Roman Disasters

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Acknowledgements

The aim of this book is to provide a broad and innovative treatment of the subject of disasters in ancient Rome. It tries to show the practicality and flexibility of the Roman political and cultural system in a way that is easily accessible to as wide a readership as possible, without sacrificing conceptual or empirical rigour. I came to the subject while researching into the non-elite in Roman society. It became clear that disasters, whether real, threatened or imagined, loomed large in the life of the average Roman. The effort involved in producing a book always means that many debts are incurred along the way. It is a pleasure to thank the following people, for all their support and encouragement: Pierre Caquet, Jason Goddard, Jon Gifford, William Harris, Peter Harvey, Chris Kelly, Bruce Kiddy, Justin Meggitt, Miranda Perry and Emma Widdis. My wife, Anne, contributed enormously to the project by acting as a sounding board for ideas and putting up with my many moods and absences while working on it. My son, Arthur, was born during the writing of this book and has taught me more than I would care to know about a whole range of issues. I am grateful to the President and Fellows of Hughes Hall, Cambridge, for their generous award of a Research Fellowship, and to the college's mature undergraduates for providing so much interesting and thought-provoking discussion. I also want to thank the staff of the Cambridge University Library and Classics Faculty who have always been exceptionally helpful. Andrea Drugan and Polity did their usual excellent job in producing the book. The anonymous readers for Polity provided many astute comments and

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1

What is a Disaster?

Anthemius had fallen out with his neighbour Zeno. Whether it was the result of prying or some building work that had taken his light is unclear, but Anthemius wanted to get his own back. He thought about turning to the law. Always a risky business at the best of times, this route was made impassable by the fact that Zeno was a skilled lawyer and a friend of the emperor, no less. A down-to-earth engineer, as Anthemius was, could never hope to compete with his neighbour in the face-to-face verbal sparring that the Roman courts demanded, let alone run the risk of offending the emperor. So he decided to retaliate on his own terms. Zeno had a fine upper-floor room where he loved to pass the day and entertain his close friends, but the two houses were joined in such a way that the room below belonged to Anthemius. Filling some huge cauldrons with water and placing them at intervals, he fastened on tapering, trumpet-like pipes, which were encased in leather and sufficiently wide at their bottom ends to allow them to fit tightly over the rims of the cauldrons. He then fixed the upper ends of these pipes to the beams and joists of the ceiling, which obviously also served as the floor to Zeno's fine room. With this apparatus in place, he lit fires beneath these great cauldrons and as the water boiled, the steam it produced travelled up the pipes and exerted pressure on the woodwork. Little by little the pressure increased until it became so great that it shook the whole structure. Yet as an engineer, Anthemius had been careful not to overdo it, given that any collapse would have seen him lose his house too. Instead he calculated that the steam would exert just enough force to make the woodwork creak and wobble slightly. Moreover, Anthemius employed some other mechanical tricks to enhance the

effect. He used concave reflective disks to produce lightning and struck percussive, resonant objects to imitate the sound of thunder. The impact on Zeno and his friends was dramatic. Fearing the onset of an earthquake, they ran outside, terrified. Zeno went straight to the palace to find out how the other notables had been affected by the tremors. They became indignant with him for his lack of taste: how dare he concoct such stories as some kind of practical joke? Embarrassed by his perceived faux pas, poor Zeno left the palace completely nonplussed about the 'earthquake' he had experienced.[1]

