

Early men and women were equal, say scientists

Study shows that modern hunter-gatherer tribes operate on egalitarian basis, suggesting inequality was an aberration that came with the advent of agriculture

Hannah Devlin Science correspondent



The authors of the study argue that sexual equality may have proved an evolutionary advantage for early human societies, as it would have fostered wider-ranging social network (probably not including gardening). Photograph: Everett Collection / Rex Features

Our prehistoric forebears are often portrayed as spear-wielding savages, but the earliest human societies are likely to have been founded on enlightened egalitarian principles, according to scientists.

A study has shown that in contemporary hunter-gatherer tribes, men and women tend to have equal influence on where their group lives and who they live with. The findings challenge the idea that sexual equality is a recent invention, suggesting that it has been the norm for humans for most of our evolutionary history.

Mark Dyble, an anthropologist who led the study at University College London, said: "There is still this wider perception that hunter-gatherers are more macho or male-dominated. We'd argue it was only with the emergence of agriculture, when people could start to accumulate resources, that inequality emerged."

Dyble says the latest findings suggest that equality between the sexes may have been a survival advantage and played an important role in shaping human society and evolution. "Sexual equality is one of a important suite of changes to social organisation, including things like pair-bonding, our big, social brains, and language, that distinguishes humans," he said. "It's an important one that hasn't really been highlighted before."

The study, published in the journal *Science*, set out to investigate the apparent paradox that while people in hunter-gatherer societies show strong preferences for living with family members, in practice the groups they live in tend to comprise few closely related individuals.

The scientists collected genealogical data from two hunter-gatherer populations, one in the Congo and one in the Philippines, including kinship relations, movement between camps and residence patterns, through hundreds of interviews. In both cases, people tend to live in groups of around 20, moving roughly every 10 days and subsisting on hunted game, fish and gathered fruit, vegetables and honey.

The scientists constructed a computer model to simulate the process of camp assortment, based on the assumption that people would chose to populate an empty camp with their close kin: siblings, parents and children.

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When only one sex had influence over the process, as is typically the case in male-dominated pastoral or horticultural societies, tight hubs of related individuals emerged. However, the average number of related individuals is predicted to be much lower when men and women have an equal influence – closely matching what was seen in the populations that were studied.

"When only men have influence over who they are living with, the core of any community is a dense network of closely related men with the spouses on the periphery," said Dyble. "If men and women decide, you don't get groups of four or five brothers living together."

The authors argue that sexual equality may have proved an evolutionary advantage for early human societies, as it would have fostered wider-ranging social networks and closer cooperation between unrelated individuals. "It gives you a far more expansive social network with a wider choice of mates, so inbreeding would be less of an issue," said Dyble. "And you come into contact with more people and you can share innovations, which is something that humans do par excellence."

Dr Tamas David-Barrett, a behavioural scientist at the University of Oxford, agreed: "This is a very neat result," he said. "If you're able to track your kin further away, you'd be able to have a much broader network. All you'd need to do is get together every now and then for some kind of feast."

The study suggests that it was only with the dawn of agriculture, when people were able to accumulate resources for the first time, that an imbalance emerged. "Men can start to have several wives and they can have more children than women," said Dyble. "It pays more for men to start accumulating resources and becomes favourable to form alliances with male kin."

Dyble said that egalitarianism may even have been one of the important factors that distinguished our ancestors from our primate cousins. "Chimpanzees live in quite aggressive, male-dominated societies with clear hierarchies," he said. "As a result, they just don't see enough adults in their lifetime for technologies to be sustained."

The findings appear to be supported by qualitative observations of the hunter-gatherer groups in the study. In the Philippines population, women are involved in hunting and honey collecting and while there is still a division of labour, overall men and women contribute a similar number of calories to the camp. In both groups, monogamy is the norm and men are active in childcare.

Andrea Migliano, of University College London and the paper's senior author, said: "Sex equality suggests a scenario where unique human traits, such as cooperation with unrelated individuals, could have emerged in our evolutionary past."

Task: Summarize the information presented in the article. Cite two (2) examples to support your ideas.

