice at this point to recall the prevalence of sacred or secret vocabularies, and of forbidden words of every sort. . . . With its immense stress on the part played by language in memory and imagination, it is clear that in the days before psychological analysis was possible the evidence for a special world of words of power . . . must have appeared overwhelming.<sup>9</sup>

Now it seems obvious that the continued acceptance of practitioners of magic and purveyors of superstitions has been attributable in large part

<sup>7</sup> C. K. Ogden and I. A. Richards, *The Meaning of Meaning*, New York, Harcourt, Brace, 1938, chapter II especially.

<sup>8</sup> *Ibid.*, p. 24.

<sup>9</sup> *Ibid.*, p. 26.

to an attitude toward words deeply ingrained not only in children and primitive savages but also in the most enlightened adults of our own times. True, many adults have developed some degree of sophistication in their use of language, they no longer believe that the word is the *same* as the thing or that utterance of the word necessarily will *call forth* the thing. Nevertheless, even the more astute thinkers frequently seem to assume that, if there is a word they like to use, there must be a corresponding thing. This is the process that is called hypostatization, and many economists as well as philosophers thus become tangled in semantic snares of their own making.

Probably more or less paralleling the development of word magic in all its fascinating varieties, men also developed a language behavior that was more closely allied to or was the outgrowth of what we may call common sense. In an interesting article, Dr. Edwin Loeb<sup>10</sup> has pointed to proverbs as an example of man's knowing behavior.

For the purposes of this discussion the precise manner in which various proverbs have been handed down from antiquity or have been derived from man's experience is unnecessary. Many proverbs are still with good reason considered useful records of man's knowing behavior, but many also are known to be useless because the common sense methods of inquiry that they reflect were inadequate for the purpose such proverbs pretend to serve. From the modern scientific point of view neither proverbs nor magic are considered consistently useful forms of knowing behavior.

#### The Greek Philosophers and Knowing Behavior

MORE THAN 2,000 YEARS AGO a new development in man's knowing behavior occurred. No doubt, the beginnings of this development lie farther back beyond the reach of recorded history; but, in any event, what we know of it is what has survived from the Greek philosophers' work and the modern application of their methods still widely used today.

Records concerning two quite different Greek philosophical schools have come down to us. One, dominated by Plato's methods, was in some respects influenced greatly by the primitive attitude toward words already described. Perhaps it would be more accurate to say that this school was influenced by the supposed significance of ideas without apparently realizing the extent to which the language so uncritically accepted controlled their ideas. They hoped to know or name reality by dielectrical or word-juggling processes, and the result was Plato's idealism. This procedure

<sup>10</sup> Edwin Loeb, "The Function of Proverbs in the Intellectual Development of Primitive Peoples," *The Scientific Monthly*, February 1952.



has not by any means been abandoned, as study of even widely known philosophers and some economists plainly shows.<sup>11</sup>

Associated with Plato were the early mathematicians whose work seemed to offer both new tools of inquiry and proof in the seeming perfection of mathematics that the course followed by Plato would have the desired results. Aristotle has sometimes been blamed for diverting the development of man's knowing behavior away from the use of mathematics in connection with observations of nature. However, Dr. Ratner clarifies this aspect of the historical development in the following paragraph.<sup>12</sup>

The plain historical matter of fact is that the Pythagoreans, the mathematicians, were, with respect to the development of Greek science and philosophy, on the ground floor. . . . Only superficial reading of history backwards . . . can yield the conclusion that Aristotle deflected the course of Greek scientific thought out of "relating mathematical notions to the facts of nature" into the halfway house of "classifying" those facts. Rather must the case have been that the Greek mathematical development, as a procedure of investigating nature, quickly reached an impasse and Aristotle's Logic was the only way out. And for this there is conclusive proof.

Now in spite of the differences between Aristotle's and Plato's methods of inquiry, one especially significant aspect of their respective philosophies was the same in each. Both were embarked on what John Dewey has labeled "The Quest for Certainty."<sup>13</sup> The objective of Greek inquiry, and indeed the objective of man's inquiries for many centuries thereafter, was to discover eternal and immutable reality, that which was assumed to be forever unchanging and that once known is known forever after with absolute certainty.

