

University of Delaware  
Disaster Research Center

PRELIMINARY PAPER  
#272

SEISMIC WAVES IN INTELLECTUAL CURRENTS: THE  
USES OF THE LISBON EARTHQUAKE IN 18TH  
CENTURY THOUGHT

Russell R. Dynes

1998

SEISMIC WAVES IN INTELLECTUAL CURRENTS: THE USES OF THE LISBON  
EARTHQUAKE IN 18<sup>TH</sup> CENTURY THOUGHT

Wherefore hath The Lord done thus unto this great city.

Jeremiah 22:8

“Embarrassing for professors of physics and humiliating for the Theologians.”

Edmond Jean Barbier (quoted in Kendrick, 1956, p.149)

Russell R. Dynes  
Disaster Research Center  
Department of Sociology  
and Criminal Justice  
University of Delaware  
Newark, DE 19716

Disasters are usually identified as having occurred at a particular time and place but they also occur at a particular time in human history and within a specific social and cultural context. Consequently, it is appropriate to call the Lisbon earthquake the first modern disaster (Dynes, 1999). Certainly, earlier history records many instances of geophysical events and the differences among such events were explained by variations in their physical intensity. But the Lisbon earthquake occurred at a time and a place which made it a part of the debate over modernity. Its location in Europe made it a topic in the intellectual debates of the times. These debates had greater impact on the changing cultural context than the physical intensity of the earthquake might imply. It happened when there were many strains between tradition and new ideas about progress. It was a time when traditional ideas and institutions were being challenged. It was a time when nation states were being created and when rivalries among states led to tensions and conflict. It was a time when the bonds of traditional religious authority were being challenged by a growing enthusiasm for intellectual freedom and for reason.

## STARTING POINTS

While the primary concern here will be on the writings of Voltaire and Rousseau, it is necessary to provide a context and a starting point. The eighteenth century was a period of reworking traditional ideas on persistent issues. Traditional ideas were still being maintained by the Church and State but those institutions were changing and the basis of their powers were being eroded. There was a growing emphasis on the ability and capacity of Man to use reason which would compete with historic institutional “prepackaged” answers. Experimentation and discussion of new answers reached beyond what had been localized and institutional answers.

Mobility and migration among European states began to create an “global” intellectual community centered in France, Germany, and England with others on the periphery. It was an expanding world, a growing intellectual network in which ideas were created, sometimes discussed face to face but often communicated by correspondence, manuscripts and books.

The discussion which emerged subsequent to the Lisbon earthquake centered on how that event symbolized the problem of evil. Even before Lisbon, earthquakes were often used as illustrations to indicate how “bad things” could happen. When the earthquake did happen in 1755, it provided a vivid reality to the on-going discussion. The convenient illustration had now become a real event. Lisbon was the first earthquake to affect a “modern” European city at a time when there was rethinking of the nature of personality, knowledge, science and religion which has come to be known as the Enlightenment. While there were other earthquakes which occurred about the same period, notably Catania, Sicily and in Port Royal, Jamaica, both in 1693, from a European viewpoint, those events were somewhat irrelevant, being in distant and perhaps in exotic places. And most of northern Europe was seismically stable.

The Lisbon earthquake was hard to ignore since, at the time, it was the fourth largest city in Europe, after London, Paris, and Naples. Lisbon was famous for its wealth and it was one of the best known cities in Europe since traders, especially English and German, did much of the business in town. Lisbon was also known as a major city of the Inquisition and as being a center of superstition and idolatry. The earthquake occurred at 9:30 on November 1<sup>st</sup> when many of the residents were at mass. Being a port city, a seismic wave came over low lying areas. Subsequently, a major fire destroyed many of the wooden buildings, not damaged by the quake. Estimates of lives lost varied tremendously, some reaching 70,000 but perhaps 10,000 might be

more realistic. Much of the damage occurred in the center of the city which contained townhouses and palaces of the nobility. The Royal Palace was destroyed. There was significant housing damage and some estimates suggested that only 3,000 out of 20,000 dwellings were liable.

## THE LITERATURE OF THE LISBON EARTHQUAKE

One major consequence of the earthquake, especially outside Portugal, was the generation of a considerable literature which described the destruction, speculated on the causes and drew moral conclusions. This literature included newspaper discussions, entire books, essays, long poems, eyewitness accounts and theater presentations (See Kendrick, 1956; Wade, 1959). The range of the concerns was quite varied, including both "scientific" and religious concerns. Many of the themes in the literature involved the idea that Lisbon was being punished for its sins, although such a case had its limits. Lisbon was known throughout Europe for its impressive churches and many convents as well as the piety of its people. A good case could be made that Lisbon was much more religious than London or Paris. But some saw the city as wicked, materialistic and immoral. Several had more delimited explanations. A few saw the earthquake as a triumph for the Jansenists since the quake had crushed the center of Jesuit power. Protestants could see the quake as a lesson for Catholics, and both Protestants and Catholics could see the quake as directed toward wickedness and toward the Inquisition. There were those, too, who felt that, regardless of the "sins" of the city, it has been treated more severely than it should have been.