COMPLETE WRITTEN ANSWER ON
THE BACK OF THE QUESTION SHEET

(11)

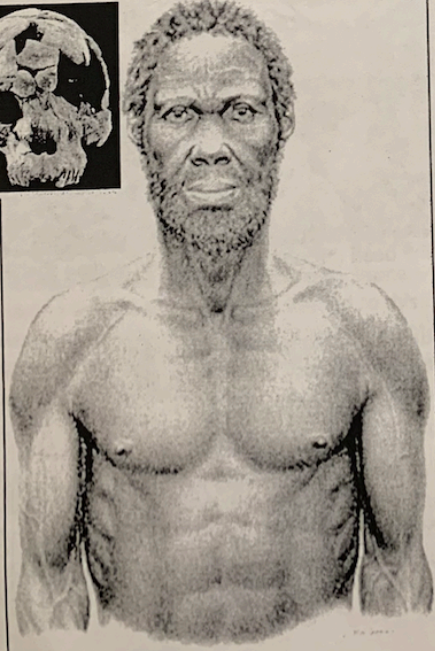
Early Humans – A Short Introduction

Directions: Read and analyze the information presented in the article on early Humans. Make sure to include a quote from the article to support your answers.

WHAT DO WE MEAN BY "EARLY HUMANS"?

Let us begin by identifying what we are not focusing on here. We are not focusing on the question of where human beings came from originally: whether we evolved, or were created by a higher power. As you know, this question is highly controversial. Many people, including most scientists around the world, believe that human beings experienced evolution, or gradual change as a species over time. According to this view, environmental factors caused gradual change in the genes of ancient apelike species, developing into modern humans over millions of years. Other people, including about 4 in 10 Americans (and 6 out of every 10 weekly churchgoers), believe in creationism, the idea that God created human beings in their present form fairly recently – within the last 10,000 years or so. The debate between evolution and creationism is interesting, and we must acknowledge that it is often personal for many students and their families. That said, it is not the focus of this reading.

Instead, we investigate early humans. We define these early humans (or *Homo sapiens*, to use the scientific name), as the first to be recognizable as people. These people were not Neanderthals, and they did not have the overhanging foreheads or knuckle-dragging posture of the "cavemen" one might see in a museum exhibit (or a Geico commercial). Rather, if dressed in 21st century style, early humans would look just like anyone else on a busy city subway. Far from speaking in grunts and simple sign language, they used language just as complex and sophisticated as our own languages (although they had not yet invented writing). They had families and loved ones, they had hopes dreams and fears, and they liked art and games and stories, just like anyone alive in the world today. We define early humans as, in short, the first recorded examples of us. So where did these people live, and how long ago did they appear?



EARLY HUMANS LIVED IN EASTERN AFRICA

The picture at the right represents some of our clearest ideas about early humans. It was produced by artist Jay Matternes, from the skull of the oldest known bones of a human being anywhere in the world. The skull (also pictured), was discovered in shattered fragments in Ethiopia in 1997, and put back together. Matternes imagined adding muscles, skin, and hair to produce this drawing, much as police artists do on television crime dramas like *CSI* or *Bones*. Today, the skull is on display in a museum in Ethiopia, but the pictures are available all around the world, to anyone who has internet access.

The bones used to create this picture were discovered and reassembled by researchers who study human beings and our ancient history, in a field known as anthropology. These anthropologists –Ethiopian Dr. Berhane Asfaw and American

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Dr. Tim White and – believe the bones date from about 160,000 years ago. Asfaw and white's discovery supports the

most common theory among anthropologists: that we first originated in Eastern Africa between 150,000 and 200,000 years ago. Although there is much disagreement about precisely where and precisely when, the evidence strongly suggests that all modern humans in the world today are descended from people who lived in Africa long, long ago.

HOW DID EARLY HUMANS LIVE?

Most, if not all, early humans were nomadic. This means that, rather than having one settled home like most people today, they moved around a large territory throughout the year. Farming hadn't been invented yet, so people lived off what food they could find or hunt, and food and water supplies varied and changed with the seasons, with the yearly rising and falling of rivers, and the migration of animals. Nomads had to move around to survive.

