

If evolution is real, then why isn't it happening now? An anthropologist explains that humans actually are still evolving

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Inuit people such as these Greenlanders have evolved to be able to eat fatty foods with a low risk of getting heart disease.

Olivier Morin/AFP via Getty Images

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If evolution is real, then why is it not happening now? – Dee, Memphis, Tennessee

Many people believe that we humans have conquered nature through the wonders of civilization and technology. Some also believe that because we are different from other creatures, we have complete control over our destiny and have no need to evolve. Even though lots of people believe this, it's not true.

Like other living creatures, humans have been shaped by evolution. Over time, we have developed – and continue to develop – the traits that help us survive and flourish in the environments where we live.

I'm an anthropologist. I study how humans adapt to different environments.

Adaptation is an important part of evolution. Adaptations are traits that give someone an advantage in their environment. People with those traits are more likely to survive and pass those traits on to their children. Over many generations, those traits become widespread in the population.

The role of culture

We humans have two hands that help us skillfully use tools and other objects. We are able to walk and run on two legs, which frees our hands for these skilled tasks. And we have large brains that let us reason, create ideas and live successfully with other people in social groups.

All of these traits have helped humans develop culture. Culture includes all of our ideas and beliefs and our abilities to plan and think about the present and the future. It also includes our ability to change our environment, for example by making tools and growing food.

Although we humans have changed our environment in many ways during the past few thousand years, we are still changed by evolution. We have not stopped evolving, but we are evolving right now in different ways than our ancient ancestors. Our environments are often changed by our culture.

We usually think of an environment as the weather, plants and animals in a place. But environments include the foods we eat and the infectious diseases we are exposed to.

A very important part of the environment is the climate and what kinds of conditions we can live in. Our culture helps us change our exposure to the climate. For example, we build houses and put furnaces and air conditioners in them. But culture doesn't fully protect us from extremes of heat, cold and the sun's rays.



The Turkana people in Kenya have evolved to survive with less water than other people, which helps them live in a desert environment.

Tony Karumba/AFP via Getty Images

Here are some examples of how humans have evolved over the past 10,000 years and how we are continuing to evolve today.

The power of the sun's rays

While the sun's rays are important for life on our planet, ultraviolet rays can damage human skin. Those of us with pale skin are in danger of serious sunburn and equally dangerous kinds of skin cancer. In contrast, those of us with a lot of skin pigment, called melanin, have some protection against damaging ultraviolet rays from sunshine.

People in the tropics with dark skin are more likely to thrive under frequent bright sunlight. Yet, when ancient humans moved to cloudy, cooler places, the dark skin was not needed. Dark skin in cloudy places blocked the production of vitamin D in the skin, which is necessary for normal bone growth in children and adults.

The amount of melanin pigment in our skin is controlled by our genes. So in this way, human evolution is driven by the environment – sunny or cloudy – in different parts of the world.

