Conversations in Human Evolution

Volume 1

Edited by
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Conversations in Human Evolution

Lucy Timbrell[1]

Introduction:

Conversations in Human Evolution (https://conversationsinhumanevolution.wordpress.com) is a science communication project exploring the breadth and interdisciplinarity of human evolution research at a global scale. Through informal but informative interviews (henceforth referred to as 'conversations'), this project delves deeply into topics concerning the study of our species' evolutionary lineage, covering the current advances in research, theory and methods as well as the socio-political issues rife within academia. This project also provides important insights into the history of human evolutionary studies. This volume is the result of the first twenty conversations, published online between March and June 2020. When this volume went to press, this subset of the conversations had been collectively viewed 6817 times since they were made available on the website.

The idea for Conversations in Human Evolution (CHE) arose in March 2020 during the escalation of the COVID-19 global pandemic. Following the cancellation and postponement of in-person events, CHE became a creative project to encourage engagement with human evolutionary research during this time of isolation and confinement. It was noticed that, whilst there is great public interest in this area of research, there are few freely accessible online resources about human evolutionary studies itself (though see https://humanorigins.si.edu/ for a good example of a publicly available resource). What's more, science engagement initiatives are almost always concerned with communicating exciting results and discoveries, and whilst this is obviously the most important aspect of science communication, it can lead to the neglection of the personal experiences of the scholars behind the science. Broader socio-political issues within subject-specific academic circles are also rarely discussed through publicly accessible communicative forums, somewhat depersonalising the science and perhaps even romanticising academia in certain ways. CHE fills this void by asking - what does it actually mean to study and research human evolution in the 21st century?

Human evolution studies, by definition, is a discipline concerned with the deep past. We explore the most pertinent questions about the evolution of humanity, such as the emergence of complex language and culture. The exploration of such issues allows researchers to look back into our species' evolutionary history to better understand our present and our future. Yet, we rarely consider the role of history and personal experience in the shaping of human evolution research. Acknowledging that the history of our discipline and its historical figures deserve focus in their own right is a fundamental premise of CHE as, in the same way that human evolutionary research drives our understanding of our past, present and future selves, historical and personal contexts have driven modern approaches to the deep past. CHE bridges the gap between the research and the researcher, contextualising modern science with personal experience and historical reflection.

Themes:

The conversations featured in this volume can be organised into five non mutually exclusive categories based on research interests: (1) quaternary and archaeological science, (2) Palaeolithic archaeology, (3) biological anthropology and palaeoanthropology, (4) primatology and evolutionary anthropology, and (5) evolutionary genetics. CHE features scholars at various different stages in their careers and from all over the world; in this volume, researchers are based at institutions in seven different countries

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(namely the United Kingdom, Australia, the United States of America, Germany, Denmark, India and China), covering four continents.

The first section of this volume features five conversations with quaternary and archaeological scientists, covering topics such as quantitative methods in archaeology, human-environment interactions, palaeoecology and geoarchaeology. In this section, Dr Enrico Crema first discusses his research into evolutionary cultural change and prehistoric demography, with a particular focus on Japanese prehistory, as well as the importance of being a 'π-shaped' researcher with domain-specific knowledge and analytical and computing skills (Marwick, 2017). Professor Felix Riede builds on this idea, suggesting that 'π-shaped' researchers should learn how to 'hold hands' and work collaboratively. He also discusses previous and current projects attempting to understand how paleoclimates have interacted with past societies, and the role that archaeology can play in current discourse in contemporary climate change (Hussain and Riede, 2020). Professor Ben Marwick details the importance of 'open access archaeology' as well as some of his many projects in Southeast Asia. Quaternary Scientist, Professor Chris Hunt recounts his work at the ongoing Shanidar Cave Project in Iraqi Kurdistan (among his many other projects), which has recently published fascinating results on Neanderthal mortuary practises (Pomeroy et al., 2020). Professor Andy Herries also reviews his recent publications, such as the dating of the DNH 134 *Homo erectus* fossil (Herries *et al*., 2020). As well as discussion about his ongoing work in geoarchaeology and geochronology, he stresses the importance of working with local collaborators and communities.

