

program falls short of Woodford's, which would triumph with their verbal acumen. Their advice to the researcher falls short of Trelease's, which they could rewrite in half the space. Their title betrays the promoter, since they really address only medical writers. But since all writing fails in the same way, as wasted words obscure the meaningful, we can concede something to the marketplace. These brief essays, developed in writers' workshops and published in the *Journal of the American Medical Association*, will help anyone bugged by the *is's*, *of's*, and *which's*, the bunched nouns, and the passive wordiness of science. That the authors themselves fail of perfection only underlines the difficulty of cleaning out these stables: "The topic of the passive voice will form the basis of the next communication in this series." ("We shall discuss the passive voice in our next article"—10 words for 17.)

Ward outdistances the other three, as he pursues the writer's problems from "audience" through organization, paragraphs, sentences, and words, with a generous section on all our faults. Ward writes clearly and briskly, addressing the student directly and concluding each section with exercises. He adroitly quotes all kinds of writers, especially to strengthen Woodford's point, which he launches early and well by presenting Woodford's entire essay: *writing clarifies thinking*. Writing is thought—not an aid to thought, or a crutch, or a frill, but thought distilled and crystallized. Except for numbers, we know what we know only through words. We formulate what we know only by writing it out. Ward makes this point again and again, quoting all kinds of men to whom this ultimate linguistic truth has finally come through, among them (p. 64) Charles Darwin:

I have as much difficulty as ever in expressing myself clearly and concisely; . . . but it has had the compensating advantage of forcing me to think long and intently about every sentence, and thus I have been led to see errors in my reasoning and in my observations or those of others.

But even Ward demonstrates the distressing blindness of scientific writers, particularly to the newer opacity of noun on noun. Each of his sections contains an entire essay by someone else, illustrating his topic. After his own lucid prose, he can insert, with approval, an essay groaning with nouns-as-adjectives in such phrases as "utilization of energy sources" and "efficien-

cy of energy utilization." Its title should have warned him: "Energy sources and energy conversion." ("The sources and conversion of energy," in its syntactic clarity, would have been worth the price of the extra word.) Worse yet, Ward himself shows how to write an abstract in the worst possible abstracter's prose: "The applicability of seven published readability formulas for estimating the communicative effectiveness of scientific writing has been studied. The formula scores were compared . . ." ("I have studied seven formulas for estimating the readability of scientific prose. I compared scores . . ."—15 words for 23). He falls into the very pleonasm he deplores.

He would not have done so had he read King and Roland's excellent pages on using the first-person pronoun and

avoiding the passive voice. In fact, Ward says nothing at all about the sins of passivity and anonymity, which, together with the noun as adjective, waste multitudes of words in scientific writing. Writers on scientific writing continue to ignore this devilish trio in one way or another. The best solution with these four books is perhaps this: to use Woodford for your pedagogical outline, and Ward, supplemented by King and Roland, for your text, tearing apart the prose where it will tear to remind your students, and all of us, how fanatically we must work to write clearly, how easily we waste words, time, space, patience, intelligence, and money.

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Singing and Dancing: A Cross-Cultural Survey

Folk Song Style and Culture. A staff report on cantometrics presented at the Washington meeting of the American Association for the Advancement of Science, Dec. 1966. ALAN LOMAX. With contributions by the Cantometrics Staff, Bureau of Applied Social Research, Columbia University, and with the editorial assistance of Edwin E. Erickson. AAAS, Washington, D.C., 1968. xx + 364 pp., illus. \$16.75; members' cash price, \$14.50. AAAS Publication No. 88.

For 80 years anthropologists have been trying to develop the cross-cultural survey method. In cross-cultural survey they study a large, worldwide sample of tribes and nations, mostly primitive tribes. They look for statistical correlations and try to analyze them. They hope thus to test hypotheses about human behavior and human ways of life with almost the rigor and confidence of a controlled laboratory experiment. Here are a few of the questions they have tried to answer in this way: Do varying ways of making a living make for correlated varying types of family organization and even correlated varying concepts of kinship? Do variations in systems of infant care make for correlated variations in types of personality among adults? Do variations in the amount of population clustering make for correlated variations in the social and occupational complexity of tribes and nations? Do these variations in social and occupational complexity in turn lead to correlated variations in the whole level of civilization

of those tribes and those nations? And do variations in level of complexity among those tribes and nations also lead to correlated variations in the complexity of their styles of art?

The first attempts at such surveys had serious defects. Critics pointed to bias in the samples of tribes and nations and to confusions of unit definitions—what is a tribe? Critics pointed to bad data in the field reports of explorers, missionaries, and anthropologists. Critics pointed to confusions in concepts arising from studies trying to classify native behavior but using European casts of thought and to anomalies of comparison in which a few thousand wandering food gatherers like the Yahgans of Tierra del Fuego were likened to a great modern nation like the English. Critics pointed to the use of mere statistical correlations as tests of theories of cause and effect and derided studies which ran dozens and dozens of correlations in order to report triumphantly one or two "statistically significant" at the 5-percent level of "confidence." Critics such as Franz Boas, for two generations the immensely influential dean of American anthropologists, dismissed the whole enterprise as a waste of time because it had no way of telling correlations reflecting underlying patterns of human behavior from correlations reflecting mere accidents of common history—the problem posed for this method at its very outset by Sir Francis Galton.

