

The Webs of the Mind: Human Thought and Belief as Theoretical Systems

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A perennial problem of folklore concerns the search for method. While folklore study has managed to amass considerable quantities of data, folkloristic science has usually failed to apply any consistent approaches to the organization of this data. In short, folklore as a science is at best still in its infancy. An understanding of the nature of theory, in the particular and rigorous form that theoretical expressions take in the sciences, is useful to the folklorist in two ways. There is the obvious benefit of knowing how to properly formulate a theory based on collected data. But it is the second use that concerns me here, and this is utilizing the theoretical form as a model for human thought patterns. In the course of this paper I will argue first that the theoretical form corresponds in structure to the knowledge and belief patterns of human thought. Second, I will argue that this framework can be of value to folklorists when used as a basic pattern for describing and finding the relations within the belief systems of individuals and cultures.

Science seeks to understand as thoroughly as possible the sum of what exists. Understanding must consist first of accumulating data, and second of giving meaning to our chaos of observations. To find meaning is to find pattern, and men have usually been satisfied only with finding cause and effect, beginning and end, explanation and law. This search continues, though now we realize that we must be satisfied short of any absolute truths. Still, even if we cannot know the ultimate cause of some phenomenon, it is valuable to know the event that causes (or always accompanies) another event. I explain how the sun is eclipsed if I say the moon has passed directly in front of it. This explanation is satisfying within limits even though I have not mentioned such things as light and shadow, celestial mechanics, or the origin of the universe, which would figure into a fuller explanation of an eclipse.

A major goal of science, then, is to explain. Explanation is always relative to some criterion that serves as a reference, or starting point. Of course the best explanation would refer to some ultimate and unquestionable truth. However, the best we can do is to explain in terms of a statement that is true from one point of view, and that may be false from other point of view. To subsume a statement about a particular event under a more general statement is to explain the particular in terms of a wider reference,¹ though from a yet wider view the general statement may be questioned. For example, if all solar eclipses are caused by a dragon eating the sun, then if event X is a solar eclipse, we explain event X when we say that it is a particular case of a dragon eating the sun. Within itself this is the correct explanation for solar eclipses, but relative to our view of the nature of the solar system, the general statement, and thus the explanation based on it, is false.

For scientific understanding we need more than a collection of laws. We need a systematic structure for our statements, one that has a beginning point and which has clear expression of what relationships are allowed. Ideally, we need a deductively related system. Such a framework is provided by a theoretical system. Theory in itself is not necessarily a correct description of nature. Rather, theory is simply a group of statements that are systematically related to each

other, and empirically testable.² They may be general laws but not necessarily; what is necessary is that a network of interdependent statements be formed. In brief, a scientific theory consists of a group of elements and rules of relationship that are assumed to be true, and from these basics a system of derivative elements and relationships are deduced. When applied to nature it is hoped that the basic parts of the theory correspond to the underlying mechanism of the phenomenon in question, while it is hoped that the derived parts of the theory correspond to features of the phenomenon that are dependent on the lower layers for their characteristics. A theory is a description that tries to guess the mechanism behind some reality. It differs from other descriptions by having a definite starting point and definite relationships between the parts. I must now consider the structure of theory in greater detail.

Theory is fundamentally a language. Theory in its simplest terms consists of vocabulary and grammar, that is, a set of elements that may be single words, mathematical symbols, whole statements, or any other thing that can be treated as a simplest term; and a set of rules that specify how the elements may legitimately be ordered. The overriding order in a theoretical system is subordination, with all derived elements and rules related as consequences to a group of initially chosen elements and rules. Out of all the possibly existent elements some are chosen to have no synonyms within the theory, and are called primitives. All other elements allowed in the system must have synonyms, and thus these elements can be defined ultimately in terms of the primitives. The rules of relation operate in a similar way--some rules are selected from all the possible rules to serve as axioms, or rules accepted without further proof. All other possible rules are derived from these basic rules. Their expression depends on the prior existence of the basic rules. To make these derivations, a set of rules for definition and transformation are needed. These are rules that specify, respectively, the definitions that are permitted and the ways in which different rules can be made from the initial set of rules.

The system I have described so far is purely formal. I have not been concerned with knowing the meaning of the terms, but only how the terms fit together in accord with the rules we use. To illustrate: the rules might specify that a sentence structure "article--subject noun--verb--object noun" is proper, and this is a sentence of form as opposed to "The boy ran home," which is a sentence with meaning interpreted into the form. If the sentence is properly constructed in accord with its rules the formal system will bear internal consistency, and its statements can be said to be true with reference to the system of which they are a part. But science is concerned for truth with reference to nature. What we want, then, is a meaning to give to this system so that the system will also be true when we use it to describe our observations of reality. We can add rules of interpretation to give meaning to the elements and rules, and give various meanings to the formal system. Then we may test each interpretation of meaning to see if it is true to the reality that concerns us. By its formal consistency we know that if the axioms are true then the derived relationships, which are related by deduction to the axioms, must be true. If the axioms and derived relationships correspond to observed reality, then we know that the language of relationships that composes our theory is a proper description of a phenomenon and its underlying mechanism. Such a theory stands until some of the data fails to fit. Then a different interpretation of the same system to better fit the data may be tried, or a whole new theory may be required.³

The Copernican theory of the solar system may be used to further illustrate. The task of Copernicus is to explain how the celestial bodies move as they are observed to do, and to give a better account than Ptolemy's geocentric theory does. Copernicus begins his theory with such primitives as heavenly bodies, the concept of planetary motion in some form or other, and geometric shapes.