Until about 40,000 years ago, early humans had a very simple culture. It was only around this time that humans appear to have begun developing behaviors that we would recognize as typical of modern humans today. These behaviors include creating artwork (such as the cave paintings in Lascaux, France, at right) and musical instruments, building permanent fire-pits, wearing animal skins as clothing and dying fabrics (and creating needles and so on, with which to sew the clothing), wearing jewelry, mourning the dead through funerals, and building shelters (rather than just living in caves).



Tens of thousands of years ago, the quality of people's lives around the world may have varied quite a bit, although perhaps not as much as it does today. Whether a person lived an easy or a difficult life would have depended a lot on the climate and the weather during his or her lifetime.

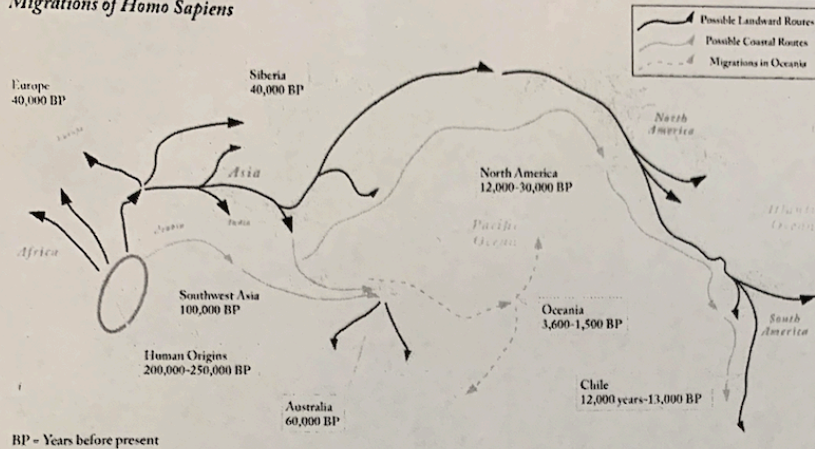
HOW AND WHEN DID HUMANS SPREAD AROUND THE GLOBE?

Fossil and DNA evidence has shown that Homo sapiens evolved in Africa, and then spread outward around the globe. To figure out exactly how, where, and when, scientists and historians use DNA evidence, fossils, and archaeology (the study of human artifacts and culture) to piece together a clear story about what happened. As the gaps in this story continue to be filled, it will no doubt change. But for now, here's what scientists believe.

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Migrations of Homo Sapiens



From their beginnings in Africa, early humans went first to Asia between 100,000 and 60,000 years ago. By 60,000-45,000 years ago, we had settled in the islands of the South Pacific: Indonesia, Papua New Guinea, and Australia. We entered Europe about 40,000 years ago, along the north and south coasts of the Mediterranean Sea. And about 15,000

years ago, many scientists believe, humans crossed from Asia to North America and from there to South America. Others disagree with this hypothesis.

HOW DID HUMANS GET TO LOOK SO DIFFERENT FROM EACH OTHER?

Because of early humans' complex culture and technology, we were able to spread throughout the world and live in a range of different physical environments – from the tropical islands of the South Pacific, to the snow treeless mountains of the Himalayas, to the temperate forests of the Pacific Northwest. This spreading across the globe may have contributed to the great diversity in humans' physical appearance that we see in the world today. This is because, in each environment, people with certain characteristics survived more easily and had more children, thus passing their useful characteristics on to future generations. For example, in a very cold environment, short, stocky people might survive more easily, because they conserved body heat more efficiently. These short, stocky people would give birth to short, stocky children, and over many generations, the entire society would develop a more compact body size. Similarly, some scientists believe that in a very hot and sunny environment, it may have been an advantage to have darker skin, to protect from overexposure to the sun. Thus dark skin may have become increasingly common in sunny places.

Other times, cultural selection may have impacted what a particular group of people looked like. If a cultural group decided it was beautiful to have red hair and freckles, then the red-haired, freckled people would have more success finding partners and having children. Over time, the entire society would include more and more red-haired, freckled people. So basically, humans' ability to use technology and to move around led to our spreading around the globe, and this led to this great diversity in our physical appearance – because of environmental factors, because of culture, or both. And yet, at the genetic level, humans seem to have changed very little over hundreds of generations. We are all more alike one another in our DNA, than, say, any two fruit flies or any two bacteria.

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