For some writers, content that God was the ultimate cause of everything, the earthquake

was a reminder that not enough effort had been devoted to understanding how nature works. This generated a number of new and reworked “scientific” theories, involving the power of overheated water, the explosion of compressed air and/or the presence of pyrites in the earth which were highly inflammable. Such explanations were generally not considered to be independent of or contradictory to the idea that God was the first cause of all things.

There even a few commentators who saw the earthquake as having, in the long run, considerable value for its future. To outsiders, Portugal was backward, provincial, and unenlightened and its people, undereducated and poorly educated. From that viewpoint, Portugal had given little attention to the scientific and commercial needs of the times. The earthquake might force the country to change. While the notion that the earthquake might be a blessing in disguise was not widespread, it did exist.

The most profound effect of the earthquake on ideas was its consequences for certain intellectual currents, already evident in other European capitals. Those intellectual currents, generally identified as the Enlightenment, are now considered as the seed bed for political and social thought within the western world. The earthquake became the topic of analysis and discussion for Voltaire and Rousseau, two of the major figures in Western thought. The discussion had little connection with the physical effects of the earthquake itself, but in the long run, may have had more lasting consequences.

## THE IMPACT OF THE LISBON EARTHQUAKE ON THE ENLIGHTENMENT

What has come to be know as the Enlightenment is a hundred year period- from 1694 to 1794 and, during that period, a number of intellectuals were engaged in discussions concerning

how earlier thought and institutions had failed to come to terms with the emergence of a modern world. The Enlightenment can first be seen as an informal social movement among philosophers, essayists, and critics who were intent on shedding the dominance of Christian thought and moving toward new ways of knowing. Immanuel Kant wrote a popular essay entitled "Answer the Question: What is the Enlightenment?" and his answer was "Enlightenment is man's emergence from his non-age." Man had failed to reach his goals from a "lack of determination and courage to use that intelligence without another's guidance" "Dare to know. Have courage to use your own intelligence" (Gay, 1973, p.384).

Gay, in his treatment of the relationships in the movement, suggests "the appropriateness of the metaphor of a family, characterized by informal and often tense intimacy, their fundamental philosophical affinity and their spirited debates" "They were all, as I have said, devotees of criticism: they believed in decency, humanitarianism, freedom from censorship and loosening up the moral code" (Ibid, p.15). Gay also suggests that the Enlightenment was the collaborative product of three closely linked generations. The first generation was dominated by Voltaire whose long life (1694-1778) provided a continuing challenge for others. Rousseau (b.1712) was a member of the second generation and his discussion of Voltaire's treatment of the Lisbon earthquake was couched in deference to Voltaire. In the third generation, Kants (b. 1724) limited discussion of the earthquake took a different direction toward a more "scientific" approach to knowledge but will not be discussed here.

Within the "family," criticism was the central mode of analysis. Ideas from the past were subject to criticism. This criticism frequently led individuals into conflict with the church and state. While some considered the passion for criticism as destructive, others saw it as necessary

to clear the ground so that new thinking could emerge. In spite of the premium on criticism, the various thinkers could not be accused of being alienated from the societies in which they lived. They were intimately involved in the lives of the times and shared many of the common cultural assumptions. They were not utopian thinkers but they were hopeful for the future. During their time, they had seen improvements in their status, respect and income and many had been honored for their efforts by rulers who wished to demonstrate their support for cultural and intellectual “progress.”

In many ways, it was an exciting and hopeful time to be alive. The term “optimism” seemed to fit when it was first used in 1737. Most in the Enlightenment were, in effect, deists. While rejecting much of traditional Christianity, especially the power of the Church, they believed in a god that had created the world with unbreakable physical and moral laws and then withdrew from involvement. Consequently, it was the task of others to use reason to understand such a creation. Writing in Germany in 1710, Leibnitz argued that faith was consistent with reason and that the world is good, indeed it was the best of all possible worlds since it was chosen by an all wise, all good Creator. Leibnitz wrote from the viewpoint of the Christian faith but tried to show how faith was consistent with reason. “Supreme wisdom, united with a goodness no less infinite, could fail to choose the best” (quoted in Brightman, p.501). If God was what the Christian revelation proclaimed, the actual universe must be the best of all possible worlds. This could be true only if the details are judged from the point of view of the whole, since nothing exists nor had significance in and of itself. While evil exists, such unhappiness is a result of original sin so, at times, our vices could surpass our virtues. Leibnitz, like many others, used both historic villains and seismic events to illustrate his points. “A single Caligula, a Nero has done more evil than an

earthquake" (Ibid). Regardless of the evil that exists, optimistic faith should be unaffected, since there is more good than evil in the universe and that which is negative disappears when the whole is known. For Leibnitz, theistic optimism was rationally justified.