From these three primitives he can build the defined term of orbit, which is the motion of one planet relative to another, in such a way that the motion of the first planet ascribes a circular path that is centered on the second. If he takes a part of the problem, such as the fact of day and night, then it is possible that a new sun is born daily, that the same sun orbits the earth, or that the earth turns on its axis while orbiting the sun. Copernicus chooses the heliocentric view as an axiomatic assumption, so his rules of relationship must include that the sun is central and the earth moves in an orbit around the sun. A necessary consequence derived from this assumption, if day and night are to be accounted for, is that the earth not only orbits but also turns on its axis. This latter conclusion is not at all obvious, but necessary according to the assumptions.

It might be added that Copernicus did not know that he was right. He simply made a guess that the sun was central and worked out a model for how the earth must behave. As it turned out the heliocentric model did make better predictions for planetary motion (than Ptolemy's) and its accuracy has been borne out by subsequent tests. The important point with reference to theory is that theory does not depict the necessarily true mechanism of reality. The theoretical model is an artificial construct that proves to work as well as an account of whatever "real" mechanism there may be, at least in terms of accounting for what is observed and predicting what will be observed. It is the best guess we can make, and the best device we have for giving an orderly account of what we observe, but it is still a guess. The value of a theory as a descriptive device lies in the fact that it treats data in terms of relationships. Each fact is not equally sovereign in a theory, but is ranked somewhere in a hierarchy. There is a starting point, right or wrong, in the basic elements and rules and everything else that is accepted into the system bears a definite relationship to the starting points. A few factors become the means to treat a great number of others, so in a theory there is variety and unity at the same time. In this sense theory gives meaning to the chaos of perception.

Now, my concern with theory in this brief account has not been to show folklorists how to construct theories for their data. My concern has been to provide background for two assertions: 1) Individual thought operates as a theoretical system. 2) The ideational aspect of culture operates as a theoretical system. I propose that human knowledge, to be knowledge at all, is a system of related elements, and is arranged in a hierarchy that more or less refers back to initial assumptions. There can be no doubt that there is order expressed in human thought and action, and it is attested to by the presence of language, narrative, myth, and social organization. Furthermore, a relationship of subordination manifests itself in most, if not all cultures. That is, men perceive the existence of cause and effect even if it is expressed in such simple terms as saying that an acorn is a necessary antecedent for an oak, or a mother for a baby. More wide-ranging questions of meaning are answered by religion, which may explain the origins of the world and the ultimate fate of men. A deity may serve as an answer beyond which it is impossible to question, and thus provides a definite starting point for any system of understanding. Earth, fire, water, and air may serve as the primitives from which all other objects are derived, and a hierarchical sequence of rules of relation can be seen in the belief that disease is a punishment for disobeying the laws of the deity. In short, the characteristics of theory are potentially present in human knowledge and belief.

It is a long jump from potential to the assertion that a theoretical pattern is innate in all human knowledge. Human learning probably is a more or less haphazard process, and I do not suggest that the mind begins with assumptions and systematically derives the consequences of these assumptions. While there may be a deep structure of the mind, and a fixed pattern of organization in all human thought, I am concerned with knowledge more or less on the conscious level with what people know from their experience and their leaning from others. I am also concerned with what people believe they know, and with the interpretations and explanations they use to account for what they know and believe. I cannot claim that one person knows fully the system of his own culture, nor that any one culture includes all ideational possibilities. I will simply say that an individual knows parts of the sum total of the knowledge of his culture, some of it as unrelated fact and some of it as a related system. Out of this knowledge, most people are able to solve problems or give explanations by referring to generalizations. If nothing else, a person may know the system of his knowledge in outline, so he can fall back on fundamentals, such as a deity, as a general explanation for what he does not understand in detail. Any full expression of an individual or cultural ideational system may reveal missing steps in the derivational sequence or logically inconsistent features within the system. Relationships need not be made by deduction, but we should expect to find induction, analogy, metaphor, and circumstantial association as the means of making links within human knowledge systems. Several systems with different, even contradictory fundamental assumptions may coexist in the same person or culture, and never be resolved. Only ideal theories are perfect systems of thorough subordination, while even in science theories are rarely well-formed formulations.

