es. While there is no direct evidence for this view, the data that are accumulating appear to make it increasingly plausible. (Such a model does not assume that preventable or remedial environmental factors make no contribution to either behavioral difficulties in earlier life or deviance in later life.) The connection postulated between the genotype and deviance is not an inevitable one; whether it is "causal" awaits universal agreement on the definition of the term as applied to human behavior genetics.

Statements such as Culliton's or debate as to whether the XYY genotype is "guilty" or "innocent" only polarize the issues without addressing them. The important questions concerning the XYY, XXY, and XXYY genotypes are what factors—physiological, psychological, social, and their interactions—are associated with the increased frequency of affected males in security settings and mental institutions, and what we may learn about the possible contribution of such factors to the ultimate behavior of all individuals, irrespective of genotype.

ERNEST B. HOOK
*New York State Birth Defects Institute*
and *Albany Medical College,*
*Albany 12208*

**References**

1. P. A. Jacobs, M. Brunton, M. M. Melville, R. P. Brittain, W. F. McClemont, *Nature (Lond.)* **208**, 1351 (1965).
2. E. B. Hook, *Science* **179**, 139 (1973).

## Bicentennial Bells

Constance Holden, in her article "The Bicentennial: Science loses out" (News and Comment, 8 Aug., p. 438), mentions the American Revolution Bicentennial Administration's plan for 4 July 1976: "The afternoon is to be devoted to town meetings and speeches, and at 4 p.m. (11 a.m. Hawaii time) all the bells in the nation will ring out simultaneously."

Has anyone considered what the effect might be of all that simultaneous sound vibration?

DARLENE C. SCHMIDT
*Public Information Office,*
*American Society for Quality Control,*
*161 West Wisconsin Avenue,*
*Milwaukee, Wisconsin 53203*

## Journal Reviews

It has long struck me as odd that scientific journals are not reviewed in "journal review" sections of scientific magazines somewhat analogous to the book review sections that are so familiar.

Critical reviews of journals would be of interest to the scientists who read them or publish in them. They would also be of value to librarians and others who must decide which journals to take on subscription. Librarians currently have little to go on except citation counts, the significance of which is controversial.

I would like to see a respected scholarly or professional organization, one free of financial interest in the journals that would be reviewed, undertake to publish critical reviews of scientific journals at intervals of, say, 5 years. The organization that comes immediately to mind is the AAAS, and *Science* is the obvious publication in which the journal reviews should appear. If each issue of *Science* carried reviews of 5 journals, 260 journals could be reviewed each year, or 1300 in 5 years.

The scientist invited to review a journal obviously should be a person of distinction and should not have an ax to grind. On the other hand, complete innocence of involvement with any journal as an editor or member of an editorial advisory or publication board is unlikely to be found in the case of many persons of the requisite scientific distinction. A listing of current or recent connections of that type, following the name of the reviewer, would make plain at least some of his current entanglements.

The journal review should include certain standard information about the journal's history, sponsorship, size, circulation, and cost, which should be furnished to the reviewer by staff, but the heart of the review would lie in qualitative assessment of what function the journal is serving, what clientele it caters to, where it stands with respect to comparable journals, and what trends of emphasis or quality can be discerned.

JOSEPH F. BUNNETT*
*University of California,*
*Santa Cruz 95064*

*The author is editor of *Accounts of Chemical Research*, published by the American Chemical Society.

## Particle Discoveries at SLAC

Martin Deutsch and Samuel C. C. Ting wrote letters published in the 5 September issue of *Science* (p. 750) with respect to the exciting discoveries in high energy particle physics. These letters contain selected references to conversations pertaining to the history of the new particle discoveries, reports of which were published in *Physical Review Letters* of 2 December 1974 (*1, 2*).

