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Cover: To understand how we retain and use spatial information, investigators are imaging the brains of people while they explore virtual environments such as a brick wall maze. (Image: Geoffrey K. Aguirre et al.)



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Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921. It gratefully accepts tax-deductible contributions and bequests to assist its efforts to increase the public understanding of science, with special emphasis on young people. More recently, it has included in its mission increasing scientific literacy among members of underrepresented groups. Through its Youth Programs it administers the International Science and Engineering Fair, the Science Talent Search for the Westinghouse Science Scholarships, and publishes and distributes the Directory of Student Science Training Programs for Precollege Students.

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Letters

Ups and downs of pitch

In "Device measures speed with white light" (SN: 9/30/95, p. 215), you state, "As a train comes into the station, the pitch of its whistle rises. As it leaves, the pitch falls." This is a widely held misunderstanding.

At a constant speed, the train has a single, higher pitch as it approaches and a single, lower pitch as it leaves. The change occurs essentially instantly as the whistle passes the observer. Possibly the misunderstanding results from the fact that changes in amplitude and pitch occur together, and a person "remembers" a change in amplitude in part as a change in pitch.

Ralph Miller
Medford Lakes, N.J.

Brain, not bones, key to evolution

Millford Wolpoff's comment that *Homo sapiens*' survival hinged increasingly on cultural-

ly acquired knowledge and tools is significant ("Pruning the Family Tree," SN: 9/2/95, p. 154). Since the development of cultural knowledge and tools was possible only because of the evolution of our unique brain capabilities, Wolpoff is saying in effect that our survival as a species has been determined by the evolution of effective decision-making and problem-solving brain structures and processes rather than by behavior traits, as in other species.

This brain evolution may have occurred in only one branch with the unique anatomical features of *Homo sapiens*, or anatomically similar branches may have evolved slightly different brain structures that over time proved ineffective for survival.

Bones will not tell us which scenario is correct.

Marilyn Kramer
Wausau, Wis.

Having read "Kenyan fossils unveil new

hominid species" (SN 8/19/95, p. 119) and "Pruning the Family Tree," I wonder if scientists have begun looking for signs in modern hominids of the next human evolutionary iteration or have attempted to predict how our descendants will evolve.

Scott Townell
Voorhees, N.J.

Some scientists argue that *Homo sapiens* can no longer evolve into new species because we exist in numbers too large to allow for the prolonged isolation of a subpopulation—a condition thought to be necessary for speciation to occur.
— B. Bower

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