The Symbol:
The Origin and Basis of Human Behavior

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Citation from ETC: A Review of General Semantics*, Volume 1 Number 4, Summer 1944:*
Professor of Anthropology, University of Michigan. This article is reprinted with the kind permission of the editors from *Philosophy of Science,* VII, 451-463 (October 1940).

I

In July, 1939, a celebration was held at Leland Stanford University to commemorate the hundredth anniversary of the discovery that the cell is the basic unit of all living tissue. Today we are beginning to realize and to appreciate the fact that the symbol is the basic unit of all human behavior and civilization.

All human behavior originates in the use of symbols. It was the symbol which transformed our anthropoid ancestors into men and made them human. All civilizations have been generated, and are perpetuated, only by the use of symbols. It is the symbol which transforms an infant of homo sapiens into a human being; deaf mutes who grow up without the use of symbols are not human beings. All human behavior consists of, or is dependent upon, the use of symbols. Human behavior is symbolic behavior; symbolic behavior is human behavior. The symbol is the universe of humanity.

II

The great Darwin declared that "there is no fundamental difference between man and the higher mammals in their mental faculties," that the difference between them consists "solely in his [man's] almost infinitely larger power of associating together the most diversified sounds and ideas." (Ch. III, *The Descent of Man)* Thus the difference between the mind of man and that of other mammals is merely one of degree, and it is not "fundamental."

Essentially the same views are held by many present day students of human behavior. Professor Ralph Linton, an anthropologist, writes in *The Study of Man*: "The differences between men and animals in all these [behavior] respects are enormous, but they seem to be differences in quantity rather than in quality." (p.79; the same idea is also expressed on p. 68)(1) "Human and animal behavior can be shown to have so much in common," Professor Linton observes, "that the gap [between them] ceases to be of great importance."(p. 60) Dr. Alexander Goldenweiser, likewise an anthropologist, believes that "In point of sheer psychology, mind as such, man is after all no more than a talented animal" and "that the difference between the mentality here displayed [by a horse and a chimpanzee] and that of man is merely one of degree."(2)

That there are numerous and impressive similarities between the behavior of man and that of ape is fairly obvious; it is quite possible that even chimpanzees in zoos have noted and appreciated them. Fairly apparent, too, are man's behavioral similarities to many other kinds of animals. Almost as obvious, but not easy to define, is a difference in behavior which distinguishes man from all other living creatures. I say "obvious" because it is quite apparent to the common man that the non-human animals with which he is familiar do not and cannot enter, and participate in, the world in which he, as a human being, lives. It is impossible for a dog, horse, bird, or even an ape, ever to have *any* understanding of the meaning of "the sign of the cross" to a Christian, or of the fact that black (white among the Chinese) is the color of mourning. But when the scholar attempts to *define* the mental difference between animal and man he sometimes encounters difficulties which he cannot surmount and, therefore, ends up by saying that the difference is merely one of degree: man has a bigger mind, "larger power of association," wider range of activities, etc.(3)

There is *a fundamental* difference between the mind of man and the mind of non-man. This difference is one of kind, not one of degree. And the gap between the two types is of the greatest

importance—at least to the science of comparative behavior. Man uses symbols; no other creature does. A creature either uses symbols or he does not; there are no intermediate stages.

III

A symbol is a thing, the value or meaning of which is bestowed upon it by those who use it. I say "thing" because a symbol may have any kind of physical form; it may have the form of a material object, a color, a sound, an odor, a motion of an object, a taste.

The meaning, or value, of a symbol is in no instance derived from or determined by properties intrinsic in its physical form: the color appropriate to mourning may be yellow, green, or any other color; purple need not be the color of royalty; among the Manchu rulers of China it was yellow. The meaning of the word "see" is not intrinsic in its phonetic (or pictorial) properties. "Biting one's thumb at" someone might mean anything.(4) The meanings of symbols are derived from and determined by the organisms who use them; meaning is bestowed by human organisms upon physical forms which thereupon become symbols.(5)

But the meaning of a symbol cannot be perceived by the senses.

