Cultural Patterns in Narrative

Are there cultural patterns in the folk tales and myths of a people which can be objectively described?

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There has been a revival of interest in the anthropology of folk literature, and valuable studies are beginning to appear. The main hurdle has been the difficulty of developing operational procedures and of validating results through links to other aspects of culture. Only very recently has it become possible, through the use of computers, to process large numbers of narrative texts having many variables in order to discover statistically significant patterns which are culturally distinctive and amenable to testing in the field. We now have the means to test the theories of the Russian folklorist Vladimir Propp, who analyzed folk tales structurally, and those of the French anthropologist Claude Lévi-Strauss, who views myths as vehicles for the expression of opposing dualities and their mediating elements [as in the opposition between sky and earth, with mist as the mediator (*1*)]. Both these scholars have maintained, despite contrary beliefs and indifference on the part of most traditional folklorists, that folk tales and myths are patterned.

Anthropologists often speak of culture patterns, but only in a few sectors of culture have they found clear evidence for patterned relationships. Language is one such sector. What kind of cognitive apparatus permits a child to understand sentences of his language that he has never before heard, or to produce understandable sentences which he himself has never before spoken? In order to study how novel sentences are created, linguists postulate the existence of some sort of cognitive structure (the organization of information in the brain), and they search for phonemic relationships, rules of grammar, and other linguistic patterns which evidence this structure. But there is much that remains unfathomed, for we have little understanding of the mental structure that undoubtedly lies behind these patterns.

Kinship and social organization are other areas in which patterns have traditionally been discerned by anthropologists. Now, advances are being made toward greater understanding of the distinctive semantic components of systems of kinship terminology. These components, though they vary with different systems, characteristically concern such matters as the generation and sex of the relative or connecting relative (*2*), the sex of the speaker, and the lineality. The kinship terms can be diagrammed in matrices that demonstrate how these semantic components combine to define the kin terms (*3*).

More ambitiously, anthropologists speak of broad configurations which characterize total cultures. By "broad configurations" anthropologists usually mean unstated premises, values, and goals, which are intuitively arrived at. The most widely known discussion of overall culture patterning is Ruth Benedict's *Patterns of Culture* (*4*), which presented the view that cultural configurations pervade all behavior. Benedict described two types of cultures—cultures of the Apollonian pueblos of the Southwest and those of the Dionysian Indians of the Great Plains. Apollonian cultures emphasize tradition, even-tempered restraint, moderation, harmony, and distrust of individualism. Dionysian cultures emphasize danger, power, violence, self-reliance, and lack of inhibition. Benedict described a number of other societies that seemed to fit her more masculine Dionysian type to an extent which, in the case of the Dobu of Melanesia and the Kwakiutl of Vancouver Sound, reached paranoid proportions. In these characterizations, her own preference was clear.

Other anthropologists who have known the cultures described by Benedict dispute her interpretation. Where she felt that pueblo people were highly integrated by a pervading set of harmonious values, others considered them to be divisive, tense, and suspicious. Where Benedict felt that pueblo individuals had relative freedom of action, others felt that they were authoritarian and suppressive (*5*). As a result of these and other disagreements involving radically different views of the same culture, anthropologists have begun to reappraise their methods.

New Directions in Ethnology

While still espousing a faith in underlying structures or logical systems in cultures, many anthropologists have turned away from any attempt at total "characterization" and have concentrated on those less disputable aspects of culture where the data can be subjected to formal procedures of validation and analysis. Some have studied the folk sciences of a culture in search of logical systems underlying native beliefs about plants or animals (*6*). Related to this first interest are studies of native terminologies for kinship (*7*), diseases (*8*), plants (*9*), and color (*10*). Other anthropologists have used logical and statistical techniques to focus on sectors of culture long neglected in anthropology: oaths and ordeals (*11*), omens (*12*), and divination (*13*). Some have turned to mathematics and logic for analyzing data of continuing interest (*14*). Others have concentrated on interviewing individuals in the native language in such a way as to insure that the questions asked are culturally meaningful to the native (*15*). All this work is still based on the assumption that there are cultural patterns and structures. But, as in linguistics, the patterns and structures are usually not directly observable. The search for them must thus be rigorously controlled to avoid subjective and disputable interpretations.

