

why? Elements of these queries are present in the papers in this volume, but no single paper provides a detailed description of a complete dietary; hence the ambiguities and omissions. There are of course some gains from using the nutritional approach: one is the use of a simple method of measuring intake, namely, weighing particular foods over a period of time, which is used by those few papers which aim at some sort of analysis, and this is better than attempts at determining actual nutrient content, which has not proven feasible. However, anthropologists need not replicate nutritional analysis; they have their own specialties. There is no substitute for good ethnography on the cultural meaning of food and food preferences, which should not be diluted by chasing after presumably hard data on nutrition and food chemistry, or resorting to generalized geographical descriptions.

## References

Montgomery E. and J.W. Bennett

- 1979 Anthropological Studies of Food and Nutrition. *In* The Uses of Anthropology. Edited by W. Goldschmidt. Washington: American Anthropological Association.

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## The Nuer Conquest: The Structure and Development of an Expansionist System

Raymond C. Kelly

Ann Arbor, Michigan: The University of Michigan Press, 1985. viii + 320 pp.

Maps, Bibliography. Distributed in Canada by John Wiley and Sons. \$39.50 (cloth); \$17.95 (paper).

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Kelly undertakes an unusual task for African ethnology, the application of a cybernetic analysis, in the tradition of Rappaport, to the Nuer. The question which guides his analysis is "How can we explain the fact that the Nuer, an offshoot of the Dinka and culturally like them, expanded between the years 1818 and 1890 from an area of 8,700 square miles to 35,000 square miles, in the course of which they overran large parts of Dinka and Anuak territory?" Rejecting what he documents as the usual explanation made by such people as Evans-Pritchard and Sahlins, population pressure, he details the differences in the Nuer and Dinka systems, such as the structure of bridewealth distribution, livestock management practices, herd structures, population densities, and others. He develops a cybernetic model showing how the interaction of these variables produced a negative feedback process among Nuer which led to increasing expansion, whereas the Dinka system remained stable. Furthermore, he points to the root cause of this expansion in Nuer ideas of what the ideal bridewealth should be—a cultural cause.

Kelly is to be congratulated for using an approach which takes ethnological analysis in Africa to a higher level than usual, because he attempts to define variables and assess their dynamic impact. Dynamics, in the sense in which the term is used in analytical science, is not one of anthropology's long suits. Think of Almagor's (1978) typical and static analysis of the Dassanetch system as compared to Carr's (1977) social geographic analysis of the same system as it reacted over

several decades to the impact of the Ethiopian and British Sudanese governments closing off their western grazing lands.

Kelly's analysis is reminiscent of economic analysis, but although he uses the word "economic" frequently, there is little that can be called economics in this work, "economic" standing rather for "methods of production." This is too bad. I think an analysis like this would benefit from adding the economic dimension, which would not necessarily conflict with it and would add depth. A fundamental problem with Kelly's model is the lack of quantification of many important variables, so that it comes off looking like modeling without numbers, a heuristic exercise. The ratio of cattle to people is a crucial variable in Kelly's study, but not once in the book are any actual ratios given. Economic analysis, however, has shown that such things as ratios of labor input to output typically assume curvilinear form, with the result that dependable conclusions about such things as production cannot be made by merely projecting linearly these ratios from one level to another.

Kelly's analysis, therefore, while intriguing and worth consideration, is difficult to accept. Most particularly I find it hard to believe that the Nuer stress on the production of cattle beyond subsistence needs, can be explained by their desire to exceed the "ideal" bridewealth payments in order to gain more prestige. And it is precisely this claim which Kelly argues is the engine which drives Nuer expansion.

## References

- Almagor, U.  
1978      Pastoral Partners: Affinity and Bond Partnership Among the Dasanetch of South-West Ethiopia. Manchester: Manchester University Press.
- Carr, C.J.  
1977      Pastoralism in Crisis. The Dasanetch (sic) and their Ethiopian Lands. University of Chicago, Department of Geography Research Paper No. 180. Chicago, Illinois.

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## Directions in Cognitive Anthropology

Janet W.D. Dougherty, ed

Urbana, Illinois: University of Illinois Press, 1985. 451 pp.

*Reviewer:* William C. McCormack

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Janet Dougherty, a cognitive anthropologist trained at the University of California (Berkeley) and subsequently a post-doctoral fellow in linguistics at the Massachusetts Institute of Technology, presents a challenging compilation of fourteen original and four reprinted articles, with pedagogical introductions, to demonstrate "current research by cognitive anthropologists reflecting the contemporary breadth and underlying unity of the field" (Acknowledgments). The unity expressed by Dougherty derives from concentrating on where concepts in folk classification come from—a preoccupation she acknowledges was inspired many years ago by Brent Berlin and Paul Kay (*loc. cit.* and p. 9). Also represented is a trend derivative of the work of cognitive anthropologists on artificial intelligence—research which con-