Anthemius' trick shows us the degree of fear and panic that the experience of a disaster could generate within a Roman. This is hardly surprising given the unexpected nature and often devastating effects of natural disasters such as earthquakes. The onset of life-threatening events drives inhabitants of all societies into a state of confusion and alarm. But if we look a little deeper we can see that the story also reveals a number of characteristically Roman features. The first is that even for a wealthy orator like Zeno, building quality was of such a low level that even a modest wobble sent shivers of terror running down his spine. When we look at great Roman buildings, like the Colosseum or the Pont du Gard, it is easy to imagine that Roman building techniques were generally of a high standard. This is far from the case. Domestic architecture was, by modern western standards, often jerry-built: lacking adequate foundations and constructed of variable-quality materials.[2] These were buildings which were prone to collapse even in normal conditions let alone when placed under the enormous stresses of an earthquake. The degree of panic which a wealthy man like Zeno showed, therefore, was partly an inverse index of his faith in Roman architectural practice. The fact that his neighbour was an engineer and architect seems to have done nothing to raise his level of trust in the ability of the building which they shared to withstand the impact of an earthquake. That Anthemius understood the mechanics of steam power but harnessed it only for the purposes of playing a practical joke on his neighbour underlines how different were the concerns of Roman engineers. The fake disaster, therefore, can be said to have stress-tested Roman life, thereby revealing both the limits of the social system and the faith that its inhabitants had in it. When we look at genuine Roman disasters, I suggest, we will be able to learn much about the wider Roman world and the expectations of its inhabitants.

Anthemius' story also shows how disasters penetrated right to the top of Roman society. The wealthy could be just as vulnerable to events such as earthquakes and, what is more, the impact was something which Zeno assumed would be of interest to everyone in the palace. Indeed, the strong reaction of palace officials to what they saw

as Zeno's poor judgement in spreading false rumours of disaster shows how seriously they took such events. Obviously this interest stemmed partly from the fact that earthquakes affected everyone. Zeno would have been keen to see if his friends and colleagues had survived, or indeed if his enemies and competitors had been obliterated. But the emperor's interest in the earthquake also reflected several other characteristically Roman concerns. Earthquakes destroyed buildings and if there was one thing which emperors were concerned about, it was their architectural legacy. It mattered to them if their pet building projects had been knocked down. On the other hand, the laying waste of a city might have its positive side. Disasters could generate significant opportunities for vast rebuilding programmes. The 64 CE Great Fire in Rome provided the emperor Nero with a rare chance to redevelop swathes of central Rome, one which he took full advantage of by building his infamous Golden Palace. It was hardly surprising that many Romans wondered whether Nero himself had in fact started the fire, so great was the personal benefit he accrued from it.

The Chinese symbol for disaster is often said to be a combination of two different characters, one symbolizing danger, the other, opportunity.[3] Few emperors tried to benefit from the opportunity presented by their subjects' misfortune in quite so blatant a way as Nero was alleged to have done. But most did try to exploit the shock of unforeseen calamities to express, increase and advertise their own power. Disasters, whether in the form of events such as fires, floods or earthquakes, gave emperors a tremendous opportunity to bring into operation that key Roman social force, patronage. Victims wanted help and support; structures and facilities had to be repaired; above all, social relationships needed to be re-established and reaffirmed. This is not to say that Roman emperors saw themselves as providing some general emergency service in the event of disaster striking. The reality was that emperors tended to be highly selective as to where, how and to whom they offered their assistance. This can naturally tell us a great deal about who and what mattered in Roman society, since the emperors were keen to help those who were most in a position to return the favour in some way.

Anthemius had a much better understanding of structural forces than did most ancients. Like him we can stand back and laugh at Zeno's reaction to his trembling living room. But we also live in a world where disasters are common. The *World Disasters Report* of 2001 calculated that 2,108,025,000 people had been affected by disasters globally during the last decade of the twentieth century.[4] Of course, the relative unpredictability of many disasters means that the number of people affected varies considerably from one year to the next. The low year of the last decade, 1997, saw only 67 million

Table 1 Natural disaster type ranked by number of deaths, 1947–1980

Disaster type	Number of deaths
Hurricane	499,000
Earthquake	450,000
Flood (not associated with hurricane)	194,000
Thunderstorm/Tornado	29,000
Snowstorm	10,000
Volcanic eruption	9,000
Heatwave	7,000
Avalanche	5,000
Landslides	5,000
Tsunami	5,000

Source: Shah, B. V., 'Is the environment becoming more hazardous? A global survey 1947–1980', *Disasters*, 7 (1983), 202–9.

touched by a disaster, compared with a high of 344 million in 1998. Not only does the modern world continue to be affected by disasters in the same way that the Roman empire was, but both the frequency and the impact, in terms of both human and financial cost, are increasing.[5] The ranking of different types of natural disaster according to the number of deaths worldwide gives an indication of what types of event have historically been the biggest killers (table 1).

