Albert Einstein was not just a patent clerk when he began his career in physics, a reader emphasizes. A leading researcher in the field says that work on vertebrate craniofacial patterning and the origin of jaws can best be understood in the context of seminal discoveries made a decade ago. The posting on the Web of a report of an asteroid that is potentially hazardous to Earth is discussed. "Within the next 12 months we shall learn just how interconnected and interdependent the institutions of contemporary societies have become," says a reader about the year-2000 problem. And three papers are retracted because the work is not reproducible.

Einstein: "All but the Dissertation"

A NetWatch item of 30 April ("Popular physics?," p. 707) describes a Web site that publishes physical theories by nonphysicists. The originator of the site, James Siepmann, is quoted as referring to "a patent clerk" in the course of explaining the site's purpose. The intended reference is no doubt to Albert Einstein. This is an image I regularly encounter in conversation and in print. It may be charming, but it is incorrect. Yet another attempt to set the record straight may be in order.

Einstein was hired at the patent office in Bern, Switzerland, in 1902 as a technical expert third class. In 1900, Einstein had received a diploma from the Federal Institute of Technology in Zurich, which indicated that he was qualified to teach physics at the university level. Although the Swiss academic system at the time was quite different from the current U.S. system, there is an appropriate analogy. In effect, Einstein was an ABD ("all but the dissertation") in physics. His first scientific paper appeared in *Annalen der Physik* in 1901; he published further papers in 1903 and 1904. In 1905, along with the better-known accomplishments, Einstein's thesis was accepted by the University of Zurich and he received his Ph.D. In 1906, he was promoted to technical expert second class (*1*).

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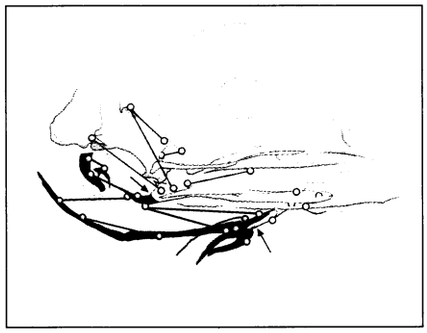
Jaw Origins

The recent article by Elizabeth Pennisi about my work on vertebrate craniofacial patterning and the origin of jaws (News Focus, 23 Apr., p. 577) requires clarification. The discovery that rhombencephalic neural crest segmentation is maintained throughout ontogeny in the pattern of skeletomuscular connections (*1*) was made when I was a graduate student at the University of London. Furthermore, it can only be understood in the conceptual framework of the seminal discoveries that the vertebrate hindbrain is segmented (*2*) and that it elicits neural crest streams in a segmental fashion (*3*). These findings (reviewed in *4*) allowed workers to make a first functional link between *Hox*-mediated gene regulatory networks and rhombomeric segments as autonomously specified cell-lineage restriction and signaling compartments. My contribution just extended these findings by assessing the significance of neural crest segmentation for craniofacial morphology and the evolution of head ontogenies, thus trying to remarry two previously alienated areas of research.



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Head structures (beige, pink, or purple) derived from the same parts of the developing hindbrain that help maintain the appropriate bone-muscle connections in the head of a chick.

In addition, the figure legend on page 577 should have read, in part, "colors...denote *head* structures derived from the same parts of the developing hindbrain" (italics mine).

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Asteroid Report

The paper that I found on the Web by Andrea Milani and colleagues about asteroid 1999 AN_{10} ("Deep impact: The sequel," ScienceScope, 23 Apr., p. 565) was posted as a distinctly separate file and was listed below and unconnected to the authors' preprints section.

Contrary to the ScienceScope piece, I did not issue a press release. The information about the existence of the Web paper was posted on the Cambridge Conference Network, which focuses on near-Earth orbit research and impact studies.

That the paper on 1999 AN_{10} is "potentially explosive" appears to be the authors' own view. In their paper, they come to the conclusion that asteroid 1999 AN_{10} might have to be "deflected and/or destroyed" in the foreseeable future. This is the first time, to my knowledge, that such an actual intervention has been suggested for any of the currently known 171 Potentially Hazardous Asteroids (PHAs). Why this option should be considered at all, given the extremely low impact probabilities for this PHA, remains unclear. Whatever the reasons, such impact-threat data, I believe, should in the future be released in an unambiguous way.

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Y2K: An "Autopsy" of Modern Society?

The Policy Forum "The Y2K problem" by Robert F. Bennett (*Science*'s Compass, 16 Apr., p. 438), was an excellent follow-up to the special issue of *Science* on Complex Systems (2 April). Within the next 12 months we shall learn just how interconnected and interdependent the institutions of contemporary societies have become.

Consider the fact that a major manufacturing firm such as General Motors (GM) has thousands of suppliers. Each of the companies supplying parts or services to GM also has suppliers. And those suppliers in turn have suppliers. Suppose that GM is completely year-2000 compliant and the majority of its suppliers are as well. But, for whatever reason, GM cannot obtain 5% of the parts needed to build automobiles. What will GM do? They will