The fact that this "quest for certainty" was the objective influenced greatly the procedures used. The Greek philosophers and probably many before their time as well as all philosophers afterward for many centuries concentrated their attention primarily on whatever they could find that seemed to be fixed and unchanging. All change was considered accidental, ephemeral, and inferior as a subject of investigation because it seemed obvious that essential and unchanging Being could not be found in the proc-

<sup>11</sup> Joseph Ratner, *Intelligence in the Modern World, John Dewey's Philosophy*, The Modern Library, New York 1939. Dr. Ratner says (p. 239), "Contemporary philosophers are of course distinguishable in many ways from medieval scholastics. But in so far as contemporaries accept standardized problems and seek for their solution by dialectically arranging standardized parts, they are every whit as medieval as the veriest scholastics of ten centuries ago," and on pp. 215, 216, 230, and 235 as well as elsewhere he cites examples from the works of Berkeley, Russell, Whitehead, and the economists.

<sup>12</sup> *Ibid.*, p. 101.

<sup>13</sup> *Ibid.*, p. 19, where Dr. Ratner's comments will be found and pages 275 *et seq.* where Dewey's book *The Quest for Certainty* is quoted at length.

esses of change. Incidentally, we should remember that, even if such had not been their viewpoint, the Greek philosophers would have been seriously handicapped by a lack of tools and instruments for effecting changes and measuring them.

Unlike Plato, Aristotle insisted on the importance of observing facts. Thwarted in the attempt to apply the mathematics of his time to reality as he saw it, Aristotle turned to classification of the qualities and proportions and relations to shapes and sizes as he found them. Aristotelian logic was the outgrowth of these efforts.

Subsequently, in Europe, for the hundreds of years of the dark ages, magic and proverbs were the principal keys to what was considered "knowledge." Whether one classifies revelation as a separate method of knowing or includes it under the general classification of magic may depend on his religious preferences or lack of them. In any event, the Greek contributions, both Plato's idealism and Aristotle's system of logic were lost to Western Civilization until rediscovered and put to use again by the medieval scholastics who dominated the field of learning until the scientific revolution of the seventeenth century.

#### The Revolution in the Method of Inquiry

SOME 300 YEARS AGO a revolution in the method of inquiry was initiated by Galileo. His new method was revolutionary in that it both destroyed one system of inquiry and started another. Precisely what were the significant aspects of the new method? To summarize, they were the quantitative measurement of change and study of the relationships between or among changes.

The new method was broader in scope than the chemist's test-tube experiments in his laboratory, although these were included in the new method. Those observers of the new method who have argued that it is applicable only to the things that can be put in a test tube, or in a laboratory at least, overlook the significant aspects of the new method. The celestial bodies have never been brought into the astronomers' laboratories, nor do the astronomers either initiate or control the changes that occur in celestial space; but the new method has been applied to that as well as other fields with outstanding success. Even such a keen observer and student as Dr. Ratner has said, we think mistakenly, that "to be able to measure quantitative relations of change, it is absolutely essential to *control* the changes, to stop them and start them, to accelerate them and regard them."<sup>14</sup> We suggest that the significant aspects of experiment in the

<sup>14</sup> *Ibid.*, p. 99. However, in all fairness to Dr. Ratner, we should add that he waived all claims to certainty both for his own assertions and those of John Dewey.

modern sense of that much abused word are measurement of change and study of the relationships between or among changes.

Although Galileo and those who followed him in applying the new method demonstrated its value by the results obtained, they too, at least the earlier ones, retained the Greek objective, the quest for certainty, as the goal of their research. Newton, for example, was satisfied that he, by better methods, had pushed aside, as it were, the curtain of change and found behind it the indivisible and indestructible atom and the immutable and unchanging laws of gravitation, etc. He and others were at first ready to assert the superiority of their laws over any recalcitrant facts. If any facts did not accord with the new theories, so much the worse for the facts.

