

object transfer networks by substituting advanced object-manipulation programs for the simple object-manipulation program of social grooming itself" (p. 198).

Reynolds asserts that the emphasis on aggression, aggressive interaction, and aggressive control of property as the precursors of hominid exchange is wrong. This is probably the most stimulating essay in this book. As arguments go, his contentions about social grooming are not unsound. Unfortunately, he does not provide evidence of any convincing sort. And I regret that, for this is a provocative and useful set of notions.

The sixth essay is an attempt by Reynolds to defend the notion that language is not based on an emergent symbolic faculty. He seems to be unaware of the serious, indeed crippling, reservations that experts have about the so-called symbolic performances of apes, performances that probably are simple examples of the Clever Hans syndrome. Yet these performances are the evidence he proposes in support of his view. The reader can only begin to appreciate the quality of his prose and argument from the following quote, which is a proposal for an alternative to the notion of an emergent symbolic faculty: "... a coevolutionary model is adopted, in which language is theorized to evolve in conjunction with the conceptual and motor advances of the instrumental modality and to use instrumental action as an input-output device but nonetheless to remain a distinct system" (p. 235). Fundamentally, it starts by using the notion of emergent symboling, although in disguised verbiage, and patters away into obfuscation. The lucid arguments of Bickerton's *Roots of Language* should be examined by the reader interested in a fertile and, perhaps, profound approach to the problem of the origin of language.

Essay seven is a short but stimulating discussion of the nature of the mental differences between apes and men. The author spoils what seems a rational discussion by some fanciful verbal pyrotechnics that are not easily translated into simple English.

The provocative nature of much of Reynolds's book is evident. It is marred by adherence to some extremely old-fashioned notions. There is a rather aggressive arrogance to his claims for what ethology will do to social theory. The claims are not borne out by his discussion of language origin and acquisition nor by his presentation of a "new" theory of instincts. So much of the theoretical writing of

ethologists and sociobiologists is like the emperor's new clothes, there is a considerable fuss but on examination there is nothing there. Reynolds's book, alas, is no exception.

Atlas of Radiographs of Early Man. Mark F. Skinner and Geoffrey H. Sperber. New York: Alan R. Liss, Inc., 1982. xiv + 346 pp. n.p. (cloth).

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One adaptation I (and I suspect others) have developed in response to the information glut of the past decade is to skim new publications, read introductions and conclusions, or (as a last resort) rely on the reports of bright and obviously more energetic graduate students to try to keep up-to-date. This leaves time to closely examine publications with an importance that immediately catches my interest. The *Atlas of Radiographs of Early Man* is one such publication.

I suppose that this is an unusual reaction to what is essentially a book of radiographs, but this information is new and important. There never has been an attempt to systematically publish radiographic information for most of the fossils presented here: Legoux's *Determination de l'age dentaire de fossiles de la lignée humaine* (1967) and Mann's *Some Paleodemographic Aspects of the South African Australopithecines* (1975) come to mind as partial exceptions. There are a number of reasons why this information is critical.

The *Atlas* is mainly concerned with the dentition, although there are occasional exceptions such as the D frontal from Krapina and the cranial views of Broken Hill and Gibraltar. Information given about each specimen includes the site and its location, specimen number, provenience, description of the specimen, dental age, commentary, description of the photographic views presented, and location of the original specimen.

Designation of the specimen number reflects an unusual attempt to provide information about alternative numbering (in most cases, although the authors do not give the specimen numbers for the isolated Krapina teeth), and where relevant this section also refers to the *Catalogue of Fossil Hominids* (Oakley and Campbell, British Museum [Natural History], 1977) numbering. This is particularly useful

since the *Catalogue* itself is not always correct. The authors caught an error that several workers including myself (Wolpoff, *American Journal of Physical Anthropology* 50:67-114, 1979) have made, in assuming that the incisors glued into Krapina maxilla C belonged to this specimen. They recognize these incisors as "unassociated" (it has since been determined that they belong with maxilla B). Provenience is not always very specific, perhaps as much a reflection of the state-of-the-art as of the authors' efforts. Disagreements are reported but neither resolved nor in most cases referenced. Description of the specimen involves mainly a description of which teeth are present, their state of eruption, and their stage of formation. Dental ages are based on standards described in an earlier, but unfortunately unpublished, work by Skinner, or alternatively on Mann's (1975) assessments for the South African australopithecines. Some of these are in error, as for instance the adult status attributed to Hadar specimens AL 145-35 and 333-W1b. Although in both cases the region is missing, it is clear that neither of these specimens has an erupted third molar, as indicated by the lack of a distal interproximal facet on the second molar. In other cases, the authors age late juvenile and young adult specimens somewhat older than I would because they assume a late M3 eruption. Yet, the great value of this atlas is that this issue can probably be resolved through a perusal of the data presented within it.

The commentary is invariably useful, often addressing specifics of pathology, history of interpretations, or issues of taxonomic characters. Yet, these sections are too brief, and if I have one serious criticism of this volume, it is that these commentaries should have been greatly expanded. The authors are truly experts in dental anthropology, and are as well qualified to interpret the radiographs they present as any reader.

The views of specimens presented are generally of very high quality. In many cases, regular photographs as well as radiographs of specimens are shown. This is very useful for readers not familiar with all the details of the fossil record. The most appropriate views are usually presented, although it would have been useful to have symphyseal views of SK 74 (to help ascertain whether the mental eminence was pathological) and SK 23 (to help determine whether the incisor crowding was pre- or postmortem), and an anterior corpus view of MLD 2 to establish the size of the unerupted

canine. Nevertheless these are picky points; no doubt, many readers can think of views or specimens they would have liked to have seen illustrated.

Area coverage of the *Atlas* is intensive rather than extensive. In particular, the South African australopithecines and the later Upper Pleistocene hominids of western Europe are extremely well covered, while other regions and items are represented only insofar as specimens were available at the museums and institutes visited to intensively survey the European and African material.

Because much of the interest in radiographic data is in tooth formation and eruption, juveniles are heavily represented. Some of the data presented are of immediate importance to several ongoing debates. For instance, the age determination of the Devil's Tower maxilla and mandible at 5.4 (if male) or 4.7 (if female) years argues against Tillier's recent contention (*Les enfants neanderthaliens de Devil's Tower* (Gilbraltar), 1982) that the frontoparietal and jaws are from a different, younger (she suggests 3 years old) individual than the associated temporal (aged at 5 years). The age of another Neanderthal child, 3.6 years for Engis 2, is considerably less than the 5-6 year range usually given for it. Conversely, Mann's (1975) claim of a humanlike delayed eruption pattern for the South African australopithecines is strongly supported by the radiographs presented here.

Clearly, this is a book for the specialist concerned with evolutionary, developmental, and pathological problems in the study of the human dentition. It is an excellent book that I predict will be often used and widely quoted.

A History of American Physical Anthropology, 1930-1980. Frank Spencer, ed. New York: Academic Press, 1982. xvi + 495 pp. \$44.50 (cloth).

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In 1938 the British geneticist John B. S. Haldane wrote, "We are part of history ourselves, and we cannot avoid the consequences of being unable to think impartially." While this statement appears in his work *Heredity and Politics*, it has applicability to scientists in relatively new disciplines, fields of inquiry that may appear to be too recent in origin to possess an easily defined historical