



Iron: The Origin Story

Slowly, word reaches your village. Invaders are headed your way and they are armed with deadlier weapons than yours. Even worse, they outnumber your people. Their advanced technology allows them to maintain larger populations and reshape the world around them. These are not alien invaders. They're humans, and they have learned to harness the most common metal on Earth: iron.

Early human history is usually studied in three periods: the Stone, Bronze, and Iron Ages. Historians organize early human history in this way because metal and stone tools are often the only artifacts we have from those times. This organization is most accurate when we are talking about Afro-Eurasia, an area that includes the continents of Europe, Asia, and Africa.

The Iron Age lasted roughly 1,000 years from 1500 BCE to 500 BCE. We're used to iron now, but iron-making was an important new technology back then. To make iron, you needed a furnace that could handle 1,538 degrees Celsius (2,800 degrees Fahrenheit). It took thousands of years before humans learned how to make a furnace that hot. Before the Iron Age, humans could only get their furnaces to about 950 degrees celsius (1,740 Fahrenheit).

The timing of the first iron-smelting¹ technologies is significant. Toward the end of the Bronze Age in 1200 BCE, several major ancient states like Egypt and Greece began to fall. Different factors caused this failure, including natural disasters and foreign invasions. The introduction of iron at this time quickly changed the ancient world. Iron changed politics, trade, nature, and society all over Eurasia.

Swords into ploughshares: Iron reshapes power dynamics

Iron is stronger than bronze. However, the real advantage of iron is that it is easier to find and easier to make than bronze.

Some states depended on trade to get the materials they needed to make bronze weapons. If trade was interrupted, those societies could not make weapons or tools. Meanwhile, societies who began making iron grew stronger because they could make weapons faster and cheaper.



[Stone tools](#), Neolithic, Hungarian, c. 5400-4000 BCE. By Bjoertvedt, CC BY-SA 4.0



[Bronze Age Sword](#), Eastern Zhou Dynasty, China, c. 500-400 BCE. By British Museum, public domain.

¹ Smelting is the process of removing metal from ore by melting it. Ore is a kind of rock that has a lot of metal in it.

More ore: Iron reshapes trade networks

Different parts of Eurasia were connected during the Bronze and Iron Ages. For several centuries, armies and merchants brought bronze and iron technologies along trade networks. Other parts of the world such as the Americas were left out of the Iron Age transformations. They did not use iron until about 3,000 years later in the sixteenth century CE.

The earliest evidence of iron smelting comes from the Hittites. From 1500 BCE to 1177 BCE, the Hittites ruled an empire in Anatolia, which is in present-day Turkey.

By around 1000 BCE, people all over Eurasia were using iron tools. In India and China, iron was used to make farming tools that helped farmers grow more food. This led to huge population increases in those areas.

There is evidence that iron developed in Africa around the same time it developed in Anatolia. Central African communities used iron to clear forests and expand their agricultural societies.



Iron Age Farming Tool. By British Museum, public domain.



[The Hittite Empire](#), approximate extent of the maximum area of the Hittite rule (light green) and the Hittite rule ca. 1350-1300 BCE (green line). By Ikonact, CC BY-SA 3.0.

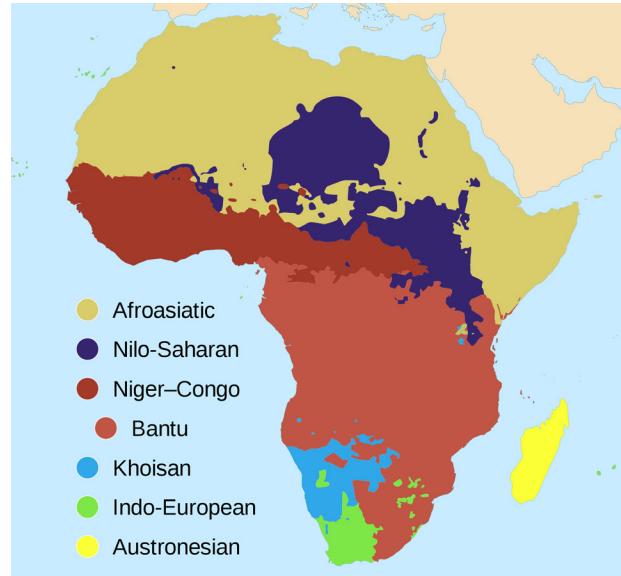
Turning trees into swords: Iron reshapes the environment

Iron Age societies changed the environment in major ways. Iron smelting furnaces needed lots of wood, which was the most common fuel at the time.