Finally, however, the scientific scandal of facts at variance with theory became acknowledged for what that situation now is considered to be. Again, Dr. Ratner's description is enlightening.<sup>15</sup>

That the Newtonian reign should ever come to an end was simply inconceivable to Newtonians. The basic structure of the Newtonian system was eternal and immutable. . . . But instead of solving the problems presented by experimental findings [measurements of change], the Newtonian method kept piling them up ever higher. And it is the last straw that breaks the camel's back. In this case, the black-bands in Michelson's interferometer.

What happened to the "eternal basic structure" of Newtonianism, to its immutable cosmological framework reputedly riveted "scientifically" to the three absolute pillars of Space, Time and Matter by eternally true and eternally enduring, non-corrodible struts and bolts of pure mathematics, every one knows. . . . By establishing the forthright and uncompromising procedure of giving to experimental findings first the authority to determine the meanings of mathematical-physical concepts and then the final authority to control their development and formulation in all respects relevant to the science of nature, Einstein accomplished in *scientific practice* the full enstatement of experimentalism [measurement of change]. The verified success of Einstein's reversal of the Newtonian policy has demonstrated beyond all doubt and with a precision science alone is capable of, that for three hundred years Newtonianism . . . because of one basic methodological fault . . . had literally upset the true relationship between experimental findings and theoretical (mathematical) formulations. It had been living methodologically upside down.

Thus we come to the work of the modern scientist today. In his search for knowledge, he has abandoned the Greek objective. The theorist and the laboratorian have been made inseparable partners in the scientific

<sup>15</sup> *Ibid.*, pp. 108 and 109.

transaction; and, above all, theory both controls and is controlled by a study of relationships between and among changes and definitely and finally is controlled by measurement of change.

Of course, a primary objective of man's knowing behavior today is to enable him to predict and control. Just as the primitive medicine man's word magic was intended to enable men to find security against the vicissitudes of life, so likewise today the findings of modern scientists are used for prediction and control. The predictions are of what may be expected to occur under certain circumstances, and the control involves either control in some degree of man's behavior or control over some aspects of the external environment, or both.

The usefulness of the modern scientific method of inquiry in comparison to the other methods that man has used and still uses requires little emphasis. To an ever-increasing extent the people of Western Civilization look to the doctors of scientific medicine rather than witch doctors for the cure of bodily ills, to the psychologists rather than to word magic for the cure of mental ills, and to the physical scientists for control over much of the inanimate environment. Why then, the slowness to apply to economic problems the same methods that have been successful in other fields?

That the older methods still are widely used and apparently widely accepted by economists is evident. Striking examples are numerous, and two will be mentioned.

The distinguished Dr. Ludwig Von Mises in a recent volume makes clear his objective and methods. On many pages<sup>16</sup> he affirms and reaffirms that his objective is the discredited "quest for certainty," in effect that his method includes introspection and revelation as acceptable procedures, that change is unworthy of serious attention ("Praxeology is not concerned with the changing content of acting, but with its pure form and structure."), that hypostatization and dialectical facility (Plato's method) is still useful, and that warranted assertion can be derived through the medieval scholastics' revival of Aristotle's syllogisms.

That Dr. Von Mises adopts the modern methods of scientific inquiry when discussing some aspects of economics including the business cycle is to his credit. But this departure from the methods on which he claims to have built the basic structure of his treatise emphasizes by contrast his reliance on outmoded procedures

<sup>16</sup> Ludwig Von Mises, *Human Action, A Treatise on Economics*, New Haven, Yale University Press, 1949. The 900 pages of small type include a multitude of specific comments on method. Those on pp. 24, 25, 26, 27, 32, 64, 86, 788 *et seq.* are especially pertinent to the comment here.

Another example is found in the works of the late John Maynard Keynes and his numerous followers. Detailed analysis would require more space than is here available, but the views of Dr. Arthur F. Burns merit quoting in this connection.<sup>17</sup>

The opinion is widespread that Keynes has explained what determines the volume of employment at any given time, and that our knowledge of the causes of variations in employment is now sufficient to enable governments to maintain a stable and high level of national income and employment within the framework of our traditional economic organization. . . . Unhappily, this opinion reflects a pleasant but dangerous illusion.