The emphasis on control has, un-

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fortunately, imposed a bias in the selection of ethnographic subject matter toward the more explicit aspects of culture, where there is high consensus among culture members, as in semantics. The more abstract aspects—art, religion, and folk literature—have usually been neglected.

Study of Narrative Patterns with Computers

During the last few years I have sought ways to investigate the more abstract aspects of culture with methods less subjective than those customarily used. For example, I have made a study of folk narratives—primarily folk tales and myths—through word counts. Counts of words belonging to different conceptual domains —domains such as affection, assistance, cognition, competition, perception, space, and time—have suggested interpretations of folk tales which can be tested in various ways. More importantly, I have found conceptual patterns in narratives—patterns of words belonging to a given conceptual domain whose frequencies in the various sections (1 to 9) of the narrative or narratives differ for different cultures (*16*).

Underlying this study is the assumption that the patterns found are indications, however imperfect, of a more basic cultural system of mental "templates" or pattern components which are used in telling folk tales. Each folk tale reflects the influence of such a template system, but because the pattern measurements are only approximations and the patterns are interwoven and superimposed in complex ways, gross patterns emerge only when we examine a very large number of folk tales.

Narrative—at least narrative as we usually define it—has certain requirements which seem to be universal. These include a setting in time and space. The listener must be able to orient himself before the events of the narrative begin. Examples are the familiar "Once upon a time" or "Long, long ago" of the folk stories we know best. In general, one expects to find a high frequency of time words at the beginning of folk stories. In Eskimo and Japanese folk tales [which I have been studying recently, in translation (*17*)], this seems to be the case. When one divides the text of each folk tale studied into nine sections of equal length, one finds that the combined first ninths of all the folk tales in the study contain more time words than any of the other ninths.

Similarly, in both the Eskimo and Japanese folk tales, words for places and areas are most frequent at the beginning of the folk tales. The occurrence, by text section, of words for natural place and general place in the Japanese tales is shown in Fig. 1 (patterns 9J and 4J).

It is probable that a high occurrence of time words at the beginning of the narrative is characteristic of folk tales in all cultures, but a graph of the Japanese pattern for time words (Fig. 2, left) suggests that the secondary peak or modal point is culturally distinctive. An examination of the text sections which correspond with the secondary modal points reveals that many of the tales tend to emphasize time as part of the plot movement toward the middle of the story. The frequencies (by text section) of all sentences mentioning the time when something is expected to happen or does happen were tallied with the frequencies for all sentences in which the time for a task is stipulated or in which there is mention of limitations on a time period. When these frequencies were graphed (Fig. 2, right) it was clear that the primary modal point now corresponded with text section 6, while the height of the peak for section 1 was greatly diminished. In this way two different patterns of time words can be identified and isolated from one another.

As one analyzes the beginning sections of the folk tales in more detail he notices differences which probably reflect differences in culture. The earlier parts of the Eskimo narratives have a higher frequency of "search" words than the later parts. The frequencies of these words decrease linearly as the tale proceeds. This decrease is due to the fact that Eskimo tales deal with a search for people or game. The observation of landmarks, terrain, tracks, and footprints is important to this search, but search words are needed less as the stories progress and the people sought or the animals hunted are found. (As one would expect, this pattern parallels the patterns for words describing spatial orientation.)

In Japanese folk tales no such pattern exists for search and observation words, which are used for other purposes—for example, to show or reveal objects, secrets, or special places to the protagonist. In the Japanese tales the frequencies of these words increase as the tale proceeds. This pattern demonstrates the interest in strategies of deception and secrecy characteristic of more complex societies, which contrasts with the great interest in physical skill and hunting ability in the less complex Eskimo culture (*18*).

In almost all folk tales or myths the characters in the story are confronted by a problem. In Eskimo and Japanese stories, concern over the problem builds up to a high point at about the middle of the story; this buildup requires the use of many words indicating communication and conversation—words such as *tell* and *say* (Fig. 3). In the stories people communicate with each other more freely when they are attempting to solve the problem. In Japanese folk tales this greater intensity of communication is accompanied by frequent use of the second person (Fig. 1, pattern 1J).

