

## When quantity means quality

Robert A. Josephs, a psychologist at the University of Texas at Austin, knows of a psychology department at a major university that only hires new doctorate recipients who have published at least two research papers as lead author. Yet graduate students usually thrive when they work on projects with experienced researchers, Josephs asserts, suggesting that the first-author requirement shuts out the most promising applicants.

It does, however, illustrate a surprisingly common decision-making strategy, in his opinion: People who must make a complex judgment based on ambiguous standards often turn to easily obtained quantitative measures for guidance.

"Quantity information often influences quality judgments when it has no right to," Josephs argues. "I suspect this applies to a wide array of real-life situations."

In the March *JOURNAL OF EXPERIMENTAL PSYCHOLOGY: GENERAL*, Josephs and his coworkers describe five "judgment by quantity" studies performed with a total of 269 college students.

In a proofreading task, volunteers rated themselves as more productive and more satisfied with their performance if each page of text was attached to the front of a journal and placed in an office-style out-box upon completion, compared to individual pages of the same text placed in the out-box.

In another task, researchers told students to proofread text until they felt "reasonably satisfied" with their work. Those given single pages did much more work than those given pages attached to journals or to empty cardboard boxes.

Artificially boosting the height of a stack of completed work contributed to rosier progress and performance judgments, the psychologists maintain. Proofreading accuracy, amount of effort expended, and other relatively objective cues played a minor role in these judgments, they note.

Students cited greater progress, productivity, and performance for thicker piles of completed work kept in plain view. When finished work was kept out of sight, participants who proofread individual and attached pages rated themselves similarly, based on more objective criteria.

Moreover, when asked to compose an essay, students wrote markedly longer pieces when using a small-type, single-spaced format than a large-type, double-spaced format.

Easily processed quantity information may automatically divert attention from more reliable indicators of performance, Josephs suggests. More may not always be better, but it often gets treated as such in these instances, he contends.

In various endeavors, from writing a legal brief to building a house, explicit criteria for evaluating progress and performance discourage "judgment by quantity," Josephs holds. The findings contrast with the theory that mental shortcuts for decision making shun quantitative considerations (*SN*: 1/29/94, p.72).

## Researchers get federal reprimand

A report issued last week by an office of the National Institutes of Health (NIH) in Bethesda, Md., argues that University of California, Los Angeles, researchers failed to obtain proper consent from schizophrenic patients recruited for a study in which they were taken off antipsychotic drugs.

The report orders UCLA to track more closely how well medical-research volunteers understand the risks they face.

The ongoing UCLA study of how people diagnosed with schizophrenia cope in the absence of antipsychotic drugs began in 1983. Of 50 participants taken off medication, 23 have suffered severe relapses, one of which resulted in suicide. Families of two patients have filed complaints with NIH.

The informed consent documents signed by patients did not make clear the potential severity of relapses, according to the federal Office of Protection from Research Risks.

## Faroese infants fed fishy breast milk

In some fishing communities, breast-fed babies fill up on dangerously high doses of methylmercury, which harms their nervous system, researchers report. Moreover, the infants appear unequipped to eliminate the chemical from their bodies.

Human milk "seems to be an important source of methylmercury exposure in infants," Philippe Grandjean of Odense University in Denmark and his colleagues report in the January *ENVIRONMENTAL HEALTH PERSPECTIVES*.

The researchers studied methylmercury concentrations in the hair of 583 1-year-old children from the Faroe Islands in the North Atlantic. Faroese women eat a diet high in seafood, including pilot whale, which is rich in the chemical.

The study found that the hair of children who nursed for at least 6 months had twice the mercury of hair from children who were never breast-fed. Children who nursed for a year, compared to children who were never breast-fed, had hair containing triple the amount of mercury.

Children failed to eliminate mercury from their bodies during their first year, or did so very slowly, the researchers report. The amount of time that elapsed between when mothers weaned their children and when the investigators performed the hair tests proved unrelated to the children's mercury concentrations. Other studies suggest that to eliminate the chemical, humans need demethylating bacteria in their gut, which infants don't acquire until after weaning.

Babies also receive the chemical in the womb, the team notes. An earlier study showed that about one in five Faroese newborns has elevated mercury concentrations, they write.

Grandjean and his colleagues hesitated to recommend that mothers stop breast-feeding. They did suggest that the prudence of not nursing beyond 6 months "may need to be considered" if the mothers must eat contaminated food.

## Link of radon to lung cancer looks loopy

Public health experts warn that high radon readings in a home may put residents at risk of developing lung cancer. However, "there is surprisingly little objective evidence" from studies on radon in houses to back up these warnings, point out John S. Neuberger of the University of Kansas School of Medicine in Kansas City and his colleagues.

So they decided to examine residential radon and lung cancer rates of women in 20 Iowa counties. Seventy-one percent of homes in Iowa exceed Environmental Protection Agency radon guidelines, they write in the March *HEALTH PHYSICS*. The percentage of women in Iowa developing lung cancer falls below that in most other states, however, and an average percentage smokes.

The researchers first looked at lung cancer rates among women living in the counties with the largest percentage of smokers. Of this group, those residing in areas with the highest radon readings had a 23 percent greater incidence of the disease than women living in areas with the lowest radon.

But counterintuitive findings emerged when they examined lung cancer rates of women in the counties with the lowest proportion of smokers. In this group, residents of low-radon areas had a 33 percent *higher* incidence of lung cancer than women living in high-radon counties.

Factors affecting lung cancer that the researchers didn't measure, such as diet and urbanization, may have confounded their results, Neuberger and his group write. Also, using county data may be insufficient to get a clear picture, he says.

Nevertheless, their findings suggest that "radon and smoking may synergistically increase the risk of lung cancer when both levels are high," they report. Their new study, now in progress, of 1,200 women should clarify the radon-lung cancer link, Neuberger says.