Lest the foregoing be misunderstood, I should explain that the works of Keynes and Von Mises have been selected *not* as extreme departures from the general rule but as representative of by far the most of the economic literature available. Why, then, are the results of such methods accepted as warranted assertions by many economists today?

One answer that has been suggested is that the subject matter of economics is somehow different with the result that only the older methods of inquiry are applicable however discredited they may be in other fields. This suggestion cannot be discussed adequately in a paragraph, but the argument against it has been summarized as follows.<sup>18</sup>

When a "distinction" in subject-matter between the "natural" (physical) and "social" (mental) is used as *ground* for explaining the differences between the "natural" (physical) and "social" (mental) sciences, the "distinction," if it does not start out as a variant term for "separation," is forced to grow into an assertion of an abysmal separation in order to maintain itself. And when the so-called natural sciences are separated from the social, are taken out of their context in human history, and out of relation to human activity, then an adequate and satisfactory explanation of the natural sciences themselves becomes impossible.

The answer now suggested rests not on an arbitrary division of the universe into two or possibly more realms requiring *fundamentally* different methods of inquiry, but on the nature of man as we find him in his cosmos. For man, in many respects the freest of all that we find in our universe is, by virtue of certain characteristics that make him relatively free, at the same time singularly restrained. In the terminology of Alfred Korzybski, man the time binder is himself bound by the very capacities and abilities that enable him to bind time.

This seemingly paradoxical and perhaps at this stage unclear assertion

<sup>17</sup> Arthur F. Burns, *Economic Research and the Keynesian Thinking of Our Times*, Twenty-sixth Annual Report of the National Bureau of Economic Research, New York, 1946, p. 5.

<sup>18</sup> Ratner, *op. cit.*, pp. 72 and 73.

involves no deep mysteries, however. With Korzybski's aid we may summarize the explanation.<sup>19</sup>

Man is fundamentally and greatly different from the other forms of life found in our universe. Like plant and animal forms of life, man is an energy binder, that is, he can absorb the materials of his environment and convert the energy in them to his own uses. Like animal life, man is a space binder, that is, he can move about in space and use it as a means of adapting to and otherwise utilizing his environment. But, unlike either plants or animals, man is also a time binder, that is, he can accumulate the results of his experiences over time and make the lessons of these experiences available to successive generations of men.

This time-binding capacity of man apparently is made possible by the development of the human brain and the development of language and tools. The details of the process would require volumes to describe, and such volumes are to be found among others in the libraries that are part of man's cultural heritage, some of the most pertinent evidence of man's time-binding activities.

Now it is evident that for men to be able to learn from experience and from their cultural environment, there must be a plasticity of habit-forming capacities, an elasticity as it were of learning ability. But the very fact of capacity to learn new habits implies that what is learned will be habitual, will have a tenacious hold on the individual learner.

Thus we can see how man the time binder is likewise bound. The accumulating libraries of the world have their influence on each generation of students and tend to impress on them the habitual outlooks and knowing behaviors of earlier days. Moreover, the unconscious learning processes of the infant in relation to language that already have been described become habitual behaviors toward words. These primitive habits must be replaced by different behavior if an individual is to learn to use language scientifically, that is, if he is to think in the modern way. To the extent that the more primitive knowing behaviors are firmly fixed habits they constitute restrictions on the intellectual development of men, restrictions as pervading and effective as the great weight of the cultural environment embodied in libraries, folklore, and superstition, all the prescientific knowing behaviors and culture of man.

<sup>19</sup> Alfred Korzybski, *Manhood of Humanity*, first published 1921, second edition printed by Country Life Press Corporation, Garden City, New York, 1950, and *Science and Sanity, An Introduction to Non-Aristotelian Systems and General Semantics*, The Science Press Printing Company, Lancaster, Pennsylvania, second edition 1945. Chapters 3 and 4 of the former and chapters 2, 24 and 30 are especially pertinent to the discussion here.

