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Form and Meaning of Magical Acts

Like one of the proverbial blind men who probed different parts of the elephant's body, I shall investigate merely a fragmentary portion of the gigantic question: Is there a basic difference in the modes of thought of "traditional prescientific" and "modern science-oriented" societies? This was implicitly the theme of Evans-Pritchard's justly famous "dialogue" with Lévy-Bruhl. I shall attempt here only a mini-dialogue with Evans-Pritchard concerning the theoretical implications of his Zande data on magic.

My general thesis will be as follows. The *analogical* mode of thought has always been exploited by man generally. While both "magic" and "science" are characterized by analogical thought and action, they comprise differentiated varieties whose validity it would be inappropriate to measure and verify by the same standards. Magical acts, usually compounded of verbal utterance and object manipulation, constitute "performative" acts by which a property is imperatively transferred to a recipient object or person on an analogical basis. Magical acts are ritual acts, and ritual acts are in turn performative acts whose positive and creative meaning is missed and whose persuasive validity is misjudged if they are subjected to that kind of empirical verification associated with scientific activity. Neither magic nor ritual constitutes applied science in the narrow sense.

In contrast, the exploitation of analogical thought in science consists in making the known or apprehended instance serve as a model for the incompletely known in the phenomenon to be explained. The model serves to generate a prediction concerning the *explicandum*,

which is then subjected to observation and verification tests to ascertain the prediction's truth value.

"Performative" acts of a persuasive kind are by no means confined to the primitive; modern industrial societies also have their rites and ceremonies which achieve their effects by virtue of conventional normative understandings. However, science (strictly defined) is an achievement perhaps only of certain complex and literate civilizations. In the West at least, where it has attained its fullest development, science probably developed and differentiated out of certain forms of traditional and magical thought and activity; but this should not automatically serve as a universal linear scheme, nor should there be a retrospective and backward thrust by which the "rationality" of magic is pitted against the "rationality" of science, to the former's inevitable and foregone detriment. Indeed it is precisely because many Western anthropologists have approached the ritual performances of other societies from the perspective of their own historical experience and intellectual categories that they have misunderstood the semantic basis of magical acts.

I shall try to give flesh to these programmatic assertions by working through a body of concrete ethnographic data.

The Observer's Problem: The Example of the Azande

Although Evans-Pritchard in his book on the Azande (1937) and in an earlier article written in 1929 admitted that the spell was nearly always a part of and indeed essential to Zande magical rites, he emphasized over and over again (perhaps to drive home the difference between Zande and Trobriand magical systems) that it was "medicines" which played the major part. Mystical power, producing the desired end, resided in the material substance used, whereas spells, having no specific virtue by themselves, were merely words of direction uttered to the "medicines" linking them to the desired ends.

A major concern of Evans-Pritchard was to investigate the attributes and logic of selection of Zande "medicines," and their role in effecting the end sought by the rite. It is my view that in most of Evans-Pritchard's discussion of the potency of Zande "medicines" he was troubled by a theoretical framework whereby "magic" stood for effects automatically ensuing from the ritual operations alone (particularly the manipulation of material substances), and also whereby the efficacy of the ritual acts was sought to be seen within an observer's empirical "cause-effect" scheme.

At several points in his book Evans-Pritchard (1937) tried to apply the observer's distinction *ritual* (or *mystical*) versus *empirical* to the rites he was examining and found them difficult to apply consistently. This question of whether Zande medicines were mystical or empirical plagued him with recurring insistence in his final chapter, entitled "Leechcraft." It is instructive to summarize the findings of this chapter, for here at least where the subject matter was the etiology and cure of disease and the efficacy of Zande "drugs" and "pharmacopoeia" we might expect the discussion to be more concrete than that pertaining to the more elusive magical rites and witchcraft attacks. Apropos his use of concepts which I have put in quotation marks above, Evans-Pritchard disarmingly states: "We can later decide to what extent their leechcraft is magic, their leeches magicians, and their drugs mere *materia medica* of magical ritual." I shall be concerned here with the implications of that postponed decision.

In the chapter under discussion Evans-Pritchard makes the following seemingly contradictory points in the space of a few successive pages:

- 1a. The object or animal chosen as "resembling" the disease may not only constitute the medicine but also the cause of the disease (for example, fowls' excrement is the cause and cure of ringworm).¹
- 1b. In seeming contradiction to the above, Evans-Pritchard, agreeing with De Graer, asserts that a Zande, if he feels the need to do so, will attribute sickness to "some mystical entity like witchcraft or magic." The thing or animal that appears in the name of the disease may be a participant in the genesis or a tool of magic, *but is never the object of therapeutic treatment*. The implication of this assertion is that the cause of disease is a "mystical" entity, that there is no direct "causal" relationship between symptom and object resembling it. What then is the logic of using the object as a "cure" in treatment?
- 2a. The Azande show discerning powers of observation and commonsense inference—as seen by their naming of diseases by symptoms, by their perceptive diagnosis and cure of some diseases by the "logico-experimental" use of drugs, and by the employment in a few instances of "empirical therapeutics" (p. 495)—for example, treatment of headache, use of massage or emetics, and so forth.
- 2b. But the true answer to the question of whether Zande

leechcraft "is in any degree empirically sound, or . . . pure magic" is this:

"The enormous number of drugs which Azande employ and the variety of herbal products they bring to bear on a single disease at once demonstrate their lack of therapeutic value when we reflect what scientific pharmacology really implies" (p. 494). Evans-Pritchard's final verdict is unambiguous: "In spite of . . . empirical elements in Zande treatment of minor ailments, my own experience has been that Zande remedies are of an almost completely magical order" (p. 499). And Evans-Pritchard concludes that the "drugs" of Zande leechcraft are no different in their preparation from the "medicines" of Zande magic (p. 499), that most cases of prophylactic and therapeutic treatment have little or no objective value. The performances of leeches are similar to the magical performances: "drugs of leeches are boiled and spells are uttered over them in the same manner as medicines of magicians" (p. 504).

Evans-Pritchard's final attempt at sorting the data, in answer to the query: "To what extent are Zande medical practices 'empirical' as opposed to 'ritual'?" ran something like this. In acute and sudden illnesses the attribution of genesis may be to "mystical" causes like sorcery and witchcraft alone; in chronic and prolonged illnesses recourse is to a theory of *dual causation* in that there is the disease itself *plus* witchcraft, which conditions its occurrence and continuance. (This dual theory is paralleled by Evans-Pritchard's earlier elucidation of witchcraft: while the Zande are aware of the physical circumstances of accidents and disease, witchcraft explains why a particular sufferer and no other was the victim. "Witchcraft explains why events are harmful to man and not how they happen"—p. 72.) In both acute and chronic illness, in which mystical forces are at play, the drugs used are appropriately thought to have "mystical" efficacy, as seen in the notion of *mbisimo ngua*, "the soul of medicine" (corresponding to the notion "soul of witchcraft").