All symbols must have a physical form, otherwise they could not enter our experience.(6) But the meaning of a symbol cannot be perceived by the senses. One cannot tell by looking at an *x* in an algebraic equation what it stands for; one cannot ascertain with the ears alone the symbolic value of the phonetic compound *si;* one cannot tell merely by weighing a pig how much gold he will exchange for; one cannot tell from the wave length of a color whether it stands for courage or cowardice, "stop" or "go"; nor can one discover the spirit in a fetish by any amount of physical or chemical examination. The meaning of a symbol can be communicated only by symbolic means, usually by articulate speech.

But a thing which in one context is a symbol is, in another context, not a symbol but a sign. Thus, a word is a symbol only when one is concerned with the distinction between its meaning and its physical form. This distinction *must* be made when one bestows value upon a sound-combination or when a previously bestowed value is discovered for the first time; it *may* be made at other times for certain purposes. But after value has been bestowed upon, or discovered in, a word, its meaning becomes identified, in use, with its physical form. The word then functions as a sign, rather than as a symbol.(7) Its meaning is then perceived with the senses. This fact that a thing may be both symbol (in one context) and non-symbol (in another context) has led to some confusion and misunderstanding.

Thus Darwin says: "That which distinguishes man from the lower animals is not the understanding of articulate sounds, for as everyone knows, dogs understand many words and sentences." (Ch. III, *The Descent of Man)*

It is perfectly true, of course, that dogs, apes, horses, birds, and perhaps creatures even lower in the evolutionary scale, can be taught to respond in a specific way to a vocal command.(8) But it does not follow that no difference exists between the meaning of "words and sentences" to a man and to a dog. Words are both signs and symbols to man; they are merely signs to a dog. Let us analyze the situation of vocal stimulus and response.

A dog may be taught to roll over at the command "Roll over!" A man *may* be taught to stop at the command "Halt!" The fact that a dog can be taught to roll over in Chinese, or that he can be taught to "go fetch" at the command "roll over" (and, of course, the same is true for a man) shows that there is no necessary and invariable relationship between a particular sound combination and a specific reaction to it. The dog or the man can be taught to respond in a certain manner to *any* arbitrarily selected combination of sounds, for example, a group of nonsense syllables, coined for the occasion. On the other hand, any one of a great number and variety of responses may become evocable by a given stimulus. Thus, so far as the *origin* of the relationship between vocal stimulus and response is concerned, the nature of the relationship, i.e., the meaning of the stimulus, is not determined by properties intrinsic in the stimulus.

But, once the relationship has been established between vocal stimulus and response, the meaning of the stimulus becomes *identified with the sounds;* it is then *as if* the meaning were intrinsic in the sounds themselves. Thus, "halt" does not have the same meaning as "hilt" or "malt." A dog may be conditioned to respond in a certain way to a sound of a given wave length. Sufficiently alter the pitch of the sound and the response will cease to be forthcoming. The meaning of the stimulus has become identified with its physical form; its value is perceived with the senses.

Thus we see that in establishing a relationship between a stimulus and a response the properties intrinsic in the stimulus do not determine the nature of the response. But, *after the relationship has been established* the meaning of the stimulus is *as if* it were *inherent* in its physical form. It does not make any difference what phonetic combination we select to evoke the response of terminating self-locomotion. We may teach a dog, horse, or man to stop at any vocal command we care to choose or devise. But once the relationship has been established between sound *and* response, the meaning of the stimulus becomes identified with its physical form and is, therefore, perceivable with the senses.

So far we have discovered no difference between the dog and the man; they appear to be exactly alike. And so they are as far as we have gone. But we have not told the whole story yet. No difference between dog and man is discoverable so far as learning to respond appropriately to a vocal stimulus is concerned. But we must not let an impressive similarity conceal an important difference. A porpoise is not yet a fish.

"All sounds … have their signification from the arbitrary imposition of men."

