Culture History and Convergent Evolution

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Can We Detect Populations in Prehistory?

Edited by

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Preface

Archaeology uses patterns of similarities and differences in material culture to construct narratives about the human past. Its methodologies to do this borrow from both the natural and social sciences, and over time diverse schools of thought have developed. Crudely put, some see culture (learned behaviours) as absolutely paramount in determining the form of things like stone tools, while others emphasize 'pragmatic' factors such as the use of different kinds of raw material. Other perspectives sit between these extremes, such as those emphasizing the centrality of variation in mobility strategies in determining the nature of the archaeological record.

At the root of these different approaches and perspectives are diverse ways of understanding the character and meaning of similarities and differences in the archaeological record. The aim of this book is not to 'heal' and reconcile the diverse approaches used in archaeology, but rather to explore one of the fundamental building blocks for all perspectives. 'Convergent evolution' in this setting refers to the independent evolution of particular forms of material culture, as opposed to their spread with the movement of people or ideas. Convergent evolution is therefore the opposite side of the coin to cultural transmission. While cultural transmission theory has been widely discussed in the literature in recent years, rather less has been made of convergent evolution.

Most, or hopefully all, archaeologists would accept that convergent evolution characterizes at least some elements of the archaeological record: the question is, how much? If we cannot satisfactorily answer this question then accounts of the past—be they of highly 'cultural-historical' character or biologically-derived cladistics-based perspectives—will build a potential ticking time bomb into their DNA.

When I first pitched the idea of this book I soon discovered a similar book was about to come out: the excellent *Convergent Evolution in Stone-Tool Technology* (2018, MIT Press), edited by Michael J. O'Brien and colleagues. The convergent evolution of a book on convergent evolution highlights the importance of this topic in the contemporary research climate. As O'Brien and colleagues' book focuses very much on lithic technology and is somewhat weighted towards chapters looking at the Americas, I decided to take a slightly different tack. While still primarily relating to lithic technologies, which constitute the overwhelming body of data for the human past, I sought to connect this field of study with the notion of 'populations'.

The reasons for emphasizing this notion of 'population' are three-fold. Firstly, the idea of 'populations' offers a bridge between subject areas. It is, for example, an absolutely central notion in genetics, so it is important to think about what we can (and cannot) say about human populations in prehistory. Secondly, archaeology is gradually coming to the realization that population dynamics (demography) are central to understanding long-term processes in the human past. For example, genetic studies often assume panmixia (random mating), but archaeology and related disciplines can provide information on population structure which can allow models to be refined. Thirdly, in archaeological accounts, populations are often seen as being central and are often linked with particular forms of material culture. Thus, for example,

one can read about the 'Aterians', the 'Gravettians', the 'Nubians', etc. Yet at root, these vaguely defined 'populations' are effectively just guesses based on patterns observed in archaeological data. Yet, what that patterning *means* is not self-evident. What does it mean if we find a particular kind of lithic technology in one area for 100,000 years? No straightforward framework exists to link the kind of long-term patterning visible in the archaeological record with the existence of 'populations' as commonly understood in social or biological ways. I think that linking thinking about populations with considerations of convergent evolution can offer a useful way to orient our thoughts about the past. If we are to understand populations in prehistory, then we require both solid theory and practice which allow us to distinguish convergent evolution of material culture from cultural transmission.

I have deliberately not sought to act as a heavy-handed editor. The numerous themes explored—such as the causes of variability in the archaeological record and the character and recognition of populations in the past—are both complex topics and ones which can be approached from very different perspectives. My aim was to highlight diverse theoretical and methodological approaches to these themes. If this book encourages researchers to consider the role of convergent evolution more carefully, then I will consider it to have been a success. Failure to address this topic will arguably damn the relevance of archaeology and particularly areas such as lithic analysis. Conversely, if we are able to develop sensible and balanced perspectives and methodologies, then our field can grow into a mature science. Many recent accounts of human evolution and prehistory are heavily biological in character. If we are to come to balanced perspectives it is up to us archaeologists to emphasize the importance of culture, and doing so means getting to grips with convergent evolution and the recognition of populations in prehistory.

I thank all of the contributors to this volume, the dozens of peer-reviewers, and Eric Delson (Springer VERT Series editor). All played important roles in shaping this volume. I hope that readers find it a useful and enjoyable book.

Jena, Germany
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Huw S. Groucutt

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