From one point of view we may say that *the* great problem of our times is how shall we free man the time binder from the multitudinous, all-encompassing, and intricately tangled web that is one obvious result of his own time-binding propensities. Thus far, no one has offered an easy solution; perhaps there is none. As to this, Dr. Ratner suggested:<sup>20</sup>

It is possible, I think, to prove with reasonable surety that against oppression hardened in institutions and enforced by socially guarded and perpetuated dogmas only the assault of individualism, under whatever form it may be, has revolutionary power and effect. But whether or not this can be established as a principle, certain it is as a fact that modern culture started, and for nearly three hundred years won, all its greatest battles under this standard.

And as we look back over those 300 years, what do we see on this planet we inhabit? Most significant, in relation to our present subject, is the rise of Western Civilization. Out of the ruins of the once mighty Roman Empire our civilization has come.

We see the successive triumphs of individual intellects over the inhibitions of the torture chamber, rack, and screw, over the restrictive syllogisms of Aristotle, with which the minds of the medieval scholastics were bound, and over the word magic that is our common heritage and apparently inevitable infantile experience. And, as it happened, there was a new continent available where men could seek the freedom, economic and political, without which sustained intellectual individualism seems to be impossible.

Like a great tidal wave in slow motion, the advancing front of Western Civilization has moved across a broad continent. And on its far western shore a city has arisen, in one sense a symbol of man's great advance from primitive times. This city at the Golden Gate faces to the west across the vast Pacific to a continent and subcontinent where perhaps a billion men labor unceasingly and relatively unfruitfully, seemingly in perpetual bondage of man's own making.

And if we continue westward across the steppes of Russia, through Europe, and to the very shores of the Atlantic, we find that the light that was Western Civilization there burns dimly. Retrogression rather than progress seems to be the general rule.

Even in parts of the Atlantic seaboard of the United States one may question whether progress is not being replaced by retrogression of a subtle but devastating kind. Certainly much in the great cities seems similar to the physical decay found in the great cities of Europe.

<sup>20</sup> Ratner, *op. cit.*, p. 25.

Perhaps this is too gloomy a viewpoint. True, there are no new continents on which the tidal wave of Western Civilization might mount to greater heights; but, with luck, there may yet be time in our own land for the triumph of intelligence over the darkness in which prior civilizations have been engulfed. If so, those brilliant buildings of San Francisco, gleaming whitely in the rising and setting sun, could be taken as a symbol of the light of a lasting civilization that may spread to the far corners of the globe.

What is essential in order that such may be the future of our world? Possibly we do not yet know all the requirements; but we may safely conclude that one, without which all others could not avail, is that organized intelligence shall triumph over the infantile, the primitive, the pre-scientific economic knowings of mankind.

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### *A Consumer Survey of Medical Costs*

THE HEALTH INFORMATION FOUNDATION of New York City has made public the first national consumer survey of medical costs in twenty years.

The survey data are based on person-to-person interviews in homes, conducted in June and July, 1953, by the National Opinion Research Center of the University of Chicago, documenting the medical expenses of 8,846 individuals during the previous twelve months. Some of the important findings:

A total of 58 per cent of the population, or 89,500,000 people, now have some type of health insurance. This represents a growth of 83,900,000 in the past fifteen years, compared with a total of 5,600,000 people who were protected in 1939.

Some type of hospital insurance is held by 57 per cent of the population, or 87,400,000 people. Surgical or medical insurance in some form is held by 48 per cent of the population, or 74,500,000.

A total of \$10,200,000 cost was incurred from July, 1952 through June, 1953 by families for medical and dental services and goods. Of the total gross cost, \$1,500,000,000 was covered by insurance benefits. Fifty per cent of the total gross costs incurred by all people in the nation for hospital expenses, or \$1,000,000,000 were covered by insurance benefits, although only 57 per cent of the population have insurance. Thirteen per cent of the total physician costs, or \$500,000,000 were covered by insurance benefits. Within these costs, 38 per cent of the surgical fees to physicians were paid by insurance benefits.