The man differs from the dog—and all other creatures—in that *he can and does play an active role in determining what value the vocal stimulus is to have, and the dog cannot.* As John Locke has aptly put it, "All sounds [i.e., in language} . . . have their signification from the arbitrary imposition of men." The dog does not and cannot play an active part in determining the value of the vocal stimulus. Whether he is to roll over or go fetch at a given stimulus, or whether the stimulus for roll over be one combination of sounds or another is a matter in which the dog has nothing whatever to 'say.' He plays a purely passive role and can do nothing else. He learns the meaning of a vocal command just as his salivary glands may learn to respond to the sound of a bell. But man plays an active role and thus becomes a creator: Let *x* equal three pounds of coal and it does equal three pounds of coal; let *removal of the hat in a house of worship* indicate "respect" and it becomes so. This creative faculty, that of freely, actively, and arbitrarily bestowing value upon things, is one of the most commonplace as well as *the* most important characteristic of man. Children employ it freely in their play: "Let's pretend that this rock is a wolf."

The difference between the behavior of man and other animals then, is that the lower animals may receive new values, may acquire new meanings, but they cannot create and bestow them. Only man can do this. To use a crude analogy, lower animals are like a person who has only the receiving apparatus for wireless messages: He can receive messages but cannot send them. Man can do both. And this difference is one of kind, not of degree: a creature can either "arbitrarily impose signification," to use Locke's phrase, can either create and bestow values, or he cannot. There are no intermediate stages.(9) This difference may appear slight, but, as a carpenter once told William James in discussing differences between men, "it's very important." All *human* existence depends upon it and it alone.

The confusion regarding the nature of words and their significance to men and the lower animals is not hard to understand. It arises, first of all, from a failure to distinguish between the two quite different contexts in which words function. The statements, "The meaning of a word cannot be perceived with the senses," and "The meaning of a word can be perceived with the senses," though contradictory, are nevertheless equally true.(10) In the *symbol* context the meaning cannot be perceived with the senses; in the *sign* context it can. This is confusing enough. But the situation has been made worse by using the words "symbol" and "sign" to label, not the *different contexts,* but *one and the same thing:* the word. Thus a word is a symbol *and* a sign, two different things. It is like saying that a vase is *a doli* and a *kana*—two different things—because it may function in two contexts, esthetic and commercial.(11)

That which is a *symbol* in the context of origination becomes *a sign* in use thereafter. Things may be either signs or symbols to man; they can be only signs to other creatures.

IV

Very little indeed is known of the organic basis of the symbolic faculty: we know next to nothing of the neurology of symbolizing.(12) And very few scientists—anatomists, neurologists, physical anthropologists—appear to be interested in the problem. Some, in fact, seem to be unaware of the existence of such a problem. The duty and task of giving an account of the organic basis of symbolizing does not fall within the province of the sociologist or the cultural anthropologist. On the contrary, he should scrupulously exclude it as irrelevant to his problems and interests; to introduce it would bring only confusion. It is enough for the sociologist or cultural anthropologist to take the ability to use symbols, possessed by man alone, as given. The use to which he puts this fact is in no way affected by his, or even the anatomist's, inability to describe the symbolic process in neurological terms. However, it is well for the social scientist to be acquainted with the little that neurologists and anatomists do know about the structural basis of "symboling." We, therefore, review briefly the chief relevant facts here.

The anatomist has not been able to discover why men can use symbols and apes cannot. So far as is known the only difference between the brain of man and the brain of an ape is a quantitative one: "… man has no new kinds of brain cells or brain cell connections." (A. J. Carlson, *op.cit.)* Nor does man, as distinguished from other animals, possess a specialized "symbol-mechanism." The so-called speech areas of the brain should not be identified with symbolizing. These areas are associated with the muscles of the tongue, larynx, etc. But symbolizing is not dependent upon these organs. One may symbolize with the fingers, the feet, or with any part of the body that can be moved at will.(13)

To be sure, the symbolic faculty was brought into existence by the natural processes of organic evolution. And we may reasonably believe that the focal point, if not the locus, of this faculty is in the brain, especially the forebrain. Man's brain is much larger than that of an ape, both absolutely and relatively.(14) And the forebrain especially is large in man as compared with ape. Now in many situations we know that quantitative changes give rise to qualitative differences. Water is transformed into steam by additional quantities of heat. Additional power and speed lift the taxiing airplane from the ground and transform terrestrial locomotion into flight. The difference between wood alcohol and grain alcohol is a qualitative expression of a quantitative difference in the proportions of carbon and hydrogen. Thus a marked growth in size of the brain in man may have brought forth *a new kind* of function.

