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Computerized Journal

In their article, “The future of scientific journals” (1 Dec., p. 1153), Brown, Pierce, and Traub describe the journal of the future for which their Mercury service is the model. Their suggestions are timely and their experience with the Mercury system is invaluable. A parallel effort formed the basis for the publication of Communications in Behavioral Biology, an information system and primary publisher of scientific reports (8 Sept., p. 1149). CBB is a computerized journal and consists of two primary sections: (i) the abstracts and indices and (ii) the original articles. All articles are published as singles, preprinted for insertion in binders provided with the subscription. Articles are preindexed by the Brain Information Service (UCLA), utilizing a hierarchical index having many of the characteristics described by Brown. These are processed and printed at the Johns Hopkins Medical Computing Center and are immediately available (as preprints from xerographic copies). The abstract section of CBB, in conjunction with the indices, allows readers to select articles of interest, or they may request that all articles in selected index categories or by selected authors be sent to them, either as preprints or, a month later, in their final form. Articles are obtained with prepaid article-request cards supplied with subscriptions to the index and abstract section or purchased directly from the editorial offices. Libraries will also carry article request cards permitting users to order the articles at a cost less than that of reproduction by xerography.

Among the journals that provide CBB with prepublication abstracts of accepted articles are: Journal of Applied Physiology, Journal of Neurophysiology, American Journal of Physiology, Physiological Reviews, Electroencephalography and Clinical Neurophysiology, Life Sciences, Journal of Comparative and Physiological Psychology, Journal of Pharmacology and Experimental Therapeutics, Psychosomatic Medicine, British Journal of Psychiatry, and European Journal of Pharmacology, plus other independent journals including several published in Czechoslovakia, Hungary, Poland, and France.

CBB was organized with funding from the National Science Foundation and the National Aeronautics and Space Administration, with the technical assistance of the Academic Press and University Microfilms. Readers will be able to subscribe to categories of information, preprint distribution will be available, magnetic tape and microform editions will be produced, separate article and abstract-index editions can be purchased, and finally, publication lags will be reduced to less than 3 months. A large interdisciplinary review board will provide constructive review of papers in behavioral biology.

Stephen A. Weinstein
Laboratory of Behavioral Physiology, Johns Hopkins University,
Baltimore, Maryland 21205

Teledvised AAAS Symposia

Although my mobility has recently been limited by the arrival of a new baby, my interests have not, and I would like to thank the AAAS, its members, and the participants in its annual meeting for having made so widely available the opportunity to witness some of the proceedings through educational TV. The choice of teledvised sessions was exceptionally good. The topics were of the broadest general interest; the speakers neither engaged in superficialities—talking down to the teleview audience—nor resorted to esoteric vocabulary and the discussion of fine points.

One of the most significant achievements was to help refute the notion (still prevalent despite Hiroshima) that scientific progress is a neutral entity, neither good nor evil in itself and laying no ethical burden on the scientist. Frank discussions of the impact of systems analysis and birth control on social and individual well-being, of ethical limits on secret and subsidized research, of privacy invasion by modern technology, and of the conflicting effects of modern agriculture on the life of underdeveloped countries, all showed scientists accepting the responsibility of their discoveries.

The medium is the message: television is a prime example of technological progress as a mixed blessing, and the excellent use the AAAS made of it is a hopeful sign for the future. I hope this fine contribution to public education will be repeated at future meetings.

Margaret Dickey Wilde
1707 Columbia Road, NW,
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Speech, one of the most complex of human activities, is studied as part of the continuing communications research at Bell Telephone Laboratories. But the speech mechanism has always been difficult to analyze: vocal-tract movements—crucial to the formation of meaningful acoustic signals—are mostly obscured from sight and are not easily measured. Now our understanding of speech is being advanced through a computerized simulation of the vocal tract devised by Cecil H. Coker of Bell Laboratories and Osamu Fujimura of the University of Tokyo, who worked at Bell Labs as a consultant.

The model (displayed on an oscilloscope, left) resembles the actual vocal tract and shows its principal parts. The parts can be moved either automatically by the computer program or by manual controls on the computer panel. The program calculates speech data corresponding to the displayed vocal-tract shape and delivers these data to an electronic speech synthesizer, designed by Coker. The synthesizer then generates a sound corresponding to the tract shape. Hence the researcher can hear the synthetic output at the same time he sees the tract motion.

The model accurately reproduces not only individual speech sounds but, for the first time, the subtle transitions that connect these sounds. It also demonstrates that these transitions are vital to clarity and realism.

The system produces patterns of frequency and energy (spectrograms) very like a human's (left). And it passes a more difficult test: pronouncing speech sounds which are understandable even when taken out of context.
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The 2115A Computer has 16-bit words, 2 μsec cycle time, 4K memory. Price, including Teleprinter, $16,500. Additional memory and options available.
Biology in Europe: Cooperation Grows

Geneva. The effort to win government financing for the promotion of molecular biology on a European basis is making definite progress. A draft constitution for a European Molecular Biology Conference made up of Western European governments was agreed upon at a meeting here late in January, and ratification is expected to follow fairly rapidly.

The new conference would underwrite the program of fellowships and summer courses now operated by the European Molecular Biology Organization (EMBO). EMBO's members are individual biologists elected according to scientific accomplishment, and EMBO fellowships and summer courses have until now been financed by Foundation grants. EMBO, however, has been seeking government support for its programs through creation of an intergovernmental organization modeled on the European Organization for Nuclear Research (CERN). The Geneva meeting was the latest of several meetings held here involving EMBO members and representatives of government science ministries.

