

tures of particular modes of life, Ingold suggests. For instance, thunder speaks through the quality of its rumbling peals—to attentive and empathetic listeners, at least—just as the sounds of talking, singing, clapping, and drumming speak of a human presence in distinctive ways.

So it seems reasonable, Ingold says, to entertain the possibility that the old Ojibwa man who spoke to Hallowell truly perceived some rocks as live participants in the activities of his comrades.

Bird-David and Ingold's proposed makeover of animism from childish illusion into grown-up conversation with the environment strikes Gísli Pálsson, an anthropologist at the University of Iceland in Reykjavik, as a promising development. Because the concept of nature has become increasingly isolated from human society in the Western world, researchers have developed an unfortunate tendency to ignore widespread animistic beliefs or relegate them to an outdated category of "primitive" thought, Pálsson argues.

A keener scientific appreciation of animistic thinking demands more than an emphasis on intimate relationships to one's environment holds anthropologist Scott

Atran of the University of Michigan in Ann Arbor. In all cultures, he asserts, people accept animistic assumptions on authority or as a matter of faith rather than constructing them out of "common-sense knowledge." In Atran's view, scientists need to identify the mental mechanism that allows individuals who accept animistic beliefs to override a universal tendency to categorize plants and animals in highly structured ways (SN: 11/16/96, p. 308).

Resuscitated respectability for animism also raises questions about a currently popular theory, comments psychologist Angeline S. Lillard of the University of Virginia in Charlottesville. It states that children everywhere come to assume that only people have intentions, beliefs, and other mental states that impel them to act (SN: 7/17/93, p. 40). Many North American and European scientists now theorize that by around age 5, children avidly try to discern others' thoughts and feelings.

Many non-Western cultures, on the other hand, regard this mind-reading process as unimportant, Lillard reported in the January 1998 *PSYCHOLOGICAL BULLETIN*. For example, some of these groups give little regard to inner emotions and thoughts. They instead view spirits, particular situations, and other people as central causes of indi-

vidual actions. They often attribute life and magical powers to rocks, trees, and other entities, as well as to natural phenomena and dead ancestors, Lillard suggests.

There can be differences in outlook even within a country. Preliminary findings, discussed by Lillard in the April *CURRENT DIRECTIONS IN PSYCHOLOGICAL SCIENCE*, suggest that rural 7-year-olds in the United States—but not their urban counterparts—explain others' behavior mainly with references to characteristics of situations rather than internal intentions and beliefs.

Even among grown-ups who believe that their own mental processes guide their actions, those engaged in practical tasks readily perceive life in surprising places. One striking instance concerns the men who battled massive forest fires in the western United States in 1989. They described the flaming mass to interviewers as "devious," "cunning," and "lying in wait." When winds died down at night, firefighters referred to the fire as "resting up."

Perhaps one of the seasoned firefighters, if asked by an anthropologist such as Hallowell whether all fires are alive, would respond, "No, but some are." □

Behavior

Sounds like dyslexia

Scientists have tentatively linked the reading disability known as dyslexia to a bevy of brain disturbances. A team of neuroscientists now adds to this collection a disruption of the brain region that mediates perception of brief, rapidly presented sounds.

Lifelong reading problems may often stem, at least in part, from glitches in an area of the brain's sound system thought to be crucial for identifying speech sounds, contend Srikantan Nagarajan of the University of California, San Francisco (UCSF) and his coworkers.

"We believe that adult dyslexics are not delivering normal forms of representation of the separate sounds in words to brain regions involved in speech perception and reading," says study coauthor Michael M. Merzenich, also of UCSF.

The new study, published in the May 25 *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES*, compared seven people who have severe reading difficulties typical of dyslexia with seven competent readers. All were between 18 and 42 years old and had average scores on intelligence tests.

Only the poor readers scored low on a test of the ability to discriminate between pairs of briefly heard sounds. Each acoustic duo consisted of any of four combinations of high- and low-frequency tones (high-high, high-low, low-high, low-low). After presentation of a sound pair, volunteers signaled which combination they had heard by pressing buttons strapped to their thighs. A computer stored their responses.

During these trials, sensors placed over the scalp measured magnetic fluctuations generated by the electrical activity of large numbers of neurons. The UCSF team focused on activity in the brain's primary auditory cortex, which sorts out sounds that can serve as components of words.

Competent readers readily identified the sound sequences. Poor readers did report hearing each pair of sounds, and they

could often tell when the two sounds differed. They usually erred, however, in selecting the correct sequence.

Moreover, individual tones evoked weak and disorganized responses in the primary auditory tissue of poor readers, in contrast to strong, clear responses in competent readers.

Other recent studies have implicated brain disturbances affecting language comprehension and visual perception in dyslexia (SN: 3/7/98, p. 150). —B.B.

Feeling better with fish oil

Preliminary evidence suggests that a nutritional supplement, omega-3 fatty acids from fish oils, helps stabilize the volatile moods of people suffering from manic depression, also known as bipolar disorder.

Omega-3 fatty acids may share biochemical actions with lithium and valproate, say psychiatrist Andrew L. Stoll of McLean Hospital in Belmont, Mass., and his colleagues. Those medications are commonly used, with varying success, to treat manic-depressive patients.

The researchers recruited 30 patients receiving drugs for manic depression. Over 4 months, 14 of the volunteers also received high daily doses of omega-3 fatty acids in capsules containing fish-oil concentrate. The rest took olive-oil placebos.

Initially, all patients showed mild symptoms of mania or depression. Eleven of those receiving omega-3 fatty acids improved or maintained their emotional condition during the study, compared with 6 of the 16 patients taking placebos, the scientists report in the May *ARCHIVES OF GENERAL PSYCHIATRY*.

More intensive studies of the effects of omega-3 fatty acids on manic depression are needed, comment psychiatrist Joseph R. Calabrese of Case Western Reserve University School of Medicine in Cleveland and his colleagues in a commentary accompanying the study. —B.B.