This indication has severe limitations, however, because the numbers are skewed by a small number of particularly significant events. A larger-scale study looked at the percentage contribution to total deaths for each hazard type for the twentieth century as a whole (table 2).[6]

Even then, though, the numbers are affected by the fact that certain types of disaster have news value and so the number of deaths from these events has tended to be over-reported. There has also been a regional bias in the interest taken by the west in certain disasters.

Table 2 Hazard type by percentage of deaths, 1900–1999

Hazard type	Percentage of deaths
Famine/Drought	86.9
Flood	9.2
Earthquake/Tsunami	2.2
Storm	1.5
Volcanic eruption	0.1
Landslide	<0.1
Other	Negligible

Source: Centre for Research on the Epidemiology of Disasters (CRED), 'EM-DAT: The International Disaster Database', www.emdat.be.

Asia has been more prone over the last century to suffer disastrous events, but these have held less interest for the western media. By contrast, relatively small-scale calamities in Europe have attracted significant coverage. A moment's reflection will also bring the realization that these numbers, even over a timescale as seemingly long as a hundred years, are highly variable. The figure for tsunami, for example, which appears low in both these studies partly as a result of under-reporting, partly because of the vagaries of chance, would leap if the period were to include the dreadful South Asian tsunami of 2004, which killed perhaps 250,000, and that in Japan in 2011, when almost 20,000 died.

We will come back to the problems of methodology involved in studying disasters, but for now it will have become apparent that greater technical expertise and knowledge have not allowed humanity to stand aloof from the problems of disaster in the manner of Anthemius. All too often, modern societies are reduced, like Zeno, to fleeing in panic from the impact of some potentially catastrophic occurrence. Disasters, therefore, give us a means of comparing how different societies have reacted to and tried their best to cope with the extreme situations which they often generate. In some basic way, disasters also provide a ready means for us to empathize with Roman experiences, if only as a prelude to understanding how radically different were their own conceptions of these events.

The Roman empire was an extraordinarily successful military, political and cultural enterprise. Indeed, Rome has been famous throughout history for its great triumphs.[7] Yet Rome also suffered frequent, regular and sometimes colossal disasters. From the battle of Cannae, where 50,000 men fell in a single day, to the Great Fire in Rome, to the first appearance of the bubonic plague in the sixth century, the Roman world experienced large-scale calamities.[8] The aim of this book is to analyse from the top down how the Romans coped with, thought about and used these events. There has been much excellent scholarship on individual or localized disasters, such as famines or floods, but none that has looked at disasters as a conceptual unity.[9] I think this is an oversight given the importance the Romans themselves attached to these events and how useful a source they can be for telling us about the Roman approach to societal danger and risk.

The ancients recognized that disasters could be both significant and interesting. The fifth-century BCE Greek historian Thucydides argued at the start of his *History of the Peloponnesian War* that whereas the greatest struggle of the past had been the Persian wars, in which a coalition of Greek states had repelled the two punitive expeditions of the Persian kings Darius and Xerxes in 490 and 480 BCE, it was