No decision has been reached on the proposal for establishment of a European laboratory for research in molecular biology (Science, 2 June 1967). The question is expected to come up at later meetings.

Prospective member countries are in general those which belong to CERN: Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom, Yugoslav and Polish representatives attended as observers.

No budget is mentioned in the draft, but expenditures starting at the present $200,000-a-year budget figure and rising to $1 million in 1971 have been discussed.—J.W.

administer, and any sort of means test has been regarded as political poison in Britain since the days of the dole in the 1930's. Free medicine has had a symbolic meaning for a particular generation of the Parliamentary Labor Party's left wing, and the charges were a main factor in the abstention of 25 Labor members in the House of Commons confidence vote on the cuts.

By deferring for 2 years the raising of the age for leaving secondary school, putting it off until 1973, the government expects to save £33 million this year and £48 million in 1969–70, principally in school construction costs. In announcing the cuts Prime Minister Harold Wilson applied some balm when he said that an extra £8 million would be spent in each of the 2 years so that comprehensive reorganization of the secondary schools "is not held up." Additional funds for priority areas in education were also promised.

Pains have obviously been taken to avoid cuts which would inhibit industrial modernization and economic growth. The Ministry of Technology's programs in support of the shipbuilding, computer, electronics, and machine-tool industries will go forward. Savings of £13 million this year and £15 million next year are planned, however. The Atomic Energy Authority will be affected; cuts of £3 million for the AEA have already been announced. Details are not yet worked out, but it appears that cuts will be spread over R&D projects and should not affect reactor research, particularly fast-reactor development. The drop in AEA manpower is expected to continue.

University authorities are in a gloomy mood. The full effects remain to be assessed, but the 5-year financing program announced by the University Grants Committee about 2 months ago was a fairly austere one, and the Prime Minister brought no cheer when he announced that funds for capital construction at the universities this year are to be cut.

Basic research was not specifically mentioned in the Wilson message. The impression is that basic research has escaped the ax, but the Department of Education and Science, which is the main patron of fundamental research, seems to be waiting for the Treasury to release its yearly detailed estimates before commenting on how the research councils will fare.

Government silence on such major technological projects as the Channel tunnel, the Concorde supersonic transport, and the 300-GeV proton synchrotron for CERN (Science, 12 January) is intriguing. The clue may well be found in Wilson's statement that Britain intends to "make to the alliances of which we are members a contribution related to our economic capability while recognizing that our security lies fundamentally in Europe and must be based on the North Atlantic alliance." Twenty years ago British withdrawal from India signaled the end of an imperial era. The last two decades have been for Britain a kind of epilogue to empire. But the recent change in military policy East of Suez is, in effect, the renunciation of a world role. The consensus here is that economic necessity has at last forced Britain to accept identity as a European power. A logical result of this new perspective would be a warmer government view of efforts to strengthen scientific and technical ties with Britain's European peers.—JOHN WALSH

APPOINTMENTS

John J. Procknow, medical director and administrator of Barlow, a University of South Carolina affiliated hospital, to first Walter Jarvis Barlow professor of Chest Diseases in the department of medicine, in the university school of medicine. . . . Ivan Tolstoy, associate director of the Columbia University Hudson Laboratories, to professor of ocean engineering, Columbia University's School of Engineering and Applied Science. . . . L. J. Haynes, dean of the faculty of natural sciences, University of the West Indies, to president of the newly established Jamaican Association of Scientists. . . . Lawrence Markus, director of the Center for Controlled Sciences, University of Minnesota, to Nuffield visiting professor, Mathematics Research Centre of the University of Warwick, England . . . Gifford H. Symonds, visiting professor of operations research, to visiting scholar at the Center for Research in Management Science, University of California, Berkeley. . . . Hans W. Liepmann, professor of aeronautics, California Institute of Technology's Graduate Aeronautical Laboratories, named as the first Dryden Research Lecturer by the American Institute of Aeronautics and Astronautics. . . . William P. Weiss, assistant professor of pharmacology, George Washington University, to chief, program review and development division, District of Columbia Department of Health.
crete antigens in a random population, the concept was derived that these factors were components of a single complex system. Similar conclusions were drawn from linkage studies. In certain families, including those recently studied at the Torino workshop (Torino, Italy, June 1967), the patterns of the isoantigens in the children's leukocytes can be explained on the basis of the inheritance of an "allelic" unit of inheritance from each parent. Further confirmation has come from a comparison of serologic findings with survival of experimental skin grafts exchanged between siblings and from culture reactions. Other isoantigenic systems independent of the main locus have been described. In some of these, the antigens are widely distributed on the tissues; in others, the antigens appear to be restricted to a single cell lineage.

Several names have been proposed for the major locus: Group IV, after the first leukocyte "group" to be detected; Hu-1, for the association shown among ten antigens; Du-1, from the relationship of three complex subgroups: I.A, because of the intricate relationship among the four antigens of the I.A system; TO, for the antigens detected in Torino; and L.C, emphasizing the expression of these antigens on the lymphocyte. Some investigators have used simple numbers. Yet another nomenclature was devised in which each antigen was identified by its cellular or tissue distribution, for example, on platelets or granuloctyes, and so forth.

A World Health Organization (WHO) committee is being formed to discuss and formulate terminology. As an interim measure, the investigators listed below, who agreed as a result of discussions held at a meeting at Williamsburg, Virginia, in November 1967, suggest that the major locus be designated HLA. We hope that this designation will be generally accepted.


D. B. Amos
Department of Microbiology and Immunology, Duke University Medical Center, Durham, North Carolina

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