Probably no cross-cultural survey has

been done with greater effort, a larger staff, a bigger budget, a deeper problem, and a keener sensitivity for the whole social and cultural context of its problem than the work of Alan Lomax reviewed here. This book is a massive attempt to correlate song and dance styles with various other aspects of culture. Lomax reports correlations between level of cultural evolution on the one hand and on the other hand song complexity, song wordiness, song explicitness, song repetitiousness (the more complex the social development the less repetitious the songs), narrowness of melodic intervals, rhythmic organization, consonant complexity, and phonation areas (chapter 6). These findings would echo those of Fischer's study of the graphic arts. Lomax reports a correlation between stability of work teams and cohesive song groups; that is, song groups and work groups tend to have similar social structures (chapter 7). He reports a correlation between several aspects of child training and several elements of song style (chapters 8 and 9). He reports a marked association between several elements of dance style and level of cultural evolution (chapters 10 and 11). He also, with less assurance, suggests a possible correlation between frequency of certain types of concepts in song texts and level of cultural evolution (chapter 13).

Lomax even finds clear associations between the voice quality of the songs of a tribe and its style of subsistence production. "Noisy" voice styles—raspy voices, narrow voices, nasal voices—tend to be especially common among irrigation farmers and not nearly so common among foraging tribes or simple gardening or herding tribes. Furthermore, "tense" voice styles—narrow voices or nasal voices—are most common in societies where food production tends to be predominantly the work of men rather than women. Lomax explains these two associations as reflections of the male dominance and female sexual repression. That may be, but his evidence supports equally well a variety of other explanations. There are a wide variety of traits associated with level of social development—including, as Lomax here shows, a number of elements of musical style. To single out certain of these traits as causes and certain others as effects requires more evidence than mere correlations. In general, his associations seem well documented, but his theories of causality lack greater support than raw correlations.

Lomax's work goes farther even than these tests of theory. It offers many novel and evidently useful categories of musical performance—types of song and dance styles. Lomax has studied not merely single musical traits but complex patterns of traits and has mapped their distributions in considerable detail.

An underlying theme of Lomax's book is the linkage between different orders of complexity or of elaboration of folk song and dance styles on the one hand and of successive stages of social development on the other. Simple foraging peoples tend to prefer contrapuntal and interlocked singing. Tribal farming people without any real city life are the people who have developed most highly musical polyphony, musical polyrhythm, and musical integration. And so on.

The formal solutions which Lomax

offers in this book to the difficulties pointed to by critics of earlier cross-cultural surveys are not good enough to silence all of *his* critics. Indeed, Lomax is publishing further documentation elsewhere. His many dozens of correlations clearly show important associations between musical styles and social and material culture. These correlations are there, and the carping of his critics will not get rid of them. As the decades pass, and other studies independently confirm his findings, this study will thus stand forth as a monument of our time. As of now, however, Lomax's cause-and-effect explanations of the associations remain no more than the hunches of a sensitive and learned musicologist.

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The Reconstructing of Prehistoric Societies

Settlement Archaeology. K. C. CHANG, Ed. National Press, Palo Alto, Calif., 1968. x + 229 pp., illus. \$8.95.

Archeologists have, over the past decade, become increasingly interested in describing aspects of prehistoric societies that were formerly thought impossible to elucidate. The focus is on reconstructing social organization—residence patterns, task organization, integrative institutions, statuses, and so forth. Argument over how such organizational features can best be discovered and their existence confirmed empirically is increasingly heated; and since this book is an attempt to present an appropriate methodology, it will provoke further healthy escalation of the argument.

Chang's purpose in assembling the 11 very diverse papers in this book is at least threefold: to present some of the basic theoretical and methodological tenets of a fashionable new "approach" in archeology—the "settlement approach"; to present some of the kinds of problems the settlement archeologist must face; and to provide further substantive examples of this so-called "new archeology." While the first of these goals is only partially met, the others fare much better. The book, taken as a whole, is a comprehensive and illuminating discussion of the programs and practices of the settlement "school" of archeology.

A most provocative paper is Chang's

own contribution, "Toward a science of prehistoric society," in which he sets forth a rationale and proposed methodology for a settlement approach. A paper by Irving Rouse expresses strong disagreement with Chang, especially with regard to the priority of research procedures. The other papers are all stimulating products of noted professionals, including James Deetz (artifact typology), Robert Ascher (stages of structural decay in contemporary villages), Bruce G. Trigger (determinants of settlement patterns), Sherburne F. Cook and Robert F. Heizer (relationships of floor-space and site area to population size), John W. M. Whiting and Barbara Ayres (architectural and sociological inferences based on dwelling shapes), William Sears (settlement models indicating levels of organizational complexity), Evon Z. Vogt (Zinacantan organizational model as applicable to the prehistoric Maya), and William Y. Adams (inferences from the changing settlement plan of a Nubian village). The final paper is an appraisal by Gordon R. Willey, including an adjudication of the disagreements between Chang and Rouse.

Chang's claim that settlement archeology is a new archeology, although not without merit, is somewhat exaggerated. In the first place, no new theory is presented. The major premises are left implicit, and they represent no departure from traditional eclecticism. Further-