the war between Sparta and Athens from 431 BCE that was the more important. The reason, he suggests, is that during this war, disasters befell Greece the like of which had never occurred in any equal space of time. Cities were left desolate, exiles flooded alien states, and never had there been so much bloodshed, all of which man-made disaster was matched by natural phenomena of equally destructive force: earthquakes of great violence struck everywhere, eclipses of the sun and moon were seen, and the land was ridden with droughts and attacks of the plague.[10] Similarly, disasters fascinated Roman historians. Harking back to his Greek forerunner and model, the second-century CE Roman writer Tacitus starts his *Histories* by justifying his chosen period of the early empire because this was a time that was 'rich in disasters, terrible with battles, torn by civil strife, horrible even in peace'.[11] Later, during the crisis period of the third century when the empire came close to falling under the weight of barbarian invasions, the historian Herodian claimed that what made the period from Marcus Aurelius to the third century more significant than the earlier imperial period, from Augustus to Marcus Aurelius, was not only the succession of reigns, the variety of fortunes in both civil and foreign wars, the disturbances among the provincial populations or the destruction of cities; it was also the fact that in the later period 'there have never been such earthquakes and plagues or tyrants and emperors with such incredible careers'.[12] Significantly, disasters also formed part of the official annual record of the most important events to have occurred in republican Rome, the *Annales Maximi*, which were drawn up and publicly posted by the pontiffs.

What is clear from this is that the Roman fascination with disaster did not simply reflect a ghoulish interest in death and destruction. Instead, what these Roman sources and their audiences saw as particularly significant was the causal link between military and political disorder and both natural and man-made disasters. War and rebellion were the usual stuff of politics, and food shortage and disease the everyday nuisances that went hand in hand with life in a pre-industrial society like Rome. But when catastrophe struck it was clear that here was a period in which the usual ordering of the world was breaking down. We can see this perhaps most clearly in the fact that it was a sure sign of the infamous emperor Caligula's perversion that 'he even used openly to deplore the state of his times, because they had been marked by no public disasters, saying that the rule of Augustus had been made famous by the Varus massacre, and that of Tiberius by the collapse of the amphitheatre at Fidenae, while his own was threatened with oblivion because of its prosperity'. What Caligula in his madness occasionally wished for, therefore, was 'the destruction of his armies, for famine, pestilence, fires, or a great earthquake'.[13]

Roman and modern ideas about what constituted a disaster did not in many ways differ radically. Looking at definitions of the Latin words for disaster we find the following four main terms:[14] *clades*, embracing exile, military defeat, slaughter, the devastation of war and physical ruin; *calamitas*, for crop failure, blight, disease or military disaster; *casus*, for military or political disaster and violent death; and *pestis*, which is applied to physical destruction, plague, pestilence or the overthrow of a people or institution. All of these could be termed disastrous events in modern terminology. The obvious difference, however, is the heavy emphasis in Roman terminology on human, man-made disasters. It is military and political issues that feature most highly. This is partly a simple reflection of the fact that most of our literary sources, where we find such terms, use them in the context of their own preference for military and political history. But these terms also reflect the fact that it was often these kinds of events which had the most calamitous impact on the broad population of the ancient world. War, conquest, famine and death from these afflictions could lay low an entire population: it is no wonder that it was the bringers of these four fates that constituted the Four Horsemen of the Apocalypse in the Bible's book of Revelation.[15]

Most disasters in the ancient world were not novelties but periodic regularities. The eruption of Vesuvius in 79 CE gives us a misleading impression of the kinds of hazard that most people faced in their daily lives. Food shortages, for example, were a predictable feature of the Roman system of food supply. The sources suggest that a subsistence crisis occurred somewhere every 3.3 years.[16] Such crises rarely developed into full-scale famines. And when they did, the fact that a famine was happening somewhere in the empire certainly does not mean that it was affecting the whole of the empire. Disasters, whether they were invasions, famines, floods, earthquakes or volcanic eruptions, tended to have a fairly localized impact. In fact, micro-disasters are a recurrent feature of ancient sources. The account of the life of the seventh-century holy man Theodore of Sykeon, in Galatia in what is now Turkey, for example, is full of the village-sized panics and crises which probably for most people constituted their experience of disaster. We find villages afflicted by plagues of beetles, beasts, worms and dormice. At one point, we find the men of the village of Euarzia burning unslaked lime for the building of the church, which they then load onto wagons. As they make their way to the monastery, a dark cloud overshadows them and rain begins to fall. Knowing that lime and water do not mix, the account describes how 'the farmers were terrified and desperate, thinking that their wagons and oxen would be burnt by the lime because of the downpour of rain'.[17] This is hardly comparable with the destruction of Pompeii, with all its drama and

