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Letters

MDs and Zs

The suggestion that sleep deprivation in interns and residents does not impair patient care ("Doctors-in-training: Wake up bright?" SN: 10/1/88, p.218) is another example of the hazards involved in extending the results of a limited experiment to the complex real world.

Doctors-in-training would certainly be highly motivated to perform well on tests, and this could temporarily compensate for fatigue. But suppose that what diminishes in sleep deprivation is motivation? Or attention to detail, or long-term memory? Or even bedside manner? Tests of cognition and motor performance evaluate just that; the way to evaluate patient care is to observe patient care. This study also ignores other important issues such as the long-term health of trainees.

William Steele
Ithaca, N. Y.

I want *my* surgeon to have eight hours of sleep (or more). If I discovered that my

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Cover: Some scientists contend that new findings in neurobiology will enable a class of computers known as neural networks to model a variety of mental functions. Their assertion has added fuel to an already heated debate over the nature of the mind. (Painting by Todd Siler/Courtesy Ronald Feldman Fine Arts, New York)



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surgeon had only four hours, it would not reassure me one bit to learn that there are only trivial differences in performance between surgeons who had four hours and surgeons who had two hours of sleep!

Victoria Day
Duluth, Minn.

Shrouded in mystery

I read with interest "Shroud of Turin is fake, official confirms" (SN: 10/8/88, p.229). I believe this is a conclusion that cannot yet be drawn.

The date provided by the three labs mentioned is based upon tests done on a single sample cut into three pieces which was taken from the frontal end of the shroud at the corner in the immediate area of the so-called "sideshow." In order to conclude that the shroud is dated to the 14th century, one must assume that the date obtained for this corner actually represents the entire shroud. In fact, we do not know this to be true. No control samples were taken from elsewhere on the cloth. A minimum of three separate samples

taken at random should have been tested.

There are genuine reasons why we may question the results. First, for years it has been argued by some that the "sideshow" may have been a later addition. Second, during the fire of 1532 the shroud was subjected to "pressure cooker" conditions when water was poured on the superheated silver reliquary in which the shroud was kept at the time. Since cloth has not been extensively tested by accelerator technology since its development in 1977, what special conditions might this circumstance have presented which could possibly have affected the results? The question deserves consideration since this very corner was heavily laden with contaminants due to the shroud being hand-held at this very spot during exhibitions over the centuries. It is a rule of thumb in radiocarbon technology that roughly 10 percent of modern carbon levels left on or in the sample being tested will skew the date by 1,000 years.

I should also like to point out that a

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