

Another time another place

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While trying to bury his nut in the ice age, our hero, Scrat, uncovers a frozen time machine. Accidentally activating the machine, he goes on a hilarious adventure chasing his precious nut through time.

<http://www.blueskystudios.com/>

Watch the movie "No Time For Nuts" on Youtube: <http://www.youtube.com/>

Dr Who

One of the most well-known and popular BBC programmes is *Dr Who*, a science fiction television series, in which Dr Who travels through time in his time machine. This time machine looks just like a blue police phone box – in fact the TARDIS is a blue police phone box. The Doctor and his chosen companion(s) travel backwards and forwards in time in the TARDIS, fighting enemies and villains and righting all the wrongs of the world.

The programmes started in 1963, and the current Dr Who, David Tennant, is the tenth person to play the character. It could be said that Dr Who is a national institution in Britain – Kylie Minogue appeared in the Christmas special in December 2007, and the music, the TARDIS, and the most famous villains, the Daleks, are familiar to everyone in the UK. In fact, when the Metropolitan Police objected to the use of the blue phone box, they lost, because people in the UK associate the blue phone box with *Dr Who* and his TARDIS time machine rather than with the police!

Games: <http://www.bbc.co.uk/>

Video: <http://www.bbc.co.uk/>

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Time Bandits Review

116 minutes, UK (1981), PG

Terry Gilliam's deranged, delightful journey into (and out of) world history. Starring John Cleese, Michael Palin and Sean Connery

Schoolboy Kevin (Craig Warnock) wakes up to find a black knight smashing through his bedroom wardrobe. He is followed by a clumsy band of dwarves. They've discovered a map of the universe's worm holes - the portals of time travel - and are stealing rich treasures from the past. Ralph Richardson's brilliantly down-to-earth Supreme Being is on their trail.

Warnock joins this crowd of people, and together they drop in on such legendary figures as Robin Hood (Cleese), who turns out to be hopelessly vague, Napoleon (Holm) who steals the show as a hilarious drunk obsessed with history's little men, and Agamemnon (Connery) who's kind, but ineffective.

Written by Michael Palin, *Time Bandits* is a completely crazy history lesson for over-intelligent kids, rich in visual extravagance and with enough dark gags about fruit and philosophy to keep any Python fan happy.

Shortened and adapted from: <http://www.channel4.com/>

The Time Machine

The Time Machine was written by H G Wells in 1895. It is perhaps one of the best known novels about the perils of time travel. The 2002 film version is the third film to be made of the original book.

Wikipedia starts their summary of the story something like this:

Plot summary

The book's main character is an amateur inventor and scientist living in London. He is identified simply as *The Time Traveller*. First he demonstrates to friends using a miniature model that time is a fourth dimension, and that a suitable machine can move back and forth in this fourth dimension. He then completes the building of a larger machine capable of carrying himself, and immediately sets off on a journey into the future.

The Time Traveller details the experience of time travel and the evolution of his surroundings as he moves through time. While travelling through time, his machine allows him to observe the changes of the outside world in fast motion. He observes the sun and moon traversing the sky and the changes to the buildings and landscape around him as he travels through time. His machine makes him disoriented. What is outside the machine is blurred and faint.

His journey takes him 800,000 years into the future, where he finds an apparently peaceful, pastoral, communist future filled with happy, simple humans who call themselves the Eloi. The Eloi are about 120cm tall, pink-skinned and frail-looking, with curly hair, small ears and mouths, and large eyes. Males and females seem to be quite similar in build and appearance. They have high-pitched, soft voices and speak an unknown language. They appear at first to be quite unintelligent and child-like and live without quarrels or conflict.

*Slightly adapted from: <http://en.wikipedia.org/>
<http://www.imdb.com/>
<http://timemachine.countingdown.com/>*

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How to Build a Time Machine

By Paul Davies

It wouldn't be easy, but it might be possible.

WORMHOLE GENERATOR/TOWING MACHINE

OVERVIEW

- *Traveling forward in time is easy enough. If you move close to the speed of light or sit in a strong gravitational field, you experience time more slowly than other people do - another way of saying that you travel into their future.*
- *Traveling into the past is rather trickier. Relativity theory says it is possible in some circumstances: a rotating universe, a rotating cylinder and, most famously, a wormhole - a tunnel through space and time.*

PETER BOLLINGER

Time travel has been a popular science fiction theme since H G Wells wrote his celebrated novel *The Time Machine* in 1895. But can it really be done? Is it possible to build a machine that would transport a human being into the past or future?

Our best understanding of time comes from Einstein's theories of relativity. Before these theories, time was thought to be the same for everyone no matter where they were or what they were doing. In his special theory of relativity, Einstein put forward that the time between two events depends on how the observer is moving. Crucially, two observers who move differently will experience different times between the same two events.

Speed is one way to jump ahead in time. Gravity is another. In his general theory of relativity, Einstein predicted that gravity slows time. Clocks run a bit faster in the attic than in the basement, which is closer to the center of Earth and therefore deeper down in a gravitational field. Similarly, clocks run faster in space than on the ground. Once again the effect is minuscule, but it has been directly measured using accurate clocks. Indeed, these time-warping effects have to be taken into account in the Global Positioning System. If they weren't, sailors, taxi drivers and cruise missiles could find themselves many kilometres off course.

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Adapted and shortened from: <http://www.sciam.com/>

An Interview with Paul Davies: <http://www.abc.net.au/>



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Is time travel possible?

*John Gribbin is an astronomist and full-time science writer who has written more than 100 books – both fiction and non-fiction and including **Birth of Time**. Some of his books are written with his wife, who he says 'makes him write more crisply'.*

*Mary Gribbin has written science books for children for many years, like **Inventing the Future** in 2004, which she co-authored with her husband.*

In one of the wildest developments in serious science for decades, researchers from California to Moscow have recently been investigating the possibility of time travel. They are not, as yet, building TARDIS lookalikes in their laboratories; but they have realised that the logical conclusion of Albert Einstein's general theory of relativity is that there is nothing in the laws of physics to prevent time travel. It may be extremely difficult to put into practice; but it is not impossible.

So what do Einstein's equations tell us, if pushed to the limit? As you might expect, the possibility of time travel involves black holes. A simple black hole won't do, though. In the 1960s, the New Zealand mathematician Roy Kerr found that things were different if the black hole was rotating. And now there are other kinds of black hole time machines, involving "wormholes". So, a black hole at one place and time is connected to a black hole in another place and time (or the same place at a different time).

Michio Kaku, a professor of physics in New York, has a fascinating chapter on how to build a time machine in his book called *Hyperspace*, 1995 (Oxford UP). Kaku's description of a time machine is something fans of Dr Who and H.G. Wells would be happy with:

It consists of two chambers, each containing two parallel metal plates. The intense electric fields created between each pair of plates (larger than anything possible with today's technology) rips the fabric of space-time, creating a hole in space that links the two chambers.

Taking advantage of Einstein's special theory of relativity, which says that time runs slow for a moving object, one of the chambers is then taken on a long, fast journey and brought back: Time would pass at different rates at the two ends of the wormhole, and anyone falling into one end of the wormhole would be instantly thrown into the past or the future as they emerge from the other end.

Shortened and adapted from: <http://www.lifesci.sussex.ac.uk/>