The optimism which Leibnitz expressed in theological language was also put in more accessible poetical language by Alexander Pope in England in his Essay on Man (1733-34). In this poem, many of the same ideas and even some of the same illustrations that Leibnitz used, are expressed.

Of systems possible, if 'tis confessed  
That wisdom infinite must form the best (Mack, Epistle I, lines 43-44)

Who sees with equal eye, as God of all  
A hero perish, or a sparrow fall (lines 82-88)

What errs not nature from this gracious end  
From burning suns when livid death descends  
When earthquakes swallow, or when tempests sweep  
Turns to one grave, whole nations to the deep  
"No" 'tis replied, "the first Almighty Cause  
partial but by gen'ral laws" (lines 141-46)

If plagues or earthquakes break not heaven's design  
Why then a Borgia or a Catiline? (lines 155-56)

While the illustration shifts to Borgia and Catiline by Pope from Caligula and Nero by Leibnitz, the notion that human evil is no more a threat to understanding God's plan than problems of nature.

Pope ends the poem, by reaffirming the limits of reason in understanding God's plan and that nature's aberrations, in the form of earthquakes and other traumas, as well as the evil that men can do, do not undercut the notion of a reasonable God. He concludes in the following way:

All nature is but art unknown to thee  
All chance, direction which thou canst not see  
All discord, harmony not understood  
All partial evil, universal good

And, spite of pride, in erring reason's spite  
One truth is clear, Whatever is, is RIGHT (lines 289-94).

The theme then was that the universe as a whole was the only object of value and that specific events or specific individuals have little meaning. For men, "Tis but a part we see and not a whole." For God defines the universal cause- "that chain which links the immense design."

All are but parts of one stupendous whole  
Whose body nature is, and God the soul (lines 267-68).

Pope was read by others at the time as a deist with a vision of a reasonable god who had placed man in his proper place in the great chain of being. (1) That view was widely accepted. It downplayed traditional Christian interpretations, pleasing those who were hostile or indifferent to the Church, while at the same time, it pleased those who were enthralled with the promise of man's reason but did not wish to break completely with notions of God's power. However, while earthquakes had provided useful hypothetical examples in intellectual discourse, the Lisbon earthquake provided a realistic instance to look again at the assumption that the world is good and indeed the best of all possible worlds.

#### THE DISCUSSION BETWEEN VOLTAIRE AND ROUSSEAU ABOUT THE MEANING OF THE LISBON EARTHQUAKE

The focus here will be on the discussion about the Lisbon earthquake between Voltaire and Rousseau, perhaps the two major thinkers of the Enlightenment. Voltaire's views on the earthquake are more widely known since Lisbon played a major role in his Candide in which his central characters make a tour around historical disasters and record their conversations about hope and despair, ignorance and disenchantment. Less well known was Rousseau's challenge to Voltaire in which he argued on the moral philosophical level but also introduced, for the first time,

a social science view of disaster. Rousseau's relationship with other members of the Enlightenment was complex to a certain extent he was regarded as an enemy within the camp. But as Gay has commented "Rousseau remained a member of the philosophical family, though hardly in good standing! "A black sheep is still a sheep" (Ibid, 1973, p.15). Other comments about their personal and career context are necessary.

Certainly the central intellectual figure in the Enlightenment would be Voltaire. He was a free intellectual spirit who hated organizations and state authorities. Throughout his life, he quarreled with the Church, the Government, and the intellectual Establishment of the time. Constantly in trouble with these establishments, many of his critiques were oblique, set all over the globe and many of them took the form of rather fantastic travelers tales. They were often published anonymously and frequently Voltaire denied authorship. He relished intellectual combat and used wit to make his points. Clearly, Voltaire was bothered with the rather prevailing view that everyone lived in the best of all possible worlds and, in his forties, his writings began to deal with these issues. His particular target was Leibnitz and less so Pope whom he liked personally. Certain of his initial criticisms could be found in Micromegas which today might best be characterized as "science fiction" and in Zadig or Destiny which uses the conventions of an Oriental travel tale. Personal and professional troubles interrupted his considerations when his longtime lover died and he accepted a position in Frederick's court in Berlin that ended badly, and he left in 1753 and then moved to Geneva in 1754 where he returned to his consideration of previous themes.

