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★**Ethnomathematics.**
A multicultural view of mathematical ideas.
*Brooks/Cole Publishing Co., Pacific Grove, CA*, 1991. xii+203 *pp*. \$36.95. *ISBN* 0-534-14880-8

The aim of this book is to introduce the concept of ethnomathematics, understood as the study of the mathematical ideas of people who live in “traditional or small-scale cultures”, through the discussion of select examples, largely drawn from the author’s own previous work on Inca quipus, on complex continuous-line sand drawings from Zaire-Angola and Vanuatu, and on the “kinship algebra” of the Australian Warlpiri and the Vanuatu Malekula. These studies (of which the second and the third are discussed in the light of graph theory and group theory) make up the first three chapters. Chapter 4, Chance and strategy in games and puzzles, analyzes the Native North American aleatoric “game of dish” and the Maori mu torere game of strategy and describes a number of African variants of the puzzle of “the wolf, the sheep, and the cabbage”, while Chapter 5, The organization and modeling of space, discusses Navajo spatial intuitions, the extensive use of “localizers” (of type “here/there”, “in/through”, “in relation to me/to you”, etc.) in Inuit language, Inuit drawings and use of drawings, and the star-and-virtual-sight-line navigational technique of the Caroline Islands. Chapter 6 investigates “Symmetric strip decorations” as made by Maori craftsmen and Inca pottery makers, mainly from the point of view of symmetry groups. Chapter 7, finally, summarizes the field as it has been exemplified in the previous chapters and discusses ethnomathematics as a supplementary approach to the historiography of mathematics and as a necessary insight for Third World mathematics educators.

The book is easy to read throughout, and all examples are set in cultural context. Mathematical concepts, from the place value system to the necessary elements of graph and group theory, are lucidly explained. So are, e.g., basic elements of sailing technique and requisite linguistic terms. The book will thus be useful as an inspiring introduction to the subject—accessible for the interested general public—and as a corrective to ethnocentric mistakes of mathematicians and others. Still, a number of methodical weaknesses should be taken into account before it is used for specialized purposes.

First of all, the delimitation of the category of “mathematical ideas” is quite vague. For instance, if we do not consider the classical Indo-European use of the accusative/locative/ablative case (or the English distinction between “in” and “into”) as a mathematical idea, it is difficult to see why a similar though more elaborate system in Inuit should be discussed as such (and preferred to the Inuit map drawings, which are only mentioned quite briefly).

Secondly, the very nature of the material at hand often makes it impossible to proceed from the artifacts (strip patterns, African sand drawings, etc.) to the ideas involved, which means that the analysis by means of our (“Western”) concepts tends to replace these, in spite of the author’s intentions (e.g., a quantitative probabilistic analysis is ascribed to the North American Indian gamblers, against the numerical evidence). Furthermore, the paucity of ethnographic reports concerning mathematical notion and techniques makes the correlation between mathematical procedure and cultural context random or nonconvincing.

Thirdly, the theoretical foundations are used at times with little caution. “Number” (and even “abstract number”, which is somehow different from “decontextualized number”) is taken to be a cognitive universal, on the faith of Chomskyan linguistics, and the use of linguistic classifiers (the use of category-specific endings or other marks on numerals) is rejected as an objection to this statement. Spatial concepts, on the other hand, are taken to vary radically, on the faith of the irreconcilable Whorfian linguistic tradition, and the Inuit localizers (closely parallel to the classifiers) are taken as evidence for this.

All in all, a recommendable first but not the last word.

Reviewed by *Jens Høyrup*