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Remote Anthropology: Reconciling Research Priorities with Digital Data Sharing

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Elton & Cardini (2008) assert that there is a need for increasing debate concerning how new forms of analysis and information sharing are approached in biological anthropology. From an archaeological perspective, we would agree, and add that these types of debates are needed in all areas of anthropological study. Clearly, discussions of this sort are not altogether absent, as evidenced by the special forum on three-dimensional scanning technologies convened at the 2007 annual meeting of the Society of American Archaeology. However, at present there is no general consensus or even rudimentary agreement on how best to approach the integration of information technologies in anthropological research. What does the adoption of these new methods mean for how we gather, process, and subsequently share information in the so-called Digital Age? It is the issue of information sharing that the authors wish to briefly address here. Our discussion primarily concerns three-dimensional imaging in archaeological and paleoanthropological studies, but the overarching theme is applicable to all anthropologists who utilize these and related technologies.

Contributors to the present forum have raised important points regarding the advantages and disadvantages of the current trend toward computer-based methods of data sharing and analysis of biological and cultural materials. In reviewing the use of computer-generated replicas of paleoanthropological remains, Mafart (2008) makes important observations regarding the benefits afforded by reduced artefact handling in terms of specimen conservation. Along the same vein, Kulmer (2008), while pointing out that we have yet to learn what, if any, long-term physical effects on specimens may result from using such new applications, also notes that 3D laser-scanning, CT and MRI technology provide non-invasive and flexible methods of data collection and specimen reproduction. Conservation should always be the primary concern of anthropologists working with any cultural or biological remains, but even more so with delicate or rare specimens. To that end, there must be control over who is given access to such materials and the kinds of interaction with specimens that are permitted. A careful balance must be reached to reasonably satisfy the researcher and likewise protect the subjects of their studies. Accordingly, new methods of offering access to specimens that meet these criteria are of great interest to anthropologists.

The ease with which digital information can be shared worldwide has opened up new directions of potential research and international collaboration on a scale unforeseen only decades ago. Yet, there remain significant and persistent barriers to the kinds of information sharing that one would expect to accompany recent advances

in digital modeling. Perhaps the most troubling obstacle has little to do with technology itself, but instead stems from certain incompatibilities of information technology with what one might term 'researcher entitlement'. Negotiation of access to study specimens has long been a contentious issue in archaeology and anthropology as a whole, particularly because it raises the spectre of "ownership". As Mafart (2008) points out, control over access to rare paleoanthropological and archaeological specimens is often held by those who recover the material in question. This scenario would not be so troubling were it not for the frequency with which scholars withhold access to specimens and data for sometimes extensive periods under the pretence of 'ongoing research'. To be clear, researchers deserve a period of exclusivity with their finds, and the authors do not intend to debate this issue here. However, it is imperative that we acknowledge the complications that are presented as methodological advances facilitate greater access to the Research Community. As members of the scientific community, do we not have a responsibility to make data available to our colleagues in a timely and productive manner? Accordingly, the authors support calls for the increased availability of specimens in digital form, especially when the apparent benefits outweigh the inherent challenges of establishing information repositories.

Calls for increasing accessibility to specimens are forcing scholars to address issues of ownership and to consider compromise regarding conditions under which studies are made. In this regard, the application of three-dimensional digital imaging, while at once placing pressure on researchers to share data, offers the same individuals a way to provide a certain degree of controlled access. Specific datasets, limited in scale and resolution, can be generated to fit the needs of fellow researchers while reserving others for one's own inquiries. Alternatively, it is possible to "loan" complete digital copies and retrieve them electronically after a predetermined period of study, thereby allowing simultaneous access to multiple researchers. Unfortunately, as with all digital media, the ease with which copies can be made nullifies any assurances of control over copyright. One possibility would be to develop a licensing system wherein publication of research from unlicensed data is forbidden – a daunting but feasible approach to information exchange management.

Several possible models of digital information access can be proposed, each with their own unique advantages and challenges, yet none are capable of addressing the fundamental problem at hand: a general unwillingness to provide access. This is a problem born of the present and, in some sense, deeply entrenched academic milieu and is unlikely to change in the near future. Digitization requires time and labour, to say nothing of financial investment in equipment that some may believe would be better spent on active research interests. The digital reproduction of artefacts and biological remains has the potential to put data into the hands of far more researchers, in more places, in a more timely and cost-effective fashion than traditional methods of information sharing. Nevertheless, the scale at which this can occur is limited by the resources allocated, a decision that can only be made by those with access.

Putting aside the vast and expanding repertoire of new analytical methods available to anthropologists today, the potential for collaboration and communication with fellow researchers on the global scale should not be underestimated. It would be a shame for that potential to be lost because of an unwillingness to renegotiate the terms under which information is produced, examined and distributed. The willingness to propel change is certainly present in the anthropological community, for that are many who welcome the integration of new methods for technological analysis, but basic changes need to be made in the ways we perceive our work and perceive our relationship to our subjects of study. What is needed is a new ethic of cooperation, an eagerness to engage with the global anthropological community in a productive, informed

manner that includes granting our colleagues greater access to our data.

Technology has the potential to foster increased academic and scientific cooperation and information sharing, but only if we find a reason to do so. 3D imaging provides compelling new avenues for research and serves an important illustrative function in publications and presentations. As repositories for such media increase in number, systematic procedures for accessing and referencing digital models will be developed. Digital collections will almost certainly become a common fixture in educational institutions in the not-so-distant future, enriching the learning experience of countless students. Yet, from our perspective, so much more is possible. If the scientific community is unable to reconcile its academic priorities with emerging issues pertaining to the use of information technology, the progress of anthropological inquiry will be all the more weakened for it.

In closing we wish to reaffirm that, as important and as necessary as the adoption of computer and internet-based methods for analysis and information sharing is, there is no substitute for the singular sort of experience acquired from direct interaction with one's subject of study. 3D models can do much to further anthropological inquiry, but in the end they do not leave the researcher with the same impression as when he or she has the opportunity to examine the subject itself. We echo the sentiment of Elton and Cardini (2008) in the present forum as they so eloquently describe the experience of sitting "... in a dusty room of an old museum collection..." There are some qualities that CT and laser surface scanners can not capture, and as such we doubt researchers will ever be completely spared the stress, inconvenience and the rewards, both personal and scientific, associated with carrying hands-on research abroad. Nor, we suggest, should they desire to be.

References

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