Rousseau was on the outside of intellectual circles and was a persistent irritant to others.

He arrived in Paris in 1742 and worked as a tutor and a secretary. He gradually became known in the intellectual circles, and Diderot asked him to write articles for the Encyclopedia. His initial fame came at the age of thirty eight with the publication of his Discourse of the Science and Arts. In many ways, Discourse undercut a primary theme of the Enlightenment that science and technology could save mankind. He argued, in a contrarian manner, that advances of knowledge were deleterious since they took people farther away from their natural innocence toward corruption. This general thesis was extended in his Discourse on the Origin of Inequality which argues about the origins and downfall of man as a moral, social and political being. In addition to his philosophical arguments, Rousseau underscored his argument “against” civilization by taking a menial job and eventually left Paris. Concerned that many other philosophers tended to mock God in their writings, in spite of their nominal attachments to the Catholic Church, Rousseau, at the age of 42, moved back to Geneva and sought admission to the Calvinist Church into which he had been baptized as an infant.

There was correspondence between Voltaire and Rousseau the year before the Lisbon earthquake. Rousseau's letters were usually initiated by profuse declarations of admiration for Voltaire. Voltaire's responses were frequently curt and caustic. In 1755, Rousseau had sent Voltaire a copy of his Discourse on Inequality. In his acknowledgment, dated August 30<sup>th</sup> Voltaire wrote:

I have received your new book about the human race....Never has  
so much intelligence been used in seeking to make us stupid.  
(Masters and Kelly, 1992, p.102)

But Voltaire goes on to admit that literature and science could cause harm but that such harm was only “flowers” in comparison with the ills which could be caused by the pride of men. Then

Voltaire goes on to complain about his fate as a writer, beset by crass publishers, book agents and critics who try to profit from his fame and notoriety.

Rousseau's response, dated September 10, 1755, reassures Voltaire that he is aware of "all the disfavor that pursues men famous in letters" and points out that he does not "aspire to reestablish us in our stupidity" but he reasserts that "the progress of the mind and of knowledge that enlarges our pride and multiplies our errors soon hastens our misfortune." He then goes on to suggest that "Men's ills come far more from error than ignorance and that what we do not know at all harms us far less than what we believe we know" (Ibid, p.103). He illustrates that by pointing out that Galileo was not punished for creating knowledge but by those who believed they knew the earth did not turn.

There was a lull in the correspondence. The Lisbon earthquake occurred on November 1, 1755 and Voltaire's poem on Lisbon was perhaps finished before the end of the year. It was initially circulated anonymously when Voltaire attributed authorship to another, but the poem was published in Geneva in March 1756 and was sent to Rousseau along with Voltaire's Poem on Natural Law sometime during the summer of 1756. Voltaire used the earthquake as a vehicle to attack optimism. His poem was subtitled "An Inquiry into the Maxim "Whatever is, is Right" and he starts

Oh wretched man, earth-fated to be cursed  
Abyss of Plagues, and miseries the worst!  
Horrors on horrors, griefs on griefs must show  
That man's the victim of unceasing woe,  
And lamentations which inspire my strain,  
Prove that philosophy is false and vain (Redman, p.560).

later

Say what advantage can result to all  
From Lisbon's lamentable fall? (Ibid, p.561).

and later

Leibnitz can't tell me from what secret cause  
In a world governed by the wisest laws  
Lasting disorders, woes that never end  
With our vain pleasures, real sufferings blend (Ibid, p.567).

Most of the content of the poem centers on a critique without any resolution provided by Voltaire. In the final portion he goes back to using an oriental metaphor.

A caliph once when his last hour grew nigh  
Prayed in such terms as these to the most high  
"Being supreme, whose greatness knows no bound  
I bring thee all that can't in Thee be found" (Ibid, p.569).

The original version, which Rousseau received, ended with these verses:

What is necessary, o mortals? Mortals, it is necessary to suffer  
To submit in silence, adore and die (Masters and Kelly, p.93, note 4).

The final version, however, read:

Defects and sorrows, ignorance and woe  
Hope he omitted, man's sole bliss below (Redman, p.569).

Rousseau was disturbed by the Poem since he saw it as an attack of the type of religious faith he had. Rousseau wrote a letter to Voltaire, dated August 18, 1756 but did not send it directly to Voltaire but passed but passed it through a mutual friend, asking him to use his judgement in sending it to Voltaire. The friend, Dr. Tronchin, indicated that he had passed the poem on but warned Rousseau that Voltaire was not likely to accept the criticism but he, Tronchin, had advised Voltaire to burn his poem.

