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COVER: Problems in which complexity grows exponentially are now believed incapable of exact solution on even the fastest possible computers. See p. 298. (Illustration: David Suter)

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Editorial and Business Offices
1719 N Street, N.W.
Washington, D.C. 20036

Subscription Department
231 West Center Street
Marion, Ohio 43302

Subscription rate: 1 yr., \$10; 2 yrs., \$18; 3 yrs., \$25. (Add \$2 a year for Canada and Mexico, \$3 for all other countries.) Change of address: Four to six weeks' notice is required. Please state exactly how magazine is to be addressed. Include zip code.

Printed in U.S.A. Second class postage paid at Washington, D.C. Title registered as trademark U.S. and Canadian Patent Offices.

Published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D.C. 20036. (202-785-2255). Cable SCIENCE SERV. Telex 64227.

MAY 8, 1976

LETTERS

Self-fulfilling hemisphere myths

Theories about right-left brain differentiation and its relation to the way we think are always fascinating and are having a great vogue. Unfortunately this popularity often means that speculations and claims are made without being critically examined. As an example, in your recent article (April 3), the "striking preponderance" of the right-handed Inuit carvers' holding their stones to their left sides is offered as a prediction of some theory about brain structure. Yet anyone who works with his hands knows that it has only to do with body structure: The action of cradling something in the left hand and pushing firmly on it with an implement in the right hand happens to be rather clumsy when the object is held to the right, but less so when it is held to the left. (Readers with arms of equal length who try the obvious experiment will learn that their wrists do not flex equally well in all directions.) Of the two pictures in SCIENCE NEWS, the one where the carving is not cradled in the left hand shows it pretty much in the center of the visual field.

The assertion that American English is the most analytic of languages is also puzzling. The French have a tradition of analysis and precise definition unknown in our tongue, and our cousins the British have at least the reputation for analysis that we do. If there really is an objective linear classification of all languages, which happens to put English at one end and Inuit at the other, that remarkable fact is only obscured by using the terms "analytic" and "synthetic," which already have their share of technical meanings. Linguists do not usually hesitate to make up new words, but old ones are more suggestive, and hence help keep the speculation and the fun going.

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The universal division-of-labor between the hands of right-handers (who constitute about 90 percent of the population in most cultures) is indisputably hemisphere-based. The tendency toward left-right visual scanning (which has not been systematically investigated cross-culturally, and certainly has exceptions as far as some writing systems are concerned) is probably also hemisphere-related. However, it is not at all clear how Professor Katz's observations on hand-use and scanning in Inuits (SN: 4/3/76, p. 220) differentiates these people in any way

from artisans in any other culture, or indeed from *anyone* in any culture, whether he chooses to sculpt, write, or what-not.

The fact is that ever since asymmetry in hand-use evolved, right-handers have used the right for acts which require greater precision or strength, while relegating the left to the subordinate role of positioning materials for the right to act upon. Bruner has called the division-of-labor "holding" vs. "operating," and it obtains equally whether sculpting or writing are involved. When there is a trade-off between the right hand's own specialties (strength and rhythmic precision vs. dexterity) then sometimes the left hand is required to become more "dextrous" (as in violin-playing), but in general a kind of economy is the rule, with the right taking as much of the "upper-hand" in a particular activity as is most efficient. In this light, imagine how awkward it would be for the Inuits to "hold" with the left and "operate" with the right while positioning the material in the *right* visual field.

I might add that there is no evidence whatsoever that an intact brain "seems to have two 'minds' that can operate independently and differently (p. 19)." This is one of many self-fulfilling "hemisphere-myths" which have become all too popular today. Researchers and amateurs alike gleefully ascribe their pet polar dichotomies to the hemispheres, and to the individuals and populations in which one or the other purportedly predominates; and this with hardly more than a figurative glance at the evidence, on which the mythology is literally *imposed*, like the interpretation of a dream, rather than being inferred, as hypotheses and predictions. Hardly surprising, then, is an "almost perfect relationship between the right hand doing the detailed, analytical kinds of activities and the left hand doing all the spatial and touch activities."

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Pauli's postulation

I enjoyed reading about the new limit on the mass of the neutrino (SN: 4/17/76, p. 244), but the credit for predicting the existence of the neutrino belongs to Wolfgang Pauli rather than Enrico Fermi. Pauli presented the suggestion for the neutrino to conserve energy and angular momentum in 1930. It was only three years later that Fermi gave the neutrino its name.

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