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This Week

- 244 Medical Alchemy: Muscle Turned to Bone
- 244 Antarctic ozone hole sinks to a record low
- 245 Sex abuse: Direct approach may aid recall
- 245 Nuclear waste delayed
- 246 Supernova's light curve baffles scientists
- 246 Cocaine may piggyback on sperm into egg
- 247 Air pollution: No place like a mobile home
- 247 Laser spotlight pinpoints atoms in motion

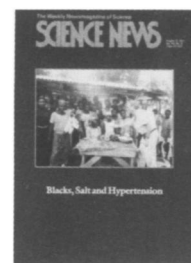
Research Notes

- 252 Chemistry
- 252 Science & Society
- 253 Biomedicine

Articles

- 248 Oedipus Wrecked
- 254 The African Gene?

Cover: Epidemiologist and medical historian Thomas W. Wilson purchases a block of salt at the marketplace in Obodo-Ahiara, an agricultural center in Nigeria. Wilson and his colleagues recently traveled to West Africa to search for clues that may help explain why U.S. blacks run a higher risk of hypertension than do whites. (Photo: Dorothea M. Wilson)



Departments

- 243 Letters
- 251 Books

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Letters

No free lunch

"Pick a Sample" (SN: 7/27/91, p.56) explains how modern computing helps statisticians, both as educators and as practitioners. But some statisticians are suspicious of claims that resampling techniques allow us to get more information from the data. What you get out of the data is a function of the assumptions you make; there's no free lunch. Statistics should not be thought of as "extracting as much information as possible from the data," but as a method for clarifying the relationship between assumptions and conclusions. Resampling techniques do not eliminate assumptions; they hide them.

Larry Wasserman
Assistant Professor of Statistics
Carnegie Mellon University
Pittsburgh, Pa.

The inherent problem with statistical inference — which is not overcome by statistical reprogramming — is that it presumes scientific ignorance. Medical researchers, for instance,

routinely use statistics to ask, in effect, if it is just by chance that some people who are shot in the stomach die. Systems scientists have started putting knowledge back into the equation by using statistics for a different purpose — i.e., to distinguish between noise (the static you see and hear when a TV set is not tuned to a station) and signal (the program that appears when a TV set is tuned to a station). The latter, but not the former, requires a causal mechanism that we can reliably reproduce.

Allen D. Allen
Chair, Medical Decision Making
Systems, Man, and Cybernetics Society
Institute of Electrical and Electronics Engineers
Northridge, Calif.

"Pick a Sample" was excellent, but it contained one glaring misconception: "When a good player misses eight of 10 shots, it doesn't necessarily mean that he or she must be replaced or stopped from shooting. The streak could quite easily occur from chance."

You speak here of "chance" as if it had some

kind of causative power, rather than being an after-the-fact description applied to events that are random, treated in the aggregate, or too complex to predict.

Magic Johnson's 47 percent shooting record falls into the last category. It is the product not of a random number generator, but of a complex set of circumstances, including skill, concentration, his level of tiredness, and who is defending against him. These factors might well conspire to cause a "slump." It is the very fact that they do cause slumps from time to time that yields the statistical ratio.

In short, Magic might well face a 6.5 percent chance of an eight-shot slump — but the streak would not result from chance. It is the other way around. The 6.5 percent chance is the result of the various reasons why Magic actually misses his shots.

I'm sure that Magic knows this! If he misses eight in a row, my guess is that no one will need to pull him from the court, since he'll stop shooting and go to other parts of his game.

Tim O'Reilly
Sebastopol, Calif.

OCTOBER 19, 1991

243