Rousseau's letter was a long one in which he made a number of points. He commented

that he hoped that Voltaire's poem would not be characterized as a poem against Providence in the same way that Voltaire had characterized Rousseau's Discourse as being a book against the human race. He goes on to suggest that "Most of our physical ills are still our own work."

Rousseau then launches into a discussion which can best be describes as the initial social science view of disaster. He says:

Without departing from your subject of Lisbon, admit, for example, that nature did not construct twenty thousand houses of six to seven stories there, and that if the inhabitants of this great city had been more equally spread out and more lightly lodged, the damage would have been much less and perhaps of no account (Masters and Kelly, 1992, p.110).

Rousseau points out that if the population had evacuated at the first tremors they would have been safe but-

How many unfortunate people have perished in this disaster because of one wanting to take his clothes, another his papers, another his money? (Ibid, p.110).

And Rousseau points to the idea that disaster is a social construction, the event was defined by existing cultural norms. He says:

You might have wished....that the quake had occurred in the middle of a wilderness rather than in Lisbon....But we do not speak of them, because they do not cause any harm to the Gentleman of the cities, the only men of whom we take account.

Should it be ....that nature ought to be subjected to our laws, and that in order to interdict an earthquake, we have only to build a city there? (Ibid)

While much of Rousseau's letter deals with further implications of Voltaire's attack on optimism, toward the close he underscored a paradox, he points out that Voltaire is living in abundance, freedom and admiration but yet only find evil on earth, while he, Rousseau, poor, obscure, and

tormented finds all that is good and he concludes "...you enjoy, but I hope, and hope adorns everything" (Ibid, p.420).

Voltaire acknowledged the letter on September 12<sup>th</sup> in the following way.

My dear philosopher, we are able, you and I, in the intervals of our ills, to reason in verse and prose. But at the present movement, you will pardon me for leaving there all these philosophical discussions which are only amusements (Ibid, p.122).

Voltaire, however, had the last word, in part by cutting Rousseau off but even more so by publishing Candide in 1759. The book became an international best seller. In its first year, it ran over 30,000 copies, which was astounding at the time for a work of fiction. It created a voice that was recognizable all over Europe, enlarging Voltaire's reputation (Holmes, 1995). Moving beyond his Poem which focused exclusively on Lisbon, Voltaire looked around the world and saw poverty, ignorance, disease, and fanaticism. His central character, Candide, traveled the earth to witness and experience the absurdities of human existence. Even with this increased scope, Lisbon remained a central destination and the earthquake a common predicament. On the day Candide visits Lisbon, the earth shook again and Candide says to himself "If this is the best of all possible worlds, what are the others?" (Redman, p.243). Voltaire's ending to Candide, while still paradoxical, was not as harsh as the original ending to the Poem. Ending the adventure in Constantinople, Candide with his faithful companions, Pangloss, the Optimist and Martin, the Pessimist, enter a discussion with an old man. This old man comments that he never worries about what happens in the city but is only concerned about the garden he cultivates. Candide reflects on his remarks and comments that the Turk has chosen an existence preferable to many Kings they have met in their travels but that we should cultivate our gardens. Martin replies "Let

us work without theorizing, tis the only way to make life endurable (Ibid, p.327). When Pangloss reemphasizes the “All of the events are linked up in this best of all possible worlds” and provides a summary of the connectedness of their adventures, Candide’s final response is “Tis well said but we must cultivate our gardens.”

The relationship between Voltaire and Rousseau became increasingly fractured. In 1758, Rousseau read an article on Geneva which had been published in Diderot’s Encyclopedie. One of the offending comments was on the laxity of the clergy in Geneva and the other was a comment that Geneva needed a theater to elevate its culture. Geneva had previously banned dramatic performances. Seeing Voltaire’s hand behind that suggestion, he attacked the idea suggesting that a theater would become “a temple of illusions and falsehood” (Cranston, 1991, p.109), a surprising position since Rousseau also wrote plays. Later, in 1761, when, Rousseau published his novel La Nouvelle Heloise, Voltaire published an attack entitled Quatre Lettres sur La Nouvelle Heloise but under the name of Marquis de Ximenes. Since Voltaire never answered the points Rousseau had raised in his letter, Rousseau came to believe that Candide was the answer. In correspondence with the Prince of Wurttemberg in 1764, he said “My letter gave birth to Candide, Candide was his answer to it. I wanted to philosophize with Voltaire: in return, he made fun of me” (Quoted in Cranston, 1991, p.31).

After Candide, Voltaire shifted his focus somewhat. In 1764, he published his The Portable Philosophical Dictionary then involved himself in specific cases of injustice, fighting them through his writings in the press and later wrote a Treatise on Toleration which he saw as an answer to the fanaticism. Certainly, by the end of his life in 1778, he had become the symbol of the Enlightenment. While Voltaire had used the Lisbon earthquake, his preoccupation with the

earthquake was only as a device to undercut optimism, although his alternative “to cultivate a garden” seemed to others to be a weak alternative.

