

CULTURE AND THOUGHT

Investigations of "culture and thought" pose two fundamental questions. First, how does what one learns as a member of a cultural community influence thinking (e.g., making inferences, retrieving information, constructing explanatory theories, estimating likelihoods), and second, how is thinking distributed across cultural communities?

In 1910, Lucien Lévy-Bruhl answered the latter question in terms from which two generations of scholars have tried to extricate themselves. By his account, many non-Western peoples ("primitives") think in ways any logician would count as contradictory. They are "uncultivated in following a chain of reasoning which is in the slightest degree abstract" and display a predilection to explain even minor accidental occurrences by reference to occult invisible forces. "Primitive" thinkers, Lévy-Bruhl claimed, substitute memory for reason, restrict their intellectual concerns to the practical and immediate, admit of no coincidence or chance event, and are sensitive in their observations of "men and manners." Lévy-Bruhl noted that "primitives" are perfectly capable of logical and scientific thinking. They are also not confused; their intellectual procedures are not incompetent applications of the canons of logic and science. Quite the contrary, Lévy-Bruhl argued. The "primitive mentality" accepts the authority of "methods of thought" so different that logical models are inappropriate for their evaluation and inadequate for their description. The "primitive mentality" is "pre-logical," not illogical; "mystical," not irrational.

Lévy-Bruhl's position sharply contrasts with three other views: (1) an earlier (yet still extant) *evolutionary* perspective (e.g., of E. B. Tylor and more recently Robin Horton), which saw in the primitive mind an incipient rationality similar to our own, albeit less developed; (2) a later *relativist* perspective (e.g., of Benjamin Whorf, 1956), which held that the "laws of logic and reason" were not the same for all observers of the universe, for example, that the rational and logical foundations of science were expressions of the "necessities of grammatical pattern in Western Aryan grammar"; and (3) a current *universalist* perspective (e.g., of Claude Lévi-Strauss yet well-formulated by

Lévy-Bruhl; he had recanted) that "the logical structure of the mind is the same in all known cultures" (Lévi-Strauss, 1966).

Thinking: Its Cultural Environment

Most investigations of "culture and thought" hypothesize that thinking is largely a reflection of man's cultural environment. A study by A. D. de Groot (related by Herbert Simon) exemplifies the point. Chess grandmasters and neophytes are permitted a five-second viewing of twenty-four chess pieces and asked to reconstruct the board. When the pieces are randomly placed, grandmasters and neophytes recall at a comparable level, and one consistent with the rather unimpressive short-term memory capacity of our species (i.e., between five and nine "units" of information). However, when the pieces are not "placed" but "positioned" as they might be in a chess game, the recall of grandmasters increases to near perfection; neophyte memory remains unchanged. The rules of chess, mastered and skillfully applied, transform the forgotten placement of a piece of wood on a checkered board into a memorable "move" in a meaningful activity. The intellectual capacities of our species may be limited, but they are overridden, put to work, and augmented by this part or that part of our cultural heritage (e.g., the rules of chess) all the time.

Thinking takes place in a cultural context. Its subject matter is a mother's threat, "If you don't clean up your room, then you can't go to the movies" (what does she imply?); a run of black numbers on a roulette wheel (what shall I bet on next?); an overturned chess board (let's reconstruct the positions!). Construed as a reflection of man's cultural environment, thinking involves the accomplishment of intellectual purposes (e.g., making that inference, estimating that likelihood, recalling that visual image) within an environment of socially transmitted (1) rules; (2) beliefs; and (3) techniques.

Rules. A cultural environment is populated with rules. Imagine an act of creative invention, for example, word-coining in English (Whorf provides the example). A budding Lewis Carroll might arrive at "blosch" but never "nwelng," at least not in English. What does it mean to say "at least not in English"? It means

that to speak English is in part to produce sounds that conform to certain morpho-phonemic rules.

Rules (or norms) are standards (often unconscious but always recognized in their breach) for how something is to be done if it is to count as an instance of a certain kind of activity (e.g., speaking English, playing chess, being reasonable). One can, of course, utter any pattern of sound, move pieces of wood in any direction across a checkered board, or claim that just about anything "follows" from your mother's conditional threat. But if one is to speak English, or play chess, or reason logically (e.g., in terms of the propositional calculus) most of these possible "behaviors" are either "wrong" or "beside the point." Rules define the limits within which much that we call thinking (e.g., word-coining, game playing, inference drawing) has its life.

