perfectly reasonable, even predictable, that a speech-specific module of the kind we have described should be capable of incorporating sine-wave components in its operation. After all, the information needed by that module is just exactly the information the sine-waves provide—the trajectories of the formants, hence the articulator movements (*5*) produced by the underlying gestural structures that are elements of the phonological message (*1, 2*). Indeed, sine-wave speech has been found, in three different kinds of experiments, to provide direct support for the existence of the distinct phonetic system we assume (*6*).

In their comment about the order of processing, Kluender and Greenberg appear to confuse open and closed modules. We did concede that the evidence is equivocal for our claim that the closed phonetic module is preemptive with respect to the closed scene-analysis module, but we have found no reason to abandon the wholly independent claim that the closed phonetic module preempts information from the open modules.

It would, of course, be "unfortunate" not "to apply all that we continue to learn about general auditory and cognitive processes," especially if, as Kluender and Greenberg appear to believe, phonetic communication is merely an epiphenomenal outgrowth of processes that developed independently of language. But if, as we believe, phonetic processes are narrowly adapted to the special requirements of the phonology, then they will be properly understood only when, taking careful account of those special requirements (*7*), we uncover the equally special, species-typical mechanisms that apparently evolved to meet them. Consider, in this connection, how little the general principles of audition and cognition have figured in the stunning successes that have been scored in investigations of such auditory specializations as echolocation in the bat, sound localization in the barn owl, and song in the bird (*8*).

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Financial Impact of Animal Regulations

I was pleased to read that the National Institutes of Health are finally beginning to recognize that they must confront the animal rights activists head on (News & Comment, 28 Apr., p. 415). It was particularly refreshing to read that Charles Schuster, head of the National Institutute on Drug Abuse, sees that the growing list of federal regulations "will price us out of existence" and estimates that the new regulations on primates and dogs are estimated to cost $40,000 to $70,000 per grant.

This estimate is probably low. Since I last renewed my grant in 1986 to study the cardiovascular system, the cost of a "random source" dog has gone from $146 to $570. The increase in the cost of animals over the remaining 3½ years of the grant comes to $97,870, excluding the increased costs of care associated with new regulations and indirect costs. This increase represents about 20% of the total direct costs and only accounts for regulations introduced since 1986, not those now being proposed, which are likely to have an even greater fiscal impact.

Last year, when I wrote Congresswoman Barbara Boxer (D–CA) to express my concern that HR778, the Pet Protection Act, which would have forbidden federal funding of research using pound or shelter animals, would drive up the cost of research in an era of tightening budgets, she wrote back

> . . . the Director of the National Institutes of Health Division of Research Resources recently stated that "we have no information on any studies comparing the use of random sources and purpose-bred animals in research relative to fiscal and scientific factors." However, I am aware that a 1973 study by the National Institutes of Health entitled "Research Animals in Medicine" found that the initial purchase price of a laboratory animal... represents only 6.7% of the total expense related to the animal.

In other words, on the basis of the information provided by the NIH, it appeared that Congress could placate the animal rights activists at little or no cost to the taxpayer. The NIH needs to provide a more current and candid view of the fiscal impacts of the animal rights movement for Congresswoman Boxer and her colleagues.

The $30,000 a year in extra expenses animal rights costs my grant would be enough money to support two graduate students or one postdoctoral fellow at a time when the number of federal fellowships is declining. Instead, it is going to the dogs. The result is that we have simply slowed the pace of the work, a victory for animal rights activists who see fewer dogs being used for biomedical research.

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Squaring the Grecian Circle

If, in playing the game of squaring a circle or cubing a sphere, cutting and pasting is a permissible tactic (Research News, 5 May, p. 528), then the solution of the problem was available to Democritus. All he had to do was dissect (conceptually) any object into its constituent atoms and then reassemble them into any other desired shape. Then one would have to deal with approximately 10^{23} objects, rather than 10^{50}. Also, one would not have to wade through 39 pages of sophisticated mathematical arguments to be convinced of its rationality. Of course, either dissection would be a Herculean task, but the precise reassembly would be even more difficult in view of ambiguities arising from the uncertainty principle, a limitation that would be immeasurably greater for 10^{50} objects.

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Erratum: In Constance Holden's News & Comment article "Computers make slow progress in class" (26 May, p. 906), a network developed by the National Geographic Society and the Technical Education Research Centers was incorrectly identified (p. 907). The network described in the article is named the National Geographic Kids Network, not "Kidsnet," which is a separate program.

Erratum: In the article "Pattern and prevalence of same-gender sexual contact among men" by R. E. Fay *et al.* (20 Jan., p. 338), the estimated percentages and standard errors from the 1988 NORC General Social Survey in table 7 should have been 2.4(0.7), 1.7(0.8), 2.4(1.8), 4.3(1.7), 2.3(1.1), 2.1(0.9), 2.3(1.3), and 3.2(1.9), respectively.