Mild illnesses, in contrast, bring to the fore, so Evans-Pritchard says, "natural" or organic causation, with the witchcraft allegation sinking into the background. But even here "the treatment may be just as useless in a slight as in a serious illness" (p. 505). It is not surprising then that Evans-Pritchard admits with a touch of bafflement: "There are many varieties of behaviour and opinion which defy rigid

classification because they shade into one another in a complicated pattern of interconnexions" (p. 506).

Despite this confession, it is evident that Evans-Pritchard did sort things out after a fashion. With the benefit of hindsight it might seem that a greater attention to folk classification of disease and "medicines" and the native exegesis about them might have provided additional clarification. My thesis is that this lack itself is the concomitant of a certain theoretical perspective. Evans-Pritchard had clear clues that much of Zande magic was based on analogical thought and action, but rather than investigate its semantics deeply, he, being at this stage of his thought unable to liberate himself from the influence of the observer's distinction between things empirical and things mystical (and the like), simply subjected Zande magic and leechcraft to the Westerner's criteria of induction and verification. The unstated assumption of such an intellectual exercise is that Zande practices had the same empirical purposes and objectives as those of Western science and that they, like science, were concerned with "causal" relations. This chapter is largely concerned with the consequences of (erroneously) submitting Zande analogical thought and action to Western scientific standards of induction and verification.

The Uses of Analogy

Evans-Pritchard's originality could not, of course, be confined for long within the bounds of limiting frameworks. Consequently, fresh insights break through here and there in the Zande book. One such is contained in the passing phrase "imitative symbolism," and another in the idea of "homeopathy," discussed briefly in two pages (pp. 449-450). Here we find the seeds of an approach to Zande magic (and indeed other magical systems) which I shall call "analogical action."

Apparently the Azande themselves recognized the analogical and metaphorical basis for the use of material substances in their rites—a revelation which is also embedded in Malinowski's account (see Chapter 1). Evans-Pritchard (1937) writes: "They [the Azande] say, 'We use such-and-such a plant because it is like such-and-such a thing,' naming the object towards which the rite is directed. Likewise they say, 'We do so-and-so in order that so-and-so may happen,' naming the action which they wish to follow. Often the similarity between medicine and desired happening is indicated in the spell" (p. 449). Evans-Pritchard proceeds to give the example (which he also gave in 1929) of the tall *bingba* grass, which is profuse in growth and has featherlike

branches, being used by verbal direction and by direct action to make the oil-bearing melon (*kpagu*) flourish.

There are many examples of analogical action in word and deed scattered throughout the book. A systematic assembling and examination of these examples may provide an alternative interpretation to the one proposed by Evans-Pritchard.

Scrutinize these preliminary examples with this objective in view:

1. When the Azande prick the stalks of bananas with crocodiles' teeth they say, "Teeth of crocodile are you, I prick bananas with them, may bananas be prolific like crocodiles' teeth" (p. 450).
2. Azande tie *gbaga* (the fruit of a palm tree) to their girdles as a medicine of masculinity and to secure sexual potency. When tying they say: "You are *gbaga*. May I be very potent sexually. May I not become sexually weak" (p. 455).
3. Here is an expressive example that could equally well come from Sri Lanka or Thailand. If a man is a victim of *menzere* (sorcery) medicine, he goes to a much-frequented cross-roads, kneels there, and verbally disperses it: "If it is *menzere*, may it follow all paths and not return" (p. 394).
4. Finally, there is the celebrated case of the stone placed in the fork of a tree to retard the sun: "You stone, may the sun not be quick to fall today. You, stone, retard the sun on high so that I can arrive first at that homestead to which I journey; then the sun may set" (p. 469).

Note here that the Azande refer to the stone used as *ngua uru*, which Evans-Pritchard translates as "sun-medicine."

It is my submission that, had Evans-Pritchard followed leads of this sort, he could have thrown more light on why within the range of plant life and arboreal substances (which form the major category of "medicines") used by the Azande, certain woods or roots or leaves rather than others were chosen to represent specialized ideas. Furthermore, the utterances and spells are in fact, as we have seen in these examples, critical for telling us which feature of an object-symbol is the focus of attention on an analogical basis. A shift of theoretical interest from "inherent potency" of medicines to "analogical transfer of their qualities" might have made the botanical enumeration of Zande medicines less tedious and unnecessary than Evans-Pritchard feared.

Here is a critical passage which I shall take as the text for my dis-

cussion. It encapsulates the “closed” system of Zande thought, a central theme of this book (and grist for the Popperian mill):

I do not know whether more than a verbal analogy is implied in the Zande name for mumps (the affected parts are massaged with an unguent): *imawirianzoro*, sickness of the little (*wiri*) *anzoro* birds (finches) which have lumps on their necks. But it may well be so, for we know that in primitive patterns of thought objects which have a superficial resemblance are often linked up by nomenclature and ritual and are connected in mystical patterns of thought. In Zande therapeutics this mystical connexion is found in notions about cause and cure. Ring-worm resembles in appearance fowls' excrement, and fowls' excrement is at the same time both cause and cure of ring-worm. Blepharoptosis resembles a hen's egg, and a hen's egg is its cure. Generally the logic of therapeutic treatment consists in the selection of the most prominent external symptoms, the naming of the disease after some object in nature which it resembles, and the utilization of the object as the principal ingredient in the drug administered to cure the disease. The circle may even be completed by belief that the symptoms not only yield to treatment by the object which resembles them but are caused by it as well. (1937: 486–487)

A number of words appear in this commentary that are worthy of “practical criticism.” “Superficial resemblance” can get its meaning only by unstated comparison with the notion of deeper identity from a scientific causal viewpoint; “mystical connexion” can only mean unobservable and unknown connection by comparison with empirically observable connection. The backdrop then is the standards of verification of science.

A classicist who was exploring the use of analogy by early Greek philosophers and who consulted Evans-Pritchard on Zande magic inferred certain principles from the extract quoted above. He wrote:

This passage illustrates very clearly three quite distinct functions which an analogy may serve.

1. First, an object may be named or described by referring to another object which it resembles. (Here it *need* not be implied that there is a causal connection between the two objects, though it is often the case that some causal connection is, in fact, assumed to exist.)

