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978-0-521-43807-0 - The Anthropology of Numbers
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*Cambridge Studies in Social and Cultural
Anthropology*
*Editors: Ernest Gellner, Jack Goody, Stephen
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70

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Published by the Press Syndicate of the University of Cambridge
 The Pitt Building, Trumpington Street, Cambridge CB2 1RP
 40 West 20th Street, New York, NY 10011-4211, USA
 10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Cambridge University Press 1990

First published 1990
 First paperback edition 1992
 Reprinted 1994, 1997

Printed in the United Kingdom at the University Press, Cambridge

British Library cataloguing in publication data

Crump, Thomas
 The anthropology of numbers. – (Cambridge studies in
 social anthropology).
 I. Numbers. Social aspects
 I. Title
 306'.45

Library of Congress cataloguing in publication data

Crump, Thomas.
 The anthropology of numbers / Thomas Crump.
 p. cm. — (Cambridge studies in social anthropology)
 Bibliography.
 Includes index.
 ISBN 0-521-38045-6
 1. Numerals – Folklore. 2. Symbolism of numbers. 3. Economic
 anthropology. I. Title. II. Series.
 GR933.C78 1990
 306.4'5–dc20 89-34123 CIP

ISBN 0 521 38045 6 hardback
 ISBN 0 521 43807 1 paperback

Contents

<i>List of illustrations</i>	<i>page</i> vi
<i>Preface</i>	vii
<i>Acknowledgements</i>	x
1 The ontology of number	1
2 The cognitive foundations of numeracy	14
3 Number and language	31
4 Cosmology and ethno-science	47
5 Economy, society and politics	60
6 Measurement, comparison and equivalence	72
7 Time	81
8 Money	92
9 Music, poetry and dance	103
10 Games and chance	115
11 Art and architecture	128
12 The ecology of number	146
<i>Notes</i>	151
<i>References</i>	180
<i>Index</i>	190

Illustrations

1 Magic squares (from J. Needham, <i>Science and Civilisation in China</i> , Vol. 3, Cambridge University Press, 1959 p. 55ff.).	page 11
2 A representative Chinese numeral (3804).	36
3 The <i>Kanshi</i> system of ten trunks and twelve branches.	40
4 Schematic example of a <i>quipu</i> .	43
5 The number 92 is Sumerian cuneiform.	45
6 Modular diagram of acupoints (from J. Needham and Lu Gwei-Djen, <i>Celestial Lancets</i> , Cambridge University Press, 1980, p. 124).	51
7 The Yin-Yang cycle (from J. Needham <i>Science and Civilisation in China</i> , vol. 5, pt. 4, p. 126).	53
8 <i>I Ching</i> trigrams, hexagrams and associated numbers.	54
9 <i>Seimeigaku</i> or Japanese 'full-name science'.	55
10 The <i>Mandala</i> (from S. J. Tambiah, <i>World Conquerer and World Renouncer</i> , Cambridge University Press, 1976, pp. 101, 103).	70
11 A full touch of four bells.	108
12 Psalm 119 in the original Hebrew.	111
13 The throwing-sticks for the game of Patol (after A. and P. MacFarlan, <i>Handbook of American Indian Games</i> , New York, Dover Publications, 1985, pp. 265 and 267).	119
14 The layout of the <i>oware</i> board (after C. Zaslavsky, <i>Africa Counts</i> , Westport Conn. Laurence Hill & Co, p. 119).	122
15 Tiles from the Alhambra recorded by M. C. Escher.	130
16 Plan of the Rin'ami house (from Teiji Itoh, <i>Traditional Domestic Architecture of Japan</i> , New York, John Weatherhill Inc./Tokyo, Heibonsha, 1972).	133
17 Japanese modular floor plans.	134
18 St Gall, plan of monastery precinct.	137
19 St Gall, plan of monastery church.	138
20 The Maya Dresden Codex.	144

Preface

In anthropology, a faculty library will contain any number of books applying the methods and insights of the discipline to almost any category of human thought or behaviour. At the same time, the standard monograph, investigating in detail the daily life of the population upon which it is based, may range equally widely in the choice of the topics dealt with. To all this there is, however, one exception: the use and understanding of numbers. This subject, if not completely disregarded, is treated as no more than marginal, even in cases where numerical factors dominate the day-to-day life of the people being studied. To take the case of Japan, where I have been engaged in field-work throughout the 1980's, I am myself the author of almost every journal article about popular numeracy to have appeared in the west. In the hundreds of books and articles about Japanese culture and society which I have come across, this subject is seldom given any serious attention. It would be one thing if the Japanese found numbers uninteresting, but in fact they are obsessed with numbers. Almost since my first day in Japan, some ten years ago, people I hardly know have talked to me about the way numbers rule their lives, and in this the Japanese are by no means an exceptional case. And yet there is no recognised anthropology of numbers: the object of this book, therefore, is to establish this subject.

