

Natural Disasters and Christian Theology

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Nearly forty years ago John Bowker published a seminal text, *Problems of Suffering in the Religions of the World*, in which he argued that the issue of innocent suffering was a prominent theme in most of the world's religions. Especially in Christianity and Judaism arguments used to reconcile the concept of a loving and omniscient God, who treats his creatures with justice, and the simultaneous existence of evil and suffering is termed theodicy. The word theodicy was first introduced into philosophical discussion by Leibniz in 1710, although attempts to understand the reasons why innocent people suffer have exercised the minds of philosophers and theologians for thousands of years being notable features of: the Hebrew Bible; the New Testament; works of early Christian writers - in particular Augustine and Irenaeus and some of the greatest writers of later Christian history including Immanuel Kant, David Hulme, Feodor Dostoievsky, Karl Barth, C.S. Lewis, John Hick, Jürgen Moltmann, Alvin Plantinga, James Crenshaw, Dorothee Sölle and Jon Sobrino. Although in recent years most discussions of theodicy within the Judaeo/Christian tradition have been concerned with the suffering caused by humans to humans (e.g. violence against the individual, warfare, genocide and the holocaust), there is an established tradition of studying what are termed natural evils, which include: sickness; bereavement; as well as disasters following in the wake of extreme natural events.

Philosophical theology is based on the exercise of human reason, in the context of an engagement with scripture which is perceived to be the revealed word of God, and within the Leibnizian tradition there are a number of models of theodicy which are either based on, or may be supported by, scripture.

Table 1: Six ‘Leibnizian’ models of theodicy (based on Chester, 1998, the references cited therein and with some modifications)

Free Will or Augustinian	Best of all Possible Worlds or Irenaean	Retributive
Suffering is related to the freedom granted to humankind by God. Suffering results from human activity and reflects human sinfulness. It does not reflect God's action and is contrary to God's will.	The universe is controlled by the laws of physics and not by special laws (i.e. providences). Despite the suffering caused by disasters, the earth is the <i>Best Possible World</i> (Leibniz) that could be created. Suffering occurs to achieve a <i>greater good</i> (e.g. without earthquakes tectonic activity would not be possible and without volcanic activity no atmosphere would have formed). The occurrence and magnitude of earthquakes and volcanic eruptions obey the laws of probability. Our 'law controlled' world facilitates spiritual growth, through dealing with suffering.	This is an important scriptural model of suffering and one that is prominent in accounts of reactions to earthquakes and volcanic eruptions throughout Christian history. There are similarities with the dualist model.
Existential	Chaotic	Dualist
Similar in some respects to the <i>best of all possible worlds</i> model. Good may come out of suffering, and a decision has to be made in order to find meaning?	Post-Newtonian (i.e. uncertainty -based) view of natural processes. The world is intrinsically chaotic. People have to plan to live with uncertainty.	Good and evil are opposites and in conflict and people must make a decision (similar to the <i>existentialist</i> model). Only good comes from God, evil and suffering from an ‘anti-God’ or Devil.

Scripture and the theodicy of retribution

Biblical narratives focus on the *Holy Land* - present day Israel/Palestine - but allude to a more extensive area covering lands that border the eastern Mediterranean and which encompasses much of the Middle East. This large region is notable for its history of

disasters, which include droughts, storms and floods, as well as earthquakes and volcanic activity. In this short paper and for reasons of brevity, attention is focused on earthquakes and volcanic eruptions. Frequent and damaging earthquakes have occurred in the Holy Land and, although active volcanism did not occur in Palestine either during the biblical era or subsequently, it is a feature of several other areas mentioned in scripture.

The effects of volcanic activity, earthquakes and other natural disasters are used by the authors of the Hebrew Bible to support its dominant theodicy: that disasters represent punishment of human sinfulness by an often wrathful God.

Drawing on the exegesis of many Old Testament passages, allows three summary statements to be made about the relationships between the divine will and human suffering.

- a. The principal distinction is between the suffering of Israel – God’s chosen people – and the suffering of individuals, and not between suffering caused by natural disasters and human agency.
- b. The people who suffer are wicked and sinful, with God controlling alike the fates of people and nations.
- c. For individuals the suffering of innocent Job is normative. Even Job's friends, cannot believe that he is totally innocent and must be harbouring secret sins

Richard Bauckham highlights how authors in the Old Testament frequently make use of earthquake imagery to highlight *theophanies*; in which God is made manifest to his/her people. “Frequently the creation shakes before the coming of God as warrior, leading his hosts to battle against his enemies, before the coming of God to reign over the nations (and) before the coming of God to judge the wicked” (Bauckham 1977, p. 224).

