

# Foreword

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Between 69,000 and 75,000 years ago, in Indonesia, a gigantic super-volcano called Toba erupted. This spectacular explosion was an evolutionary forcing event that would change our human species dramatically.

When a volcano erupts, it sends a column of super-heated gas miles up into the atmosphere, carrying huge amounts of ash and pumice with it. As the column rises, the energy in it dissipates, and the column collapses in a searing torrent of ash called a pyroclastic flow. Everything it touches is incinerated.

For hundreds of miles around, nothing survived the initial stages of the eruption. Toba's flows blasted outwards, consuming everything in their path. At first, the energy in the flow made it hurtle across the surface of the oceans, supported like a terrible hovercraft on a cushion of superheated steam. Then it plunged down under the surface, creating tsunamis that rose tens of metres into the air, radiating outwards at terrific speed and utterly devastating the coastal areas they struck. Sulphur dioxide caused highly acidic rain that withered and killed all but the most resistant plants. Thick layers of volcanic ash covered the ground, choking new growth, and the effects lasted for many human lifetimes.

Toba was one of the biggest eruptions ever and certainly the greatest in human times. Mount St. Helens, which exploded in 1980, erupted about half a cubic kilometre of material. Krakatoa, in East Asia, erupted about 18 cubic kilometres in 1883. Thera, or Santorini, which devastated the Minoans about 3500 years ago, was, by comparison, huge and erupted at least 60 cubic kilometres of material, with global consequences and volcanic effects that went on for years. Toba was of a completely different scale. It erupted as much as 3,000 cubic kilometres of ash and other material, making it fifty times greater even than Thera. The Earth was plunged into a six year volcanic winter followed by a 1000-year ice age.

*Homo sapiens* first appeared in Africa around 150,000 years ago; one of a closely-related group of hominids that had populated the savannah over the preceding three million years. During that time, our ancestors learned how to talk, how to make fire and cook, and how to cooperate in groups. The first modern humans probably lived in a very similar way to earlier hominids.

When Toba erupted, thousands of kilometres away, the skies over Africa darkened – not for weeks or months, but for years. The weather grew cold. Strange dust fell, followed by acid rain. Vegetation died. Herbivores died in huge numbers. Carnivores died. And people died. Those who remained had to adapt or disappear.

The consensus amongst geneticists is that our numbers dropped to 2000 – 10,000 individuals. We were an endangered species.<sup>1</sup> Somehow, we survived and slowly began not only to recover numbers but also to expand and develop our geographical range. We now recognise that the defining characteristics of modern humans, such as our sophisticated language, love of art, creativity and the beginnings of our culture appeared only after Toba. All the evidence that we have for the evolution of faith and belief also comes from after the Toba event. We do not know if the people before it believed in deities, spirits or the supernatural. We have evidence that by 35,000 years ago, these cultural traditions were well established.

Cults and religions have several functions. In their simplest form, they represent an attempt to understand the Universe, to answer the questions ‘What am I?’ and ‘How did I get here?’ These questions are a constant in human history. They form the basis of religion, philosophy and science, each attempting to answer them in a different way. They have prompted humanity to scale the peaks of intellectual achievement. Without them, our culture would be very different and might not exist at all. We are what we are because we wonder, and our previous attempts to answer these fundamental questions have shaped us. They have informed our culture for tens of millennia and the consequences – for better or worse – cannot easily be escaped.

This book tells the story of how the first recognisably modern human culture evolved and came to dominate the Earth. Using the most recent and solid research, we tell the story in a way that provides new insights and allows a deeper understanding of how we came to be as we are; the story of what went wrong, and how.

The evidence, from contemporary archaeology, anthropology, biology, mythology and other disciplines tells us that our ancestors lived in a form of social organisation very different from that which we have long considered the human norm. This evidence suggests that in spite of our centuries of bloody history, we humans could still find a way to live together without violence; without domination of one another; in cooperation; and in respect both of each other and the planet we live on.

After all, this is how we lived for tens of thousands of years – before men made God.

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<sup>1</sup> Other species show similar bottlenecks at around the same time, including Lowland Gorillas. (Sally *et al.* *Insights into hominid evolution from the gorilla genome sequence.* Nature 483. March 2012.)