The food that we eat

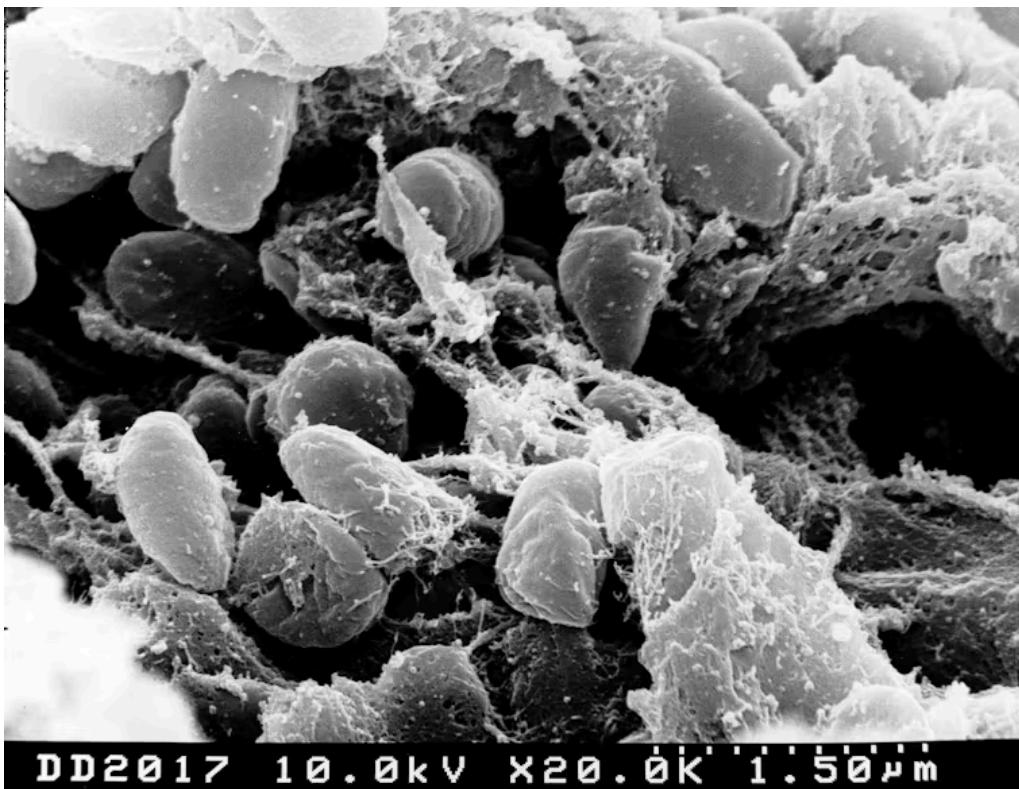
Ten thousand years ago, our human ancestors began to tame or domesticate animals such as cattle and goats to eat their meat. Then about 2,000 years later, they learned how to milk cows and goats for this rich food. Unfortunately, like most other mammals at that time, human adults back then could not digest milk without feeling ill. Yet a few people were able to digest milk because they had genes that let them do so.

Milk was such an important source of food in these societies that the people who could digest milk were better able to survive and have many children. So the genes that allowed them to digest milk increased in the population until nearly everyone could drink milk as adults.

This process, which occurred and spread thousands of years ago, is an example of what is called cultural and biological co-evolution. It was the cultural practice of milking animals that led to these genetic or biological changes.

Other people, such as the Inuit in Greenland, have genes that enable them to digest fats without suffering from heart diseases. The Turkana people herd livestock in Kenya in a very dry part of Africa. They have a gene that allows them to go for long periods without drinking much water. This practice would cause kidney damage in other people because the kidney regulates water in your body.

These examples show how the remarkable diversity of foods that people eat around the world can affect evolution.



These bacteria caused a devastating pandemic nearly 700 years ago that led humans to evolve resistance to them.

Image Point FR/NIH/NIAID/BSIP/Universal Images Group via Getty Images

Diseases that threaten us

Like all living creatures, humans have been exposed to many infectious diseases. During the 14th century a deadly disease called the bubonic plague struck and spread rapidly throughout Europe and Asia. It killed about one-third of the population in Europe. Many of those who survived had a specific gene that gave them resistance against the disease. Those people and their descendants were better able to survive epidemics that followed for several centuries.

Some diseases have struck quite recently. COVID-19, for instance, swept the globe in 2020. Vaccinations saved many lives. Some people have a natural resistance to the virus based on their genes. It may be that evolution increases this resistance in the population and helps humans fight future virus epidemics.

As human beings, we are exposed to a variety of changing environments. And so evolution in many human populations continues across generations, including right now.

Hello, curious kids! Do you have a question you'd like an expert to answer? Ask an adult to send your question to CuriousKidsUS@theconversation.com. Please tell us your name, age and the city where you live.

And since curiosity has no age limit – adults, let us know what you’re wondering, too. We won’t be able to answer every question, but we will do our best.

Michael A. Little does not work for, consult, own shares in or receive funding from any company or organization that would benefit from this article, and has disclosed no relevant affiliations beyond their academic appointment.

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