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Introducing Collapse

The fall, like the rise, of a civilization is a highly complex operation which can only be distorted and obscured by easy simplification.

Mortimer Wheeler[1]

CLIMATE APOCALYPSE IN THE NEWS

As I sat down to work this morning with Radio 4 on in the background, I was intrigued to hear the BBC's newsreader announcing that the riddle of the mysterious Classic Maya collapse had finally been solved.[2] I waited with baited breath to hear what the latest explanation would be, thinking it must be a slow news day for ancient history to have made it into the news mix. A moderate drought, she explained, was enough to cause the collapse of Maya civilisation around 1,100 years ago, which, she added, led to the Maya cities and pyramids being swallowed up by the rainforest. The announcer confided that, although solving the Maya collapse had long been a problem, archaeologists generally now preferred drought as the cause.

The whole report probably lasted no more than two or three minutes, an impressively short time in which to explain the fate of a long-lived and complex civilisation that had existed for hundreds of years, several times longer than modern nations like the United States or Australia. It was a problem that, as she rightly pointed out, had puzzled archaeologists and the curious for years. But I wondered what exactly I and other listeners were supposed to understand by 'collapse' and by 'Maya civilisation' – dramatic images of lost and abandoned cities reclaimed by nature were evoked, but would we all

be imagining the same thing? I was curious too about which archaeologists she was referring to, and who had decided that 'most' of them preferred this conclusion. I briefly wondered whether I would no longer be obliged to complete this book about collapse …

So, I diligently looked up the original paper that the news report was based on, just published in the journal *Science*.[3] The paper was somewhat less definitive than the news report, but its argument was still clear enough. I found that the authors, two oceanographers, had studied the existing palaeoclimatic data, drawn from physical samples taken from three locations in northern Yucatan, Mexico. Like other researchers before them, they suggested that chemical analysis of cores taken from lake bottoms and from stalactites ('speleothems' – stalactites and stalagmites or cave calcites) indicated periods of reduced rainfall in Late Classic Maya times (the eighth and ninth centuries AD). This, they said, would have reduced the carrying capacity of the land, the amount of food that it could produce, which would in turn have caused the population to fall catastrophically, triggering 'significant societal disruptions'.

Rather than a new solution, this sounded like a well-known story of collapse due to some kind of environmental change with which human society could not cope, the main difference being that the authors were claiming that a more moderate reduction in rainfall could be blamed, rather than the massive droughts suggested by others. If a modest reduction in rainfall could have this effect, it suggested that the ecology and hydrology of the Yucatan Peninsula, the home of (some of) the Maya people, were particularly sensitive to change; a plausible hypothesis. But, given the long history of research on the problem of the Classic Maya collapse, and the number of publications, scholarly and popular, as well as television documentaries and even films on the subject, was that it? Rainfall slightly reduced, Maya collapsed and disappeared?

I was still left wondering what the authors really thought the Maya collapse was, and if this moderate reduction in rainfall could be enough to explain it. The news story had suggested a point of collapse around 1,100 years ago, *c.* AD 900, and the disappearance of the Maya, whereas the authors of the paper actually noted, quite rightly, that 'the disintegration of the Classic Maya Civilization was a complex process' taking two centuries. But their account still seemed very much to imply some kind of terrible event that would have involved a lot of death and unpleasantness. Did they imagine that many Maya

simply died at once, that it was ultimately a kind of Malthusian population collapse? And what were these 'societal disruptions'? Their statement that the collapse 'involved a catastrophic depopulation of the region' seemed clearly enough to indicate that it was an ecological collapse they were thinking of, of the kind biologists might identify in any species or ecosystem.

I was left with an image of an empty landscape, and a population wiped out by a terrible natural disaster, yet it is difficult to square this with the idea of a complex two-century process of change, which the authors had introduced. Two centuries is a long time, time enough for significant changes in ways of life and attitudes, in political geography, and in material culture to occur. Admittedly, it can be hard to conceptualise past periods of time; as George Orwell said 'when you look backward things that happened years apart are telescoped together'.[4] The stories implied some kind of 'back to square one' blow, from which the Maya, the few who survived, would have to start again amongst the ruins of their former glory. In this account, a fairly typical story of apocalyptic collapse involving a terrible disaster and death with a handful of survivors eking out a living in a post-apocalyptic age, the ancient Maya were helpless victims of circumstance.

