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Archaeological Theory and Scientific Practice

Is archaeology an art or a science? This question has been hotly debated over the last few decades with the rise of archaeological science. At the same time, archaeologists have seen a change in the intellectual character of their discipline, as many writers have adopted approaches influenced by social theory. The discipline now encompasses both archaeological scientists and archaeological theorists, and discussion regarding the status of archaeology remains polarised. Andrew Jones argues that we need to analyse the practice of archaeology. Through an analysis of archaeological practice, influenced by recent developments in the field of science studies, and with the aid of extensive case studies, he develops a new framework, which allows the interpretative and methodological components of the discipline to work in tandem. His reassessment of the status and character of archaeology will be of interest to students, scholars and professionals.

ANDREW JONES is a Lecturer in the Department of Archaeology, Southampton University. He has worked extensively on British prehistory (especially the Neolithic and Bronze Age). Among his many research interests are the history of representation in archaeology, the role of art and memory in archaeological research, and the archaeology of animals and food. He has contributed to a number of journals and edited volumes. This is his first book.

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Preface

Since the contents of this book are concerned so much with issues of biography, it makes sense to begin by saying something about the biography of both text and author. The subject matter – the relationship between archaeological theory and archaeological science – arose from my doctoral research between 1993 and 1997 at Glasgow University, which was supervised by Colin Richards and Richard Jones. The examination of the pottery assemblage from the Late Neolithic settlement at Barnhouse, Orkney comprised the central focus of the original thesis (see Richards forthcoming, and chapters 6 and 7 this volume). However I felt that wider and more fundamental questions lay behind my use of the techniques of materials science within a framework informed by interpretative archaeology and anthropology. It was for this reason that I began to write the first two chapters of the book in Glasgow, after the completion of the thesis. At this time the subject matter was written from a personal perspective derived from attempts to balance an interest in archaeological theory with the practical application of scientific techniques. This perspective altered when I took up a teaching appointment at University College Dublin, where amongst other things I was able to observe the pragmatic application of scientific analysis alongside archaeological theory under the aegis of the Irish Stone Axe Project, directed by Gabriel Cooney and Stephen Mandal. I began to see that the issues examined in the volume were more fundamental to archaeological practice, and in Dublin I completed the third chapter.

I was persuaded more firmly of the subject matter of the book when I took up a post-doctoral position at the McDonald Institute for Archaeological Research, Cambridge. In Cambridge I came into contact with a growing number of people who were attempting to utilise both archaeological theory and archaeological science. My perspective on the topic had shifted over the course of the book's inception in Glasgow to its completion in Cambridge some two years later. No longer did it appear to derive solely from personal experience; instead, it had become a topic that was of wider concern to a growing number of archaeological scientists

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and archaeological theorists. This was encouraging although, of course, this state of affairs had prevailed throughout, since in reality we are never writing in isolation, but are always situated in a wider discourse.

My immersion in this discourse is not solely confined to my engagement with issues of science and society, and science and the arts in the academic world; these issues have an increasing impact upon the world which we all inhabit. I write at a time in which faith in science as a force of emancipation has diminished and public confidence in the sciences has waned. Genetically Modified Organisms, the Human Genome project and the issues surrounding the cloning of human tissue from stem cells are at present regular topics of discussion in the media. The terms in which these critical issues are discussed remain polarised in the framework that I describe in chapter 1, with scientists in the media occupying a position of certainty and knowledge sealed off from the wider concerns of the public. Meanwhile, while concern grows for the ethical issues associated with the newfound capabilities of the biological sciences, there is a lingering assumption of the inexorable and progressive nature of science. The discussion of these issues is then caught in a problematic trap: while it is realised that at the ethical level society ought to have an impact upon science, there remains the feeling that science proceeds outside the influence of the social. On a lighter note, the significance of the relationship between science and society, and in particular science and the arts, is also being increasingly stressed in the form of a number of major visual arts exhibitions at venues ranging from the Hayward Gallery and the Natural History Museum, London to the Victoria and Albert Museum.

While the wider issues concerning the sciences in relation to society and the arts have affected me both negatively and positively, on an academic and personal level my perspective on the philosophical implications of these issues has fundamentally altered during the course of writing this book. I have become convinced of the necessity of taking account not only of the philosophical implications of our practices, an area traditionally studied by philosophers of science (Embree 1992; Kelly and Hannen 1988; Wylie 1992), but also to understand the historical precedents and trajectories of these philosophical distinctions. In this respect I have been especially influenced by Barkan and Bush (1995), Fabian (1983, 1991) and Stocking (1996), amongst others. Although the history of science is a relatively unexplored field in archaeology and remains fairly implicit in my text, I nevertheless feel it is critically important to be aware of the historical depth of the philosophical distinctions that we employ on a routine basis in our contemporary practices. Moreover I believe that it is important to reflect upon this awareness in the reformulation of our philosophical frameworks. That is really what this book is about, since

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the aim is to examine the philosophical distinctions that divide the arts and humanities from the natural sciences. In this regard it would have been relatively simple to write an account that 'took sides'. Radically different accounts could have been written had I taken up the view of the natural sciences in defining positivism or empiricism as definitional knowledge (for the most famous recent examples of this approach see Gross and Levitt 1994; Sokal and Bricmont 1998). Similarly, in taking up a perspective flavoured by post-modernism it would have been possible to write an account which considered knowledge to exist in solely representational form. Both of these approaches would have fallen foul of the epistemological traps that ensnare our discussion of topics such as rationalism and relativism, objectivity and subjectivity. With Fabian (1991, 193) I believe that 'it is a bad sort of critique that first needs to pledge allegiance to one or another school'; instead, I have attempted to develop a position that examines the nature of the connections between each order of knowledge, and my account is meant to alienate neither archaeological scientists nor archaeological theorists.

Due to the exigencies of space, this book focuses upon materials science. However I am aware that excellent work of a similar vein is also being undertaken in many other fields of archaeological science, such as environmental archaeology (Albarella forthcoming), soil micromorphology (Boivin 2000), stable isotope analysis (Richards and Hedges 1999) and Geographical Information Systems (Lock and Stancic 1995), to name but a few. Furthermore some of the themes addressed in this book are of wider concern to field archaeology, and these have been recently examined by Bender, Hamilton and Tilley (1997) and Hodder (1996, 1999). In terms of my theoretical emphasis, I have focused upon issues such as biography, consumption, technology and identity that are of pertinence to interpretative archaeologists and anthropologists alike. It goes without saying that the application of techniques derived from archaeological science to the examination of theoretical issues need not focus on these areas of interest alone. Rather it is the imaginative application of both existent and novel techniques to a plethora of theoretical issues that will promote the creation of fresh interpretative networks between researchers in different fields.

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Finally, the book is dedicated to two remarkable individuals. My father, Dr Edward Jones, a scientist with strong opinions on the certainty and reliability of scientific knowledge and a flair for art, and my mother, Felicity Jones, a historian with a sense of the value of history who also keeps an eye on the empirical matters of life.

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