In some Old Testament *pseudepigrapha*, Bauckham has also argued that texts point to a cataclysmic earthquake that will usher in a final manifestation of God at the end of time; an event which he names the *eschatological theophany*.

As in the Old Testament so in the New Testament, theophany and eschatology are prominent ways in which earthquake imagery is employed, with the ground shaking that accompanied the crucifixion, the seismic activity which moved the stone from Christ's tomb and the earthquake that opened the doors of the prison in which the Apostles Paul and Silas were incarcerated, all being examples of the former. Eschatological imagery is found in the Gospels and in the Revelation of St. John the Divine. Reference to a volcanic eruption may also occur in the Book of Revelation, where "hail stones ('hail of stones' - according to Bauckham 1977, p. 230)....dropped from heaven on people, until they cursed God for the plague of the hail" (Rev. 16: 21), and this may be an allusion to fall deposits (i.e. tephra) from the 79CE eruption of Vesuvius which most famously destroyed Pompeii. It is also possible that it was a devout Jew who scratched on the wall of a house in Pompeii the words 'Sodom and Gomorrah'. Even thousands of years, later the Sodom and Gomorrah event was still being associated with destructive natural phenomena.

The events described in the New Testament occurred predominantly in the first century of the Common Era and explanations of suffering caused by natural and human agency display both a continuity with, and a development of, Old Testament *retributive* theodicy. In Mark 2: 1-12 (paralleled in Matt. 9: 2:8 and Luke 5: 18-26), before Jesus heals a paralytic he first forgives the man his sins, so implying an Old Testament *retributive* theodicy. It is not made clear, however, whether this particular man was especially guilty because of his wrongdoing. The most focused treatment of the issue of

human suffering and so-called natural evils occurs in two incidents that are recorded in the Gospels. In the first the disciples ask Jesus whether the cause of a man's blindness from birth is his sin or that of his parents (John 9: 2), whilst in the second and referring to eighteen people who have been killed due to the collapse of the Tower of Silo'am, Jesus asks the rhetorical question: "do you think they were worse offenders than all others living in Jerusalem?" (Luke 13: 4). In the first incident Jesus upbraids the disciples and in so doing appears to go against Old Testament teaching, "neither this man nor his parents sinned; he was born blind so that God's works might be revealed in him" (John 9:3), whilst in the second Lucan example Jesus answers his own rhetorical question, "no I tell you; but unless you repent you will all perish just as they did" (Luke 13: 5). Both these passages are difficult to interpret. In the case of the blind man it seems undeserved - indeed iniquitous - that he should have had to endure suffering just so that he could be healed by Jesus, whilst in the Silo'am incident Jesus crucially introduces the notion of collective as opposed to individual guilt, a distinction which has important implications for present day *post-Leibnizian* theodicy.

In the period between the emergence of Christianity as a major world religion and the early nineteenth century, the explanation of major disasters that eclipsed all others was that these phenomena were either manifestations of divine power sent to punish human sinfulness and/or presaged the imminent end of the world. It is not difficult to support this statement, because the study of historic disasters within societies with a dominant Christian ethos has generated a vast literature.

Making use of the literature on historic eruptions and earthquakes, the consensus of academic scholarship has been highly critical of the impact of Christianity and its

retributive theodicy on human understanding of natural perils. The period between the rise of Christianity as the officially sanctioned faith of the Roman Empire under the Emperor Constantine and the later Eighteenth Century, is considered a long 'Dark Age' in which superstition largely replaced the search for scientific explanations of natural phenomena. According to this reading of intellectual history, the spread of Christianity largely eclipsed the albeit nascent naturalistic explanations of volcanoes and earthquakes that had been proposed by writers in the classical age and it was only from the time of the European Renaissance, especially during and following the Eighteenth Century Enlightenment, that *retributive* religious explanations of disasters became less prominent; to be superseded progressively by more scientific and social scientific explanations of extreme natural events and their impacts on vulnerable populations. It is argued further that this change first occurred in Europe and North America and later spread to other parts of the Christianized world, with the 1755 Lisbon earthquake marking a watershed. Not only did this earthquake at the same time shock and fascinate the educated classes of Europe and North America, but it also stimulated a fierce debate between those who saw the hand of God in the subsequent disaster and those who proposed purely naturalistic explanations. Striking Lisbon and other areas of southern Portugal, southern Spain and North Africa on the morning of All Saints' Day (2 November), many people attending church were killed by falling masonry and hundreds of religious buildings were destroyed when fires were kindled by altar candles and houses collapsing on kitchen hearths. Such catastrophic losses led many commentators to ascribe the earthquake to divine wrath visited on the sinful people of Portugal, the group singled out for opprobrium being the people a particular writer wished to blame. For example, one Jesuit, Father Gabriel Malagrida,

