
Science at the AAAS

From our reporters at the annual meeting of the American Association for the Advancement of Science in New York City

Pyramids: A public works program?

When Kurt A. G. Mendelssohn, a retired Oxford University physicist, visited Egypt about ten years ago, he became convinced that purely technological considerations—totally removed from textual or archaeological ones—could shed new light on how and why the pyramids were built. He has written a book about the subject (*The Riddle of the Pyramids*) and summarized his conclusions in a paper presented at the AAAS meeting.

His first thought was that the irregular shape of the pyramid at Meidum resulted from a landslide during construction, and that this disaster affected subsequent designs. Specifically, he notes that builders of the so-called “Bent Pyramid” at Dahshur may have heard of the accident and changed their plans halfway through—building the top of the pyramid at a shallower angle to prevent a similar slide.

But Mendelssohn does not stop with such mechanical deductions; based on consideration of how long each structure took to build and the subsequent effect on the national economy, he concludes that the pyramids represent a continuous public works project, using voluntary labor, rather than periodic sprees of tomb building using slaves. The purpose, Mendelssohn concludes, was “transformation of a village economy into a new, highly centralized form of society . . . the State.”

Some of Mendelssohn’s ideas contradict established doctrine of Egyptologists. Thomas Logan of the Metropolitan Museum of Art agrees the workmen were not slaves, and he cited a letter in which Egyptian workmen threatened to strike unless they were paid promptly; but he says the Egyptian state had already taken shape several centuries before the time of the pyramids, whose building only solidified its power but did not create it.

City noise: No lullabye for little ears

Most studies of noise-induced hearing loss have focused on adults and left a dearth of information on the problem in children. At the request of the National Institute of Neurological Diseases, audiologist John H. Mills of Syracuse University reviewed the available information and identified areas to be researched for a AAAS session on noise and human health. There is a large information gap on noise-induced hearing loss in children, Mills says, but the existing data show that very young animals probably suffer more severe physical damage from loud and sustained noise than adult animals. Whether this injury is temporary, chronic or permanent depends on the noise, the child or animal’s age and probably other factors not yet determined.

Children also are more susceptible to noise in another way: Hearing is an integral part of learning to speak, to perceive and understand others and to read. Mills cited a recent study on the effects of noise on children’s listening and reading skills. Speech pathology researchers studied 52 children who had lived for at least four years in New York City apartment buildings near a heavily traveled highway. Those children who lived on the lower floors of the buildings (and thus were exposed to higher noise levels from passing vehicles) scored lower than expected on tests of listening and reading, when compared with others of similar age and socioeconomic status.

In the presence of loud or sustained noises, adults rely

on linguistic knowledge or contextual inference, Mills says, but children must develop these skills over time and by hearing messages clearly. Noise-induced ear and learning damage in children must be studied in greater detail, he says.

Don’t be fooled by shady psi

A panel of parapsychologists at the AAAS meeting asserted the scientific legitimacy of research on psychic phenomena (psi) but warned the public against fraudulent commercial practices. Although the Parapsychology Association was “legitimized” in 1969 by gaining affiliate AAAS membership, it has been plagued by the stigma of commercial psi ventures.

For the first time, says Charles Honorton of the Maimonides Medical Center in Brooklyn, the group is warning the public about the pitfalls of commercial psi. There has been a rebirth of public interest in parapsychology and in public demonstrations of “psychic ability.” But he emphasizes that serious parapsychology research deals with non-publicity seekers in scientific laboratories, is reproducible by other investigators and deals with psychic phenomena not easily comprehended over the mass media.

One panel member, Rex G. Stanford of St. John’s University in Jamaica, N.Y., says commercial groups claiming to teach biofeedback techniques and alpha states are operating from an erroneous neurological model. “What does this alpha state really mean?” Nothing, he says; there is no relationship between brain waves and ESP. And the claims made by many mind-control courses are so bizarre that preexisting personality disorders and paranoias can become exacerbated.

The panel listed the following danger areas in commercial psi. 1) Beware of public demonstrations of psychic ability. Anytime someone succeeds again and again on stage it is simulated. 2) Beware of people who reduce psychic phenomena into simplistic “states,” “stages” and “dimensions.” 3) Beware of political predictors, especially when they announce their predictions after the fact, when prediction is general, ambiguous and hard to falsify; when there may have been a self-fulfilling effect on voters and when the prophesy is based on inside information.

Constraints on food increases

While most papers on the food crisis delivered at the AAAS meeting emphasized methods by which production can be increased, Rutgers University professor Robert H. White-Stevens cautioned that many conditions hinder the effort.

Many people have called for lowering the amount of waste and consumption in western nations to better aid the developing world, but White-Stevens points out that to evenly distribute the world’s wealth—even if it were possible—would provide only about \$300 per year to every human on earth and that development of new means of productivity would cease. He considers the maximum number of people the world could feed to be about 12 billion, a figure expected to be reached within 50 years. Even with worldwide application of scientific agriculture, 60 percent of those people would be permanently condemned to subsistence-level nutrition.

White-Stevens sees illiteracy as the greatest impediment to the spread of modern agricultural methods. He says a network of agricultural experiment and training stations must be developed throughout the Third World to compensate.