The Maya are not the only ones to receive this treatment, although they are a perennial favourite – enigmatic, exotic, mysterious. In 2012, for example, *The Times of India* proclaimed that 'Climate killed Harappan civilization', a story also based on a research paper published in the *Proceedings of the National Academy of Sciences of the USA* (*PNAS*).[5] The paper argues that a reduction in monsoon rainfall affected the complex river flows of the Indus basin, with rivers getting smaller, becoming seasonal, or even drying up completely. The agricultural basis of the Harappan urban sites was undermined. Yet there was no sudden ending, no killing stroke executed by the climate; the authors state soberly that: 'since approximately 3,900 y ago, the total settled area and settlement sizes declined, many sites were abandoned, and a significant shift in site numbers and density towards the east is recorded'.

Another similar story, entitled 'Climate change: The great civilization destroyer' appeared in the *New Scientist* in 2012, this time about the Mycenaean Greeks of the Late Bronze Age, *c.* 1200 BC.[6] This article, again based on a research paper, wanted to add the Mycenaean collapse to the list of peoples, societies, and civilisations supposedly brought to an end by climate change.[7]

These stories, and others like them, seem to represent the public image of collapse in the early twenty-first century and the cutting edge of archaeological and historical research. They tie in with our concerns over current climate change, and also with the vivid images we have of drought and famine. What these stories remind me of, and presumably others, are the graphic images of the victims of the tragic droughts and famines in Ethiopia in the 1980s. These came to international attention through the harrowing television reports shown around the world, which many in developed countries, seeing such things for the first time, found so shocking. Those images, and more recent ones that still appear regularly on television, seemed to show people stricken and emaciated, in abject poverty, with no food, water, or hope, people for whom circumstances were intolerable and for whom normal functioning society had ceased, people who would, without international aid, die where they sat, starving and thirsty. Would the Classic Maya, Harappan, and Mycenaean collapses have looked like this?

STORIES AND COLLAPSE

Probably not. The problem with collapse in the news and in many popular articles is that the stories they tell are grossly oversimplified, offering a caricature of history, a mythic version of historical change for our sound bite society; they are infotainment at its best. As we have seen already, one issue is the way that scientific research is transformed into news. In the first place, certain kinds of scientific research are more likely to get published in high-profile journals, and thus to catch the attention of news services. Journals such as *Nature*, *Science* and *PNAS* choose to publish novel and especially interdisciplinary research, research that has definitive results and conclusions – hard science style. Thus stories about new climate change linked to the fate of ancient societies are much more likely to reach a wide audience than a more circumspect paper in an archaeological journal.

Then the headline language used to describe collapse in popular sources (in the press as well as in documentary films) frequently serves to obscure the complex historical processes that were at work, turning them into cataclysmic events, and presents the peoples, states, or societies (and peoples) in question as static two-dimensional entities

that could be wiped out in a blip. Too often, such reports, and the science papers on which they are based, fail to really consider what they are saying. What do we mean by collapse and what do we mean when we talk about the Classic Maya, the Harappans, or the Mycenaean Greeks, their cultures, their societies, and their civilisations? If we frame the questions simplistically, we are likely to get simplistic and unsatisfactory answers.

Despite their lack of substance, these stories have a great and understandable appeal, and it is worth thinking about this a little. What such stories really represent is a kind of quest romance, a kind of story as ancient and appealing as the oldest stories we know, which historian Ronald Hutton explains is 'one of the most popular and effective modes of expression for historical or archaeological research'.[8] Researchers are heroes on a quest, who undergo a journey in which they apply their knowledge and skills, and eventually, and triumphantly, solve a seemingly insoluble historical conundrum.