claimed the earthquake was punishment for the Inquisition not being sufficiently severe whilst, in contrast and writing from a Protestant viewpoint and from the safety of England, John Wesley blamed the disaster on the Inquisition's excesses. All these religious interpretations were strongly challenged by Jean-Jacques Rousseau who in the late eighteenth century was a pioneer in defining a disaster as a 'social construct'; involving an interaction between an earthquake and a vulnerable population, without any divine agency.

Scholars embracing the *conventional wisdom* conclude by arguing that today the last redoubts of religious explanations of disaster are either to be found in extreme biblical-literalist Christian circles within *economically more developed countries (EMDC)*, or in those societies within *economically less developed countries (ELDC)* which are relatively untouched by the forces of modernism.

In order to test the veracity of this conventional interpretation of intellectual history, Professor Angus Duncan and I have studied religious reactions to major earthquakes and volcanic eruptions that have occurred between 1900 and 2008 in countries with a predominantly Christian ethos. This catalogue represents an attempt to recover what we have termed a 'hidden history' of responses, because accounts which are cast in the 'language' of faith communities are frequently eliminated from official reports and peer-reviewed international academic science and social science journals. Recovery of these records requires the interrogation of newspapers of record, use of more anthropologically based studies and the study of local archives. Notwithstanding these issues it is significant that, of the 61 discrete events recorded, 72% show clear evidence of responses being couched in religious terms, a figure that would probably be even higher if local records could be interrogated for information on earlier events. For

example reports of the 1902 and 1929 earthquakes in Guatemala show no evidence of religious responses, yet more detailed reports of the 1976 earthquake disaster imply that religious explanations were at the time both deep-seated and of long-standing within Guatemalan society.

One element of the ‘conventional wisdom’ that can be supported is that a biblical-literalist *retributive* theodicy declined rapidly following the 1755 Lisbon earthquake especially in what may be described today as *economically more developed countries*, though elements of it remain both in these societies and also in many which are *economically less developed*. In Great Britain and other countries which saw rapid industrial growth and major scientific advance from the late eighteenth century, progressively fewer Christians accepted explanations that involved divine *retribution*, but even today notions of divine wrath are still embraced by a small minority of biblical literalists and conservative Evangelicals. Following the 2004 Indian Ocean earthquake and tsunami disaster, for example, a fierce debate raged in the religious press over the fact that a *retributive* theodicy was still being proposed by some Christians to explain this event and its impact. When faced with disasters that are perceived as being caused by processes that are more extreme than might be expected or have been experienced within living memory, there is a well documented tendency for Christian commentators, who are normally most reluctant to invoke divine responsibility, atavistically to revert to a *retributive* theodicy. In commenting on the British Floods of 2007 some prominent Christians, for instance, drew a direct link between British sexual lifestyles, divine judgment and the flooding, although subsequently many prominent Christian quoted in the press as holding such opinions, provided a more finely nuanced statement in partial

rebuttal, by claiming he had been inaccurately reported. Nevertheless, other letters in the religious press did not think that they went far enough in rejecting a *retributive* explanation.

A *retributive theodicy* with liturgies of propitiation, parades of sacred relics/votive images and numerous other ritualistic actions to appease divine wrath, is also still a feature of what has been termed *popular Catholicism* as encountered in places as diverse: as southern Italy and Sicily; on the slopes of Popocatépetl in Mexico, where there is a syncretic relationship between Catholicism and earlier pre-Columbian faiths; and following the earthquakes in El Salvador in 1986, and the 1991 Pintatubo volcanic eruption in the Philippines.