These developments have been among the most exciting events in the recent annals of physics. I personally was a witness during the weeks preceding the actual announcement of the spectacular sharp peaks (*1*), when the members of the Lawrence Berkeley Laboratory (LBL)–Stanford Linear Accelerator Center (SLAC) team struggled to understand the anomalous counting rates observed near a collision energy of 3.1 Gev. What finally became the now famous sharp peak initially manifested itself through a peculiarly high point at 3.2 Gev. Further scanning exhibited a lack of reproducibility of readings near 3.1 Gev, since the energy of the storage rings was not controlled commensurate to the sharpness of the peak and therefore malfunctions were suspected. After all relevant parameters were put under control, the spectacular peak initially of the 3.1 Gev particle, followed very soon thereafter by the discovery of the 3.7 Gev psi particle, became obvious.

There is no question that the Massachusetts Institute of Technology–Brookhaven National Laboratory discovery represented a very difficult and superbly instrumented piece of work in high-energy experimental physics, and the authors deserve full credit for that achievement. Similarly, the independent LBL-SLAC discoveries represented a spectacular demonstration of the powers of electron-positron storage rings in discovering new particle states and in exploring the spectroscopy and intrinsic properties of such particles. This should be a joyous occasion for all physicists.

WOLFGANG K. H. PANOFSKY
*Stanford Linear Accelerator Center*
*Stanford University,*
*Stanford, California 94305*

**References**

1. J.-E. Augustin *et al.*, *Phys. Rev. Lett.* **33**, 1406 (1974).
2. J. J. Aubert *et al.*, *ibid.*, p. 1404.

## Promising Chimpanzee

The important article "Putting a face together" by David Premack (18 April, p. 228) opens with the following statement: "Chimpanzees do not, so far as is known, construct copies of existing or imaginary figures by any device—drawing, assembling pieces of existing material, or otherwise." In fact, a paper published 66 years ago presented suggestive data that were recognized as theoretically important in comparing the mental abilities of apes and humans. This was an intriguing account by Witmer (*1*) of the remarkable performing chimpanzee, Peter. He was able to accurately copy, with chalk on a blackboard, the letter W drawn by Witmer. When asked to do so again, Peter complied. Witmer was a respected psychologist, and Peter's performance was observed by several other astonished persons. No differentiation was made, however, between copying the figure and copying the writing movements. S. J. Holmes, in his 1911 book (*2*), reproduced a photograph of a blackboard with the letters that Peter copied and stated in his review, "It is unfortunate that more extended and thorough experiments were not carried out with so promising a subject."

GORDON M. BURGHARDT
*Department of Psychology,*
*University of Tennessee,*
*Knoxville 37916*

**References**

1. L. Witmer, *Psychol. Clinic* **3**, 179 (1909)
2. S. J. Holmes, *The Evolution of Animal Intelligence* (Holt, New York, 1911), p. 272.

Those of us whose university libraries do not have the texts in question are indebted to Burghardt for calling them to our attention. It is not clear whether the animal copied the trainer's movements, visual product, or both, but in any case the example can be contrasted with that of Sarah, one of our chimpanzee subjects. Her visual production was not based on copying; she regularly reassembled the face without an external model.

The relation between copying an item and reconstructing it from memory is an interesting one. Certainly common sense suggests that it is possible to copy items which cannot be reconstructed from memory. On the other hand, we have some recent findings suggesting that, in some cases at least, if the subject cannot reconstruct an item from memory, it cannot copy it either.

In pursuing the matter of what one must know in order to be able to reassemble a face from memory, we gave Sarah disassembled pictures of faces different from previous ones. The parts were no longer eyes, nose, and mouth, but either (i) conjoint canonical parts, such as an eye joined to the nose; or (ii) disassembled canonical parts, such as an eye cut into four arbitrary pieces. Sarah reassembled the face from the conjoint pieces but failed to reassemble the disassembled eye. Moreover, when given an assembled eye (identical to the disassembled one) as a model, she was no more successful in copying the eye than she was in reassembling it from memory.

DAVID PREMACK
*Department of Psychology,*
*University of Pennsylvania,*
*Philadelphia 19104*