2. Secondly, the recognition of a resemblance between two objects may serve as the basis for an explanation of one of them, that is, an account of its cause.

3. Thirdly, the resemblances between things may be thought to form magical links between them and attempts may be made to control or influence certain objects by manipulating other objects which resemble them: the Azande hope to effect cures by using the natural object which resembles the particular disease, and such "homoeopathic" magical practices are, of course, common in all parts of the world. (Lloyd, 1966: 178)

I consider the last inference the most important (it includes the other two as well), for it is the basis on which philosophers and historians of science see the similarity and difference between magic and science, as well as the ground on which they postulate linear evolution from magic to science. Lloyd (1966) thus takes the next interpretive step:

We can see from these examples how analogy fulfills two roles in what is now for us largely, though not exclusively, the province of science, namely to provide explanations, and to control reality. As regards the second function, the most important difference between science and magic may be simply their relative effectiveness. Magic fails in practice. Yet its general aim is similar to that of applied science, to control events, and one of the means whereby it hopes to achieve this is *using the links which it believes may be formed between things by their similarities*. (pp. 178–179; italics added)

Most historians of science begin with the Greeks, and one of the principles of thought attributed to early Greek natural philosophy is that "like attracts like," which in its application meant "that a relationship of similarity may sometimes constitute a magical bond between two things, so that what happens to one of them may influence what happens to the other" (Lloyd, 1966:180). Thus, Hesse (1961) explains that one of the commonest analogies in "primitive" Greek thought was "the analogy of attraction": men apparently, having experienced sympathy and antipathy, attraction and repulsion, between themselves and other men, and between themselves and nature, therefore see these as forces which can produce effects in nature. Popular maxims based on ideas of attraction and repulsion provided, we are told, concepts of *motion* and *change*—thus, "like attracts like" was supplemented by other maxims such as "like nourishes like,"

"like affects like," "like perceives like." The doctrine of attraction explained why animals flock together with their kind, seeds of the same size seek each other when shaken in a sieve, and pebbles of like size are grouped on the seashore. In Plutarch is found the example of treating jaundice with the yellow eye of a stone curlew.

For the historian and philosopher of science, the analogy of attraction is principally of interest because the early Greek philosophers used it to explain the phenomenon of *action at a distance*, a perennial problem in scientific explanation. The Greek breakthrough from primitive analogy to "scientific" thinking, we are told, began to occur when two things happened: first, when a firm distinction was made between the animate and inanimate, and when it was recognized that phenomena of gravity and radiation were different in kind from the behavior of animals; second, when thereby a certain amount of "mechanization" of physics took place, with Aristotle and with the atomists. Indeed "action at a distance" became intellectually problematic only when this stage had been reached. "Part of the history of the problem of action at a distance is therefore that of the growth of a mechanical conception of matter, and the use of mechanical analogies in explaining natural processes" (Hesse, 1961:30). Thus, for example, it was the "atomists," we are told, who by virtue of their notion of atoms in motion introduced a purely mechanical theory of motion and change through contact.

Readers of the Azande book will have noticed that Evans-Pritchard was very concerned with this classical problem of "action at a distance," which was spelled out in terms of "mystical" ties, the "soul" of witchcraft or of "medicine" affecting a victim, and the like, all of which are adduced in an attempt to solve an "intellectual" problem which is not necessarily the Azande's.

How relevant are classical Greek scholarship and the writings of historians of science for illuminating the thought patterns of the Azande, Trobrianders, and other "prescientific" peoples? I cannot go into this matter at length here, but let me sound a note of caution. From a comparative point of view it is useful to bear in mind that many Western philosophers are concerned with how early Greek thought led by stages to the development of scientific thought wedded to experimental verification—in other words, how Greek thought was transformed from "magic" to "science," and how the seeds sown by the Greek philosophers ultimately flowered in the scientific revolution of the seventeenth century, when "the analogy of mechanism" alone was exploited with respect to events in nature and when nature's laws were sought in mechanical conceptions. Indeed, when later Newton's theory of gravity was propounded, the Cartesians attacked him for

propounding a theory of "attraction" in the occult idiom—that is, action at a distance without contact. The linear evolution and transformation of Western thought from the sixth century B.C. to the present day in the field of science should not be taken as an intellectual model when investigating the societies anthropologists study, unless at the same time one is deeply conscious of the underlying intellectual interests of the scholars who formulated it. Their interests were the foundations of scientific thought and of formal logic in Greece and the unique(?) development by which Greek analogical thought became subject to empirical verification, falsification, and deductive-inductive reasoning. Must analogical thought of the Azande necessarily be examined and its form and meaning unraveled in relation to these intellectual preoccupations?

In order to answer this question, let us examine carefully the kinds of analogies that exist and their uses. First of all, what do we mean by "analogy"? Basically, analogy depends on the recognition of similarities between the instances compared, and, as many philosophers have recognized, analogy stands as a prototype of reasoning from experience. J. S. Mill's paradigm serves well as a definition: "Two things resemble each other in one or more respects; a certain proposition is true of the one; therefore it is true of the other." Lloyd elucidating Keynes's thinking on the subject (in *A Treatise on Probability*) remarks that "both Bacon's own inductive method, based on the use of 'exclusions and rejections,' and Mill's Methods of Agreement and Difference, aim at the determination of the resemblances and differences between particular instances, at the determination of what Keynes called the Positive and Negative Analogies" (1966:173).

Hesse in an instructive essay (1963), on which I draw, lists four kinds of analogies. For my purposes, I shall modify her examples, and elaborate in new directions fundamentally two types of analogy—the *scientific predictive* and the *conventional persuasive*. First, let us bear in mind that "positive analogy" relates to properties shared or points of similarity between the things compared, "negative analogy" to their points of difference or properties they do not share, and "neutral analogy" to properties of the things compared of which we do not yet know whether they are of positive or negative character.

Of the two fundamentally different types of analogies that can be distinguished, one serves as a model in science generating hypotheses and comparisons which are then subject to verification inductively. In this use, the known or apprehended instance serves as the "model" and the unknown or incompletely known is the *explicandum*, the phenomenon to be explained by means of a theory.