Although within the context of disasters *retributive* theodicies are far less common today than they were in the past, there is no evidence to support the contention that naturalistic explanations of death, injuries and destruction have completely replaced those grounded within religious frames of reference in countries where many (or most) inhabitants profess a Christian faith. What is evident is that other models of theodicy, whilst not fully superseding the *retributive*, have become more common. Although all the theodicies listed in Table 1 have been employed in discussions of human-induced suffering, in studies of natural calamities the *Best of All Possible Worlds* (i.e. *Irenaeian*) model has been particularly important.

A *best of all possible worlds* theodicy is most commonly associated with Voltaire and his reactions to the Lisbon earthquake of 1755. In the novel *Candide* and in his poem on the disaster, Voltaire alludes to a *best of all possible worlds* theodicy and is clearly of the opinion that destructive forces are built into the very structure of the universe, with Dr

Pangloss - Candide's tutor - accepting Nature's fate even when faced with almost complete devastation. Summarizing this model of theodicy, the theologian F.J. Murphy (2005, p. 345) concludes that, it "would probably be impossible to design any system of nature which did not have the potential to injure unsuspecting humans" and that God's purpose is to accept disasters and use them to complete a greater good.

The association of the *best of all possible worlds* theodicy with St. Irenaeus correctly implies that it pre-dates Voltaire and in fact it finds support in scripture, in the history of Christian responses to disasters and in the records of events that have occurred since 1900. Although the Hebrew Bible is generally unwilling to admit that there can be any wholly innocent suffering, some biblical scholars have argued that there are a number of exceptions to this generalization, for instance in Proverbs 3 and Hosea 11.

Within the Epistles of the New Testament the most significant treatment of the issue of a greater good is the discussion of a passage from the Old Testament Book of Proverbs (Proverbs 3: 11-12) by the anonymous author of the Epistle to the Hebrews. In Hebrews 12 the Greek word παιδεία (*paideia*), which is usually translated as discipline, has traditionally been interpreted as implying rebuke or punishment and so has been used to support a theodicy of *retribution*, but *paideia* may also have the sense of positive teaching and training that loving parents give their children in a whole range of circumstances.

This theme of suffering having a moral purpose is taken further in the first Epistle of Peter (1 Peter 4: 12-19). Here suffering occurs, *inter alia*, to prove the reality of faith, to share Christ's suffering and to glorify God, and over the centuries there are many instances of monks and ascetics inflicting suffering on themselves as a means of spiritual discipline. For the theologian John Hick (1978) suffering is a learning experience and a

process of ‘soul-making’, which also involves showing ‘God’s glory’ in compassionate love and self-giving for others (and this) constitutes the highest value of all.

Reflecting on these and other passages Austin Farrer, one of the comparatively few twentieth century theologians who have been concerned with natural perils as opposed to suffering caused to humans by humans, sums up the *best of all possible worlds* theodicy using two memorable and oft repeated quotations.

“If an earthquake shakes down a city, an urgent practical problem arises – how to rescue, feed, house and console the survivors, rehabilitate the injured, and commend the dead to the mercy of God; less immediately, how to reconstruct in a way which will minimize the effects of another disaster. But no theological problem arises. The will of God expressed in this event is his will for the physical elements in the earth’s crust or under it: his will that they should go on being themselves and acting in accordance with their natures” (Farrer, 1966, p. 87-88).

“It is not, then, that the humanly inconvenient by-products of volcanic fire are cushioned or diverted; it is not that all harms to man are prevented. It is that the creative work of God never ceases, that there is always something his Providence does, even for the most tragically stricken” (Farrer, 1966, p. 90).

Within historical earthquakes and volcanic eruptions many examples of the use of a *best of all possible worlds* theodicy may be found. For example, two small earthquakes struck London on February 8th and March 8th 1750 and, although the majority of clergy preached a theodicy of divine wrath visited on the sinful people of Britain, one group believed that only some earthquakes were sent to punish, while a third - albeit a small minority - group adopted a *best of all possible worlds* position. In the 19th century and preaching on the occasion of a national day of fasting in 1832, Bishop Maltby of Chichester castigated those who saw the hand of providence in all manner of calamities, whilst the reactions of the majority of clergy to earthquakes later in the century were strongly based on explanations grounded in an acceptance of natural processes; the earthquakes in Venice (Italy) in 1873 and Colchester (England) in 1884, being good examples.