significant loss of life, but for the poor peasants in this rural hamlet, the loss of their transport and cattle would have threatened their very livelihoods. And however short term the effects of such an accident might be – in time, the villagers would have recovered sufficiently to afford more wagons and oxen – in that short term tremendous hardship was likely to have arisen.

Fortunately for the men of Euarzia, the holy man intervened to make the cloud shed its rain on either side of their carts. But most people could not count on such miraculous intervention. Instead they had to cope with the endlessly recurrent local crises of the Mediterranean environment. These did not only take the form of near-miss accidents. Floods were commonplace in the Mediterranean region, a 'perennial hazard' ranging from the annual inundation of the Nile in Egypt to flash floods resulting from heavy rainfall.[18] Even in the great city of Rome, floods of the Tiber were both frequent and severe.[19] Natural disasters were less predictable, although earthquakes were a regular feature of life in the eastern half of the Roman empire. Perhaps one of the few benefits of this pre-industrial existence was that the inhabitants of the Roman empire did not have to cope with environmental change on a global scale as we do today. Romans did, however, have to cope with other less regular or local disasters. Wars and revolts generally had a more widespread geographical impact and, particularly in the case of sieges, could affect almost all of the city's population. Wars were a recurrent feature of ancient life, although their incidence tended to coincide with periods of uncertainty, such as the end of the republic, or particular external threats, such as invasion by the Carthaginians.

Catastrophic events like the eruption of Vesuvius in 79 CE were far rarer. It is curious and interesting that Seneca's earlier work on natural phenomena, the *Quaestiones naturales*, leaves out volcanoes. But like that of most earthquakes, the effect of Vesuvius was not widespread or, apart from on the nearby towns themselves, long term. The effect of the eruption of Vesuvius may have been to destroy the buildings and some of the population of the nearby towns, but it does not seem to have had much lasting impact on the region's productivity or on its contribution to Roman commerce.[20] Indeed, the effect on the wider Roman world seems to have been negligible, a claim that is supported by the lack of interest which contemporary writers showed in the events. The fact that even significant events seem to have remained local in their impact tells us something of the resilience of the Roman system to sudden shocks. What the relative indifference of Romans at the time to the fate of Pompeii and its residents may actually show is that this resilience at least in part stemmed from the very normality of disasters in the Roman world. Whether it was the

View of Vesuvius erupting at night in 1944.
Archive of the Faculty of Classics, University of Cambridge

inability to produce enough food from the land because of drought or swarms of locusts, or the destruction of buildings by flooding, or the loss of family members from the ravages of plague, people were accustomed to experiencing such sudden setbacks, which reduced their shock-value. Risk was, in effect, routinized. For the most part,

therefore, a stable symbiosis existed between communities and their environment, which had a substantial degree of elasticity built into the system. The attitude of most towards disasters of all kinds was largely one of acceptance.[21]

It is time to discuss what the term 'disaster' means. Disaster has been the subject of academic study since 1920 when Samuel Prince carried out research into the aftermath of a huge munitions ship explosion in Halifax, Nova Scotia, during the First World War, which devastated the town and killed almost 2,000 people.[22] But almost a century of research has failed to generate any agreed definition of exactly what constitutes a disaster. It is clearly a slippery concept to grasp, but it is possible to isolate some of the main themes and issues that a study of disasters will have to address. Disaster represents more than the usual array of risks and hazards that societies always face. These hazards can be grouped into three different areas:

