

# THE ROLE OF SYMBOLS IN HUMAN BEHAVIOR

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MANY DEFINITIONS of "man" have been proposed by serious thinkers—proposed with the best intentions to call attention to a feature of man's existence which is crucial, the essence of humanness, as it were. If only man could say what man is, it was felt, man could understand man, and thus achieve Socrates' criterion of wisdom—self-knowledge.

And so man has been called a featherless biped, a rational animal, a copy of God, a combination of body and soul, and a possessor of "free will." Yet man's self-knowledge did not make much headway even amid an abundance of definitions. Except for the facetious "featherless biped" label, which, as N. Wiener remarked, made man indistinguishable from a kangaroo or a plucked chicken, none of the definitions pointed to anything which could be unambiguously recognized. One cannot identify rationality, observe God, isolate the soul, or test the existence of a "free will."

The first significant definitions of man were given by those philosophers who recognized that significant definitions should be given in terms of what the thing defined *does* rather than in terms of what it is. Such definitions are called operational. They call attention to actual events or experiences characteristic of the thing defined. I will say more about operational definitions in a while. To my knowledge, the first operational definitions of man were given by John Dewey and Alfred Korzybski about 1920. They both defined man by his most characteristic and unique *observable* activity, namely, the preservation of past experience, not only in individuals but also in the species. As far as is known, no other species possesses a store of knowledge which is transmitted to successive generations by other than genetic means and accumulated in the process of transmission. This process of transmitting accumulated knowledge, which Korzybski called "time-binding," is accomplished by the use of symbols. Since the use of symbols, like time-binding, is also a crucial and unique characteristic of man, it is proper to call man a symbol-user and *to make the study of the symbolic process central to the study of man.*

A symbol can be most vividly defined by contrast with another form of communication called a signal. By a *signal* I mean nothing more than a stimulus to which a response has been conditioned. Thus to a dog the sound of

a bell may be a signal for secreting saliva, a whistle may be a signal to come running, the command "Sit!" a signal for sitting down on the haunches. It follows that for any organism capable of conditioned response, signals can have meanings.

By a *symbol* I mean something else. A symbol evokes response only in a relation to other symbols. Thus the "same" symbol in different contexts can elicit essentially different responses, or to put it in another way, a given symbol cannot be properly defined outside of a context.

**T**O SEE what this means, let us examine the repertoire of conditioned responses in a well-trained dog. A dog can be taught the meaning of a number of commands. He can be taught to sit at the command "Sit!" He can also be taught to approach or to bark at a chair at the command "Chair." But having taught the dog the meanings of "sit" and "chair" you cannot expect that he will thereby acquire the understanding of the command "Sit on the Chair."

The same holds for a dog's expressive ability. A dog can say a number of things, perhaps "Hark, some one is coming," or "Don't come near me if you know what is good for you," or "Open the door," or, perhaps, "I love you," or even "I am lonesome." But no dog can re-combine these ideas to say, "Some one who is lonesome, and whom I love, is coming through the open door."

In other words, dogs don't know grammar. All human language, on the other hand, is grammatical. Its meanings reside not only in separate utterances but also in relations among utterances—not only in expressions of experience, but also in assertions *about* experience.

Another thing dogs cannot do is reason. Here I use the term "reasoning" not quite in its conventional sense. The conventional meaning of "reasoning" implies a close relation to "intelligence." There is no question that dogs possess somewhat of something we vaguely call intelligence. But intelligence need not depend on reasoning in the sense we use the term here, which makes it somewhat akin to *reckoning*, that is, making chains of assertions according to certain prescribed rules. This "reasoning," like "long division," is a rather mechanical procedure, which requires only the application of specific rules to specific situations. Both reckoning and "reasoning" (as we use the term) can be performed by properly constructed machines. When we say that we can reason and dogs cannot, we mean this "mechanical" aspect of reasoning which is made possible by our symbolic language to the operation of which general rules can be applied.