Reactions of Christian clergy and laity to more recent earthquakes and volcanic eruptions have often reflected the twin elements contained within the writings of Austin Farrer (1966): of recognizing such events as the outcomes of natural processes; whilst at the same time seeing them as calls to intercessory prayer for victims and for Christian social action. There are many examples of intercessory prayer and Christian help for victims of disasters goes back to New Testament times when severe famine occurred in Palestine. This took place during the reign of Claudius and the apostles sent disaster relief to fellow Christians living in Judea (Acts 11). This tradition of charity has continued and has been a feature of reactions to many historic and contemporary earthquakes and volcanic eruptions. Under both a *retributive* and a *best of all possible worlds* theodicy, Christian praxis is justified by the commandment to love one's neighbour and by seeing the suffering of Christ in the distress of the disaster victims.

There is a danger, however, with Christians adopting a *best of all possible worlds* theodicy and this is highlighted in a thoughtful and highly critical review of a conservative evangelical inspired manual on disaster relief entitled, *Christian Perspectives on Disaster Management* by Ian Davis and Michael Wall (1992). In a review, Hugo Slim makes the important point that following a disaster there is a danger when the greater good is narrowly defined as the opportunities that may arise if relief aid is used as a means of assisting the process of conversion, because such a perspective comes perilously close to the concept of a 'good' disaster, far removed from the greater good as already discussed (Slim, 1994).

In the early 1970s research on disasters was mainly carried out under the banner of what has been termed the *dominant* approach which sought to emphasise the deployment of

scientific and technological interventions to mitigate the effects of natural calamities. This approach was first introduced by the American pioneer hazard analyst Gilbert Fowler White in the 1940s to study flooding in the USA and was later extended to embrace other hazards across a wide range of countries (see Chester, 2005 and White, 1973 for more details). The theological study of natural perils was focused exclusively within the Leibnizian tradition, where the *best of all possible worlds* model had become progressively more prominent over the preceding two centuries. Paradigm shifts occurred in both academic fields at approximately the same time, starting in the 1980s and gathering momentum in the 1990s, these final ten years of the millennium coinciding with the United Nations' *International Decade for Natural Disaster Reduction (ISNDR)*,

In the case of research on disasters, the *dominant* approach became the subject of trenchant criticism. Briefly, the *dominant* approach accepted that factors such as differences in systems of beliefs, material wealth, previous experience of hazardous events and psychological factors may be of importance in affecting human responses, it nevertheless emphasized the role of environmental extremes as the principal determinants of disasters. In contrast, by the final decades of the twentieth century greater weight was being placed on human vulnerability. It was argued cogently and with increasing force that most of the mortality and morbidity in disasters, especially in *economically less developed countries*, could be explained by factors such as poverty, deprivation, marginalization, lack of disaster preparedness and, in the case of earthquakes, by collapsing buildings constructed to inadequate or non-existent codes. For instance, in the twentieth century c.99% of volcano-related deaths occurred in *economically less developed countries*, while examination of the impacts of earthquakes of similar magnitude showed a similar disparate pattern, with major

death tolls increasingly becoming the preserve of the world's poor, whereas financial losses were the most striking feature of 'rich' countries. When financial impacts are expressed as percentages of national wealth - Gross Domestic Product, or GDP) - however, then the relative economic toll in 'poor' countries is far higher.

For theodicy the paradigm shift has been even more significant because the Leibnizian tradition, which represents over 2,000 years of theological reflection on the relationships between God, natural processes and human suffering, if not superseded, now has a well supported competitor. From the 1980s an increasing number of theologians found the Leibnizian models increasingly unconvincing and constructed new theodicies which required both a renewed engagement with scripture and intense theological reflection on disasters.

There are several strands to this new theodicy. First, as has already been noted when the collapse of the Tower of Silo'am was discussed, Jesus introduces the notion that guilt may be collective and not individual. Jesus also teaches that punishment was not arbitrarily visited on the individuals who perished, because they were no more to blame than other people living in Jerusalem (Luke 13: 4-5), and there are numerous historical examples where this theme of collective responsibility is mentioned by Christians but not fully developed. In 1382, for example, Archbishop Courtenay called a meeting of the Council in Blackfriars to decide what action to take against the Oxford theologian John Wycliffe and his followers, the 'Lollards', who were seeking to reform the church and were thereby threatening church order. The occurrence of the 1382 earthquake encouraged some bishops to believe that God disapproved of the institutional church and its planned actions against Lollardy, but Archbishop Courtenay stood firm and draw the opposite conclusion, that the

earthquake was a sign which supported the *status quo*.