V

All culture depends upon the symbol.

All culture (civilization) depends upon the symbol. It was the exercise of the symbolic faculty that brought culture into existence and it is the use of symbols that makes the perpetuation of culture possible. Without the symbol there would be no culture, and man would be merely an animal, not a human being.

Articulate speech is the most important form of symbolic expression. Remove speech from culture and what would remain? Let us see.

Without articulate speech we would have no *human* social organization. Families we might have, but this form of organization is not peculiar to man; it is not *per se, human.* But we would have no prohibitions of incest, no rules prescribing exogamy and endogamy, polygamy or monogamy. How could marriage with a cross cousin be prescribed, marriage with a parallel cousin proscribed, without articulate speech? How could rules which prohibit plural mates possessed simultaneously but permit them if possessed one at a time, exist without speech?

Without speech we would have no political, economic, ecclesiastic, or military organization; no codes of etiquette or ethics; no laws; no science, theology, or literature; no games or music, except on an ape level. Rituals and ceremonial paraphernalia would be meaningless without articulate speech. Indeed, without articulate speech we would be all but toolless: we would

have only the occasional and insignificant use of the tool such as we find today among the higher apes, for it was articulate speech that transformed the nonprogressive tool-using of the ape into the progressive, cumulative tool-using of man, the human being.

In short, without symbolic communication in some form, we would have no culture. "In the Word was the beginning" of culture—and its perpetuation also.(15)

"In the Word was the beginning" of culture—and its perpetuation also.

To be sure, with all his culture man is still an animal and strives for the same ends that all other living creatures strive for: the preservation of the individual and the perpetuation of the race. In concrete terms these ends are food, shelter from the elements, defense from enemies, health, and offspring. The fact that man strives for these ends just as all other animals do has, no doubt, led many to declare that there is "no fundamental difference between the behavior of man and of other creatures." But man does differ, not in *ends* but in *means.* Man's means are cultural means: culture is simply the human animal's *way* of living. And, since these means, culture, are dependent upon a faculty possessed by man alone, the ability to use symbols, the difference between the behavior of man and of all other creatures is not merely great, but basic and fundamental.

VI

The behavior of man is of two distinct kinds: symbolic and non-symbolic. Man yawns, stretches, coughs, scratches himself, cries out in pain, shrinks with fear, "bristles" with anger, and so on. Non-symbolic behavior of this sort is not peculiar to man; he shares it not only with other primates but with many other animal species as well. But man communicates with his fellows with articulate speech, uses amulets, confesses sins, makes laws, observes codes of etiquette, explains his dreams, classifies his relatives in designated categories, and so on. This kind of behavior is unique; only man is capable of it; it is peculiar to man because it consists of, or is dependent upon, the use of symbols. The non-symbolic behavior of man is the behavior of man the animal; the symbolic behavior is that of man the human being.(16) It is the symbol which has transformed man from a mere animal to a human animal.

As it was the symbol that made mankind human, so it is with each member of the race. A baby is not a human being so far as his behavior is concerned. Until the infant acquires speech there is nothing to distinguish his behavior qualitatively from that of a young ape.(17) The baby becomes a human being when and as he learns to use symbols. Only by means of speech can the baby enter and take part in the human affairs of mankind. The questions we asked previously may be repeated now. How is the growing child to know of such things as families, etiquette, morals, law, science, philosophy, religion, commerce, and so on, without speech? The rare cases of children who grew up without symbols because of deafness and blindness, such as those of Laura Bridgman, Helen Keller and Marie Heurtin, are instructive.(18) Until they "got the idea" of symbolic communication they were not human beings, but 'animals,' they did not participate in behavior which is peculiar to human beings. They were "in" human society as dogs are, but they were not *of* human society. And, although the present writer is exceedingly skeptical of the reports of the so-called "wolf-children," "feral men," etc., we may note that they are described, almost without exception, as without speech, "beastly," and "in-human."

