SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 137, No. 24, June 16, 1990

SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for $34.50 for 1 year or $58.00 for 2 years (foreign postage $6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, D.C. 20036. Second-class postage paid at Washington, D.C., and additional mailing office. **POSTMASTER:** Send address changes to SCIENCE NEWS, 231 West Center Street, Marion, OH 43305. Change of address: Four to six weeks' notice is required — old and new addresses, including zip codes, must be provided.

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231 West Center St., Marion, OH 43305
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This Week

Research Notes

Articles

Cover: It took more than 15 years and many treks to distant lands before nature photographer Kjell B. Sandved finally completed his unique search-and-photo mission. In the designs of butterfly and moth wings, he found and photographed all of the letters of the English alphabet, the Arabic numerals and many other symbols. His latest print, "Butterfly Alphabet," appears here. The designs emerge from a marvelous interplay of light and the microarchitecture of thousands of pointillist scales. (Photo: Kjell B. Sandved)

Departments

Letters

Blame the victim?

The implicit message of "Breast cancer rise: Due to dietary fat?" (SN: 4/21/90, p.245) has a curious "blame the victim" quality. If there is a causal relationship between dietary fat and breast cancer, where is the evidence that women today choose to eat significantly more fat than their mothers, whose breast cancer rates were significantly lower?

Why are we so quick to attribute responsibility to individual women and so reluctant to investigate the relationship between increased rates of breast cancer and larger economic issues? Breast cancer rate may be increasing because of dietary fat, but that may be because of additives used in the last 25 years to make food production more efficient and profitable.

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Prescribed punishment

In concluding his article on the use of disulfiram to reduce drinking alcoholic beverages, Ron Cowen mentions a report that "stresses the need for more research on . . . drugs that use negative reinforcement. . . ." ("Alcoholism treatment under scrutiny," SN: 4/21/90, p.254). But treatment with disulfiram is more analogous to punishment than to negative reinforcement.

Reinforcement and punishment are contingencies involving behaviors and environmental events (stimuli). In disulfiram treatment, one gets nauseated for drinking alcohol. Nausea is not a stimulus, though it seems to function like shock, noise or other aversive stimuli (i.e., perceptible environmental events). Regardless, when one gets a negative reinforcer (nausea) for a behavior, the behavior decreases, and that is punishment.

In negative reinforcement, one gets a reduction in the negative reinforcer because of the behavior. If people taking disulfiram became nauseated (an analog of a negative reinforcer) and if consuming alcohol reduced the nausea, their drinking would be negatively reinforced (strengthened). In disulfiram treatment, however, people get nauseated because they drink. They get a negative reinforcer (nausea) for drinking. That weakens the behavior, and that is punishment, not negative reinforcement.

Typically, this error occurs when authors equate reinforcers and reinforcement. The error is critical because different contingencies use negative reinforcers (i.e., punishment, negative reinforcement and avoidance) but have remarkably different effects on behavior. Punishment weakens behavior because the behavior gets a negative reinforcer as a consequence. Negative reinforcement strengthens behavior because it reduces a negative reinforcer. Avoidance strengthens behavior because it prevents the negative reinforcer.

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