

# Book review: Out of Eden (Stephen Oppenheimer)

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Stephen Oppenheimer

OUT OF EDEN

The peopling of the world

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Until recently we had to rely exclusively on archaeology to learn about how human populations moved in the prehistoric past, but now we have a new method of investigation, DNA studies. These complement, and in some cases contradict, the archaeological evidence. In this fascinating book Stephen Oppenheimer, who is a foremost researcher in the subject, provides an excellent survey of what has emerged from recent work.

The DNA techniques that have been used are of two kinds. Mitochondrial DNA tells us about the maternal line of descent; Y chromosome analysis does the same for the male line. Most accounts of this work make use of a good deal of jargon, with liberal sprinkling of letters and numbers to identify the different genetic types, but Oppenheimer has made things easier for the reader by personalising the principal male and female lines and giving them names. Thus the main two daughters of the famous "Mitochondrial Eve" are called Manju and Nasreen. In the male line, similarly, we have Cain, Abel, and Seth. This certainly helps the reader to follow the story, as does Oppenheimer's jargon-free style laced with occasional flashes of humour.

As one would expect, Oppenheimer is firmly of the "Out of Africa" school, and in fact he thinks that the multi-regional hypothesis is hardly worth considering in the light of the DNA evidence. All modern non-African humans, he believes, are descendants of a small band of people who crossed the southern end of the Red Sea into Arabia about 85,000 years ago.

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The migrants followed a beachcomber existence, travelling eastwards round the shores of the Indian Ocean. They moved surprisingly fast; they could have taken as little as 6,000 to 10,000 years to reach Perak and another 4,000 to 10,000 to reach Australia. During this Long March various subgroups split off from the main body and trekked northwards, sending offshoots in other directions to east and west as they went. In many cases they seem to have followed the great rivers. The story becomes quite complicated at this stage, particularly in connection with the early explorations of Asia and the Far East.

Oppenheimer ascribes a lot of importance to climatic change, which played a part in the initial departure from Africa and continued to influence events subsequently, as forests came and went and sea levels fell and rose again. Most important of all was the Great Freeze, the Last Glacial Maximum, which occurred some 20,000 years ago. This produced far greater disruption and movement of northern human populations than at any time since, with large areas becoming uninhabitable although new land emerged farther south as sea levels fell. The peopling of the Americas occurred in the aftermath of the Great Freeze and that subject is treated in the final chapter.

Probably the most dramatic implication of Oppenheimer's theory is what it says about the origin of Europeans. At one time it was thought that they were descendants of an earlier exodus from Africa which became established in the Levant, but this group became extinct about 90,000 years ago so it is difficult to explain the gap of some 50,000 years between their disappearance and the arrival of the Cro-Magnons.

The majority opinion today is that Europeans arose separately, from a north African exodus, and it is further assumed that abstract thought, art, and technology then developed in Europe. Some have even suggested that language may have arisen at this time. Oppenheimer thinks all this is the result of complacent Eurocentricism. His view, which he claims is convincingly supported by the genetic evidence, is that there was only one exodus from Africa and that Europeans are a side branch from the original group.

These people left the main route and went north and then west, taking their already sophisticated art and technology with them and arriving in Europe 45–50,000 years ago. Far from being the cradle of human culture, therefore, Europe was the recipient. If anything, in fact, art and technology declined in Europe subsequently; Oppenheimer finds that the earliest cave paintings, at Chauvet, are better than those made subsequently.

Language, too, he believes, is very ancient; it may go back 2.5 million years. *Homo erectus* could certainly speak and quite possibly *Homo habilis* could too. Our large brains evolved to facilitate language, according to the principle that cultural change precedes genetic change.

The story told here is one of ever-accelerating cultural and

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technological evolution, and Oppenheimer concludes with a look towards the future and the prospects for our species. These are not necessarily rosy. First, there is the threat of disease. Because all non-Africans today arose from a small group of ancestors in the relatively recent past, we have remarkably little genetic diversity. The result is that we are dangerously susceptible to worldwide epidemics of infectious agents, such as we have already seen in the case of AIDS.

On the larger scale, we are still at risk from major climatic change. We are at present preoccupied with global warming caused by our own profligate use of fossil fuels, but in the longer term it is certain that the ice will return. "Taking the long view, the effects of global warming could be little more than a blip on the way to the next glacial maximum." If we do survive, Oppenheimer believes, we may or may not be biologically different, but we will certainly be culturally different.

This is one of the most stimulating and thought-provoking books on human origins I have read for a long time. The book is fully accessible to non-specialists; at the same time it contains comprehensive notes and discussion of alternative theories so it is suited to an academic as well as a general audience.

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