VII

Summary. The natural processes of organic evolution brought into existence in man, and man alone, a new and distinctive ability: the ability to use symbols. The most important form of symbolic expression is articulate speech. Articulate speech means communication of ideas; communication means preservation—tradition—and preservation means accumulation and progress. The emergence of the organic faculty of symbol-using has resulted in the genesis of a new order of phenomena: a superorganic, or cultural, order. All civilizations are born of, and are perpetuated by, the use of symbols. A culture, or civilization, is but a particular kind of form (symbolic) which the

biologic, life-perpetuating activities of a particular animal, man, assume.

Human behavior is symbolic behavior; if it is not symbolic, it is not human. The infant of the genus homo becomes a human being only as he is introduced into and participates in that supraorganic order of phenomena which is culture. And the key to this world and the means of participation in it is—the symbol.

Notes

1. New York, 1936.
2. *Anthropology*, p. 39; New York, 1937.
3. We have a good example of this in the distinguished physiologist, Anton J. Carlson. After taking note of "man's present achievements in science, in the arts (including oratory), in political and social institutions," and noting "at the same time the apparent paucity of such behavior in other animals," he, as a common man "is tempted to conclude that in these capacities, at least, man has a qualitative superiority over other mammals." ("The Dynamics of Living Processes," in *The Nature of the World and Man.* H. H. Newman, ed., p. 477; Chicago, 1926) But, since, as a scientist, Professor Carlson cannot *define* this qualitative difference between man and other animals, since as a physiologist he cannot explain it, he refuses to admit it—"...the physiologist does not accept the great development of articulate speech in man as something qualitatively new ..." (p. 478)— and suggests helplessly that some day we may find some new "building stone," an "additional lipoid, phosphatid, or potassium ion," in the human brain which will explain it, and concludes by saying that the difference between the mind of man and that of non-man is "probably only one of degree." (*op cit*., pp. 478-79)
4. "Do you bite your thumb at us, sir?"—*Romeo and Juliet*, Act I, Sc. 1.
5. "Now since sounds have no natural connection with our ideas, but have all their signification from the arbitrary imposition of men ... ,"John Locke, *Essay Concerning the Human Understanding*, Bk. III, ch. 9. "When *I* use ... [a] word, it means just what I choose it to mean," said Humpty Dumpty to Alice. (*Through the Looking Glass*)
6. This statement is valid regardless of our theory of experiencing. Even the exponents of "Extra-Sensory Perception," who have challenged Locke's dictum that "the knowledge of the existence of any other thing [besides ourselves and God] we can have only by sensation," have been obliged to work with physical rather than ethereal forms. (Bk. 4, ch. 11, *Essay Concerning the Human Understanding*,)
7. A *sign* is a physical form whose function is to indicate some other thing—object, quality, or event. The meaning of a sign may be intrinsic, inseparable from its physical form and nature, as in the case of the height of a column of mercury as an indication of temperature; or, it may be merely identified with its physical form, as in the case of a hurricane signal displayed by a weather bureau. But in either case, the meaning of the sign is perceived with the senses.
8. "Surprising as it may seem, it was very clear during the first few months that the ape was considerably superior to the child in responding to human words," W. N. and L. A. Kellogg, *The Ape and the Child.* (New York, 1933)
9. Professor Linton speaks of "the faintest foreshadowings of language … at the animal level." (*op cit*., p. 74) But precisely what these "faintest foreshadowings" are he does not say.
10. What we have to say here would, of course, apply equally well to gestures (e.g., the "sign of the cross," a salute), a color, a material object, etc.
11. Like a word, the value of a vase may be perceived by the senses or imperceptible to them depending upon the context in which it is regarded. In an esthetic context its value is perceived with the senses. In the commercial context this is impossible; we must be told its value—in terms of price.
12. Cf. "A Neurologist Makes Up His Mind," by C. Judson Herrick, *Scientific Monthly*, August, 1939. Professor Herrick is a distinguished one of a not too large number of scientists who

are interested in the structural basis of symbol using.