By contrast, Rousseau turned from a preoccupation for criticizing the ideas of others to a more constructive phase in which he tried to imagine a social setting which would have less corrosive consequences. In Emile (1762), he explored the nature of education, which had been a frequent concern of philosophers from Plato. In The Social Contract, published the same year, Rousseau deals with the age-old conflict between the rights of the individual and the rights of the collectivity- in this case, represented by the community rather than the state. Again, his concern was on a central issue of social life- the relationship between freedom and authority.

In certain ways, it is unfortunate that Lisbon became a prime example for Voltaire in Candide. He was perhaps the most brilliant advocate of the Enlightenment, and his influence underscored the idea that the pen is mightier than the sword. But later scholars have suggested that Voltaire emphasized style over substance and that in many of his works, such as Candide, he was fanatical in his antifanaticism (Woloch, p.420). In fact, in his later years, Voltaire was viewed by younger writers as being an establishment figure, perhaps best described as a liberal elitist with a conscience. By contrast, Rousseau’s prose was not witty and often turgid. His comments on Lisbon was only a small part of the longer letter that came to be designated as a “Letter on Providence.” Neither did he return to Lisbon in other writings. The paradox which he asserted in the beginning of The Social Contract “Men are born free but everywhere they are in chains” expressed the idea that society could corrupt human nature but only within society could people be regenerated. Rousseau’s difficult personality, even paranoia, fractured his relationship with others. His penchant for self-imposed exile to seek solitude facilitated his own writing but

reduced the dialogues he had at one time with Voltaire. Rousseau's fame was enhanced after his death, especially the recognition he received for his work on political theory. If he had followed up his ideas about the social implications of disaster, he could have made an additional contribution.

## LASTING IMPLICATIONS

Dealing with the issues debated after the Lisbon earthquake have a dated quality to them since the dominant issues did not have the same saliency later. But the reason for the importance of Lisbon was its timing and location. It occurred on the edge of what was to become the modern Western world- an urban but not then necessarily an industrial world and at a time when the modern state was developing and when issues of government responsibility were becoming critical. There were cracks in the old order and the processes were developing which led to both the French and American Revolutions. Nation states were beginning to become concerned not only about political issues but also about collective economic success. So in spite of the differences in the content of issues, there are certain longer term implications that can be based on the Lisbon example.

### 1. The meaning of a disaster is always interpreted in terms of the existing cultural context.

The timing of Lisbon and the location of the earthquake place it in the middle of the period of the Enlightenment and inadvertently in the center of intellectual concerns. The earthquake provided the opportunity for Voltaire to attack what he perceived as a common set of assumptions about the nature of the world. In that context, optimism referred to a set of ideas about the origins of the universe and of the cause of physical and moral corruption. In effect, Voltaire saw optimism

as the predominant intellectual world view at that time. However, one should not ignore the cultural differences which did exist among the developing nations in Europe nor can one ignore the fact that the ideas of the Enlightenment did not permeate deeply into the mass culture. Still the intellectual controversies about the earthquake has had continuing significance. Voltaire's attack, especially in Candide, has remained a significant part of the Western literary canon, reflecting its historical importance in Western thought. One might argue that optimism as a world view is no longer a key element within Western culture, although a good case could be made that optimism reappeared in the 19<sup>th</sup> century as progress and in the 20<sup>th</sup> century as development. As an overall philosophical orientation today, optimism can be a part of nationalism but more often, in an individualistic age, optimism is seen as a personality attribute, sometimes for those who do not understand what is going on.

Many of the themes of the Enlightenment have persisted without substantial change. As a part of the premium placed on reason, science and technology as the prime "solution" to disaster continues to be recommended. Whether it is better construction materials, the building of levees and dams, better detection methods, enhanced communication technology or a variety of other technological fixes, modern disasters are usually considered only technological failures.

It is difficult to compare the level of intensity of the arguments evoked by Lisbon as compared with the level of intensity generated today by Bhopal or Chernobyl. But Lisbon, Bhopal and Chernobyl all illustrate the contention that the meaning of a disaster is always seen in the cultural context of the time.