Figures 2.1 and 2.2 show examples of analogies that might be used

CAUSAL RELATIONS	SIMILARITY RELATIONS	
	<i>Properties of sound</i>	<i>Properties of light</i>
	echoes loudness pitch etc.	reflection brightness color

Figure 2.1. Examples of analogies that might be used in science, showing relations of similarity and causality.

in science. Following Hesse, I indicate in the figures two kinds of dyadic relations that should be recognized: the *horizontal* and *vertical* relations. If Figure 2.1 is to serve as a material analogy in science, the pairs of horizontal terms (echoes : reflection, and so forth) should be either identical or *similar*, and the vertical relations (between the properties of sound such as echoes, loudness) should be *causal*, which term given a wide interpretation should mean at least a tendency to *co-occurrence*, in that certain properties are necessary or sufficient conditions for the occurrence of other properties.

In the "looser" example given in Figure 2.2, the horizontal relation may show similarities of *structure* or of *function*, and the vertical relation that of whole to its parts depending on some theory of interrelation of parts, evolutionary or adaptive.

It is essential to note that analogies can usefully serve as theoretical models only if the horizontal dyadic relations are relations of similarity (that is, judged by identities and differences), if the vertical relations of the model are *causal* in some scientifically acceptable sense and if those of the *explicandum* also promise relations of the same kind, and if the essential properties and causal relations of the model have not been shown to be part of the negative analogy between model and *explicandum*. If these conditions are satisfied, then predictions can legitimately be made from any set of known—say, three—terms to an

CO-OCCURRENCE	SIMILARITIES	
	<i>Bird</i>	<i>Fish</i>
	wing lungs feathers	fin gill scales

Figure 2.2. Examples of analogies that might be used in science, showing relations of similarity and co-occurrence.

unknown fourth. For example, in the case of the sound and light analogies in Figure 2.1, if we have established the similarity of "echoes" to "reflection," then from the known property of "loudness" in sound we may expect to find the "similar" property of "brightness" in light. Or in the bird and fish analogy, one can predict from the known parts of the bird skeleton to a "missing" part of the fish skeleton. To put it differently, the fun lies in extrapolating from the domain of positive analogy into the domain of neutral analogy, as these were defined above. Ultimately, of course, these predictions should be capable of verification or falsification in terms of observation statements.

There is another kind of traditional analogy used widely in human discourse that does not owe its genesis and use to the pursuit of "scientific" knowledge. It would therefore be ridiculous to weigh and measure its adequacy in terms of inductive verification. Consider the following analogy that may occur in political rhetoric: the employer is to his workers as a father is to his children.

$$\frac{\text{father}}{\text{children}} : \frac{\text{employer}}{\text{workers}}$$

Let us say that the purpose of this analogy is propagandist, that it is disseminated by employers in order to "evoke" attitudes in workers rather than to "predict" them.

It should be noted that in this example the vertical relations are not specifically causal; nor is it necessary that if three terms occur, the fourth also must. Even more important, there is not in this example any horizontal relation of similarity between the terms, except by virtue of the fact that the two pairs are up to a point *related by the same vertical relation*. (There may be other persuasive analogies in which, in spite of horizontal similarities between terms, the critical relation is still the vertical one.)

How must this analogy work if it is to succeed as political rhetoric? The relation of father to children bears some resemblance to the relation of employer to workers (positive analogy) in the sense, let us say, that just as the father provides for the material needs of his children so does the employer provide work and wages for his workers. Let us next say that the relation of children to father (and vice versa) is much more than this dependence; children should love their father, obey and respect him, and so on. These meanings are not necessarily implied in the employer-worker relation (negative analogy). It is precisely this expansion of meaning or the transfer of these additional values to the employer-worker relation that is sought by invoking the father-children analogy. Since in this case the ultimate aim is to make workers believe that they are like "children," there is a sense in

which we can say that the operation consists in "transferring" (rather than "predicting") from the postulated three terms the value of "children" to the fourth term, the "workers." It is for this reason that this analogy and its variants are labeled "persuasive," "rationalizing," or "evocative."

It is my thesis that in ritual operations by word and object manipulation, the analogical action conforms to the "persuasive" rather than the "scientific" model. I shall later illustrate the argument that in Zande rites (as well as those of many other societies) the operation rests on the explicit recognition of *both similarity* (positive analogy) *and difference* (negative analogy) *between the vertical relations of the paired terms*. And the rite consists in persuasively transferring the properties of the desired and desirable vertical relation to the other which is in an undesirable condition, or in attempting to convert a potential, not-yet-achieved state into an actualized one. The manipulation is made operationally realistic by directing the transfer not only by word but, as in the Zande case, by bringing a material piece of the object in the desirable-desired analogy into contact with the object in need of the transfer. There are nuances in this basic manipulation which are best illustrated when dealing with the concrete cases.

Thus, a vital difference exists between the use of "analogy" in science and its use in ritual. Barring a few instances, in most Zande magical rites (especially those considered important by the people concerned), the analogical relation or comparison and the wished-for effect is stated *verbally* simultaneously with or before the carrying out of the "homeopathic" act (of influencing certain objects by manipulating other objects which resemble them). Why must the analogy of attraction be stated in word and deed for it to be effective? No classical philosopher or historian of science appears to have asked this when propounding that the principle of "like attracts like" activated primitive thought and action. In a laboratory of today, the only time a scientist may be found to foretell and verbally explain his actions while simultaneously doing his experiment would be, for example, when he is teaching a class the procedure involved in conducting that experiment. (And of course he does not expect that his words will automatically make the experiment come out right, as we know from the failed experiments in science classes we have attended at school.) Outside some such situation, his sanity would be suspect if he gave instructions aloud to his apparatus to do his bidding.

Note also how extraordinary the magical operation must look in terms of the traditional explanation (of like attracts like) when placed in relation to the use of analogy made by a scientist. Supposing a scientist constructs an electronic brain-model to "simulate" in some

ways a human biochemically structured brain. The former is useful as a predictive model only in those areas where the material makeup of the analogue is not essential to the model (that is, constitutes the innocuous negative analogy) but where the pattern of mutual relation of the parts and the behavioral relations expressed by it are the essential features. If, say, a man is weak in arithmetic the scientist does not bring a brain-model that can add and place it in contact with the head of the former so that his additions may be thus "caused" to be correct. But this is precisely what we are told the primitive magician might attempt to do! (On the other hand, the scientist may demonstrate the working of an adding machine to our hypothetical subject, and it is possible that after sufficient demonstration of its workings the subject's abilities might increase. This is a technique of "persuasion" through contact. Could it be that this is the logic of the magical operations as well?)