Collapse stories appeal to our narrative desires in other ways too. They can be seen as both tragedy and parable. Tragedy originated as a specific kind of theatrical performance in ancient Greece, and tragic stories dealt with big and serious themes; plays were not simply 'art', but actively mirrored the politics and society of contemporary life and functioned 'as a powerful medium for the communication of ideas'.[9] They had a standardised plot in which the hero's journey is followed, his actions leading to a climax and then finally to a resolution, often the death of the hero.[10] Read 'ancient civilisation' for 'hero' and we have a story of rise, zenith, and fall – stories of collapse which are blamed on human degradation of the environment seem to fit this pattern.

In tragedy, the hero usually makes a mistake, which leads to his fate; sometimes these errors are brought about by outside factors, such as divine intervention, but at other times there is some fatal character flaw. So in collapse we can see external factors blamed or errors made by the society that collapsed. Just as in tragedy, where the *mechane* allowed gods to enter the stage through the air, revealing the act of violence that resolved the play, collapse is often 'explained' by *deus ex machina*.[11] Just as tragedy was a social art, witnessed and consumed by ancient audiences, our stories of collapse are spectacles, shared and consumed by modern audiences.

Aristotle thought tragedy served an emotional or psychological purpose. He suggested that 'through pity and fear' there would be catharsis, an emotional purging in the audience.[12] Nietzsche, thinking of tragedy, wrote of 'that lust which also involves the *joy of destruction*'.[13] Others have suggested that tragedy provokes *Schadenfreude*, that in fact audiences enjoy the horrors of tragedy and the sufferings of its fictional hero, a kind of enjoyment which, however morally questionable it may be, seems real and commonplace.[14] Does our witnessing of apocalyptic collapse, whether in print, on television, or on film, somehow fulfil us emotionally? Do we enjoy the spectacle and revel in stories of the destruction of others?

Perhaps. Nowadays this may be most evident in popular blockbuster films that project views of apocalyptic collapse with causes that reflect contemporary concerns. In recent decades, we have been treated to global disaster threatened by colliding comets in the 1998 film *Armageddon*, where disaster was narrowly averted through technology and guts, and also by the film *Deep Impact* where the ending was much more bleak, with millions perishing. In 2004 there was *The Day After Tomorrow*, a film which depicted a sudden climate change and the onset of a new ice age almost overnight. In 2009, *2012* focussed on global disasters such as earthquakes and tsunamis, which killed millions, caused by the heating of the Earth's core by solar flares – a select few humans were able to save themselves in a number of 'arks', built in secret in China. The 2011 film *Contagion*, in more of a documentary style, explored the effects of a global pandemic, which caused the breakdown of social order; the film reflected real contemporary fears about possible pandemics such as SARS and H1N1 flu.

Other myths of apocalyptic collapse too come to mind from our shared past culture. The flood myths shared by numerous cultures around the world are often taken to suggest that floods had a profound effect on people in the past, strong enough to warrant being passed down in stories, although floods, like other themes can have metaphorical rather than literal meanings.[15] The flood myth recounted in the Mesopotamian Epic of Gilgamesh, and later the Christian Bible, have even inspired people to search for a real catastrophic geological event that may underlie the story – some suggest the flooding of the Black Sea.[16]

Also from the Bible we have the story of Sodom and Gomorrah, recounted in Deuteronomy 29:23. The cities were destroyed by God in his anger at the wickedness and vice of their inhabitants. But other kinds of destruction were also foretold. In Isaiah 17:1–2, a prophecy of the destruction of Damascus is given, in which it is predicted that the city will become a heap of ruins. The destruction of the mercantile city of Tyre by Nebuchadnezzar was also graphically prophesied in Ezekiel, which describes the utter destruction of one state by another. Destruction is a consequence of wrongdoing – a precursor to our modern environmental stories of collapse.