## 2. The understanding of the effects of a disaster depends on a knowledge of particular

social and behavioral patterns. Rousseau's ill fated attempts to bring Voltaire's ideological argument down to the level of understanding human culpability was not successful but the issues he raised were still important. Rousseau's discussion was perhaps the first attempt to conceptualize what is now known as "vulnerability." He pointed out that the urban pattern and the housing type made a city located in a seismic risk area much more susceptible to damage. He also could have pointed out that the layout of the city made it susceptible to fires and that any port city in a seismic area makes it a prime location for what we called tsunamis. Too, there was a social selectivity to the casualties. The Center of the city, close to the Royal Palace, contained the houses of many of the nobles, who wish to be close to the King. Such a risky location, however, is not common since such areas are more frequently "allocated" to persons of lower status. (It would seem that Voltaire should have noticed this differential vulnerability given his rather constant conflicts with various royal authorities.)

Rousseau did point out that Voltaire's concern for Lisbon might be due to his interest in "high culture" assumed to be more likely found in large cities. Rousseau suggested his attention might wane if the earthquake had occurred in sparsely populated areas. Voltaire has little interest and even considerable disdain for peasants and rural folk. Rousseau also introduced the idea that the behavior of the inhabitants of Lisbon might have played an important part in the ultimate consequences. If the residents had not been so concerned with pride, property and money, they might have been more sensitive to warnings. In more contemporary terms, their risk perception had been minimized by their pride and social position.

Rousseau's brief comments can be seen as the beginnings of a social science view of

disaster which were not picked up in any systematic way for almost 200 years. (See, for example, Dynes 1970, Drabek 1986, Quarantelli 1998.) In any case, Rousseau's arguments that to understand the meaning of Lisbon depended not just on the overarching philosophical assumptions but on an understanding of the social structure and culture in the specific community in which the earthquake took place.

3. Since disasters are significant disruptions and a threat to social order, the "modern" state has assumed more and more collective responsibility for their consequences. (For more on this theoretical position see Stallings, 1998.) One of the most significant structural changes which was occurring in the 18<sup>th</sup> century was the development of the modern state. These changes were not particularly reflected in the concerns of Voltaire and Rousseau. Voltaire's perception of Portugal was of being superstitious and fanatical. In the lead sentence of Chapter VI of Candide, Voltaire comments "After the earthquake which destroyed three quarters of Lisbon, the wise men of that country could discover no more efficacious way of preventing ruin that by giving the people a splendid auto da fe." Voltaire's comments can be attributed to literary license rather than to an accurate assessment. It is true that, for most of Enlightenment writers, Portugal was seen as backward and despotic but, even at the time of the earthquake, there had been important structural and political changes moving Portugal toward more modern economic and political goals. That made the earthquake especially problematic. In fact, the earthquake was the first disaster in which the state accepted the responsibility for mobilizing the emergency response and for developing and implementing a collective effort for reconstruction. In Portugal, the ideological battle was not about the nature of optimism but about the nature of economic and

political development.

Portugal was the first emerging nation state in Europe to be confronted with a major disaster in its capital city. The Marques de Pombal was given the responsibility for the emergency response and reconstruction of Lisbon. (That title was given to him in 1770 and historically that name is associated with him. See Maxwell, 1995.) His earthquake responsibilities were only one part of his overall efforts to modernize Portugal. Pombal's previous service in other countries had allowed him to understand the economic and political weakness of Portugal, and how a small country might maintain economic viability in an international system composed of larger and more aggressive states. He was distrustful of the Jesuits because of their economic activities in Portugese colonies and for their close ties to the aristocracy in Portugal. The earthquake delayed the effort to modernize the country but Pombal was alert to see as enemies those who would delay the reconstruction process. The person who came to be a major impediment to Pombal's aspirations was Gabriel Malagrida, a Jesuit, who continued to insist on a supernatural causation for the earthquake. Over time and through a series of structural changes engineered by Pombal, Malagrida was condemned as a heretic by the Inquisition and in 1761, Malagrida became the last victim of the Inquisition and of the earthquake in a rather spectacular auto de fe. Voltaire's literary imagery of the leaders of Portugal in Candide written several years before could not match the conclusion which Pombal finally engineered. (For greater details, see Dynes 1999, Maxwell, 1995.) This suggests that the evaluation of the consequences of disaster are more closely related to the development of the modern state than to the changes in particular cultural assumptions. While ideas always have consequences, changes in the structure of society, from whatever source, are more essential for change. While feelings of optimism may dominate culture

at a particular time and place, not until a disaster is conceptualized as a threat to social order and consequently to the state do we have structural changes to accommodate its collective responsibility for disaster effects. The primary lesson of Lisbon is not on the issues which it raised for Enlightenment thought but the issues it raised for the responsibilities for an emerging nation state.