13. The misconception that speech is dependent upon the so-called (but mis-called) organs of speech, and, furthermore, that man alone has organs suitable for speech, is not uncommon even today. Thus Professor L. L. Bernard lists "The fourth great organic asset of man is his vocal apparatus, also characteristic of him alone." (*Introduction to Sociology*, J. Davis and H. E. Barnes, eds., p. 399; New. York, 1927)

    The great apes have the mechanism necessary for the production of articulate sounds: "It seemingly is well established that the motor mechanism of voice in this ape [chimpanzee] is adequate not only to the production of a considerable variety of sounds, but also to definite articulations similar to those of man." R. M. and A. W. Yerkes, *The Great Apes*, p. 301. (New Haven, 1929) Also: "All of the anthropoid apes are vocally and muscularly equipped so that they could have an articular language if they possessed the requisite intelligence." E. A. Hooton, *Up From the Ape*, p. 167. (New York, 1931)

    Furthermore, the mere production of articulate sounds would not be symbolizing any more than the mere "understanding of words and sentences" (Darwin) is. John Locke made this clear two and a half centuries ago: "Man, therefore had by nature his organs so fashioned, as to be fit to frame articulate sounds, which we call words. But this was not enough to produce language; for parrots, and several other birds, will be taught to make articulate sounds distinct enough, which yet, by no means, are capable of language. Besides articulate sounds, therefore, it was further necessary, that he should be able to use these sounds as signs of internal conceptions; and to make them stand as marks for the ideas within his own mind, whereby they might be made known to others ..." Book III, Ch. 1, Secs, 2, 3, *Essay Concerning the Human Understanding*.

    And J. F. Blumenbach, a century later, declared in his *On the Natural Variety of Mankind*, "That speech is the work of reason alone, appears from this, that other animals, although they have nearly the same organs of voice as man, are entirely destitute of it." (quoted by R. M. and A. W. Yerkes, *op. cit*., p. 23)

14. Man's brain is about two and one-half times as large as that of a gorilla. "The human brain is about 1/50 of the entire body weight, while that of a gorilla varies from 1/150 to 1/200 part of that weight." (Hooton, *op. cit*., p. 153)
15. "On the whole, however, it would seem that language and culture rest, in a way which is not fully understood, on the same set of faculties . . ." A. L. Kroeber, *Anthropology*, p. 108. (New York, 1923) It is hoped that this essay will make this matter more "fully understood."
16. It is for this reason that observations and experiments with apes, rats, etc., can tell us nothing about human behavior. They can tell us how ape-like or rat-like man is, but they throw no light upon human behavior because the behavior of apes, rats, etc., is non-symbolic.

    The title of the late George A. Dorsey's best seller, *Why We Behave Like Human Beings*, was misleading for the same reason. This interesting book told us much about vertebrate, mammalian, primate, and even man-animal behavior, but virtually nothing about symbolic, i.e., human, behavior. But we are glad to add, in justice to Dorsey, that his chapter on the function of speech in culture, (Ch. II) in *Man's Own Show: Civilization* (New York, 1931), is probably the best discussion of this subject that we know of in anthropological literature.
17. In their fascinating account of their experiment with a baby chimpanzee, kept for nine months in their home and treated as their infant son was treated, Professor and Mrs. Kellogg speak of the "humanization" of the little ape: "She may thus be said to have become 'more humanized' than the human subject …" (p. 315.)

    This is misleading. What the experiment showed so strikingly was *how like an ape* a child of homo sapiens is *before he learns to talk*. The boy even employed the ape's "food bark"! The experiment also demonstrated the ape's utter inability to learn to talk, which means an inability to become humanized at all.
18. The reader will find a resume of the more significant facts of these cases in W. I. Thomas, *Primitive Behavior*, pp. 50-54, 776-777. (New York, 1937)

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