Heightened preoccupation with a problem is not accompanied by an increase in words denoting routine activities such as hunting and fishing, or in words describing custom, manner, or direction (Fig. 1, pattern 9E). Such words occur most frequently in the first few sections of Japanese and Eskimo stories, because the activities they describe are interrupted when the plot begins to develop (*19*).

As may be seen in Fig. 1, there are many conceptual categories for which very significant patterns are obtainable for one culture but not for the other. In Fig. 1 the ten most definite patterns for each culture, as determined by a combined ranking of the most significant results obtained by the chi-square method and by Kendall's tau test, are presented. On the theory that those areas showing the clearest, most definite patterns are also areas of cultural importance, one can make a number of general statements about the two cultures. The Japanese seem to be more oriented toward concern with external, usually social, situations, while the Eskimo are more oriented toward concern with the abilities and capabilities (mainly physical) of the individual.

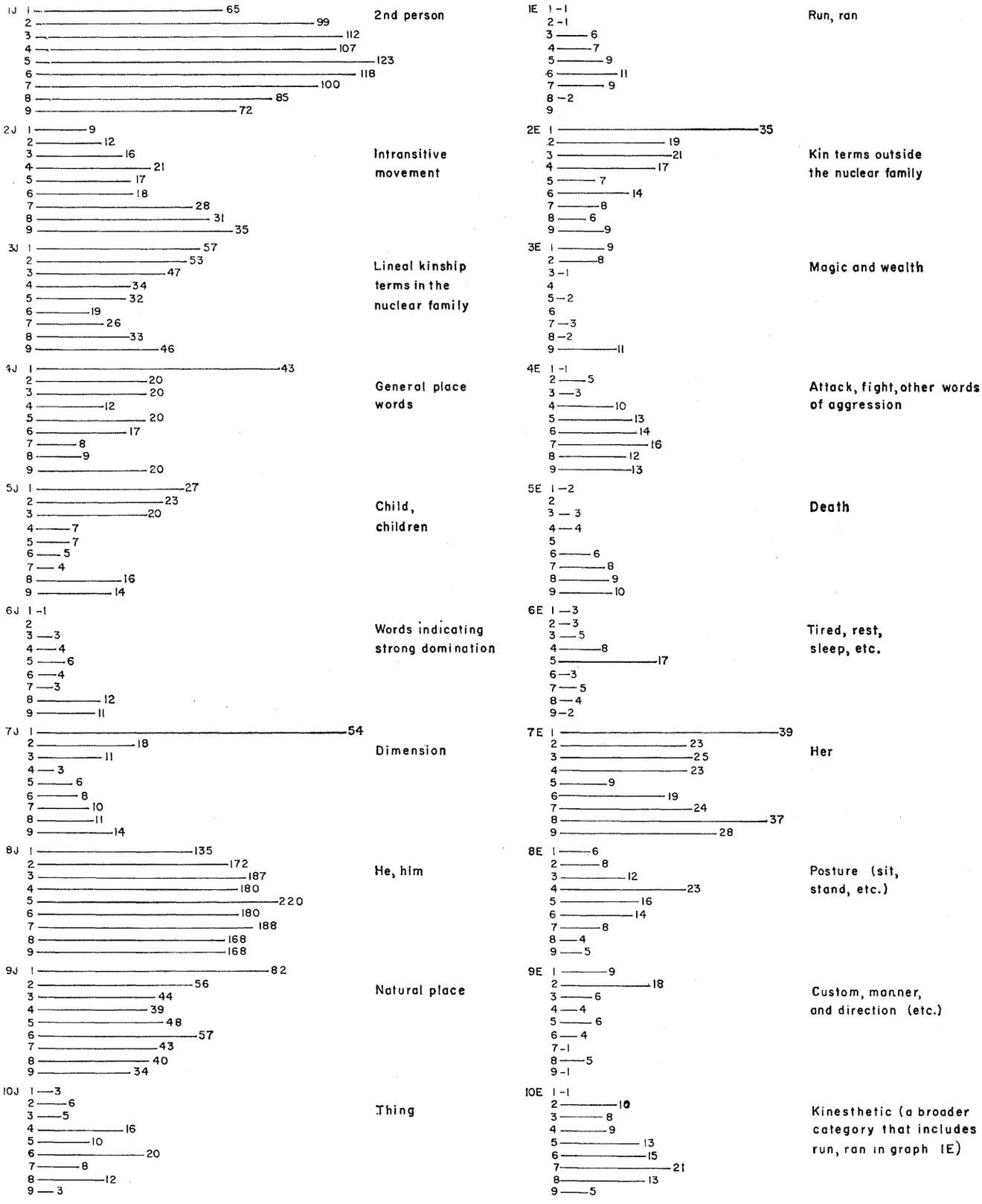

Fig. 1. Graphs of the ten most significant patterns of word-group frequencies, from the beginning (section 1) to the end (section 9) of the Japanese folk tales (graphs at left) and Eskimo folk tales (graphs at right). The lengths