The abacus is a tool, just like the calculator is a tool. Your smartphone’s calculator app — that’s a tool, too.

But are numbers themselves a tool? That’s the case Caleb Everett makes in his new book, “Numbers and the Making of Us: Counting and the Course of Human Cultures.” Everett, a professor of anthropology at the University of Miami, shows that numbers — or the words and symbols we use to represent specific quantities — emerged through a series of slow historical steps. Numbers may feel instinctual. They may seem simple and precise. But Everett synthesizes the latest research from archaeology, anthropology, psychology and linguistics to argue that our counting systems are not just vital to human culture but
also were invented by that culture. “Numbers are not concepts that come to people
naturally and natively,” he writes. “Numbers are a creation of the human mind.”

I spoke to Everett by phone about the book.

**Craig Fehrman:** Are human beings hardwired to think numerically?

**Caleb Everett:** We seem to have some kind of innate predisposition to numbers, but
it’s smaller than you’d think. At an early age, we have the ability to tell the difference
between bigger groups — between, say, eight things and 16 things. We can also tell one
thing from two things or two things from three things. But other primates like chimps
can do that. And once you get to four things, it starts to get tricky.

**CF:** That’s where numbers come in, right? In your book, you suggest that our five-
fingered hands — and the fact that we walk on our legs and keep those hands free — may
have played a big role here.

**CE:** My suspicion is that there were many, many times in history when people realized
in an ephemeral way that this quantity is the same as that quantity — that this five, in
terms of their fingers, is the same as that five, in terms of goats or sheep. It’s no
coincidence that many unrelated languages have a numerical structure built around 10
or that the word for five is often the same as the word for hand. Once someone else heard
you referring to something as a “hand” of things, it became a cognitive tool that could be
passed around and preserved within a particular culture.

**CF:** Once a particular culture has numbers, what does that allow?

**CE:** The way our cultures look, and the kinds of technology we have, would be radically
different without numbers. Large nation-states aren’t really possible without numbers.
Large agricultural societies aren’t possible, either.

Let’s say that two agricultural states in Mesopotamia, more than 5,000 and maybe as
many as 8,000 years ago, wanted to trade with each other. To trade precisely, and we
can see this in the archaeological record, they needed to quantify. So they cooked up
these small clay tokens, with each token representing a certain quantity of a certain
commodity like grain or beer. The tokens were then cooked inside a clay vessel that
could be transported and cracked open. It was essentially a contract — you owe me this
many whatever.
At some point someone realized that in addition to putting the tokens in the vessel, they could make marks on the outside of the vessel for how many tokens were inside. And then someone realized the iconographical marks were enough to convey the meaning. Something like writing wasn’t invented in one fell swoop. But it’s not a stretch to say that the letters we write with in books and on websites owe a lot to that Mesopotamian system.

**CF:** In your book, you also write about your extensive fieldwork with anumeric peoples, or hunter-gatherer cultures that do not possess their own words or symbols for counting.

**CE:** There are about 7,000 languages in the world today, and the vast majority have numbers systems. But dozens have systems with only a handful of numbers. And a few languages and other communications systems, like the Pirahã’s in Brazil, have only imprecise words like *hói* [one or a couple] and *hoí* [a few]. Many experiments have shown that without numbers, the Pirahã struggle with basic quantitative tasks. They have a hard time matching one set of objects to another set of objects — lining up, say, eight spools of thread next to eight balloons. It gets even harder when they have to recall an exact quantity later.

It’s important to stress that these people are totally normal and totally intelligent; if you took a Pirahã person and raised them in a Portuguese home, they would learn numbers just fine. But without recourse to a number system, they struggle with counting. It’s an example of how powerful these cognitive tools can be.

**CF:** It’s also a hint at what humans were like before numbers, or what other cultures would be like without numbers today.

**CE:** Right. We’re not so special as a species as we sometimes think. Concepts that seem so simple to us — like “what is a prime number?” or “what is pi?” — took humans thousands of years and haphazard processes to arrive at.

You may think, “I’m a numbers person.” Well, no, you’re not. Playing soccer is not innate, even though some humans are better at soccer than others. Numbers are the same way. You’re not innately a mathematician. You benefit from the cultural innovations that came before you. You’re much more like the Pirahã than you realize.