Rules are our cultural inheritance. All peoples speak a language, play games, and reason, but clearly the morpho-phonemic rules of English and the rules of chess are relevant only in certain cultural environments. Not all peoples speak the same language or play the same games. Some scholars (e.g., Whorf, and for very different reasons, Jean Piaget) feel this is also true of particular systems of logic (e.g., the propositional calculus). Not all peoples, they argue, reason the same way.

Beliefs. Beliefs are understandings about how objects and events sort into categories and how categories relate to one another. The objects and events do not usually insist; they don't sort *themselves* out. For example, in a recent legal case a doctor was tried for "aborting" (or is it "murdering"?) a "product of conception" (or is it a "child"?). A dispute arose between the defense and prosecuting attorneys over terms to be used in arguments. Shall it be "the product of conception" or "the child," "the fetus" or "the offspring," "the patient" or "the mother," that is, shall we talk in a language for "things" or a language for "persons"? Pointing couldn't settle the issue; the attorneys couldn't point at "personhood."

Cultures vary in the granting of "personhood" (e.g., the right to "standing" in court). Some deny this right not only to fetuses but to children, women, most full-grown men, and whole ethnic groups. Others grant the status to curious invisible entities (e.g., corporations).

Such cultural categories, especially when they can be described and talked about, obviously influence judgment (e.g., is the doctor guilty of murder?); they also affect memory.

The effects on memory of cultural category systems seem to exist even in the limiting case of memory for color chips. Memory for color chips is a "limiting case" because (1) the task is entirely referential; one can point at color chips; and (2) there is evidence in the work of Brent Berlin and Paul Kay (1969) and Elinor Rosch Heider that the human perceptual apparatus universally notices certain salient patches in the color solid (the so-called focal colors) and "screams out" at cultural naming systems that universally assign *terms* to them in a fixed order. Nonetheless, V. Steffle et al., working with Mayan and Spanish-speaking informants, discovered a substantial correlation between the ability to write a description of a color chip so that a reader could identify it in an array, and the writer's later ability to recognize the chip he had described. (Note that the use of specialized color terms is only one way to describe color chips.) Quite crucially, the areas of the color spectrum accurately communicated and later recognized were different for Mayan and Spanish-speakers. Memory related to interpersonal "communication accuracy." Both reflected the distinctive potential of one's culture to provide descriptive symbols (metaphors, allusions, terms, etc.) for talking about color.

Beliefs can have a pervasive influence over judgment. Consider the estimation of cooccurrence likelihoods between classes of events or objects. For example, it is the belief of most Americans that boys who fight with their peers are very unlikely to submit quietly to discipline. Yet in a study reported by R. Shweder, the correlation (in scored behavior) between fighting with peers and submitting quietly to discipline (from camp counselors) was +.32. A few weeks later, in the rated judgments of those who had previously done the scorings, the correlation was -.82. We rarely recognize that our understandings of "what goes with what" are not inductive generalizations from experience but part of a cultural inheritance which, mediated by fallible judgment and faulty recollection, creates its own illusions of truth (L. and J. Chapman on "illusory correlation," R. D'Andrade on "memory-drift," and A. Tversky and

D. Kahneman on judgmental "representativeness").

Beliefs and Reasoning

Beliefs also influence reasoning. A "logic" has been defined as a system "in which formulae may be transformed into new formulae according to certain rules governing the manipulation of symbols." There are many such systems; not all of them have been formalized. There is a recent recognition among psychologists (e.g., P. Wason and P. Johnson-Laird) that the meaning and cultural context surrounding what one reasons about can be decisive for which system of logic is brought to bear on a proposition, and that no current formalized system of logic is capable of representing these meaning-laden judgments of "what follows" from a proposition. For example, the formal implications of the conditional assertion, "If you don't clean up your room, then you can't go to the movies" differ from "If John married Jane, then he loved her." It *must* follow that "If you do clean up your room, then you can go to the movies"; it does not follow that "If John did not marry Jane, then he did not love her." A mother who denied consent to her tidy and eager child ("But I didn't say you *could* go to the movies if you *did* clean up your room") would be misusing the language. She would be appealing to a particular set of logical criteria (the rules of material implication) which would be inappropriate given the cultural context of use presupposed by her words. Moreover, even if judgments about "what follows" in the case of John and Jane happen to parallel the rules of material implication (i.e., the inverse doesn't follow, etc.) this has less to do with the authority of the propositional calculus than something we think we know about the workings of "love" and "marriage" (i.e., that they don't go together like a horse and carriage).