This, then, is the second characteristic of symbolic languages: they are *logical*, that is, certain relations among certain assertions in it are *prescribed*.

I should like to digress for a moment to point out some implications of the grammatical and logical structures of symbolic languages. It may be argued that the use of grammatical and logical forms is simply a matter of conditioning

(as to a great extent it doubtless is), and that therefore grammatical and logical speech is in principle no different from other conditioned behavior. There is an important difference, however. What gets impressed is not simply isolated instances of usage but *rules* of usage, which would not be impressed unless a certain capacity for abstraction were present. To give an example, consider the frequent *consistent* mistakes in grammar made by young children, particularly in the speech-formative years. Frequently a young child will say "I knowed" instead of "I knew" or "two sheeps" instead of "two sheep," even if everyone around the child talks "good English." It is obvious that "I knowed" and "two sheeps" are instances of logical extension of grammatical rules of English for forming the past tense and the plural. It shows that *abstract rules* do impress themselves at a very early age and also that already concepts of quite prodigious abstractness (such as the time sense and the notion of plurality) are already operating. Similar instances of *logical* generalization can also be observed.

This takes us to the third characteristic of symbolic language—its abstractness, which allows humans to acquire symbolic repertoires quite immense compared to the signal repertoires which constitute the languages of other animals. This is so because words can be associated with objects, actions, qualities, and situations without a separate conditioning in each instance.

But aside from this quantitative advantage of symbols as elements of communication, there is a vital qualitative one. You may condition a dog to respond to the sound of a bell as to a signal for food. The bell comes to "mean" food to the dog. However, there is a most significant limitation to this "meaning." No matter how hungry a dog is, he will not think of *ringing the bell himself* to make food appear. True, the dog can be taught to ring a bell to obtain food, but this act has to be taught separately. It will not occur to the dog as a by-product of the "idea" that bell means food. When a dog learns signals, he does not thereby learn to use the same signals to communicate to others. Signals do not become *symbols* to him. But we do learn that words not only stand for events but also that words can be manipulated to *bring events about*. We learn word magic.

The fourth characteristic of a symbolic language is that it is *metaphysical*. That is to say, a particular language imposes on its user a framework of perception and reasoning into which his observations of the events around him must fit. This characteristic of human languages has been most brilliantly discussed by Benjamin Lee Whorf and Alfred Korzybski. It now forms one of the basic precepts of modern anthropology.

Finally, symbolic languages are characterized by being psycho-logical (the word is hyphenated as in Korzybski's writings). That is to say, a language impresses on us not only a metaphysical framework but also an affective one. It does not only a good deal of our thinking for us but also a good deal of our feeling. The distinction between "thinking" and "feeling," which I seem to be

making here, is only an artifact. It serves to emphasize one or the other aspect of what is in reality a single process, more properly called evaluation.

THESE, then, are the characteristics of languages composed of symbols which distinguish them from other means of communication among living things. Symbolic languages are

1. grammatical,
2. logical,
3. abstract,
4. metaphysical,
5. psycho-logical.

Now it is interesting that these characteristics of human language form the basis of what has become the "liberal arts" curriculum. In medieval universities, the four years of the baccalaureate program have often been built around "grammar," "rhetoric," "philosophy," and "theology," respectively. Logic, of course, was included in rhetoric, and metaphysics in philosophy. Theology was considered as the discipline probing into the most important category of knowledge—the knowledge of God and of man's relation to him. Inherent in this program was the conviction that the understanding of the nature of language was of fundamental importance. The relation of grammar and rhetoric to linguistics is obvious. But even in philosophy, awareness of linguistics and symbolic matters was discernible already in the Middle Ages, as for example, in the intellectual struggle between the Nominalists and the Realists concerning the reality of universals—an early preoccupation with semantic problems. And in theology one has the magnificent efforts of Anselm and Aquinas to derive theological theorems by means of the deductive apparatus of formal logic and the mystic obsession with the power of the Divine Word.