Some Zande Analogies

I have already noted that for the first time, well toward the end of the Azande book, Evans-Pritchard (1937) broached the question of the analogical basis of magical rites as seen by the actors. It is, however, a pity that he did not compile a more thorough indigenous exegesis on why certain "medicines" were used, and what properties or features of the substance used were singled out as "similar" to those of the recipient of the rite. Hence, in the examples he cryptically cites, the logic of their use is open to an alternative interpretation that is as plausible as Evans-Pritchard's own implicitly theory-dictated view that the medicines and drugs, chosen on the basis of superficial resemblances and to which is given mystical significance, are empirically ineffective and scientifically false, although used as if they had automatic effects. Let us look at some Zande cases:

1. At a certain time of their growth the stems of the creeper *araka* lose their leaves. These are replaced by a double row of bands, joined to the stalks, which little by little dry, split, and fall in small pieces just as the extremities of the hands and feet disappear in "*la lèpre mutilante*." This creeper is highly thought of as furnishing treatment for this kind of leprosy (p. 450).

I suggest that the analogical reasoning in this example is more complex than is implied by a simplistic "like attracts like," in that it brings to view both similarities and differences, positive and negative analogies, in the *vertical relations* of the terms (see Figure 2.3). In

POSITIVE AND NEGATIVE ANALOGIES		
CO-OCCURRENCE	<i>Araka creeper</i>	<i>Human being</i>
	falling leaves etc. growth	falling extremities disease (leprosy)

Figure 2.3. Zande analogies between *araka* creeper and human being.

the case of the creeper, the falling of its extremities is a *phase of its growth cycle*, whereas in the case of human beings the decay of limbs through leprosy is a *disease that leads to degeneration and death*. Thus, this comparison proceeds to use the *araka* creeper in the rite as a vehicle or agent of life, the message being: may the leprosy disappear and health appear, just as the shedding process in the creeper stimulates growth. The rite expresses the wish that one "vertical" relation that is undesired be replaced by another desired one; it itself represents symbolic, not causal, action.

2. Let us next take the celebrated example already cited of a man indulging "in the action of placing a stone in the tree and relating by a few words this action to a desired end." We should bear in mind that the man is on a journey and wishes to arrive home before sunset (pp. 468–469).

We can plausibly say that here the initial comparison is between the sun "traveling" toward sunset (in the sky) and a man traveling (on land) to his homestead (see Figure 2.4). The sun and the man are therefore similar in their situations, but their interests are not identical (the difference that constitutes the negative analogy). The man wishes to travel faster than the sun. It is in this context that we must view the operation of putting a stone in the fork of a tree and thus wedging it. It represents the desired positive effect of retarding the sun and the implicit counter effect (or negative analogy) of quickening

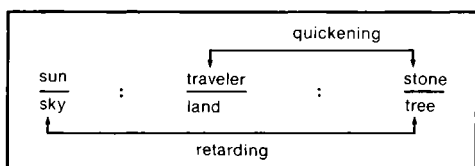


Figure 2.4. Zande analogies describing a man on a journey.

his footsteps home, which in fact the traveler actually does by performing this rite.

3. A third example is a case of “homeopathic” treatment of a disease. Ringworm in children is called *imanduruakondo* (*ima* = sickness; *nduruakondo* = fowl house). It is so called because the scabby patches of the disease resemble fowls’ excrement. Hence, they appear to consider the disease a result of the afflicted child’s having eaten food grown on a dung heap in the vicinity of a fowl house. Hence also they consider the remedy to consist in fowls’ excrement dried and reduced to ashes and mixed into a paste with a little palm oil and applied to the ringworm (p. 485).

While the “like attracts like” argument would say that the fowls’ excrement is (falsely) used to attract the scabs on the skin which it (falsely) resembles, I am tempted to say that the analogy is interesting and is capable of being acted upon creatively because, once again, of the positive and negative features it exhibits (see Figure 2.5). The relation of fowl to excrement is one of *elimination* of (unwanted) waste product, while that of scabby skin on child is one of (unwanted) *adherence* to body. Hence it is that the fowl’s excrement can convey the desired idea of eliminating the scabs when applied to the body, because while in one sense similar to it, it is also essentially different.

4. Epileptic fits (*imawirianya*: *wiri* = small; *nya* = animal) are associated with the red bush monkey, which is thought to display certain movements resembling epileptic symptoms. Before sunrise this monkey seems to be in a torpor, but as he comes out of it under the warm rays of the sun, so does the epileptic slowly recover when placed in the warmth of a fire. One of the remedies for epilepsy is to eat ashes of the burnt skull of the red monkey (pp. 483–484). Superficially considered, it seems inconsistent and absurd that the ashes of the skull of the “epileptic” monkey can cure an epileptic man. But in fact the analogy moves in two steps, exploiting the fact that although the

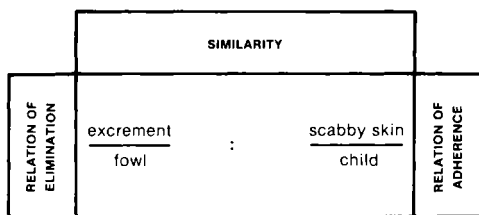


Figure 2.5. Zande analogies for the treatment of ringworm.

monkey's movements resemble epilepsy, yet it is a normal occurrence for the monkey to revive daily from its torpor under the warm rays of the sun, and the same recovery is desired in the patient. It is this capacity of the monkey to revive daily that is persuasively exploited by the rite of eating the ashes of the monkey's skull.

Enough Zande examples have been given to suggest how the analogical thought and action of the persuasive type are exploited. A well known example such as the cure of elephantiasis by the use of ashes from a piece of burnt elephant's leg looks much less bizarre when subjected to similar analysis. Nor is this underlying logic peculiar to the Azande. Numerous cases were documented by Malinowski: one example that neatly illustrates analogical action is that in which the Trobrianders, having postulated an analogy (or homology) between the yam house with yams stored in it and the human belly with food inside it, act upon the former in order to influence the latter. According to Trobriand logic (as we have already seen in Chapter 1), the rite is really a metaphorical analogy urging the human belly to restrain its hunger and greed for food. The application of "similarity and difference" analogically also serves to unravel the logic of some Trobriand food taboos.

Closer to the Azande, a number of examples can be taken from Turner's voluminous and excellent documentation of the symbolism exploited by the Ndembu in their rites. For instance, take the Ndembu *Ntambu* cult, which deals with the hunter's affliction of failure to kill animals. The mode of manifestation of the disease is that the afflicted hunter sees a lion in his dreams, and the ritual consists of the making of an effigy of a lion on a mound and the miming of the lion's actions by the hunter and the practitioner (Turner, 1968: 301). Or again, consider the simple persuasive analogy which exploits identity and difference between a Mujiwu tree which has many roots (empirically a true and desirable state of affairs) and a woman who wants to have many children (desired but not an empirically inevitable state of affairs). The Ndembu penchant for use of arboreal substances rests on such analogies and persuasive manipulations, which are cultural equations. There is no intrinsic reason why the tree should be similar to a mother and the roots to children, but the analogy which says that roots are to the tree as children are to the mother makes relational sense that can be used to "transfer" effects.

