

servable photo-induced sound and ignition in our experiments with chemical vapor deposition-grown multiwalled nanotubes (MWNTs) and compacted SWNTs, both of which have catalyst particles of a similar fraction, size, and chemical state to those of uncompact SWNTs, indicates that the unique structure of the carbon and the density of the nanotubes are the primary factors that give rise to photoacoustic response and ignition. In other words, as we indicated in our Brevia, the heat confinement in the carbon structures (i.e., avoiding dissipation into the bulk) is necessary to achieve the temperatures required for ignition. At that point, the cat-

alytic particles most likely help ignition, as Bockrath *et al.*'s results indicate.

The structural reconstruction of the SWNTs (during exposure to light flash in vacuum or inert gas atmospheres) in the absence of ignition (in air) occurs throughout the sample, not just near the relatively sparse catalytic particles; the high temperatures required for such reconstructions will naturally oxidize and burn carbon in air whether catalysts are present or not.

Although the results of Bockrath *et al.* show that the catalytic particles play a favorable role in the ignition process, the exact mechanism is not understood. In particular, the role of the density, nature, and dimensions of the carbon surfaces; the nature and size of catalytic particles; and the carbon-catalytic interface need to be determined. Finally, it would also be crucial to test metal-free SWNTs, but, unfortunately, such samples can only be prepared by purification procedures that effectively densify the samples and, hence, remove the photo-induced effects.

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## Eisenstein's Departure from the NSF

**CONTRARY TO YOUR RECENT REPORT** ("Eisenstein leaves NSF," ScienceScope, May 17, p. 1219), the National Science Foundation (NSF) did not "decline to comment" on the departure of Robert A. Eisenstein, Assistant Director for Mathematics and Physical Sciences. We were simply unable to comment by your press deadline.

Eisenstein, who will remain with NSF and begin a professional development tour at CERN this spring, has made valuable contributions to the NSF and to American science during the past 10 years. He proved to be a remarkably able and innovative administrator of complex and expensive projects, including the LIGO gravitational wave observatories, the Gemini telescopes, U.S. components of the Large Hadron Collider, and the Atacama Large Millimeter Array.

The NSF and the international physics community have benefited enormously

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from Eisenstein's efforts, and we expect him to continue to play an important role following his assignment at CERN.

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## Being Human

**ANN GIBBONS' ARTICLE "HUMANS' HEAD start: new views of brain evolution"** (News Focus, 3 May, p. 835) reports on an interesting communication from the 71st annual meeting of the American Association of Physical Anthropologists. Karl Zilles and colleagues used functional magnetic resonance imaging to compare the right and left sides of human brains and the right and left sides of chimpanzee brains. Dean Falk, representing Zilles and colleagues, demonstrated that, compared with chimpanzees, humans seem more "right-minded"; i.e., they found bulges in the right side of human brains that were not seen in chimpanzee brains. This finding was received with surprise: As the left hemisphere is known to be the language-bearing side of the brain, it was reportedly expected that

the left brain would become larger in the evolution from chimpanzees to men.

Although the big question of what makes us human belongs more to philosophy than biology (1), there are sound pieces of evidence obtained in scientific studies supporting a most peculiar role of the right brain in human life: It is where emotions are better recognized and control of subtle emotional expression and emotionally communicative gestures is located (2); it is assigned appraisal and evaluation activities (3); it dominates the language-dependent half of the cerebrum for social-emotional affairs and is responsible for insight and intuition, leaps of imagination, and daydreams (4); it makes inferences about mood, attitude, and intention (5); it is involved in the infant's tie to the mother and in the later attachment of one adult to another (6); and it is particularly relevant for feelings of attachment and compassion (7). Being human is much more than speaking languages.

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## Mother Knows Best

**IN THEIR REMARKABLE BREVIA, "SONS reduced maternal longevity in preindustrial humans,"** S. Helle et al. (10 May, p. 1085) document that among preindustrial Sami women in Finland, mothers who gave birth to sons had reduced longevity compared with mothers who gave birth to daughters. We report that our Jewish mothers routinely told us, with an accent we cannot reproduce here, that "you are going to be the death of me yet; why can't you be more like your sister?" We now know that our mothers were correct and have gained even greater respect for their wisdom and insight.

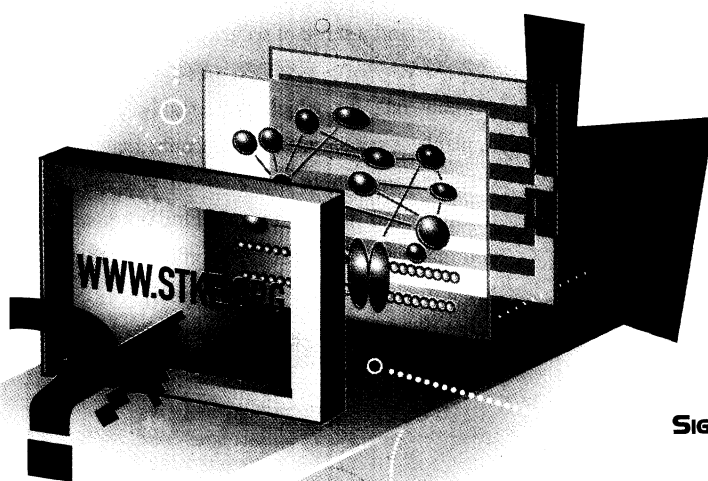
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