- *natural hazards*:
  - atmospheric: rain, snow, hurricane
  - hydrological: floods, drought
  - geological: earthquakes, volcanoes, landslides
  - biological: epidemic diseases, blight, plagues of insects, forest fires
- *technological hazards*:
  - fire, hazardous materials, destructive processes, structural failure, mechanical devices, organizational failure
- *violence*:
  - war, rebellion, assault, ethnic cleansing

Each of these hazards is capable of generating a disaster-type event. This can then be described as either natural or man-made, depending on the underlying cause. This is not always easy to ascertain, particularly where a complex series of events has led up to its occurrence. A famine, for example, might on the face of it be the result of a drought, but might also be partly or largely a consequence of organizational failures of food supply. Man-made hazards can be further divided into those which can be considered to be accidental, those which have arisen as the result of deliberate policy, and those which are the result of a combination of the two.

How can we decide what kind of hazard-related event constitutes a disaster? Are wars and revolts comparable with volcanic eruptions, famines and plagues?[23] Do disasters have to be social in their impact? Or, put another way, do disasters need deaths to count as such? And if so how many? Is a single death or are a few serious injuries sufficient? There have been three main theoretical approaches to

answering these questions, all of which are helpful. The first has been to see disaster as an external agent. Studies adopting this view have focused on how people react to specific external events which have imposed themselves on their lives. Earthquakes, floods and wars are, in this view, all comparable because they act as the triggers which precipitate human crises. It is important to realize that this approach sees the triggering event, such as an earthquake, as an agent and not the cause. An earthquake does not always produce a disaster, only if there are people living close to its epicentre. Even then, the impact of the earthquake will depend on social factors such as the quality of building construction, the degree to which building regulations are enforced, how people react, and what kind of relief mechanisms are in place.

This agent-specific view is the most common way of looking at disasters. It carries with it the risk that it reduces disasters to a fixed list of events. It also tends to emphasize both individual tragedy and individual acts of heroism as a way of humanizing the large-scale event. This is certainly the kind of reporting that is most commonly found in the modern media. More penetrating analysis can be carried out on the second approach, which views disasters as an expression of social vulnerabilities, that is to say the result of underlying community weaknesses. Disasters in this view occur when social structures and relations are unable to cope with the impact of some kind of abnormal event or situation. Another way of putting this is that it is easier to say that the famine was caused by a drought than that the risks inherent in the supply system were revealed during a water shortage. In this view, the disorder of disaster is produced from within and is a consequence of society's own imperfect ordering. It also results from society's inability to cope with the changes to social and political boundaries that occur during situations which are extreme by the standards that have prevailed previously.

If there is a problem with this kind of approach, it is that it looks at disaster to try to explain social behaviour in a general sense. Often funded by governments to improve their ability to respond to disasters, research taking this approach has a tendency to formulate hard-and-fast rules about how people can be expected to react and behave when confronted by an extreme set of circumstances. The fact that most of this research has focused on the modern developed world has also encouraged a lack of historic perspective. A third, more subtle and historically sensitive approach is to try and understand how different cultures have reacted to disastrous situations. A disaster then comes to be seen as any event which generates a communal crisis. This crisis is reflected in a crisis of communication between different social groups, an upsetting of the system of meaning and a loss of the

cornerstones of common sense. Disasters are then no longer seen as a fixed list. Above all, the danger which causes such a crisis need not be real. It can be religious, for example, as we shall see was often the case in the Roman world. Many self-reported disasters in the ancient world reflect this significant conceptual difference between what the modern world and the Romans thought caused a crisis in the social order. Religious and moral ideas were often central to their thinking. Of course, the problem with this approach is that it becomes possible to see almost any significant negative event as a disaster.