## CONCLUSIONS

The Lisbon earthquake, in 1755, was the first modern earthquake. In addition to its physical damage, it provided a focus of discussion among writers and thinkers of what has come to be known as the Enlightenment. They were attempting to break away from traditional ideas and to emphasize the importance of reason. The fact of a major earthquake on the European continent in a well known city prompted a reevaluation of existing explanations. Existing philosophies of Leibnitz and Pope assumed a wise god who created nature so that any imperfections had to be judged on understanding God's overall plan. When the earthquake occurred, Voltaire, perhaps the central figure in the Enlightenment, wrote a Poem on Lisbon, which criticized the conventional optimistic view. In correspondence, Rousseau criticized Voltaire's views and introduced, in his critique, an embryonic social science understanding of disaster. Voltaire ignored Rousseau's critique and published Candide which has continued an integral part of the Western literary canon.

This discussion prompts the following conclusions. That the meanings of disaster is always interpreted in terms of the existing cultural context but, picking up on Rousseau's ideas, that the meaning of disaster has to be found in understanding the social and cultural context in

which they occur. Finally, while Enlightenment ideas had consequences, the development of the state in Portugal concerned with the economic and political consequences of the earthquake, become central to the recovery and reconstruction processes. Perhaps the prime result of this first modern earthquake was that the state assumed collective responsibility for its consequences. This, too, was a first in modern history.

## NOTE

1. While Pope is being quoted here in the context of the discussion of optimism, it is important to remember that he also can be seen as a precursor of a social science approach.

Know then thyself, presume not God to scan  
The proper study of Mankind is Man.

(Mack, 1993, Epistle II, lines 1-2)

## REFERENCES

- Broome, J.H.  
1963 Rousseau, A Study of his Thought. London, Edward Arnold Ltd.
- Brightman, Edgar S.  
1919 "The Lisbon Earthquake: A Study of Religious Valuation,"  
American Journal of Theology, 23:550-518.
- Cranston, Maurice  
1991 The Noble Savage, Jean-Jacques Rousseau, 1754-1762. London,  
The Penguin Press.
- Drabek, Thomas  
1986 Human System Responses to Disaster: An Inventory of  
Sociological Findings. New York, Springer Verlag.
- Dynes, Russell R.  
1970 Organized Behavior in Disaster. Lexington, MA, Heath Lexington  
Books.
- 1999 "The Lisbon Earthquake in 1755: Contested Meanings in the First  
Modern Disaster" (unpublished).
- Dynes, Russell R., B. DeMarchi, C. Pelanda (eds.)  
1987 Sociology of Disasters: Contributions of Sociology to Disaster  
Research. Milan, Franco Angeli.
- Gay, Peter  
1973 The Enlightenment: A Comprehensive Anthology. New York,  
Simon and Shuster.
- 1988 Voltaire's Politics: The Poet as Realist. New Haven, Yale  
University Press.
- Grimsley, Robert  
1968 Rousseau and the Religious Quest. Oxford, Oxford University  
Press.
- 1970 Rousseau's Religious Writings. Oxford, Clarendon Press.
- Hazard, Paul  
1954 European Thought in the Eighteenth Century. New Haven, Yale  
University Press.

- Holmes, Richard  
1995 "Voltaire's Grin," The New York Review of Books,  
Vol. XLII, No.19, November 30, pp.49-55.
- Kendrick, T.D.  
1956 The Lisbon Earthquake. London, Methuen and Co., Ltd.
- Leigh, R.A.  
1964 "Rousseau's Letter to Voltaire on Optimism,"  
Studies on Voltaire and the Eighteenth Century, XXX, 247-309.
- Mack, Maynard, ed.  
1993 Alexander Pope: An Essay on Man. London, Routledge.
- Mason, Haydn  
1992 Candide, Optimism Demolished. New York, Twayne Publishers.
- Masters, Roger D. and Christopher Kelly, eds.  
1990 The Collected Writings of Rousseau, Vol.3.  
Hanover, The University Press of New England.
- Maxwell, Kenneth  
1995 Pombal: Paradox of the Enlightenment. Cambridge, Cambridge  
University Press.
- Quarantelli, E.L., ed.  
1998 What is a Disaster? Perspectives on the Question. London,  
Routledge.
- Redman, Ben Ray, ed.  
1949 The Portable Voltaire. New York, The Viking Press.
- Stallings, Robert  
1998 "Disaster and the Theory of Social Order" in E.L. Quarantelli (ed.)  
What is a Disaster? Perspectives on the Question. London,  
Routledge.
- Wade, Ira. O.  
1959 Voltaire and Candide: A Study of the Fusion of History, Art and  
Philosophy. Princeton, Princeton University Press.

Wiley, Basil  
1940

The Eighteenth Century Background: Studies on the Idea of Nature  
in the Thought of the Period. London, Chatto and Windus.

Woloch, Isser  
1982

Eighteenth Century Europe: Tradition and Progress. New York,  
W.W. Norton and Co.