Each person possesses an organized account created from cultural inculcation and a personal synthesis. From birth the individual perceives objects, which become nouns, and actions, which become verbs. He experiences sequences of events and learns what thing invariably accompanies another, which may lead to expressions of cause and effect. This experience also teaches him to anticipate consequences, so he gains the power to predict. Meanwhile the individual learns from the culture of which he is a part. Learning words and grammar shapes what he is able to communicate and the ways in which he may communicate it. He learns customs and social patterns. The educational process, formal and informal, passes on to the individual the answers to questions he may ask and even tells him what questions are relevant to ask. Out of all this input the individual develops a personal synthesis. Some things are taken to be true without doubt, and some of these truths are more important for understanding the nature of the world than are others. Around these centrally important truths all other input is interpreted, whenever there is the need to interpret it. Part of the organization thus derives from the presentation of cultural data, and part derives from the personal work of relating the data. The result is the individual's organized account of the world.

To say that an individual knows, and is a product of his culture, means that the individual possesses an organized account of his world. It seems to be in the nature of the organization of conscious thought that human knowledge closely resembles a theoretical system. Further study is needed to declare that human knowledge is in fact such a system, but at a minimum the theoretical model provides a useful scheme for describing human thought. Culture, as a mode of learned behavior, is more than simply a system of knowledge.⁴ In its ideational aspect, culture approaches what we have dealt with in the individual. If we treat ideational culture as the full repertoire of ideas found among a

group of people, then we do not find an organized account of the world but rather a collection of all the potential accounts, and elements from which to build an account, that a member of this culture might draw on. In this sense culture is not a theoretical system but in fact a collection of systems. On the other hand we might recognize the individual as the ultimate bearer of ideas. Ideational culture must then be the ideational pattern of each individual, and thus a theoretical system in the same sense that individual thought is. If we seek what is general and characteristic of the thought of a specified group, then we may establish some normative criterion for expressing the ideational culture. Whether or not the result of this kind of process yields ideational culture as a theoretical system depends on what is abstracted. If a normal pattern for ideation is sought, then something like a world view may result, and this can be treated as a theory. If normal ideas are sought independent of their organization, then of course a theoretical scheme cannot result. However, if ideational culture is treated as the learned thought pattern of individuals, or as the average world view of a culture group, then culture can be treated as a theoretical system.

If individual and cultural thought can in fact be regarded as theoretical systems, the study of beliefs as a system should prove a fruitful approach for folklore. Instead of taking our task as finished when we have discovered a belief and its function, we should in addition try to determine how the belief fits into the system of antecedent and consequent beliefs. Folkloristic material such as legends and folk beliefs lend themselves well to study under this approach. For example, a person who reports a flying saucer sighting describes characteristics of the object that suggest a machine and a disc shape. Let us take two possibilities along with this report: First, independent evidence proves that the object sighted was the planet Venus, and second, no identification of the object is made other than the one given by the witness. Such a case as the first, in which we can compare reality and belief, is rare, and clearly suggests that the reality of flying saucers is a fundamental assumption, while certain features and relationships are entailed by this assumption. Our analysis of this belief must include, at a minimum, delineation of basic assumptions and consequences both tacit and explicit. Related ideas, internal inconsistencies, reasoning processes by the witness, and the relation between belief and behavior are only a few of the possibilities to look for once the belief itself is delineated. This study can be conducted as an analysis of the subject's beliefs without the investigator needing to add or infer, since within the report itself relationships are present for him to study. Of course in most cases no independent identification of what a belief is based on can be found, and the job of finding basics and consequences becomes harder. However, the flying saucer in the report may be taken at face value; its actual identity fails to change the pattern of relationships in the report itself. The belief system taken in itself does not change because we are ignorant of the reality behind it. One advantage of the theoretical system approach, then, is that the subject vs. observer problem is solved in favor of the subject--what he thinks can be described without the observer completely translating and distorting what the observed person believes. The theoretical system we draw up is ultimately our product, and thus it may not depict what the subject thinks, but at least the pattern of relationships in the subject's belief is preserved.

The recognition of pattern in human belief raises the possibility for advancing the field of folklore, but at the same time obliges us to adopt improved methods of study. I have proposed that individual thought and the ideational aspect of culture are theoretical systems, or at least can be described as such. This idea is neither new nor shocking, yet folklorists have failed by and large to practice

the kind of study such an approach entails. Our past efforts have likewise striven to find pattern and relationship, but we have usually worked haphazardly. The value of attacking human thought as operating in theoretical systems lies in the chance to add method to the madness of our enterprise.

Notes

1. Hempel, Carl, Philosophy of Natural Science (Englewood Cliffs, New Jersey: Prentice-Hall, 1966), p. 51.
2. Rudner, Richard, Philosophy of Social Science (Englewood Cliffs, New Jersey: Prentice-Hall, 1966), p. 10.
3. Rudner, Philosophy of Social Science, pp. 10-18.
4. Bidney, David, Theoretical Anthropology (New York: Schocken, 1967), p. xv.