of the horizontal lines indicate relative frequencies of occurrence of words belonging to the conceptual domain indicated ("2nd person," "run, ran," and so on). Numerals to left of lines refer to text sections; numerals to right of lines, to number of occurrences.

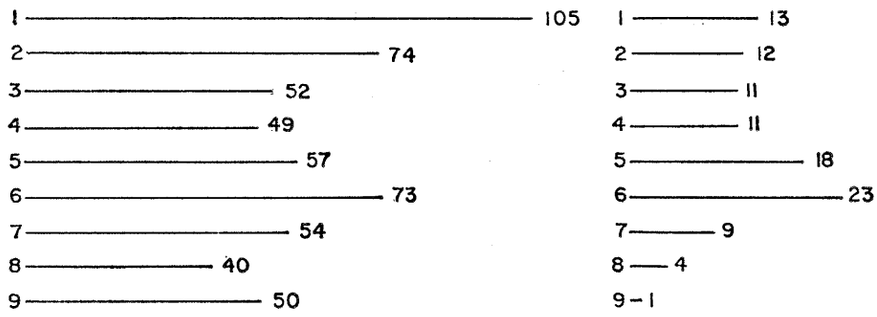

Fig. 2. (Left) Graph showing the frequency of occurrence of time-unit words in the Japanese folk tales, by text section. (Right) A secondary pattern—for words or phrases denoting anticipated and limited time periods—isolated from the data on which the left graph is based.

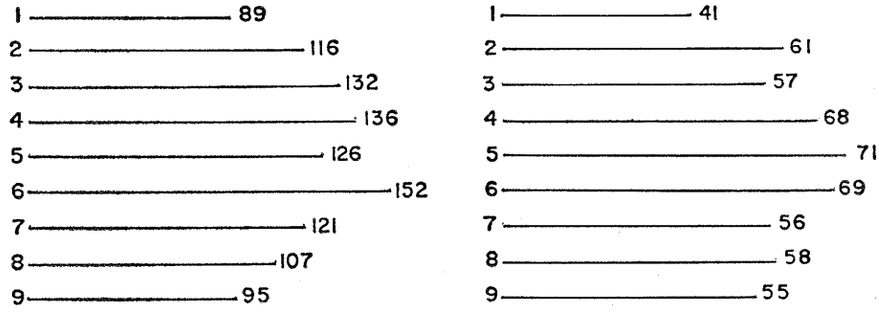

Fig. 3. (Left) Japanese and (right) Eskimo patterns for words concerned with communication in the folk tales, by text section.

The Japanese folk tales show a pattern in the conceptual category "dimension" (Fig. 1, pattern 7J), which applies to objects and people external to the protagonist, while the Eskimo folk tales reveal a pattern in the physical position or "posture" (Fig. 1, pattern 8E) of both the protagonist and others. The Japanese folk tales have a pattern in the use of concepts translated as "thing" (Fig. 1, pattern 10J) in English. The Eskimo folk tales show a pattern for concepts of physical, kinesthetic action (Fig. 1, patterns 1E and 10E). In Eskimo stories, words in the category "tired" (Fig. 1, pattern 6E) are used in connection with sleep or rest to restore physical strength.