TODAY, although we certainly have come to realize that no understanding of man is possible without a systematic inquiry into man's non-human environment—the subject matter of natural science—still the old feeling that symbols and language are of fundamental importance has been amply vindicated. Today we would call the "symbolic universe" the man-made "non-material" part of man's environment—as much so as the web is the most important spider-made part of the spider's environment or the metabolic products released by the bacteria in a bacterial culture are a vital part of the bacteria's environment. All these "secreted" environments play a decisive role in the subsequent fate of each organism.

Man in society "secretes" his symbolic environment, that is, his culture, in which he must continue to live (a fortunate coincidence in two meanings of the word "culture" referring to a bacterial colony and to human society makes a lively metaphor possible). This symbolic environment is instrumental in

shaping man's natural environment, and is, in turn shaped by it. Hence its crucial importance.

I would like to describe the modern counterpart of the medieval curriculum by a similar hierarchy:

1. Grammar.
2. Logic.
3. Semantics.
4. Metalinguistics.
5. Neuro-linguistics.

THE FIRST two disciplines are purely formal. They deal with the explicit rules of speech. Grammar is entirely empirical (noting how *in fact* words are put together in various languages to form assertions and other modes of communication). Logic, on the other hand, is entirely deductive, like mathematics. It is concerned with rules governing the relation of assertions to each other and with techniques of forming new assertions from the given ones by applying the rules. The last three disciplines, semantics, metalinguistics, and neuro-linguistics constitute together the subject matter of what is known as general semantics.

Semantics deals with *meaning*, defined as a relation between names or assertions and their referents. (These relations are of no interest to either grammar or logic). For instance, the question whether a definition is or is not meaningful is a semantic question. It is examined with reference to the referents of the terms involved in the definition. In the light of such analysis, there arose, especially in physical science, the operational method of making definitions. A term is defined operationally as far as possible in terms of *observable effects*, which exhibit sufficient invariance under certain conditions to warrant the application of the term to each manifestation of the effect.

The practice of defining an electric current by the deflection of a magnetic needle associated with it, a chemical by means of its behavior under certain conditions, a disease by consistently associated syndromes or by the presence of identifiable micro-organisms—such practice adheres to the principle of operational definition.

Another subject of interest in semantics is the analysis of the truth content of an assertion. A distinction is made between logical validity of an assertion (which depends only on its relation to other assertions) and the *truth content*, which is established by empirical tests of the asserted relations among the referents or of predictions implied by those relations.

Metalinguistics deals, as we pointed out, with the frameworks of thought which the structure of our language imposes on us. Thus if situations are described by nouns, we tend to concretize the situations (e.g., place heaven above the clouds and hell beneath the earth.) We tend to separate in our minds what is separated in our language (e.g., time and space, body and mind, eco-

nomics and politics). We tend to confuse the literal and the metaphorical use of prepositions (we think that the assertions "The chalk is in the box" and "Evil is in man" refer to similar relations).

Neuro-linguistics deals with such evaluations on the level of individual psychology. It seeks, in particular, the physiological components of symbolic behavior. Some effects of symbols on the nervous system can be directly demonstrated, as with measurable physiological changes accompanying the awareness of certain words or with the phenomenon of the person allergic to roses sneezing at the sight of *artificial* roses. Hypnosis, faith cures, the effectiveness of word magic and, by extension, the entire area of psycho-somatic phenomena, as well as the psychiatric components of the culture profile, constitute the subject matter of neuro-linguistics.

NOW I HAVE OUTLINED the disciplines which deal specifically with symbols in the order of increasing involvement with the problems of human behavior. Perhaps the importance of symbols in human behavior is already apparent from the description. Nevertheless, I should like to conclude by emphasizing some, perhaps obvious, considerations.