Finally, take this fragment from Dobuan magic (close in form to the Trobriand system) which displays a persuasive analogical act. Fortune (1932) writes: "The woman magician next breathes a spell into two or three water gourds containing (sea) water, and pours the

water over the heaped seed yams . . . The spell breathed into the water gourds and continued while the water is being poured runs—

murua octopus
from its inner cave
it thrusts a left arm out
on the left side it lies, head inland,
it thrusts a right arm out
comes over and lies down . . .” (1932: 117)

The analogical pattern of this rite is crystal clear. Verbally a comparison is made between the octopus which has many tentacles and the yam which it is desired will sprout many roots and shoots (like an octopus). The seawater in which the octopus lives metonymically represents it, and it is realistically poured on the yam to transfer to it the desired properties of the octopus. This Dobuan example portrays equally well the underlying design of Trobriand analogical action.

How to Understand Ritual (Which Includes “Magic”)?

I have perhaps so far only indicated negatively how “magic” should not be viewed, and not positively how it might be viewed in terms of a new perspective. I have argued that to view magic as an attempt at science that failed (or more crudely a “bastard science” in the manner of Frazer, or more sophisticatedly as a “closed” system of thought that allows for no verification and falsification of its principles *à la* Popper) is to assert that in their magic and ritual² the primitives tried to achieve results through “causal” reasoning and failed. I have also argued that while it is the case that much primitive magic is based on analogical thought and action as is Western science, the difference between them is that whereas in science the use of an analogy is closely linked to prediction and verification, and its adequacy judged in terms of inductive support, or of meeting standards of probability criteria, or of standing up to tests of falsifiability, and the like, the semantics of a magical rite are not necessarily to be judged in terms of such “true/false” criteria of science but on different standards and objectives. The corresponding objectives in (magical) ritual are “persuasion,” “conceptualization,” “expansion of meaning,” and the like, and the criteria of adequacy are better conveyed by notions such as “validity,” “correctness,” “legitimacy,” and “felicity” of the ceremony performed.

It is this latter assertion that I wish to elucidate now. In Chapter 1 I took some steps toward understanding the form and meaning of ritual in terms of its inner semantic frame and outer pragmatic frame. My starting point with regard to the former was that most "magical rites" (as indeed most rituals) combine word and deed and that the rite is devoted to an "imperative transfer" of effects, which some might phrase as the "telic" and others as the "illocutionary" or "performative" nature of the rite (Austin, 1962; Finnegan, 1969). The semantics of the transfer itself, the logic of construction of the transfer, in the Trobriand case depend 1) on metaphorical and analogical transfers by word, mediated by realistic contact transfer through objects used as "transformers," and 2) on imperative verbal transfer of energy to a "whole" through the metonymic naming of the parts. One of the points I made was that the same laws of association that apply to ordinary language apply to magical language—I reiterate this because one reader at least has managed to misunderstand my effort and thinks I tried to deal with the special character of "magical" utterances (Finnegan, 1969: 549), thereby also not appreciating my critique of the theory of "magical" language held by Ogden and Richards, Malinowski, and others. But fortunately, in compensation, Finnegan has led me to Austin (1962), whose ideas I shall exploit in an attempt to formulate a perspective, according to my own design, for viewing the form and meaning of ritual.

In Austin's *How To Do Things with Words* (1962), the chief topic of elaboration is what he calls the "performative" or "illocutionary" act, in which the uttering of the sentence cannot merely be described as saying something, but is, or is a part of, the *doing of an action*. When in a marriage ceremony the man says "I do take this woman to be my lawful wedded wife" (or some such formula), or the man says in a will "I give and bequeath . . .," to utter these sentences in the appropriate circumstances "is not to *describe* my doing of what I should be said in so uttering to be doing or to state I am doing it: it is to do it" (p. 6).

What ultimately I think Austin arrives at toward the end of his exercise is a classification of speech acts, "the issuing of utterances in a speech situation," which makes any stating "performing an act." (This is close to Malinowski's approach of seeing speech as part of action; see Chapter 1.) How many senses may there be in which to say something is to do something, or in saying something we do something, or even by saying something we do something? The following classification of speech acts may help answer the question:

1. To perform a *locutionary* act: To utter a sentence with a certain sense and reference (an assertion, a descriptive statement of fact) which is *true or false in a referential sense*.
2. To perform an *illocutionary* act: This relates to an utterance which has a *certain conventional force*, a performative act *which does something* (as implied in promising, ordering, apologizing, warning). Usually the explicit illocutionary utterance is reducible or analyzable into a form with a verb in the first person singular present indicative active (that is, the "I," the "active," and the "present" seem appropriate). These statements cannot be subject to the *true-false test*, but are *normatively judged* as "happy"/"unhappy," valid/invalid, correct/defective, and so forth.
3. To perform a *perlocutionary* act: This refers to what we bring about or achieve by *saying something* (as connoted by convincing, persuading, misleading). It refers to both the intended and unintended *consequence* upon the hearer of words uttered by the speaker. (By saying it I convinced him . . .)

These three are analytically separate but in reality not exclusive categories: both locutionary and illocutionary acts can have consequences listed as perlocutionary; and an illocutionary act can have referring and predicating elements together with the performative.³ We could perhaps say that an imperative illocutionary act attempts to get the world to conform to words, whereas "true" when ascribed to illocutions attributes success in getting words to conform to the world.

Adapting these ideas for our purposes, we can say that ritual acts and magical rites are of the "illocutionary" or "performative" sort, which simply by virtue of being enacted (under the appropriate conditions) achieve a change of state, or do something effective (for example, an installation ceremony undergone by the candidate makes him a "chief"). This performative aspect of the rite should be distinguished from its locutionary (referential, information-carrying) and perlocutionary (consequences for the participants) features.

It was quite evident to Austin that, while he focused on the role of speech in illocutionary acts, the utterance was not the sole thing necessary if the illocutionary act was to be deemed to have been performed,

and also that *actions other than speech*, whether physical or mental, were entailed for the full realization of the performance. Indeed it is even possible at the other extreme to enact a performative act without uttering words at all—a hypothetical example would be the establishing of blood brotherhood by the physical exchange of blood (without an exchange of words).

