

Nature and Natural Disasters: Some thoughts on Pakistan's 2005 earthquake

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Earth has been moving and shaking indifferently for billions of years. One of its sudden motions jolted the northern areas of [Pakistan](#) in 2005, resulting in the [death](#) of roughly a hundred thousand people. Natural disasters of this magnitude always elicit reflections on life and the meaning of the world around us.

It is quite natural to look for causes for such a calamity. Up until recently, the best causal explanation available was some sort of Divine act in response to the actions of the victims. This not only provided order from a chaotic event but it also reinforced the centrality of humans in the happenings of the cosmos.

The last few hundred years, however, have seen the development of modern [science](#) that can successfully explain the causes of many natural disasters, such as earthquakes, without resorting to the Divine. While there is order in a scientific explanation, it is rather indifferent when it comes to ascribing meaning to an event. This tension between a theistic and a naturalistic explanation for disasters played a central role in [European](#) Enlightenment of the 17th and 18th centuries and is becoming important in the discourse of modern Islamic societies.

It was another earthquake 250 years ago that shook not only the Earth but also the intellectual landscape of the time. At 9:20am on November 1st, 1755, a devastating earthquake struck the Portuguese capitol of Lisbon, one of the most cosmopolitan cities of the world at the time. A tsunami struck the heart of the city within an hour and fire broke out in areas unaffected by the tsunami.

Out of a [population](#) of 275,000, about 90,000 perished in Lisbon. Some preachers, as usual, invoked Divine actions for the disaster. But public intellectuals of the day, such as Voltaire and Rousseau, rejected this as a Divine act and instead attributed the quake to a neutral natural world. This was the high point of Enlightenment and perhaps it opened the gates for scientific studies of disasters that will save lives in the centuries to come.

Compared to Voltaire and Rousseau we know a lot more about the causes of earthquakes today. We know that Earth's crust is divided up into plates that are floating on top of molten magma. Earthquakes usually occur at the intersection of these plates. In fact a map of past earthquakes matches the outline of plate boundaries. This theory of plate tectonics is the backbone of modern geology and can explain virtually all of the geological features of the world. If we want to save lives, it is vital to understand the [science](#) behind earthquakes.

At the beginning of the new millennium, it is thus astonishing to hear some Muslim scholars invoke supernatural explanations for the [Pakistan](#) earthquake. While it was refreshing to see some open debate about treating earthquakes as purely natural

phenomena, the dominant discourse continued to be about some sort of Divine warning or retribution. A few have gone as far as to blame the victims of the earthquake. It is as if the magma, which has been driving plates naturally and indifferently for billions of years, has suddenly become sensitive to the intentions of human inhabitants.

On the other side of the intellectual spectrum, even the idea of a scientific explanation appears threatening. For example, Dr. Muzaffar Iqbal has this to say in the winter 2005 volume of the journal *Islam and Science*: "... if earthquakes can be explained away in terms of the movement of plate tectonics, and all that happens on earth in terms of randomly occurring processes, then life on this ravaged planet itself becomes terminus ad quem, without any *hope* of a future life". Instead of seeing the potential for saving lives, Dr. Iqbal would rather shoot the messenger. *Science*, in fact, is the process that removes randomness from human perception. We no longer attribute lightening to Divine wrath. Rather, we put rods on top of tall buildings and direct the flow of electrons into the ground.

Hurricanes and cyclones are routinely predicted ahead of time and towns and cities evacuated. Thus, the disaster in the wake Hurricane Katrina has been blamed on the ineptness of the US *government* in the presence of ample warnings. And while it is awe-inspiring to know that the mighty Himalayas have been lifted because of the slow persistent push of the Indian plate against Asia, the same information can identify places of higher tectonic activity perhaps prompting the construction of safer buildings.

Far from losing *hope*, there is joy in discovering the workings of nature. Isn't it uplifting to know that oxygen in our blood was once part of a star that exploded as a supernova – underscoring our profound relationship with the universe? What could be more intimate than our symbiotic relationship with the mitochondria – the once independent organisms billions of years ago that now provide *energy* to our cells in exchange for a safe haven? It is indeed *science* that provides us with a deep connection to our surroundings. Some see a Divine hand in creating these connections and some see them as purely natural. But in both cases we gain an understanding of the natural world, appreciate its complexity, and in the case of plate tectonics, potentially save lives from this understanding.

For centuries, societies around the world ascribed Divine motives behind eclipses. Today, astronomers can predict eclipses with high precision for thousands of years. One day we will be able to do the same for earthquakes. Such an understanding will only come when we stop seeking supernatural explanations for natural phenomenon. The Lisbon earthquake prompted such an intellectual shift in Europe. Will we see a similar shift in Muslim thinking around the world or did the Earth move too soon for an Islamic enlightenment?