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THE DIALOGUE BETWEEN VOLTAIRE AND
ROUSSEAU ON THE LISBON EARTHQUAKE:
THE EMERGENCE OF A SOCIAL SCIENCE VIEW

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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)

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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 typically explained by variations in their physical intensity. However, 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. The earthquake occurred when there were many strains between tradition and new ideas about progress. It was a time when traditional ideas and institutions were being challenged, when nation states were being created, and when rivalries among states led to tensions and conflict. Further, it was a time when the bonds of traditional religious authority were being challenged by a growing enthusiasm for intellectual freedom and for reason. These major political and institutional shifts were reflected in the meanings that were assigned to the Lisbon earthquake.

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 ways of viewing and solving problems reached beyond what had been localized and institutional answers. Mobility and migration among European states began to create a “global” intellectual community centered in France, Germany, and England with other political entities on the periphery. It was an expanding world, a growing intellectual network in which ideas were created and 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

conventional illustration had now become a real event. Lisbon was the first earthquake to affect a “modern” European city at a time when there was a rethinking of the nature of personality, knowledge, science and religion, a period which has come to be known as the Enlightenment. While there were other earthquakes which occurred about the same period, notably in Catania, Sicily and in Port Royal, Jamaica, both in 1693, those events were somewhat irrelevant, from a European viewpoint, having taken place in distant and exotic places. And most of northern Europe was seismically stable.

The Lisbon earthquake was hard to ignore since, at the time, Lisbon 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 a center of superstition and idolatry. The earthquake occurred at 9:30 on November 1st when many of the residents were at mass. Lisbon is a port city, and the seismic wave inundated low lying areas. Subsequently, a major fire destroyed many of the wooden buildings, that had not been damaged by the quake. Estimates of lives lost varied tremendously, some reaching 70,000. 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 remained livable after the event.

THE LITERATURE ON THE LISBON EARTHQUAKE

One major consequence of the earthquake, especially outside Portugal, was the generation of a popular 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 concerns expressed in these works 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 for 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 commentaries offered 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.

In addition to the generation of popular culture, the most profound effect the earthquake had on ideas was its consequences for certain intellectual currents that were already evident in other European capitals. Those intellectual currents, generally thought of as comprising 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 Enlightenment thought. Those analyses had little connection with the physical effects of the earthquake itself, but in the long run, may have had more lasting consequences.

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 be seen first 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. Gay, (1973) in his treatment of the social and intellectual 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, Kant’s (b. 1724) limited discussion of the earthquake took a different direction, toward a more “scientific” approach to knowledge which will not be discussed here.

Within the “family,” criticism was the central mode of analysis. Ideas from the past were subject to criticism, which frequently led individuals into conflict with the church and state. While some considered the passion for criticism destructive, others saw it as necessary to clear the ground so that new thinking could emerge.

In spite of the premium placed on criticism, the various thinkers could not be accused of being alienated from the societies in which they lived. On the contrary, they were intimately involved in the lives of the times and shared many of their societies' 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, essentially, deists. While rejecting much of traditional Christianity, especially the power of the Church, they believed in a god who 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 natural and human events. Writing in Germany in 1710, Leibnitz argued that faith was consistent with reason and that the world is good, indeed it is 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 not 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 or has significance in and of itself. While evil exists, such unhappiness is a result of original sin so, at times our vices can 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 that Leibnitz expressed in theological language was also put in more accessible poetic 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. Pope ends the poem by reaffirming the limits of reason in understanding God's plan and arguing 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 (Mack, Epistle I, lines 289-94).

The theme then was that the universe as a whole is 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 (Ibid, 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. That view, which was widely accepted, downplayed traditional Christian interpretations, pleasing both those who were hostile or indifferent to the Church, and 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 an actual concrete opportunity to look again at the assumption that the world is good and indeed the best of all possible worlds.

