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Symposium: The Impact of IT on Archaeology

Abstract Package

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Down to Earth - is IT a hard landing for Aerial Archaeology?

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Aerial survey is now one of the established methods of archaeological investigation in many countries of the world. It has always relied on technology (cameras, aircraft and optics) and has been able to develop in-step with any changes. However, in the past decades the pace of development in IT has been so fast and so dramatic that aerial archaeology has not, uniformly, been able to adapt or adopt the best of the new. Faced with the challenges of rapid change many practitioners have been forced to question why they are doing what they are doing, if they are doing it in the right way and what is the best means of providing the best result. The impact of IT has been and will continue to be positive but solutions to all the questions it raises have yet to be resolved. Meanwhile the day to day work has to continue.

Mathematics and Computers: The Classifier's Ruse

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This paper puts the view that the increasing popularity of computer generated statistical classifications is a consequence of archaeology's need to affirm its identity as a science. Firstly, the arguments used by advocates of statistical and computer generated classifications throughout the past forty years are identified. Of particular importance is Spaulding's defense in his 1954 "Reply to Ford" that statistical methods conform essentially to the processes of more traditional classification methodologies, an argument used repeatedly to support statistical classification over the past forty years. The paper asserts that suprisingly few have asked 'if the methods are the same, why use statistical ones, and why are these statistical methods better than others?' Advocates of the above methods have used the novelty and technology of computer generated statistics to formulate the impression that it constitutes the "cutting edge" of archaeological methodology. I will argue that, on the contrary, new technology has formed the basis for archaeology's defense against the attacks of postmodern theory to affirm its traditional identity as a science. The paper demonstrates the ways in which archaeology, within its self-perception as a practical discipline with a history of appropriating methodologies from the sciences, largely has not countered the postmodern assertion of an archaeology analogous to the interpretation of text through the development of counter-theories. Archaeology has rather shifted the battleground to the more familiar area of practicality. Supporters of statistical classification methodologies rely in part on an affirmation, through the cultural symbols of computerised technology and mathematics, of the identity of archaeology as a field of science, and in part on the tradition of appropriating science's methodologies without adequate analogies for doing so. This paper examines the ways in which the use of these symbols bestow an illusion of precision, accuracy and objectivity to their methodologies, not addressing postmodern theorists themselves but reassuring the

discipline of its own 'scientific' identity in the face of theory. The paper assesses the success of this 'shifting of the battleground' and its failure to address the dominating role of interpretation in all methods of classification, and the implications for archaeology of a 'textual reading' of objects. Finally the paper asserts that the increasing reliance on computer technology for the generation of statistical classifications, rather than advancing archaeological methodology in the area of classification, has the effect of evading the issues of debate and retaining the discipline's conservative position.

Archaeological computing and disciplinary theory

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The 1998 CAA conference in Barcelona, was the 25th meeting of archaeologists concerned with computer applications in the discipline. The first CAA conference thus took place around the same time that David Clarke published Archaeology: the loss of innocence (1973), in which he talked of these hitherto unexplored technologies, with their capacity to "extend our archaeological senses". The apparently reductionist binaries inherent in computer architecture seemed the perfect tool with which to quantify the relationships between people and things in middle-range theory building.

The critique of positivist, reductionist science offered by British post-processual archaeology, rejected theory-building and its quantitative-based interpretations. This occurred at a time when the PC revolution began to impact upon Western academe. As a result, archaeological computing and disciplinary theory still tend to operate within their own publications, journals and conferences. Recent work, particularly in GIS landscape studies and the use of virtual reality has attempted to address this split by overlaying, or adding on, the social. At the other end of the spectrum, archaeologists interested in multiple pasts have used the inter-textual aspects of the world wide web to construct archaeological pastiche, whereby the user constructs her/his own past.

It is this still all too apparent separation between archaeological computing and disciplinary theory that this paper attends to address - "theory" is not a subset that can be added to the "facts", nor is it a toolkit by which the authoritative archaeologist is given carte blanche.

Reference

Clarke, D. L. 1973. "Archaeology the loss of innocence", Antiquity 47: 6-18.

From museum store to data warehouse: archaeological archives for the twenty-first century

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The use of computers has become widespread in many branches of archaeological work in the UK over the past decade, but until recently little attention has been paid either to developing common standards for digital recording or to the long-term consequences of creating digital archives. In museums, the ultimate repositories of most archives in the UK, data standards are comparatively well developed, but the emphasis has been - inevitably - on the management of object collections.

This paper arises from experience at the Museum of London: firstly, of transferring some 2000 archives from field departments to a permanent archaeological archive and, secondly, of devising detailed specifications for the preparation of archives in the future. Two aspects of digital archiving - preservation and access - will be examined here, in the context of the differing 'cultures' of museums and archaeology.

Long-term preservation raises issues requiring urgent resolution: both by IT specialists, in terms of creating non-proprietary file formats and standards for data exchange, and by archivists, in terms of establishing systems which will guarantee the survival of data far into the future. Yet digitisation also offers new opportunities for facilitating multi-user and remote access; and new tools for analysing and enhancing data - especially in combination with external resources. Central to all these processes will be the acceptance and implementation of common metadata standards.

The Palestine SMR Project

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This paper will look at a new British-Palestinian project which aims to establish a Sites and Monuments Record (SMR) for the West Bank, Palestine. During the many years of Palestinian opposition to the Israeli occupation Palestinian universities were closed down and the available archaeological response to the continual destruction of archaeological heritage was minimal. Since 1994, however, the archaeology departments at the Palestinian universities of Birzeit and Al Quds have re-opened and are willing to engage in collaborative ventures with overseas academics. An SMR is a vital tool of cultural resource management. The creation and maintenance of an SMR will greatly improve the capacity of archaeologists working within the West Bank to plan and develop programmes of research and rescue excavation and survey in the area, both academically and financially. As well as heritage management issues, it is hoped that establishing a fully functioning SMR, in Arabic and English, will also provide a useful educational tool in both research and Information Technology. The paper will explore a range of IT issues, viewed alongside the potential impact of the SMR on the region generally.

Is there such a thing as "Computer Archaeology"?

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A "computer archaeologist", as the title would imply, should be out in the field with his or her trusty trowel digging up old hardware and software relicts from long-gone milestones in information technology (IT). Obviously, this is a colloquial caricature as must be clear to the layman and scholar alike. However, while this potential case of a misnomer may eventually be resolved within the realm of semantics, the lack of an appropriate naming convention serves as a general indicator for an overall trend within archaeology.

Despite the impact that information technology has had, particularly over the last decade, there seems to be only a limited strategic incorporation of IT as an integral part in ever-increasing and notoriously data-rich archaeological endeavours. Consequently, the absence of a directed focus on implementing IT within the formal structure of archaeology poses a dilemma for the discipline as a whole as well as for archaeologists possessing a high degree of technical expertise in IT.

This paper, therefore, tries to address some of the effects that computer technology has had within academic and professional archaeology in order to further define the requirements and role of "computer archaeologists" for today's discoveries of the past. Specific attention will be paid to the roles of IT within archaeology focusing on its relationship with the substance and theory of the discipline, the level of training required, and the employment opportunities available.