COLLECTIVE LEARNING

PART 1

BIG HISTORY PROJECT

780L
COLLECTIVE LEARNING

USING LANGUAGE TO SHARE AND BUILD KNOWLEDGE

By David Christian, adapted by Newsela
In the first essay of a four-part series, David Christian explains what collective learning is and why it makes us humans so unusual.
What is collective learning?

Look at the technology around you: your phone, your computer, your car. Think about how challenging it was to make them. Imagine if you could never speak to another human being. How much of that technology could you think of? How much of it could you actually build? No matter how smart and creative you might be, the answer is probably: “Not much!”

The same is true of other parts of human society. Religions, the law, art and science all represent collective knowledge. All of these things were not invented by one smart person. They were actually built up over time. Slowly, they appeared as millions of people shared their ideas over many generations.

The power of information

A species with lots of information about its environment can better take advantage of its environment. A lioness needs to know where to hunt. If she doesn’t have this information, she and her cubs will die. But if she can learn to track her prey, she will be able to eat. Her hunting will probably result in more offspring.

But the lioness is still like a single computer. She has only as much memory as she can gather in her lifetime. Humans are more like linked computers, with unlimited memory to grow. Our ability to share knowledge means we can get into a huge network of information made by millions of humans, living and dead. No one person knows it all. Human knowledge is shared when necessary, and passed on and added to by each generation.

For example, before there was farming, elders passed on what they knew to younger people. They taught them how to hunt. They explained what seasons were best for certain foods. As a result, each human learned the knowledge that had been gathered by past generations. In turn, each person
could add to that body of knowledge. Humans have a huge amount of information about the world. All that information equals a lot of power.

Collective learning helps people work together better. In fact, we humans now share information so well that we can work together in teams of people stretching across the Earth. No other creature does teamwork so well.

Sharing information doesn’t give us power just over our surroundings. It also gives us power over other humans. Powerful people are usually those with the most information. Well-connected people can form larger and more powerful alliances. Information really is power!

Language and human history

So why don’t chimps share information the way humans do? It’s probably not because they are too dumb. The problem is in the sharing. Chimp language does not allow chimps to share enough information with each other.

Try telling a friend how to play football without talking, writing, or drawing. Using your hands to talk can really only help you talk about what is right in front of you. You need to be able to talk about the future and the past, and things that don’t yet exist.

Think of the power of a simple phrase such as “pink elephant.” By saying those two words, I can give you a picture of something that does not exist and never will. Chimp language cannot do such things. Humans regularly exchange word pictures, or symbolic language.

Symbolic language lets people pass down ideas. It’s how we’ve gathered so much technology over perhaps 200,000 years. These have combined to give us more powerful ways of dealing with our surroundings and with each other.

That’s why I believe collective learning is the key to understanding human history!

When did collective learning begin?

That’s really a way of asking, “When did human history begin?” To answer this question, we need to think like an archaeologist. An archaeologist studies people from the past.

If you were an archaeologist, what would you expect a collective learning species, like humans, to leave behind? One possible answer: technologies such as stone tools. That’s exactly why Louis Leakey thought that we should regard *Homo habilis* as humans. As early as 2 million years ago, they were making simple stone tools. But there’s a problem. Scientists who study primates later found that chimps can make tools. They use twigs to

Hafted tools demonstrate that early humans learned collectively
get termites out of termite mounds. In fact, lots of animals use tools, but none seem to build on new technologies over time as well as humans do.

On the other hand, we know that some humans went to Australia about 50,000 years ago. This meant they had great boat-building skills. They would have also known how to navigate. At the same time, in Eurasia, new types of tools and new kinds of art started to appear.

But collective learning likely goes back more than 50,000 years ago. In Africa, there is strong evidence of new technologies from 100,000 years ago or even earlier. Delicately made stone tools may have appeared 200,000 years ago.

A model of collective learning networks

Now we need to examine how collective learning works in different periods of human history. The diagram opposite is a very simple map of the relations between three people. We will use it to help us think about how humans exchange information and how these exchanges have shaped human history. You can imagine this as a map of collective learning between people in a few small communities of foragers.

Could you draw such a map for your classroom? How similar would it be? You might find small clusters of close friends, but you would also find that some people have more links than others. And you’ll find that some people have links that reach well beyond the classroom. If you map all the links, you’ll find that it’s the long-distance links that hold entire networks together. Those long-distance links are what allow information to travel through the whole network.

As the course moves along, we’ll look more carefully at the relationship between networks and collective learning. We’ll examine how this relationship shaped human history.
Sources


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