The vast majority of ritual and magical acts combine word and deed. Hence, it is appropriate to say that they use words in a performative or illocutionary manner, just as the action (the manipulation of objects and persons) is correspondingly performative.

I shall attempt to formalize in a few words the essentials of what I see as the form and meaning of magical ritual acts. The rite usually consists of a close interweaving of *speech* (in the form of utterances and spells) and *action* (consisting of the manipulation of objects). The *utterance* can be analyzed with respect to its “predicative” and “illocutionary” frames. In terms of predication and reference the words exploit analogical associations, comparisons, and transfers (through simile, metaphor, metonym, and so forth). The illocutionary force and power by which the deed is directed and enacted are achieved through use of words commanding, ordering, persuading, and the like: “Whistle, whistle, I send you after a thief”—so commands a Zande spell. And a Trobriand spell combines both metaphor and illocutionary force by urging the *taytu* yam to throw out foliage like the spider spinning its web (Malinowski, 1965: 148):

The spider covers up, the spider covers up . . .

The open space, the open space between thy branches, O *taytu*
the spider covers up,

. . . Shoot up, O head of my *taytu*

. . . Make mop upon mop of leaves, O head of my *taytu* . . .

The action can be similarly analyzed. The objects manipulated are chosen analogically on the basis of similarity and difference to convey meaning. From the performative perspective, the action consists of an operation done on an object-symbol to make an imperative and realistic transfer of its properties to the recipient. Or to put it differently, two objects are seen as having resemblances and differences, and an attempt is made to transfer the desirable quality of one to the other, which is in a defective state.

It is clear that the words and action closely combine to form an amalgam which is the magical or ritual *act*. The interrelation between the two media—speech and object manipulation—can take different

forms.⁴ What I want to emphasize here is that this way of looking at "magical art" breaks through the Saussurean *langue/parole* distinction. On the one hand, the magical act bears predicative and referential *langue*-type meanings, and on the other it is a performative act. Both frames are coexistent, and it is as a *performative* or "illocutionary" act directed by analogical reasoning that magic acquires its distinctiveness.

It is *inappropriate* to subject these performative rites to verification, to test whether they are true or false in a referential or assertive sense or whether the act has effected a result in terms of the logic of "causation" as this is understood in science. Let me illustrate the point by considering the Thai rite in which a new house is blessed by Buddhist monks (so that evil spirits may be driven out and prosperity result) through the recitation of sacred verses and the performance of certain acts. Several conditions have to be satisfied if a performance of this rite is not, to use Austin's word, to become an "infelicity": there must exist a conventional procedure properly enacted only by authorized persons—for example, monks or householders; the monks who take part must be entitled to conduct the ceremony (as in this particular instance); and the actual ceremony must be executed both correctly and completely.

Quite another set of conditions relates to the *bona fides* of the actors. For example, the rite is intended for beneficiaries who expect to conduct themselves in certain ways and who have the right intentions. In fulfillment of this, it is necessary that the participants, in the actual rite performed, satisfy these expectations and actually so conduct themselves subsequently.

Now suppose that after the performance of the rite, it is found that one or more of these conditions were not fulfilled—the monks may have been bogus, the ceremony incorrectly performed, or the householder never intended to live in the house with his family but planned to use it for an illicit purpose. We cannot in these circumstances say that the rite itself was false or empirically ineffective in a causal sense. The ceremony *itself* cannot ever be said to have been proved to be false or untrue or ineffective; however, any particular enactment of it may be said to be void, unworthy, or defective. A bigamist who on false pretenses has gone through a second marriage ceremony does not on that account make the institution of marriage false, wrong, or ineffective; what can be said is that he has undergone the ceremony in bad faith and that he has not properly "married" a second time.

The conclusions therefore are that 1) while to particular instances of ritual enactments of the illocutionary or performative type *norma-*

tive judgments of efficacy (legitimacy, defectiveness, propriety, and so forth) may be applied, it is inappropriate to judge their efficacy in terms of *verification statements* and inductive rules, and 2) while ritual in general as an institution cannot be declared to be defective, particular instances of it may be so declared, if the proper conditions of performance were not met. It is at this point that I wish to take issue with Evans-Pritchard and Robin Horton.

Evans-Pritchard in his classic study of Zande witchcraft, oracles, and magic, having elucidated the coherence and close linkage of these systems of belief, felt it necessary to ask how they fitted into the observer-imposed ritual/empirical categories and how they related to Zande "practical" day-to-day activity. More pointedly, Evans-Pritchard, naturally interested in a "European" intellectual problem, asked how magic, which was oriented to achieving effects, compared with Western empiricism based on canons of proof and experimentation. Evans-Pritchard gave various reasons why the Azande did not cease believing in magic even when the expected or wished-for magical effect did not materialize. His answer was that although Azande may be skeptical about the skills and knowledge of particular witch doctors or their poor medicines or the correct performance of particular performances, and the like, their belief in the efficacy of the system itself was not thereby assailed. Whereas Evans-Pritchard gave this as evidence of why Zande magic cannot be empirically proven wrong, he did not perhaps fully appreciate that the answers he received were appropriate to all conventional performative and illocutionary acts—particular performances may for various reasons be "unhappy" or "incorrect" and therefore inefficacious while the convention itself is unassailable.

Robin Horton (1967) compounds the "error" in his challenging essays, suggestively entitled "African Traditional Thought and Western Science." On the one hand, Horton argues that African traditional thought (with its supernatural entities couched in a personal idiom) and Western science (with its concepts couched in an impersonal idiom) are similar in that reference to theoretical entities is used to link events in the visible, tangible world (natural effects) to their antecedents in the same world (natural causes). On the other hand, however—and here is the sting—this same African thought-system whose aim is explanatory and predictive (just like science) refuses to subject itself (like good science) to falsifiability and other verification tests. Indeed, African traditional thought (just as Evans-Pritchard elucidated it) is a "closed system." The believer cannot get outside the web of his thought, he cannot be agnostic, there is no vision of alternatives. Furthermore, it portrays unreflective thinking—that is,

traditional thought lacks logic and philosophy and reflection upon the rules of explanation. Evans-Pritchard's demonstration is driven home in traditional thought by a process of *secondary elaboration*; other current beliefs are utilized in such a way as to "excuse" each failure as it occurs, and thus the major theoretical assumptions are protected even in the face of negative evidence. By comparison, the collective memory of the European scientific community is littered with the wreckage of discarded theories. This is true, but Horton's enthusiasm for Popper's idealizations may benefit from some of Kuhn's skepticism.