It is still worth asking why this has not been done before. In the context of the intellectual or scientific life of the West, the problem, as it seems to me, is that the numerical sciences are presented as esoteric, self-contained and completely autonomous: this is particularly true of the world of pure mathematics as seen in G. H. Hardy's classic *A Mathematician's Apology*, whose influence, some fifty years after publication, seems quite undiminished. The one message constantly broadcast by pure mathematicians is that their subject stands far above any possible application in daily life. If anthropologists, with their feet firmly on the ground, appear, all too readily, to have heeded the warning implicit in this message, the same is no less true of the practitioners of other related disciplines. Hurford (1987:5) identifies, with remarkable precision, the reasons for this, and what he says in relation to his own subject, linguistics, applies equally to anthropology:

Preface

numerals are clearly weird, atypical of language generally, because the things they denote, numbers, are entities unlike the kind of entities dealt with in the rest of language, say persons, places, things, actions, states and qualities. [...] To the extent that numeral systems are peripheral to the core of language because they deal with mathematical concepts (a strange “because”!), they are likely to be less peripheral to the study of number. [...] Numeral systems are in clear ways well integrated with the languages in which they are embedded.

The object of my book, simply stated, is show how and why numeral systems are well integrated with the cultures in which they are embedded. Here I am particularly grateful to the late Prof. Meyer Fortes, who was the first to encourage me to pursue this object. At first I conceived of a book along much the same lines as *Literacy in Traditional Societies*, which Jack Goody edited in 1968, but once I began to take the project seriously, it soon became clear that numeracy and literacy could be equated only marginally, so that the approach of the book I have now written is quite different to that of Goody – as any reader will see.

The problems involved in writing this book have been considerable, particularly because of the small number of published works which were any help in solving them. The difficulty – clear enough from what has been said above – is twofold: first, few professional mathematicians have any interest in the cognitive assumptions implicit in their work; second few anthropologists are numerate in the sense of being able to realise how significant the numbers that occur in the course of their field-work might be in the local culture. To give but one example, Evans-Pritchard (1951:30) noted, in his study, *Kinship and Marriage among the Nuer*, that forty was the ‘ideal’ number of cattle to be given in bridewealth, but he never thought to ask why forty, and not some other number. This blindness to the meaning of numbers is quite general: it even extends to works dealing with such pronounced numerical phenomena as music, so that McPhee’s (1979) study of Balinese music hardly reflects at all the numerical richness of Balinese culture apparent in almost any of Geertz’s later studies. The sceptical reader is invited to look at any collection of anthropological monographs, to see how far he must search to find terms relating to number and arithmetic in the index. He will then have to look even further to find any systematic treatment of the significance of numbers in a local culture.

Fortunately, however, not all anthropologists are blind to the significance of numbers, and of those who are conscious of their importance, I am most grateful for having had the opportunity to talk with Louis Dumont, Clifford Geertz, C. R. Hallpike, G. B. Milner, Andrew Strathern, T. Yoneyama, R. H. Barnes, John Gay, Jonathan Parry and Paul Spencer. But one work, more than any other, is a treasure house for anyone writing a book of this kind: it is entitled *Science and Civilisation in China*, and an evening spent as the guest of its editor, Joseph Needham FRS, FBA, greatly added to my

Preface

understanding of many important points of Chinese numerology. The material gathered by Dr Needham is so rich as to tempt one to concentrate, to an excessive degree, on how the Chinese use and think about numbers.

Indeed the Far East is par excellence the home of numerate civilisations. My own time spent in Japan explains the relatively large number of Japanese examples in this book, but these are no more than a small selection from material gathered in the course of field-work. (A more detailed study is planned, with the title, *The Japanese Numbers Game*.) Once again, my research would have achieved little without the generosity of the Japan Foundation and the University of Amsterdam, which provided the necessary funds, or the help of any number of Japanese colleagues and institutions. Here I would particularly like to mention M. Akasaka, H. Araki, H. Nakamaki, T. Hatta, T. Hayashi, E. Kuroda, H. Saito, K. Sakata and H. Yamada together with the Universities of Kyoto, Nagoya, Tokyo and Toyama, the Education Universities of Kyoto and Osaka, the National Abacus Education Centre, the National Museum of Ethnology and the Little World Anthropological Museum.

In the general field of the cultural and social dimension of numbers, a number of works cover a part of the ground dealt with in this book: these are to be found in the bibliography, but Bloor (1973, chapter 4 and 1976), Hurford (1987), Ifrah (1987), Lancy (1983), Menninger (1977) and Restivo (1981, 1982 and 1983) are particularly worth mentioning. My own related works are also in the bibliography. I am also conscious of gaps in my treatment of the subject which others will no doubt point out: this book already has some 90,000 words, and an exhaustive text would be at least twice as long. It is in any case but a first step along a path which can lead to any number of new insights and discoveries, and which, I hope, many others will follow.

Finally, in the autumn of 1949, at the end of my first supervision as an undergraduate reading mathematics at Cambridge, the late Prof. A. S. Besicovitch – whom I later came to know well – asked me, ‘Mr Crump, please tell me one thing: why is it you read mathematics?’ I do not think he found my reply entirely convincing, but I hope now that this book answers his question. Certainly the writing of it has given me the very greatest pleasure, as well as enabling me to get to know many kind and helpful colleagues, in many different parts of the world. Needless to say my gratitude extends also to all of those whom I have not been able to mention above.

Acknowledgements

The author and publisher are grateful to the following for permission to reproduce illustrative material: Figure 13, Dover Publications, New York; Figure 14, Laurence Hill & Co., Westport, Conn.; Figure 15, Cordon Art, Baarn, Netherlands; Figures 16, 17, John Weatherhill Inc., New York and Tokyo; Figures 18, 19 (reprinted from *Viator*, 6 (1975), pp. 351–90), The Regents of the University of California; Figure 20, Griffith Observatory, after W. E. Gates.

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