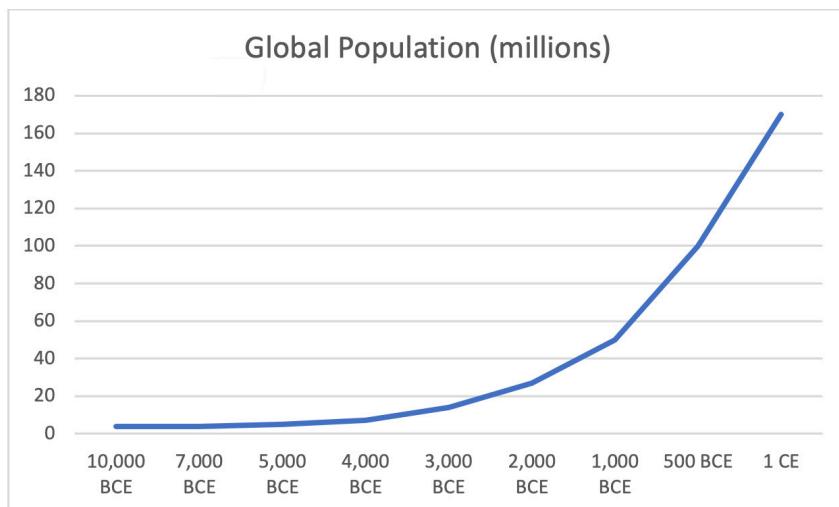
Iron Age societies had to plant more crops to feed their growing populations. So, they cut down more trees to make larger fields and produce more wood to fuel their furnaces. Soon, forests started to disappear. Populations increased slowly for most of human history, but human populations grew quickly during the Bronze and Iron Ages.



[Axes from the Stone, Bronze, and Iron Ages.](#) By British Museum, public domain.



[Map of major African language families.](#) By SUM1, CC BY-SA 4.0.



Population data adapted from McEvedy, Colin and Richard Jones. *Atlas of World Population History*. New York: Facts on File, 1978 (p. 344).



Iron forges social relationships

As iron helped populations grow, empires expanded their territories. These empires needed government and iron technology to support their large armies. Empires began ruling people in faraway places. This created a new social order, as rulers tried to manage all the people of their huge empires.

Even after the Iron Age, iron smelting technologies continued to change relationships between people. The empires of Rome and Han China used iron tools to grow more food. This food helped feed their growing cities. To manage their large empires, rulers built new roads and other infrastructure.²

Iron was cheap to make, so even poor farmers could afford iron tools.

Gender mattered when it came to iron work. The production of iron was done by men in most regions, even in places where women were using iron. As iron became more important to communities, men often held more power in those communities.

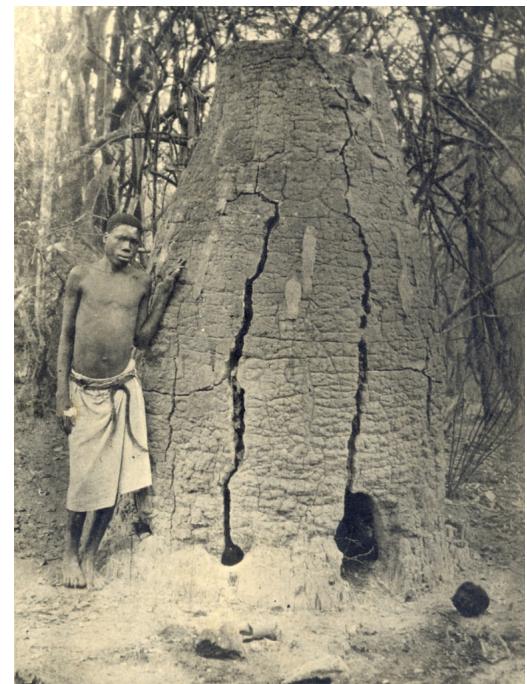
One metal, many paths

The journey to iron technology took different routes. Historians Catherine Fourshey, Rhonda Gonzales, and Christine Saidi explain the route of the Bantu³ people in Central Africa. The Bantu used termite mounds to make furnaces for melting iron.

When it came to metal working, Bantu society did not strictly separate “men’s work” from “women’s work.” It was far more complex. Evidence from the Bantu language confirms that Bantu speakers made connections linking termite mounds, iron smelting, and motherhood. The iron furnaces were connected with the idea of women giving birth, which was linked to matrilineal history. Matrilineal societies trace ancestry through mothers. This is just one example of the ways in which humans were connected to iron working, the environment, and each other.



Termite Mound, Ghana. By Shawn Zamechek, CC BY 2.0.



Iron smelting furnace, nineteenth century. By National Archives of Malawi, CC BY-SA 4.0.

² Infrastructure refers to the physical and organizational structures that allow a society to function. It can refer to physical structures like bridges, roads, and water supply. It can also refer to organizational structures like the education system.

³ Bantu refers to a group of languages spoken in Central and Southern Africa.

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