Beliefs are often about the thought process itself. For example, T. Gladwin has commented that "preplanning" is an important feature of European and American definitions of "intelligent behavior." Non-European peoples, he speculates, "lack a meaningful orientation of the self to the future," and are thus "unlikely to consider the long-term consequences of their present behavior." Horton remarks that "the growth of an ideal of objectivity" rests on the

conviction that explanatory theory is best pursued when it is . . . "segregated from the influence of political manipulation, aesthetic values, and wish-fulfillment." Many cultures admit of no such distinction, or as E. Gellner points out, refuse to separate "man the knower" from "man the citizen" and from "man the moral being."

Techniques. Techniques are procedures or tools that work (more effectively or less effectively) to accomplish tasks at hand. Intellectual techniques accomplish intellectual tasks. For example, American college students facilitate their recall of random meaningless lists by conceptualizing the list as a line and retrieving items at the beginning and items at the end (the so-called primacy and recency effects). When the random items can be reordered into different "kinds of things" (e.g., tools: hammer, wrench, etc.), these potential semantic groupings are retrieved in clusters, thereby amplifying recall. As reported by M. Cole and his associates (1971), neither primacy, recency, nor semantic clustering is *characteristic* of traditional Liberian Kpelle informants. However, the recall of Kpelle is significantly augmented by embedding the items in a story context. The research suggests not only that techniques are a crucial component of memory (and all thinking), but that they may be unevenly distributed across and within cultural environments.

Thinking: Its Cross-Cultural Distribution

Some features of thinking are distributed widely across cultural communities; others are narrowly distributed. Despite thousands of years of interest, scholars still differ over both the description and explanation of these distributions. The search for systematic relationships between cultural environments (rules, beliefs, techniques) and noncultural variables (e.g., biology, diet, ecology, personality) is not even universally endorsed. Thus no definitive summary is possible. There are, however, some promising lines of research and speculation.

Charles Osgood, for example, has discovered a universal "affective reaction system." Three dimensions of "feeling tone" or connotative meaning (evaluation, potency, activity or pleasantness, strain, excitement) universally mediate judgments across sensory modalities (synesthesia) and conceptual domains (meta-

phor). Most cultures seem to agree that "white" is more like "straight" than like "crooked," "anger" more like "red" than like "blue."

Berlin and Kay (1969) have changed our understanding of terminological and category systems, especially those referring to color. Cultural categories difficult to define by their boundaries can sometimes be defined by their best exemplars. Thus cultures disagree about where "red" begins and ends but not about the best instance of "redness." Color categories also seem to emerge in a fixed order in all cultures (black and white, then red, etc.). What has previously been thought of as a continuous color space now seems to possess discontinuous "perceptually salient" regions. These "focal" areas play a decisive part in the evolution, naming, and recollection of cultural categories.

Horton (in Wilson, 1970) has given a unified account of traditional African belief systems by reference to an "intellectual predicament," namely, the nonexistence of competing alternative perspectives (theories, classifications). One feature (out of many) associated with this "closed" predicament is an absence of self-conscious reflection about the rules of thought and explanation. Explicit rules, for example, those of logic, are necessary only when choices must be made between alternative theories, arguments, and so forth. Horton (in Wilson, 1970) believes this absence of "reflective norms of thought" leads to a confusion of the explanatory and predictive functions of thought with emotional concerns. He speculates that the "closed" predicament wanes with the advent of urban centers, literacy, and external trade.

Studies on the effects of formal schooling (e.g., the work of Jerome Bruner and his associates) dovetail with Horton's observations. Schooled children seem to treat thinking itself as a topic, and explore the logical space of alternatives implicit in any assertion. Cole and Scribner (1974) note that schooled children treat nonfactual statements "as if" they were true for the purpose of a logical examination, and recognize that alternative rules of classification are possible.