In the Japanese stories the limitations on action tend to be external domination (Fig. 1, pattern 6J) or instruction from other individuals, whereas in the Eskimo stories the limitations on action are limitations of strength or scarcity of game. The response to the presence of game or to human threat has a pattern in the "attack" category (Fig. 1, pattern 4E), which relates either to hunting or to human conflict. Another response to problem situations is a pattern of words dealing with magic and wealth (Fig. 1, pattern 3E), both of which are goals in the Eskimo stories. In the Eskimo tales, supernatural beings give humans magical powers which enable them to find game, restore life, and so on. In the graph, however, the concern with wealth predominated, and the receipt of supernatural power which usually occurs in the fourth sections of the tales was not indicated by this word group. In the Japanese stories there is a strong pattern of words (Fig. 1, pattern 2J) indicating belief in an impersonal divine justice; in these stories, for example, an object simply falls off a ledge and strikes the evil character dead. This, again, is emphasis on the external situation rather than on inner personal power—an emphasis which seems to distinguish the Japanese from the Eskimo culture.

The pattern of the concept of death in the Eskimo tales (Fig. 1, pattern 5E) reflects the continual preoccupation with life and death of people in a difficult environment. It illustrates the Eskimo's inevitable concern with such basic matters as food, hunting, maintaining physical strength, and staying alive. The Japanese, on the other hand, are more concerned with subtle social situations and strategies than with human survival.

The pattern, in the Japanese tales, of words for members of the nuclear family (Fig. 1, pattern 3J: *father, mother, son, daughter*) and of the word *child* (Fig. 1, pattern 5J) shows an interest in family origins and in the establishing of a new family. It shows the dependency of children and of aged parents in the Japanese culture, and a great pride and love for children, even for children who are not normal or are physically incapable of helping their parents. In one story a boy is only 1 inch tall. In another he is a snail. The Eskimo people, on the other hand, are vitally concerned about the economic burden that children constitute. In extremely difficult times they have sometimes practiced infanticide.

The Eskimo pattern of words for blood relations outside the nuclear family (Fig. 1, pattern 2E: *uncle, grandmother*, and so on) reflects a movement from a broader dependency on kinship toward greater self-sufficiency, and an ability to provide for several wives rather than a desire to establish a line of descendants. Often the word *her* (Fig. 1, pattern 7E) is used to denote the possession of affinal kin, as in "her husband."

The pattern for *he* and *him* in the Japanese tales (Fig. 1, pattern 8J) probably reflects the dominance of males in the culture. The women in the folk tales have a limited number of roles—wife, mother, daughter, and grandmother (exceptions are priestess, queen, and supernatural beings), as opposed to the many different roles of Japanese men. Animals also are usually referred to, in the English translations, as "he" or "him."

This is a brief summary of the most salient of the many patterns which were shown, by means of the chi-square test, to be statistically significant. Of 74 basic conceptual categories and 195 subcategories, 58 (or 22 percent) were statistically significant at the .01 level for the Japanese folk tales and 70 (or 26 percent) for the Eskimo tales (*20*).

Cultural Templates and Cultural Models

Man is a pattern-seeking animal. At the subliminal level he continually seeks patterns or regularities in his environment and unconsciously orga-

nizes such regularities in a mental structure. I propose the hypothesis that, in hearing the narratives of others, one derives patterns from them and constructs cognitive templates for future use in telling his own stories. These templates must be stored in some organized way, to be called forth by schemata (rules, formulas, programs) or by some other means, at a higher level of mental organization, according to different behavioral situations.

Why use the word *template* rather than *pattern* for this kind of mental organization? *Pattern* implies a total arrangement of elements in a fixed relationship to each other. This suggests a cognitive rigidity which is difficult to reconcile with the infinite number of behavioral variations that are possible in human action. *Template*, on the other hand, suggests pattern parts, rather than wholes, and allows for flexibility and dynamic relationships. Thus, the word *template* is used here, in the sense of a cognitive element for producing folk tales and controlling behavior in general. The word *pattern* seems more appropriate when one is discussing patterned regularities that can be found in the folk tale, or behavior that results from activation of various template combinations.

It is reasonable to expect that an individual, if he is to function efficiently in new behavioral situations, must construct templates and mentally store them even when their immediate use is unlikely. For example, a child unconsciously learns the parental role while he is growing up but does not assume it until he himself is a parent.