I think it is possible to differ from Horton on the basic assumptions of the comparisons between traditional and scientific thought. One cannot deny that traditional societies reflect the patterns he enumerates. But I think it is fundamentally mistaken to say that African religion and ritual are concerned with the same intellectual tasks that science in Western society is concerned with: this is a case of analogy abused. The net result of such comparative pursuit is to land oneself where Frazer found himself—magical rituals are like science with the difference that they are mistaken and false.

My counterargument is that to view most ritual and magical acts as if they were directed to the purposes of scientific activity—to discover natural causes, predict empirical consequences in terms of a theory of causation—is inappropriate and not productive of maximum understanding. The analogical thought of Western science and that of primitive ritual have different implications. Like "illocutionary" and "performative" acts, ritual acts have consequences and effect changes; they structure situations not in the idiom of "Western science" and "rationality" but in terms of convention and normative judgment, and as solutions of existential problems and intellectual puzzles. These orders of thought and action after all are to be found in Western societies as well—they coexist with science and thrive outside its field of action or relevance. (It would be interesting to know what Horton thinks is the relation between science and religion in Western society.)

But returning to the problem of magic itself: Have I merely evaded answering what magic is by embedding it in ritual and seeing it as an analogical cum performative act? By and large I think this embedding is a correct representation of it. But I must also go on to say that insofar as magical rites try to effect a transfer, they are often geared to achieving practical results—such as cure of disease or production of a fine harvest—as much as they are geared to effecting social results. Although we should not judge their *raison d'être* in terms of applied science, we should however recognize that many (but not all) magical

rites are elaborated and utilized precisely in those circumstances where non-Western man has not achieved that special kind of "advanced" scientific knowledge which can control and act upon reality to an extent that reaches beyond the realm of his own practical knowledge. Let us not forget what Evans-Pritchard's conclusion was. Zande rites were most "mystical" where the diseases they dealt with were the most acute and chronic. These rites, then, are on a different wavelength from scientific technology; or at least in primitive societies it is better to assimilate witchcraft and magic to "ritual" rather than to "applied science."

Let us also not forget one of Evans-Pritchard's most pregnant observations: the Zande belief in witchcraft does not exclude "empirical knowledge of cause and effect," but it provides a social and cultural method of acting upon the world. "In every case witchcraft is the socially relevant cause, since it is the only one which *allows intervention* and determines social behaviour" (1937: 73; italics added). Thus, through ritual man imposes meaning on the world, anticipates the future, retrospectively "rationalizes" the past, and effects results.

It is perhaps because magic and applied science are, so to say, on different wavelengths, yet may (partially) overlap on the ground they cover, that the results of the spread of modern science and technology in "traditional" societies are complex, inconsistent, and non-linear. An effective pesticide may over time render a "magical rite" for killing pests redundant and unnecessary. But a sacrifice which creates the cosmos persists because it "creates" the world in a sense that is different from that known in the laboratory. How does one understand the Hindu theory of sacrifice, which asserts claims vaster than the causal act itself? And in the new urban communities of developing societies, "drugs" may replace traditional "medicines," but scientific "skepticism" and "prediction" do not replace astrology, or consulting of oracles or of diviners, for the guidance of human actions and for providing meaning in perplexing situations.

But what may be true of non-Western societies may not be true of Western civilization in its recent past. And hereby possibly hangs a tale.

The Relevance of European Experience

In certain respects the history and experience of Western civilization are unique. There is the possibility that, perhaps because the Western anthropologist himself is so naturally grounded in his own civilization, he may at times project it as a potentially universal experience. Let me

clarify. If Western anthropologists faced with certain ritual procedures of non-Western societies view them as "magic" that is empirically false and doomed to concede to the claims of science, they are right as far as their own history is concerned, irrespective of the truth of the assertion elsewhere. There is no denying that in Europe there is some kind of developmental sequence by which out of more "primitive" notions and "magical" practices, more "scientific" notions and experimentation were born. The process was by no means linear, but it is true that alchemy gave way to chemistry, astrology to astronomy, leechcraft to medicine. It is also to be borne in mind that old concepts from Greek natural philosophy (such as "atoms," "species," "force," "attraction") and from Greek medicine (especially the Hippocratic corpus) still persist (in form), although they have been transformed (in meaning) in the process. Somewhere in the middle of the transition it is very plausible that science differentiated out of magic, while magic itself was at the same time making "empirical" claims. It may very well be that the Western experience is a *privileged* case of transition from "magic" to "science."

It is further possible that the outlines of similar transitions and developments can also be discerned in other great literate civilizations, such as China and India. For example, the relation between early Vedic ritual and cosmological ideas and the concepts of classical Indian medicine of later times is comparable to the development in Europe, although the trend may not have gone as far. Filliozat (1964), who has examined the question with great scholarship (and who is interesting in that he thinks Indian medical ideas may have influenced the Greeks rather than vice versa), came to the conclusion that between the ideas of Vedic times and those of later periods of Indian developments in the field of medicine there were both discontinuities and continuities.

Classical Indian medicine claims to explain by means of a coherent system the pathogeny and applies its therapeutics as a function of its theories; its design is entirely scientific, even though many of its doctrines are, in fact, erroneous. It cannot, therefore, have its bases in the pathology and the therapeutics of the Veda. It does not, however, follow that the classical medical texts are not rich in Vedic souvenirs. We have seen that a number of Vedic names of diseases are explained by naturally climbing back from their meaning in classical medicine to the sense possessed by them in the Veda. But in the Veda, we have not found the prefiguration of ulterior pathological doctrines. (p. 137)

Anthropologists should heed this warning in their comparative studies. By simply naming rituals of non-Western societies as "magic," and the substances they use as "medicines" and "drugs," one cannot thereby attribute to the phenomena so named, by virtue of that naming, characteristics that may be peculiar to one's own contemporary civilization. It is only a short step from here to go on to measure these same ritual practices and ideas as equivalent to, but of course misguided and falling short of, empirical science. It is not that such a perspective is wrong but that it may hide from view the positive, persuasive, and creative, though "nonscientific," features of analogical thought and action expressed in magical rites. The dangers of excessive historical universalization should be kept in view. The rise of industry, capitalism, and experimental science in Europe in recent centuries found its counterpart in sociological theorizing in Weber's doctrine of growing "rationality" and "rationalization" in Western civilization—an inevitable historical process toward efficiency of social forms like bureaucracy, toward pragmatic orientation whereby means were closely linked to ends, and toward the generation of context-free, neutral, and universal constructs and principles. I am merely indicating that this is a particular historical experience which need not and should not be universalized if it entails automatic projections of how things traditional inevitably become things rational.