

# 9.2

## A BIG HISTORY OF EVERYTHING

**0:00–0:35** By the year 1500...mankind is breaking the ocean barrier. And these new liquid highways amplify the very thing that makes man so special — the sharing and spreading of knowledge...what big historians call collective learning.

THE EIGHTH THRESHOLD

**0:35–2:28** I think globalization from 1500 is a sort of a gear shift in the speed of collective learning.

SHIPS

This is the first worldwide web. But the network is slow. Information, ideas, inventions can only spread as fast as a horse can run or a ship can sail. To circle the globe takes over a year. But soon, it all begins to change. By revealing connections across space and time...Big History shows how mankind will cross another portal, thanks to a revolutionary machine. To create this machine, Big History connects metals brought by meteors...ancient plants reincarnated as coal...and the almost magical property of water as it shape-shifts into a new form. That revolutionary machine? The steam engine.

By heating water, you create this steam pressure. It can force a piston, for example, to start moving up and down, machines to drive spinning machines that will create textiles much, much faster. And then, you can put it onto a platform with wheels and lay iron rails across the landscape. All of this is a product of utilizing this extraordinary property of heated water again.

The steam engine leads to the gasoline engine... and ignites a new threshold in Big History...for all of history, we have been limited almost completely to power from human and animal muscles... wind and flowing water. Now, mechanical engines, fueled by the power of the sun captured in ancient plants, make us far more productive and powerful. By 1900, the world's steam engines will equal the power of 5 billion men. The modern revolution accelerates everything — how we produce and grow things, how we travel...and communicate... and it elevates man to a unique status in the story of our planet.

**2:28–5:14**

MECHANICAL ENGINES

A single species, for the first time in almost 4 billion years, has become so powerful that it dominates the biosphere. And that's a fantastically interesting period in history, and we're living in it right now.

It is an era unlike any before. But power is not the only key to open this portal. The other is information.

## 5:14–6:17 Iceberg straight ahead!

**INFORMATION** Throughout all previous history, we were tethered to our voices, which could only travel as far as a sound wave could carry them, a maximum of 600 feet. But now our voices and ideas can ride on radio waves made possible by the electromagnetic force born in the Big Bang. Today, there are 7 billion cell phones in the world...one for every person on Earth. We are each connected to a global network...that transmits information at the speed of light.

I mean, short of teleportation, I really can't think of anything more magical than that.

In our modern era, the pace of progress explodes, leading to a staggering fact. During the era of the steam engine, it took 150 years for man's collective knowledge to double. Today, it takes two years. By 2020, it will take 72 hours. Big History brings us from the Big Bang through a series of amazing thresholds...to the world around us today. But can it foresee mankind's next momentous turning points, and do they promise even faster progress... or the end of everything?

## 6:17–7:21

THE PACE  
OF PROGRESS