

# Dental Anthropology Newsletter

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## TRENDS IN DENTAL ANTHROPOLOGICAL RESEARCH

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The beginning of the new year seems an appropriate time to assess the health of the field of dental anthropology and examine recent research trends in our discipline. I did this by searching for citations on Medline, a computer data base compiled by the National Library of Medicine on more than 4,000 medical and health science journals. Medline has some limitations as a source of information on dental anthropological research. Much important work is published in anthropological journals, conference proceedings, and edited volumes not cited in Medline. However, Medline does index a broad range of journals including the American Journal of Physical Anthropology, the Journal of Forensic Sciences, and so on that are key publication venues for dental anthropological research.

Counts of journal articles published between 1966 and 1996 show that dental anthropology is a rapidly growing research area (Fig. 1). In my survey, I defined articles on dental anthropological topics as those indexed under the key words "teeth" or "dental" and "anthropology" or "primates" or "evolution" or "genetics." Although somewhat different key words might have been used, these searches retrieved many of the dental anthropological papers I am aware of. About 1.5% of the over 200,000 dental articles published during this 30-year period are indexed on these topics that are of special interest to dental anthropologists. During the 1990's, the proportion of anthropological articles in the dental literature has more than doubled. At present, about 3% of the dental literature deals with dental anthropological topics. This increase is highly significant ( $\chi^2=27.7$ ,  $p < 0.0001$ ).

The growth in dental anthropological research roughly coincides with the founding of the Dental Anthropology Association ten years ago. The relationship between more dental anthropological publications and the formation of our association is probably not direct. Nevertheless, the recent membership growth our association has experienced reinforces the conclusion from the literature survey that interest in dental anthropology is increasing.

To get an idea of research trends, I analyzed the content of the dental articles published in the *American Journal of Physical Anthropology* (AJPA). Although certain types of dental anthropological research are not published in the AJPA, most would agree that this journal is a leading venue for dental anthropological research and that its contents provide a good overview of developments in the field. The dental articles published in the AJPA show a growth pattern different from that seen in the dental literature as a whole. The proportion of AJPA articles on dental topics increased markedly in the late 1970's. Between 1966 and 1975, dental articles made up 8.4% of the journal's content. In the succeeding years, the proportion of dental articles rose to around 20% of its content, a level that has been maintained into the present. The recent increase in dental anthropological publications seen in Figure 1, therefore, is not a result of the publication of papers in the AJPA.

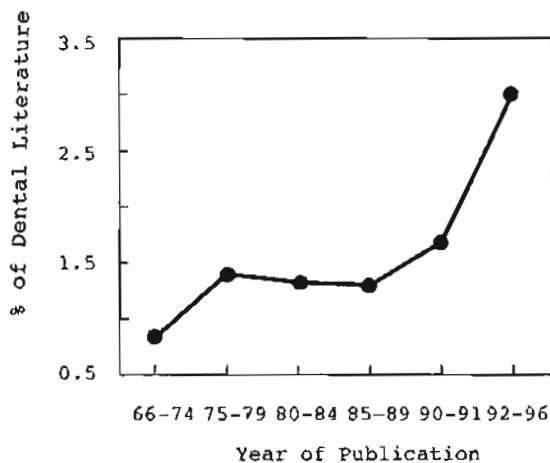


Fig. 1. Graph showing the growth of dental anthropological research. Articles on dental anthropological subjects (indexed under the key words teeth or dental and anthropology or primates or evolution or genetics) as a percent of the dental literature (articles indexed under the key words teeth or dental)

To obtain data on changes in the types of studies dental anthropologists are conducting, I classified the topics of the 417 AJPA dental articles published between 1975 and 1996 under the following headings: Functional Morphology (topics such as jaw mechanics and mastication), Growth and Development (dental and/or craniofacial development), Non-metric Traits (variation in discrete dental traits

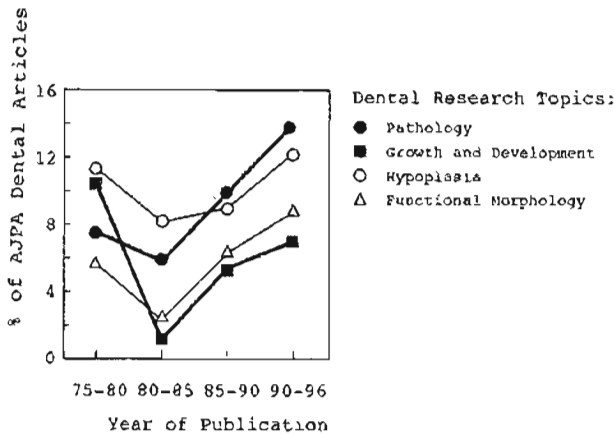


Fig. 2. Growth areas of dental anthropological research as reflected in the percentage of articles on that topic relative to the total number of dental articles published in the *American Journal of Physical Anthropology* during five-year intervals between 1975 and 1996.