Is a definition of disaster then possible? As one commentator has said, disaster is 'a vague term that has defied simple interpretation'.[24] Some have taken a straightforwardly practical approach. German insurance companies used to follow the simple policy of treating a disaster as an event which caused DM1 million's worth of damage or one thousand deaths.[25] The influential Centre for Research on the Epidemiology of Disasters adopts a definition which says that an event must result in 10 people dead or 100 reported affected to qualify as a disaster.[26] Clearly the benefit of this approach is simplicity, but it has the difficulty that any number will always be arbitrary and ignore the specific context in which the disaster has occurred. If nine people die in a village with a population of fifty, is this in any way less of a disaster than if ten die in a nearby town of five thousand? Some have tried to produce a more socially sensitive definition: 'disasters occur when one or more of the sociocultural systems that a population depends on fail to provide an adaptation to the environmental conditions which surround it, or when one of these systems produces, from within its own technological order, an event that threatens the population'.[27] Or that of Stock and Stott: a disaster is 'an occurrence of severe damage to life and/or property – resulting from natural causes, human error or deliberate intent – after which a community finds itself in shock, individual and communal coping mechanisms fail, and the survivors cannot alleviate their needs and suffering without outside assistance'.[28] What both these more nuanced attempts highlight is that disasters should not only be measured in terms of lives lost or property destroyed, but by the extent to which they reflect a failure of the cultural system. Most disasters can be explained in terms of their relationship with the normal order of things. As Hewitt says, disasters are problems that are 'out of control' and destroy order. They are events that happen 'out of place' and violate the proper social hierarchy.[29]

The problem of definition underlines how complex and multifaceted disasters are. Disasters have various aspects – social, cultural, environmental, political, economic – which vary considerably from one event to another. Disasters are generally a world where 'un-ness'

rules: the unexpected, the unmanageable and the uncertain take over.[30] People are caught unawares and left unable to cope. But the characteristics of disasters are not unequivocally negative. A disaster is not just a crisis with a bad ending. A crisis represents a critical turning point and as such a disaster can create opportunities for social and cultural change. The fact that what constitutes a disaster varies from culture to culture, and even within a culture, makes it impossible to create an all-embracing definition. A disaster, therefore, comes to be seen as a time and a space where a threat has produced uncertainty in a culture's normal framework for understanding reality. Any event, whether it be geological, military, biological, religious or financial, is capable of generating that level of uncertainty and sense of crisis. It is important to note that the fact that what constitutes a disaster cannot be fixed means that its definition is always a matter for dispute. People within a society do not always agree on what represents a real crisis, argue vociferously about what needs to be done, and act very differently to help alleviate the situation. Often, the definition reflects the needs of the definers, who tend to be those who hold power in either the political or the religious system.

What is clear is that the use of the label 'disaster' shifts the emphasis away from the physical agent towards the social features of an event. The crucial ingredient is the victims. A disaster needs people and reflects the effects that a particular trigger event has on them, effects which will differ considerably from culture to culture. Even modern environmental disasters reflect the devastating impact on the natural world of human activity. A disaster, therefore, should be seen as a social construction. The effects that a trigger event produces reflect the varying levels of cultural protections which exist in an affected society. The distinction between natural and man-made disasters is misleading in this respect because it suggests that there is no human influence on the outcome of a physical event. In fact, the effect that a natural agent such as an earthquake has on a society is purely a reflection of the particular ways in which that society has chosen to inhabit its environment. It is the effects, not the cause, that constitute the disaster. The natural event itself should be seen as nothing more than precipitating a set of reactions.

Disasters are also probably best seen as systemic events which are powerful enough to be capable of acting as catalysts for social or cultural change. Disasters, therefore, are not small events that impact on the individual but represent a radically altered context in which the community suddenly finds itself. Disasters upset group routines, affect many if not all areas of people's lives, and demand a focused communal response. Such exceptional circumstances force changes in normal behaviour or make people adopt different, disaster-related