Horton has also noted the tendency of African cultures to "explain" events by reference to personified (versus impersonal) causal agents (spirits, gods, demons). The consequences of a commitment to personified explanatory theory have not been explored, yet one speculates it is

more difficult to ascribe willfulness, intent, planning, conspiracy, and susceptibility to human influence (e.g., via ritual and prayer) to "magnetism" than it is to "Zeus." It also seems more than coincidental that many successful attempts at demonstrating the role of affect in thinking (e.g., R. LeVine, M. Spiro and R. D'Andrade, J. Whiting and B. Whiting) have focused upon personified forces (witches, ghosts, deities). Finally, the distinction between cultures that value "obedience" in their children and those that value "self-reliance" may be a useful one. H. Barry, M. Bacon, and I. Child have related such values to a culture's investment in capital resources (e.g., cattle, dams, storage facilities). The intellectual correlates of these value orientations have not been fully explored, but when the costs of error become great what we call "trial and error exploration" and "creative speculation" may come to seem more like "irresponsible disobedience."

The attribution of qualities of thinking to other peoples is a hazardous business fraught with ideological temptations and methodological pitfalls. It now appears, for example, that Lévy-Bruhl compared the intellectual *ideals* of the Western logician and scientist (a rather narrowly distributed aspiration) with the intellectual performances of other peoples. Both the Radcliffe coed and the Bongo-Bongo horticulturalist, it turns out, are "uncultivated in following a chain of reasoning which is in the slightest degree abstract." The so-called superior memory powers of "primitives" seems to be a matter of what is being remembered. The Swazi are spectacular with cattle transactions; they are not so impressive with baseball cards. As for questions concerning the comparative "intelligence" of different cultural communities, they continue to be intractable.

Cultures certainly differ in their performance on a sample of tasks categorized as indicators of "intelligence" in our schooled culture (i.e., on standard IQ tests), but interpretations of such differences are usually equivocal. Typically, there is as little reason for concluding the test is a measure of a superior gift of intellect, as there is for attributing the chess grandmaster's perfect recall of game positions to a superior capacity to recollect visual imagery. All cultures are grandmasters of their own intellectual skills. Not surprisingly, the introduction of culturally meaningful materials often

has a massive augmenting effect on intellectual performance (e.g., M. Cole et al.; D. Price-Williams).

The chess masters' superior memory performance is a matter of learned rules and techniques. We know this because they do no better than neophytes when exposed to a random placement of chess pieces, and because it seems reasonable to assume that the randomly placed pieces are *equally* meaningless to both groups. No such assumption can be made *across* cultural environments. At the moment, both those who claim that all peoples have an equal potential to learn and those who deny it are out of their evidential depth. *Within* homogenous cultural communities people certainly vary in their intellectual capacities although the consistency of such differences is a matter of dispute. How much such differences make a difference, for example, for one's life chances, is a matter of culture.

BIBLIOGRAPHY

- BERLIN, B., and KAY, P. *Basic color terms: Their universality and evolution*. Berkeley: University of California Press, 1969.
- BERRY, J. W., and DASEN, P. R. (Eds.). *Culture and cognition: readings in cross-cultural psychology*. London: Methuen, 1974.
- COLE, M.; GAY, J.; GLICK, J. A.; and SHARP, D. W. *The cultural context of learning and thinking*. New York: Basic Books, 1971.
- COLE, M., and SCRIBNER, S. *Culture and thought: A psychological introduction*. New York: Wiley, 1974.
- EVANS-PRITCHARD, E. E. *Witchcraft, oracles, and magic among the Azande*. Oxford: Clarendon, 1937.
- FORD, C. S. (Ed.). *Cross-cultural approaches*. New Haven, Conn.: HRAF Press, 1967.
- GEERTZ, C. *The interpretation of cultures*. New York: Basic Books, 1973.
- HORTON, R., and FINNEGAN, R. *Modes of thought*. London: Faber and Faber, 1973.
- LÉVI-STRAUSS, C. *The savage mind*. Chicago: University of Chicago Press, 1966.
- LÉVI-BRUHL, L. *Les fonctions mentales dans les sociétés inférieures*. Paris: Alcan, 1910.
- ROMNEY, A. K., and D'ANDRADE, R. G. (Eds.). Transcultural studies in cognition. *American Anthropologist*, 1964, 66, Special publication.
- TYLER, S. (Ed.). *Cognitive anthropology*. New York: Holt, Rinehart, and Winston, 1969.
- WALLACE, A. F. C. *Culture and personality*. New York: Random House, 1970.
- WHORF, B. L. *Language, thought, and reality*. Cambridge: M.I.T. Press, 1956.
- WILSON, B. R. (Ed.). *Rationality*. Oxford: Blackwell, 1970.

RICHARD A. SHWEDER