The subliminal search for regularities in one's surroundings cannot include everything at once. There must be a focus on things and activities which are meaningful to the individual or to the people with whom he is interacting, or which might be useful in situations that he has not yet directly experienced. Here the theory of cultural models put forward by John M. Roberts and Brian Sutton-Smith is important. According to Roberts, Sutton-Smith, and their colleagues (*21*), every culture has an array of models. Folk tales and myths constitute only one of many model types; others are graphic art, sculpture, drama, literature, toys, maps, plans, and games. Roberts views these models as devices, external to the individual, for storing information (*22*). Through personal involvement with them one can learn useful behavior. Individuals who become addicted to certain models (for example, poker-playing or listening to music) become so because of psychological conflict created by unsatisfactory earlier experiences in the behavior-area modeled. Involvement with the model assuages the conflict. These models, therefore, provide ready strategies and behavior plans which permit the learning of culturally useful behavior, particularly in the case of children who become absorbed in activities that model behavior normally inaccessible to them until adulthood.

The theory of cultural models fits with what we are beginning to understand about the learning process in young children. There were adumbrations of this theory in the work of Maria Montessori when she made didactic models that held the interest of small children sometimes for hours. The theory also fits well with what ethologists have learned about imprinting periods or critical stages—stages when animals are best able to learn certain types of behavior if the environment offers the necessary learning stimulus (*23*). Such periods undoubtedly occur for humans ("sensitive periods" Montessori called them in her work with children), but in humans they are more diffused. Also, if the sensitive period is passed without receipt of the necessary stimulation from models or from the patterned behavior of others, the consequences are less drastic or irreversible for humans than for animals. Man's ability to learn a second language is the most obvious example.

Model addiction, as described by Roberts and Sutton-Smith, suggests that in some people a blocking process in pattern learning has occurred, so that these people need many repetitions of the learning cycle, whereas others need relatively few repetitions. If the theory of cultural models is valid, one would expect that the frequency with which a folk tale is repeated, the frequency with which its elements are repeated within the tale, and the degree of patterning of these elements indicate the importance of the topics treated in the folk tale to the people of the culture. One would also expect an effective culture to provide a large number of models that encapsulate culturally important behavior styles. It may even be possible to speak of the vitality or richness of a culture in terms of the number and quality of its models.

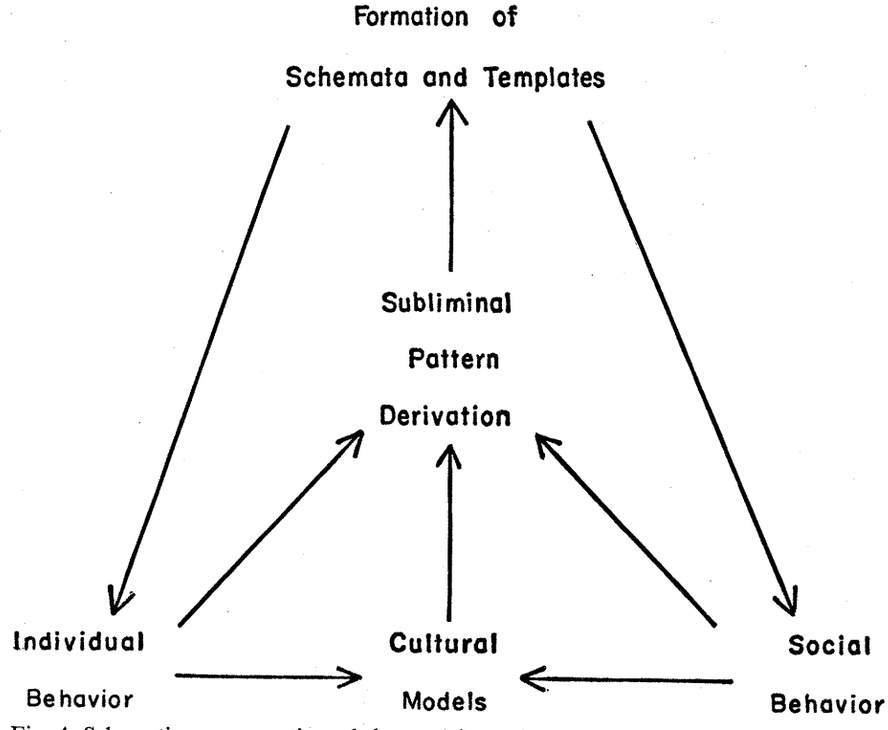

Fig. 4. Schematic representation of the model-template cycle in which behavior and involvement with cultural models leads to derivation of a subliminal pattern. The subliminal pattern, in turn, leads to the formation of schemata and templates which are used in future behavior, and to the production and perpetuation of cultural models.