In the context of current discussions of the Enlightenment, many historians of science suggest evidence for the beginnings of social science. For some writers, there was the explicit ambition of creating a science of Man. If reason was to be the key to knowledge, those who used reason needed to be understood. (Cox, 1995: Mancias, 1987). Certain, Pope is often sourced 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)

And Rousseau, writing in 1750, prior to his discussion with Voltaire about the earthquake, said it is "a grand and beautiful sight to see man--, dissipate, by light of his reason, the darkness in which nature has enveloped him." Rousseau suggested that, after dealing with theological concerns, in recent times, man had done something "even grander and more difficult-come back to study man and know his nature, his duties and his end" (Rousseau, 1964, p. 35). Such a position set the context for Rousseau's reaction to Voltaire's treatment of the Lisbon earthquake.

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, 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 the 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 and 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" (Gay, 1973, p.15). To understand more about the nature of the debate, other information on their personal and career context is necessary.

Certainly the central intellectual figure in the Enlightenment is 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. He was constantly in trouble with these authorities and many of his critiques were oblique and, set all over the globe. Many of them took the form of rather fantastic travelers' tales. Voltaire's works were often published anonymously, and frequently he denied authorship. He relished intellectual combat and used wit to make his points. Clearly, Voltaire was bothered with the 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 which ended badly. He left Berlin 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 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, which was 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 and 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 he 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 moved back to Geneva at the age of 42 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 30th 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)

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” points out that he does not “aspire to reestablish us in our stupidity” but also 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 rather by those who believed they knew the earth did not turn.

There was subsequently a lull in the correspondence. The Lisbon earthquake occurred on November 1, 1755, and Voltaire’s poem on Lisbon was probably finished before the end of the year. The poem was initially circulated anonymously, with Voltaire attributing authorship to another, but it 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, subtitled "An Inquiry into the Maxim

"Whatever is, is Right," 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 for which Voltaire provides no resolution. 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 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 that 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 described as the first truly social scientific 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 promptly 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, defined by

existing cultural norms and that whether an event is considered a disaster depends on who is affected. 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 Gentlemen 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, pointing 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 12th 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).

Thus, Voltaire 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, running over 30,000 copies in its first year, 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 everywhere. His central character, Candide, traveled the earth to witness and experience the absurdities of human existence. Even with this increased scope, however, 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 and 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 he later wrote a Treatise on Toleration, which he saw as an answer to 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 the time of 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 the relationship between freedom and authority, a central issue of social life.

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 were 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 that “Men are born free but everywhere they are in chains” expressed the idea that society could corrupt human nature but that 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 was able to have with Voltaire and others. 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 American and the French Revolutions. Nation states were beginning to become concerned not only about political issues but also about collective economic success. Thus, in spite of the differences in the content of issues, the Lisbon example has certain longer term implications for our understanding of disasters. Three of those implications will be discussed..

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 placed 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 have 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 central element within Western culture, although a good case could be made that optimism reappeared in the 19th century as progress and in the 20th century as development. As an overall philosophical orientation today, optimism can be an integral part of nationalism but more often, in an individualistic age, optimism is usually seen as a personality attribute.

Many of the themes of the Enlightenment persist. 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 primarily technological failures.

It is also difficult to compare the level of intensity of the arguments evoked by Lisbon as 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 are now 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 wished to be close to the King. The presence of the well-to-do in 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 and suggested his attention might wane if the earthquake had occurred in sparsely populated areas since Voltaire had 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 of the earthquake. If the residents had not been so concerned with pride, property and money, they might have been more sensitive to warnings and might have undertaken protective actions in a more timely fashion. 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.) Rousseau's argument 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. Thus prefigured current perspectives on disasters.

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 18th century was the development of the modern state. These changes were not particularly reflected in the concerns of Voltaire and Rousseau. Indeed, Voltaire considered Portugal 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 than by giving the people a splendid auto da fe." While Voltaire's comments can be attributed to literary license or political intent, it is true that, for most of Enlightenment writers, Portugal was seen as backward and despotic. However, even at the time of the earthquake, there had been important structural and political changes that were beginning to move Portugal toward more modern economic and political institutional forms. 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, Pombal, 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 Portuguese 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 might 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.) These events and changes suggest 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 of 1755, was the first modern earthquake. In addition to causing physical damage, it provided a focus of discussion among the writers and thinkers of what has come to be known as the Enlightenment. Those writers 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. The 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, following 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 modern state in Portugal, together with the state's concern 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.

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