If it were not for our ability to use symbols and to react to symbols, we would be no better and no worse off than the other animals. That we would not be any better off (in our anthropocentric sense of "better") is quite obvious, since our incomparably greater control over our environment results directly from the process of time-binding, the power of transmitting (by symbolic language) accumulated racial experience to succeeding generations. But it is important to note that we would also be no worse off than the other animals. For this "secretion," as I have called our symbolic or semantic environment, doubtless contains, in addition to "growth hormones," also powerful "toxic products."

To give an example, a chimpanzee may, through his *own, direct* experiences with someone wearing a red necktie, come to the conclusion that people wearing red neckties are kind dispensers of bananas, or are cruel teasers. But we, through our experiences with *symbols alone*, come to similar conclusions about people, whose only distinguishing characteristics, as far as we can discern, are the symbolic labels attached to them, such as Brahmins or bigamists or people whose names begin with Z, quite independently of our actual experiences with the referents of these labels—and regardless of even whether the referents exist.

We can multiply the examples at will. A cat may learn to avoid food which gives out a characteristic smell. The smell becomes a signal for avoidance. But most of us will avoid a dish labeled "rat meat" regardless of its smell or taste or our lack of previous experiences with rat meat. Similarly, many of us automatically admire shiny stones labeled "diamonds" and music labeled "Mozart," even though not nearly so many can distinguish a diamond from a piece of glass or Mozart from Clementi.

In other words, symbols enable us to learn with astonishing rapidity (by utilizing the experiences of others) not only a great many useful things but also a great many things that aren't so. This applies to collective and to individual knowledge. A tribal chief who got a stomach-ache after a feast at which pickled tomatoes were served may have proscribed the pickling of tomatoes, and the taboo (eventually spreading to the pickling of all vegetables) may last for thousands of years, depriving millions of people of pickles.

On the personal level, verbalizations, as determinants of behavior, are equally important. The assertions, "My husband (or wife) makes me sick," and "I react to my husband (or wife) by becoming sick" may have the same events as referents but say entirely different things and establish different orientations within the speaker, which may profoundly influence subsequent events.

On the level of community and national affairs, different political developments depend to a great extent on how people are classified: into rich and poor, or natives and foreigners, or pious and godless, or blue-eyed and dark-eyed. On the level of international affairs, the fates of populations frequently depend on how certain very high-order abstractions, such as "freedom" and "capitalism" and "aggression" and "balance of power" are manipulated.

GENERAL SEMANTICISTS have been gravely concerned with these matters. They have been impressed with the idea that both man's greatness and his madness rest on his preoccupation with symbols. A symphony and a ritual of human sacrifice, the Gettysburg Address and the diatribes of a Joe McCarthy, the deductions of a paranoiac and those of the psychiatrist who diagnoses him as a paranoiac, the equations of quantum mechanics and the incantations of a shaman are all instances of symbol manipulation.

As you may have guessed from my choice of words, general semanticists do not confine themselves to the observation that the influence of symbols on human behavior is extraordinarily profound and diverse. Most general semanticists also make value judgments about this influence. They make rather definite distinctions between "good" symbolic behavior (or semantic reactions) and "bad." Furthermore, they maintain that such value judgments are not matters of taste or even necessarily of cultural conditioning (as ethical relativists maintain) but that they are the inevitable results of the general semanticist's analysis of the symbolic process. The general semanticist *defines* good symbolic behavior as the kind of behavior which is governed by "semantic awareness," an awareness of the distinction between symbol and referent, between inference and observation, between a valid conclusion and a factually true statement; an awareness of the distortions which verbalization necessarily brings into our perceptions; an appreciation of the role of communication in human affairs and of time-binding as the unique survival mechanism peculiar to our species.

Most general semanticists believe that the construction of a universal supra-

cultural ethics is possible in the light of these criteria. They sometimes call this proposed supra-cultural ethics a scientific ethics, because the one area of human activity where semantic awareness is most pronounced is the area of scientific investigation.