The Model-Template Cycle

While work on the theory of cultural models has so far dealt primarily with the psychological effects of deep involvement in the model, with the extent to which models are used in different cultures, and with the antecedent variables making for high model addiction, the theory has wider implications for the production of models and the formation of cognitive templates as well. One might assume that the hypothesized templates are formed through the individual's involvement with a model in much the same way that, in children, linguistic patterns are unconsciously learned from speech. The process could be as follows. Subliminal patterns are derived from observed behavior, or models. Templates and schemata are formed from these patterns. The schemata select the combination of templates necessary in a given context for guiding behavior in a meaningful way. The behavior, in turn, may then lead to the further production or perpetuation of models (Fig. 4).

The construction of cognitive templates is based both on subliminal perceptions of human life and on experience with the array of cultural models available. But the cultural models themselves, being patterned and "ready-made" in a coded, condensed form, are more likely to yield information on the nature of these templates than observations of actual behavior are, since behavior, being less highly structured, can be rearranged and interpreted more in line with personal inclination. The anthropologist's own cultural inclinations would thus be less likely to bias his description of a patterned model produced by another society than to bias his description of behavior in that society. It appears, therefore, that more valid results, with less interference from the anthropologist's own culture, are attainable from a study of cultural models than from a study of simple behavior sequences. If this proves to be the case, there can be far-reaching consequences for ethnographic investigations in the field, particularly those concerned with the collection of narratives and other native texts.

Conclusion

When we tell a story, is the way we tell it culturally determined? Is freedom only an illusion? A linguistic analogy suggests an answer: We are free to say anything we like, but if we wish to be understood, we have to follow the rules of our language when we say it. Artists, too, whether operating in a formalist tradition or at the very edge of new trends, are expressing their freedom and creativity within certain bounds, some of them culturally determined. These bounds are in no sense unconscious Freudian restraints, which should, if possible, be brought to the level of consciousness. They are entirely different. Edward Sapir was speaking of non-Freudian, culturally patterned constraints when he said (*24*), "It would seem that we act all the more securely for our unawareness of the patterns that control us."

While most structural studies in anthropology—usually of kin groupings and social organization—have been described in static terms, the structural study of narrative promises something more dynamic. Like language patterns, narrative patterns are concerned with sequences of behavior. Due to limitations in the capacity of the human brain, these sequences must necessarily be mentally encapsulated and organized, in ways we are far from understanding. Through study of the resulting patterns in cultural productions and models, such as folk tales, we hope to move in the direction of greater understanding.

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19. In the Eskimo tales a secondary pattern of sentences dealing with direction in terms of line of sight, pointing, or travel route has the same shape as pattern 9E of Fig. 1.
20. More detailed analyses and discussion of the results will be found in forthcoming publications: B. N. Colby, *"Studying Eskimo Folktales by Computer"* (Museum of New Mexico Press, Santa Fe, in press);———, *"World View and Values in Japanese Folktales,"* in preparation; ——— and Chien-Pai Han, *"The Content Analysis of Anthropological Texts,"* in preparation.
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25. The research reported here was supported in part by NIH research grant MH 08854-01. It was made possible by the General Inquirer System of content analysis (see P. J. Stone *et al.*, "The General Inquirer." M.I.T. Press, in press). I especially thank Phillip J. Stone of the Harvard Laboratory of Social Relations, who programmed my dictionary of conceptual categories (the "Santa Fe Dictionary") for the General Inquirer System and whose interest and time spent on seeing the data through the computer in the initial runs made all the difference between success and failure in the research. I also thank Marshall Smith for his helpful statistical advice and for the use of his statistical programs, Chien-Pai Han for making the statistical analysis, and Donald Eid and James Toler of the Albuquerque Public School Data Processing Center for allowing me to use their 1401 computer.