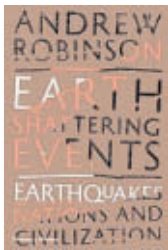


# How earthquakes shake up history

**Natural disasters can have unexpected repercussions, finds Michael Prodger**



**Earth-Shattering Events**  
Earthquakes, Nations and Civilisations  
by Andrew Robinson

Thames & Hudson, 256pp; £18.95 \* £16.95

One of the many reasons why Britain is such a blessed isle is that it is seismically stable. In the past dozen years alone earthquakes or their attendant tsunamis have caused untold destruction around the Indian Ocean, in L'Aquila in Italy, Port-au-Prince in Haiti, Canterbury in New Zealand, Tohoku in Japan — including the meltdown of the Fukushima nuclear plant — and throughout Nepal. Yet, while the rest of the world has shaken, the British Isles have stood firm.

However, as the history and science writer Andrew Robinson points out in his fascinating and fact-rich study of earthquakes and their consequences, England is no stranger to the earth's pitching and yawing. In 1248 a quake caused the vaulted ceiling of Wells Cathedral to collapse; in 1580 a chunk of the White Cliffs of Dover was thrown into the sea and the tremors caused the great bell in the Palace of Westminster to toll; 1750 became known as "the year of the earthquakes" with five in succession that shook people up but damaged only some chimney stacks, crockery and the pride of the numerous aristocrats who, at the first vibration, fled London for the countryside.

If our relationship to earthquakes is

almost comical, this is far from the case in places that sit in seismic zones. The geologists' aphorism that "earthquakes don't kill people, buildings do" may be true, but is of scant consolation to the hundreds of thousands of victims who died when Lisbon was razed in 1755, when San Francisco was flattened in 1906 or when Banda Aceh in Indonesia was wiped off the map in 2004.

All these, and a cluster of other examples of barely believable devastation, are grisly case studies in Robinson's book. His aim, though, is not just to give a history of Nature's power but to tease out the overlooked and unsuspected consequences of these cataclysmic events.

In 1755, for example, Portugal was a global power made rich by trade and gold from its Brazilian mines. On November 1 an earthquake lasted for seven to ten minutes and arrived in three waves. Thousands of worshippers died when the churches in which they had gathered to celebrate All Saints' Day collapsed on top of them. Innumerable others perished in their falling homes and yet more in the 60ft-high tsunami that swept up the river Tagus, and in the fire that consumed anything that was left. Possibly 40,000 people lost their lives and only 3,000 of the city's 20,000 houses remained habitable. The earthquake's effects were felt over an area of 6.2 million square miles, with a tsunami hitting Cornwall and waves forming on Loch Ness.

If this was the physical destruction, the consequences, according to Robinson, were even more devastating. In the political vacuum that followed, the Marquis of Pombal established a near dictatorship, the Jesuits were expelled and the country's economy began a longterm and irreversible decline. Voltaire used the disaster to take aim at the church: the earthquake, he said, "ought to teach men not to persecute men, for while some holy scoundrels burn a few fanatics

the earth swallows up the lot of them whole". Voltaire's vivid writings spurred the Enlightenment's questioning of orthodox religion and fealty to the state and promoted the rise of rationalism and science. The upshot, in short, is that the annihilation of Lisbon, for all that it was rapidly rebuilt, changed the world.

Elsewhere Robinson's causal gallops explain that Japanese militarism (and hence the invasion of Manchuria and the attack on Pearl Harbor) was a result of martial law being declared after the Tokyo earthquake of 1923 with authoritarianism becoming the norm. On the other hand the 2004 Indian Ocean quake and tsunami had beneficial effects; the scale of the devastation shocked the warring Aceh

separatists and the Indonesian government and brought an end to hostilities between them.

Robinson's sequences of consequences are enlightening and intriguing, even if some are more persuasive than others. What really sticks in the mind though are the snapshots he gives of the disasters themselves. Just occasionally they are comic, as when the tenor Enrico Caruso was caught in the San Francisco earthquake of 1906 and was found wandering outside his collapsed hotel, wearing a fur coat over his pyjamas and muttering "ell of a place! 'ell of a place! I never come back here." While, Keystone Cops-style, a car was shaken so hard by the quake that all four tyres fell off.

More often though, the stories are understandably ghoulish: in the fire that followed the 1923 Tokyo earthquake, for



## Citizens jumped into canals to escape but were boiled alive in the superheated water

example, citizens threw themselves into canals to escape the flames but the superheated water boiled them alive; the stench of death (140,000 fatalities) was so great that a pilot in an open cockpit flying over the city at 3,300ft retched at the rising smell. Only a few stories describe miraculous escape, such as that of the 10,000 Chinese miners at work underground when the 1976 Tangshan earthquake hit. Amazingly just 17 of them were killed but, emerging above ground, they found Armageddon — some 650,000 dead and 780,000 injured.

Almost as terrifying is that in this innovative and persuasive book Robinson points out that more than half of the world's largest cities lie on unstable plate-tectonic boundaries and, if that weren't enough, no seismologist has ever predicted a major earthquake with any degree of accuracy. History will undoubtedly repeat itself. Better stay in Britain.



CHRIS HARRIS FOR THE TIMES

**DEVASTATION** Survivors amid the ruins of the Port-au-Prince cathedral