Two standard arguments are usually brought forward against this point of view. First, that among general semanticists (or scientists) there is the usual incidence of behavior, which by the standards of "scientific ethics" is quite unethical. Second, that the proposed "supra-cultural" ethics is no more supra-cultural than any of the existing ones, since the general semanticist (or the scientist) is himself culture-bound, and therefore, so is the ethics which he calls his own.

The first argument is easy to dispose of. When the general semanticist says that the scientist's behavior is an example of good behavior, he does not mean Dr. A's behavior at all times. Dr. A, when he beats his wife, or when he is carried away by a demagogue, or when he subscribes to shabby notions about racial or social stereotypes, or when he accepts glib explanations of very complex events, is not behaving as a scientist. He is behaving as a scientist when he is objective in his evaluations, when he communicates freely with full awareness of what goes on in the communication process, when he is aware of the role of science in human affairs and has the courage to draw the proper conclusions. It is this kind of behavior, actually an abstraction from the collective behavior of men who created science, not the behavior of a particular Dr. A or even of the majority of scientists at a given time, which is held up as a model of semantic awareness and a basis for a supra-cultural ethics.

The second argument requires a somewhat more involved answer. The term "culture-bound" may be understood in two ways. Admittedly science is a specific product of the so-called Western Civilization. The scientist may be said to be culture-bound inasmuch as owing his outlook to science, he thereby derives it from Western Civilization. Therefore the ideals of "scientific" ethics are no more than the ideals of a particular culture—the western.

In answer to this, it must be pointed out that Western Civilization, profoundly influenced though it has been by science, is a great deal more (or less) than the "way of science." Among the features of that civilization are also found parliamentary democracy, money and credit, monogamy, the use of neckties and contraceptives, nationalism, mass entertainment, denominational religions, and competing business units. Someone who is culture-bound in western culture takes all these institutions for granted. The scientist, however, by definition cannot take any of these institutions for granted. He must analyze their structure, their relation to each other, their evolution and probable future. He must compare them with their counterparts elsewhere and he must consider existing or possible alternatives quite seriously. He could not do so if he were Western culture-bound. But it is his business as a scientist to do so. Therefore the business



of being a scientist is incompatible with being culture-bound with respect to a particular existing culture.

THERE IS, however, another understanding of the term "culture-bound." It may be proper to call the scientific outlook a new emergent culture, in which, quite naturally an ethical system peculiar to it is developing. It is to this culture that the scientist may be said to be culture-bound. It would, however, be misleading to call this scientific culture, based on semantic awareness, just "another culture." If it is a culture, it is a culture with "another dimension," namely, the awareness of the limitations of the existing cultures. Elsewhere I have named the scientist's culture a culture-studying culture, a culture of the second order, as it were. This "other dimension" of the scientist's culture must be kept in mind when one asks oneself why the scientist's ideal of behavior is any better than that of an eleventh-century knight, or of the North American Plains Indian, or of the Prussian Junker, or of a Tibetan monk. The chances are that none of those gentlemen knew any of the others. Their outlooks were necessarily limited. Only the scientist, with his awareness of the relativity of knowledge, of the dependence of convictions upon the peculiarities of one's experience and milieu, with his analysis of how knowledge and beliefs are acquired, how rationalizations operate, with his experience in arriving at objectively verifiable conclusions from a pool of subjective observations and arguments, only he can *compare* different outlooks and thus obtain the essence of human ethics, from which the accidental, culturally-conditioned, subjectively-biased hand-me-down distortions, irrelevancies, and redundancies have been distilled away.

The scientist cannot, however, say *a priori* just what should remain and what be thrown away. All he can say is that good (or healthy, or characteristically human) behavior is the type of behavior which arises in the process of increasing semantic awareness, a growing knowledge of the nature of our symbolic environment.