The second section features five conversations with Palaeolithic archaeologists working all over the world. This section highlights the ongoing global research that is being carried out to further understand prehistoric human behaviour over a huge geographic area. Starting in Asia, Professor Shanti Pappu recounts her experiences of researching the Indian Palaeolithic, drawing special attention to the importance of her outreach programmes with local schools during excavation. Professor Michael Petraglia details his interdisciplinary work in South Asia and East Asia – as well as Arabia and eastern Africa – which has the overarching focus of understanding the origin and dispersal of our own species. Dr Shi-Xia Yang describes her recent work on the stone tools of Palaeolithic in East Asia, making links between hominin behaviours and climatic change in the region. Moving into African Stone Age archaeology, Professor John Gowlett explores his experiences working in eastern Africa (see Cole *et al*., 2020 for a festschrift dedicated to John's career), illustrated with amazing pictures from his personal archive. Professor Eleanor Scerri next describes her ongoing work in northern and western Africa. Like others in this volume, she encourages the development of new quantitative and computational methods for interpreting patterns in the archaeological record. Finally, coming into the European Palaeolithic, Dr Rob Davies describes his work at the British Museum looking at the archaeology of ancient Great Britain. As a mature student coming into archaeological research later in life, he provides an invaluable account of his experiences within academia.

Four biological anthropologists and paleoanthropologists are featured in the third section. This section covers topics such as evolutionary medicine, comparative anatomy and the significance of new fossil discoveries. Dr Emma Pomeroy first describes some of her latest work in evolutionary medicine on the osteological indicators of body fatness (Pomeroy *et al*., 2018), discussing the implications of this work on modern health. She also sheds further light on the Neanderthal remains from excavation of Shanidar Cave. Professor Chris Stringer talks us through his expansive career in physical anthropology, including his PhD at the University of Bristol which led to the establishment of the Out of Africa hypothesis (Stringer and Andrews, 1988). Professor Katerina Harvati describes some of her most recent research at Apidima Cave on some of the oldest *Homo sapiens* fossils outside of Africa (Harvati *et al.,* 2019). She goes on to discuss some of the technological and methodological advancements that have revolutionized modern anthropological science as well as some of academia's socio-political issues that still require attention, like the representation of women and ethnic minorities in human evolution research as well

as sexual harassment. Finally, Professor Bernard Wood recounts his experiences working with Richard Leakey and other well-known paleoanthropologists during the 'golden era' of fossil discoveries.

The fourth section includes three interviews from researchers working within primatology and evolutionary anthropology. First, Professor Susana Carvalho describes how she helped to establish the field of 'primate archaeology' (Haslam *et al*., 2009). She also outlines the progression of the Gorongosa Field School and Palaeo-Primate Project in Mozambique which she directs. Like many others, she also strongly advocates the training of local students to lead research in these areas. Then, Dr Isabelle Winder, a self-proclaimed 'question-led researcher', discusses the broad nature of her past and present projects, including some very interesting work in the modelling of non-primate species distributions in response to climate change (Hill and Winder, 2019). Finally, Professor Fiona Jordan discusses her work on the VariKin project which uses data, methods and theory from anthropology, biology, linguistics and psychology to explore kinship system diversity. Interestingly, in this conversation, she reflects on her experiences working in academic institutions all over the world and discusses some of the national differences that she has found.

Last, the final section focuses on individuals working on evolutionary genetics as it features conversations with two population geneticists. First, Professor Eske Willerslev discusses the significance of environmental DNA (Willerslev *et al*., 2003) for understanding biological activity in the past, a field within evolutionary genetics that he founded. He also discusses some of his biggest achievements, such as the first whole-genome sequencing of an ancient human genome (Rasmussen *et al.*, 2010), and proposes some of the most promising avenues of future research for human evolution studies, such as proteomics. Second, Dr Pontus Skoglund addresses the interaction between archaeology and genetics, discussing some of the contentious issues between the two, such as the definition of ancestry. He also describes his research into the links between population migrations and the global transition to agriculture, archaic gene flow, early human evolution in Africa and more.

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