The Atlantis myth is a story of catastrophic and apocalyptic collapse *par excellence*. It has been a part of Western culture since Plato composed it in the early fourth century BC; we know it from his *Critias* and *Timaeus*.[17] However, it is probably better known now than ever before; Alan Cameron notes it as the inspiration for over 20,000 books.[18] A Platonic myth rather than a Greek myth, invented by a man devoted to exploring order, a crafter of ideal societies, and political utopias, the story relates how Atlantis, a fictional ideal state located on an island in the Atlantic, fell from grace as its once blessed and virtuous people grew corrupted and greedy over time, eventually trying to enlarge their empire and conquer the world. For this hubris Zeus wanted to punish them, and the ancient Athenians, who in contrast to the Atlanteans were still virtuous, defeated them in war, freeing all the conquered and enslaved peoples, and averting the threat from the invaders. Afterwards, 'there were earthquakes and floods of extraordinary violence, and in a single dreadful day and night all your fighting men were swallowed up by the Earth, and the island of Atlantis was similarly swallowed up by the sea and vanished'.[19]

Interpretations of the Atlantis myth abound as people make the story conform to their desires, but it seems clear enough that Plato, in the fourth century BC, was teaching his fellow Athenians (and others) to be mindful of their ambition and their priorities.[20] They had been embroiled in the creation of an empire and had had a major conflict with Sparta, which led to defeat at the end of the fifth century BC. He perhaps wanted them to recall their ancestors in the earlier fifth century who had, somewhat against the odds, defeated the enormous might of the invading Persian king. Athens was the focus of the story; Atlantis represented an undesirable, avoidable fate. The

story elaborates the age old aphorism that pride comes before a fall – much like the story of Croesus and the Delphic oracle.

Alan Cameron notes that 'it is only in modern times that people have taken the Atlantis story seriously; no-one did so in antiquity'.[21] Indeed, many have 'believed', including the British prime minister and Homeric scholar William Gladstone, and have tried to associate the Atlantis myth with 'real' history.[22] K. T. Frost in 1913 wrote that 'The search for Atlantis has given rise to so many conflicting views (most of them palpably absurd) that few scholars are prepared to take it seriously', before offering his own view, about which most modern scholars would express equal scepticism, that the story represented Minoan and Mycenaean history.[23] Frost noted that while 'it seems … futile to seek for the geographical or geological site of a huge island now submerged. On the other hand a political and national disaster, a cataclysm in the usual instead of in the literal sense of the word, can destroy an ancient civilisation as completely as any flood'.[24] But despite his comments others have continued to look, and to make associations with the archaeological, geological, and historical evidence of the Late Bronze Age Aegean, in particular the eruption of ancient Thera and its effects on Minoan Crete.

An interesting example of an apocalyptic story from the pre-Hollywood blockbuster days that ticks the same boxes, and shows that our modern disaster discourse is no new thing, is the volcanic disaster narrative.[25] This was a type of entertainment devised by pyrotechnical entrepreneurs, who produced 'volcano entertainments', spectacles with painted backdrops and sound effects, which became popular in the nineteenth century, but which originated in the eighteenth. They reflected increasing interest in geology and the natural processes of the Earth combined with excitement over the excavation of the buried city of Pompeii, which began in the 1740s.

In the 1880s, one such show, called *The Last Days of Pompeii*, was toured by the Pain family, who were fireworks manufacturers (Figure 1.1). It visited New York and London, among other places. In its first performance at Manhattan Beach, Coney Island, the show attracted more than a thousand spectators, with later shows attracting up to 10,000. In June 1889, the Pains put on a modified version of the show, announced in the *New York Times* (9 June 1889):