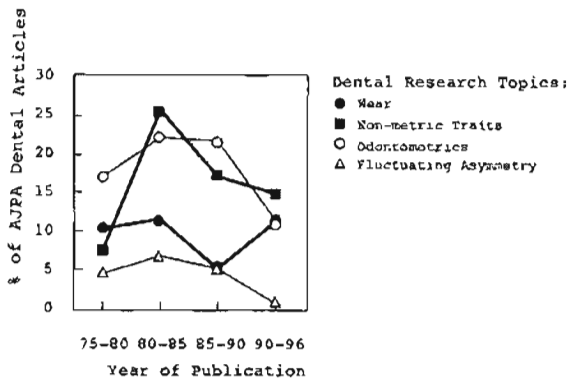


Fig. 3. Areas of dental anthropological research showing a decline or no growth as reflected in the percentage of articles on that topic relative to the total number of dental articles published in the *American Journal of Physical Anthropology* during five-year intervals between 1975 and 1996.

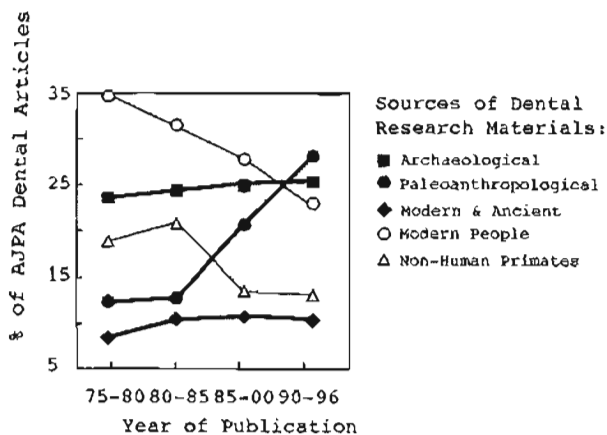


Fig. 4. Trends in the sources of dental anthropological research materials as reflected in the percentage of *American Journal of Physical Anthropology* articles on dental topics during five-year intervals between 1975 and 1996.

such as the number and form of cusps), Odontometrics (tooth size excluding fluctuating asymmetry), Fluctuating Asymmetry, Dental Pathology (caries, abscesses, and other pathologies, exclusive of enamel hypoplasia), Enamel Hypoplasia, and Tooth Wear. The bibliography used in the analysis can be found on the Dental Anthropology Association web site: <http://www.sscf.ucsb.edu/~walker/>.

The numbers of articles published on these topics show some interesting trends. Four research areas (pathology, growth and development, hypoplasia, and functional morphology) show similar patterns of decline in publication rate during the early 1980's followed by increase during the 1990's (Fig. 2). Three research topics (non-metric traits, odontometrics, and fluctuating asymmetry) show the inverse pattern with an increase during the early 1980's and a steady decline in publication rate since then (Fig. 3). Contributions on tooth wear have remained more-or-less constant through time at about 10% of the journal's dental content.

Some insights into these changing publication patterns can be gained by looking at the types of research materials dental anthropologists use (Fig. 4). There is a clear trend toward increase in publication of papers on early hominid dental remains. During the past decade, the rate of publication of such paleoanthropological studies has more than doubled. Articles concerned with the teeth of modern people and non-human primates, on the other hand, decreased significantly during the same period.

These trends, to some extent, reflect changes in the availability of research materials. During the past 20 years, paleoanthropological research throughout the world has produced much new material for dental anthropologists to describe. The steady decrease in studies of modern people, on the other hand, undoubtedly reflects the rapid decline that is occurring in opportunities to document dental conditions among people who have had little contact with Western culture, the traditional subjects of dental anthropological research.

The studies of recent archaeological materials, which account for about 25% percent of the dental articles published in the AJPA, have not increased significantly during the past twenty years. This at first glance is surprising. Many dental studies are being conducted in North American and Australia on archaeological collections threatened with destruction through repatriation to indigenous peoples. Most of this repatriation-related research is quite recent. The lack of an increase in studies of archaeological material may, therefore, reflect a lag between data collection and publication. A future increase in the publication of archaeological studies seems likely.

Although the bibliographic sources I have used to assess research trends have certain inherent limitations and biases, they clearly suggest that dental anthropology is a healthy, growing discipline.