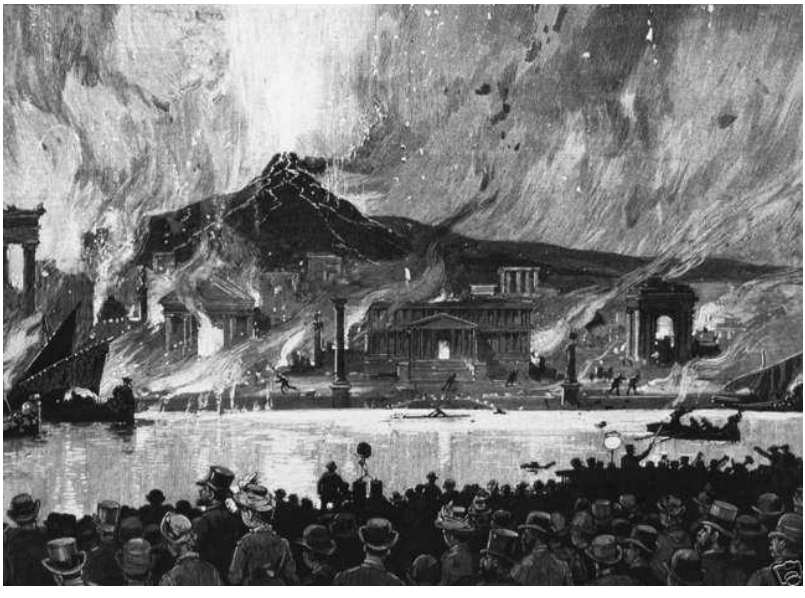

FIGURE 1.1. Graham Charles. Fireworks at Manhattan Beach – 'The Last days of Pompeii'.
Source: *Harper's Weekly* 25 July 1885, 476. General Research Division, The New York Public Library, Astor, Lenox and Tilden Foundations.

Beginning next Saturday night, 'The Last Days of Pompeii' will be presented nightly by Mr Pain at Manhattan Beach. It is not to be a revival of the show which he gave under the same name in 1885, but a much more elaborate and magnificent affair. There will be 400 people on the stage, a ballet of 36 dancers trained by Batiste Cherotte, master at the Metropolitan Opera House, a male chorus from the same place, soldiers, acrobats, jugglers, tumblers, wire-walkers, and others to assist in making the picture of a fete day. The display is to culminate in the destruction of the city by the fires of Vesuvius.[26]

In addition to their romantic and tragic appeal, stories of collapse are ideal fodder for the creation of modern parables for our time – especially parables of human relationships with the natural environment. Examples of this are not hard to find, and they are frequently repeated in the literature, becoming factoids that purport to be straightforward historical facts. One noted environmental writer, Lester Brown, for example, in his book *World on the Edge: How to Prevent Environmental and Economic Collapse*, used as examples ancient Sumer and the Maya. The former collapsed because their successful

irrigation systems eventually led to high salinity, resulting ultimately in food shortages and collapse. The latter chopped down too many trees, leading to soil erosion, and again, food shortages. Brown draws an explicit parallel between past and present: 'for us it is rising carbon dioxide concentrations in the atmosphere that are raising the global temperature, which could ultimately shrink grain harvests and bring down our global civilization'.[27] The lessons we are to learn from the past are clear.

None of this is to say that there is only one 'correct' version of collapse that exists to the exclusion of all others, nor that the academic archaeological version (not that there is 'one' single version) is the best – in doing history there are many stories and perspectives that can be usefully brought into play. But it is important that we recognise the constructed nature of our ideas about collapse. I think Stephanie Moser puts it best:

> The notion that researchers are solely responsible for creating meaning about the past is a false assumption that diverts our attention from the fact that representations have their own unique conventions and ways of communicating. Thus knowledge is not simply created by researchers and then diffused into popular culture (i.e. a one-way process); it is also created by many other kinds of discourse which in themselves shape the ideas of researchers.[28]

Our thinking on collapse, and the stories we tell of it, popular and academic, are reflections of our own times and concerns. As we read back through accounts of collapse from different times, we can see this influence clearly.[29] But we must beware of over simplifying or skewing our accounts of past collapses just to turn them into lessons for modern society.

What I hope to have shown so far is that we often see collapse in very particular ways, which are structured by how we share knowledge – through stories or narratives. Collapse stories often bridge information and entertainment, fulfilling our needs on a variety of levels. Scientists are problem-solving heroes, societies are tragic characters, destined to fail, and collapse is a lesson to be learnt from. There is nothing inherently bad about this – it is human nature to make everything into a story. But if we really want to know about collapse, we have to begin by trying to see past the popular stories. A result of this, and one that many might find unsatisfying, is that we