“Know you not that the noxious vapours which catch fire in the bosom of the earth and give rise to these phenomena which alarm you, lose all their force when burst forth? In like manner, by rejecting the wicked from our community we shall put an end to the convulsions of the church” (de Boer and Sanders, 2005, p. 68).

Another example of guilt being collective rather than personal emerges from John Wesley’s reflections on the Lisbon earthquake. For Wesley the earthquake represented divine retribution for the sins of the Inquisition, but this idea of human sinfulness – institutional rather than individual and ecclesiological, and stripped of its retributive and sectarian overtones – may be a more important insight than was recognized.

A second strand in post-Leibnizian theodicy emphasises the immanence of God within human affairs. Terrence Tilley (1991), for instance, argues that the Leibnizian approach is a means of reducing human responsibility for both natural and human-induced suffering because it focuses responsibility on God rather than people: on creator rather than creature. This line of argument may also be seen in the work of two highly influential writers. The Jesuit Raymund Schwager (1987), who shows how there is both a biblical and historical tendency within Christianity to make God the scapegoat for all manner of human failings; and Ted Steinberg (2000), a secular historian of the environment, who in reviewing disasters in the USA argues that the perception of such events as being caused by either a malign nature or by God are convenient devices for both commercial interests and institutions of government who can thereby evade responsibility for the poor, the racially disadvantaged and other marginalized groups within American society.

By combining notions of collective guilt, structural (i.e. institutional) sinfulness and human responsibility, it has proved possible to propose a *liberationist* theodicy (Chester 1998). This involves a re-working of the ‘classic’ Leibnizian *free-will* defence, with human

freedom not only being expressed at the level of the individual but also collectively, as greed at the national, international and corporate levels. This ‘structural sinfulness’ so we have argued lies behind global differences in wealth and power, as well as dissimilar and unequal disaster outcomes. Structural sinfulness was also identified by the *liberation theologians* of the 1970s and 1980s, where it was viewed as a process which keeps the poor and disadvantaged in a state of subjection. Beginning with the 1970 earthquake in Peru and especially in South America, there has also been intense theological reflection on earthquake losses particularly by Jon Sobrino (2004).

A third strand in post-Leibnizian theodicy stresses the immanence of God over against divine transcendence, with the crucifixion of Jesus and the doctrine of the Trinity being seen as critically important. According to *liberationist* theodicy, Jesus Christ the ‘crucified God’ demonstrates how God suffers vicariously with and for all his children. In the view of Jürgen Moltmann “to think of God as impassible would surely be to fall short of the God revealed in Jesus Christ, a God of love who participates in the sufferings of his creatures and is perhaps the greatest sufferer of all” (Macquarrie, 2003 p. 46). The doctrine of the Trinity is invoked to demonstrate how God shares, not only in the suffering of his son on the cross of Calvary but also with all suffering humanity, who are linked to God by a shared parenthood.

A *liberationist* theodicy is finally a partial theodicy, because the probability of disaster losses cannot be wholly eliminated. Even in the most well planned society people still suffer. In this, albeit small, minority of cases, recourse has to be made either to the ‘classic’ Leibnizian models, or to a re-working of one or more of them. One free-will approach which is highly germane to people living in hazard prone regions in *economically*

more developed parts of the world, has recently been proposed by Frank Murphy (2005).

Murphy argues that in such countries people often make a free choice - either informed or uninformed - to live in an earthquake or eruption prone location and, since God cannot have foreseen their decision, she/he cannot prevent suffering caused when disaster strikes. For example the elderly Harry Truman's well documented action in 1980 not to heed warnings to evacuate his property on the flanks on Mount St. Helens was his uninformed choice, whereas the informed choice would have been to follow the advice of authorities and so reduce his vulnerability.

Conclusions: Moving Forward

In studying evacuations carried out in connection with a range of disasters, the hazard researcher David Alexander has pointed out that no plan is likely to be 100 percent successful, but the reasons for the instructions of the civil authorities being resisted are unlikely to be religious. Reasons may be individualist - as in the example of Harry Truman quoted above - or collective, as in the case of the resistance of inhabitants living on the flanks of Furnas volcano on São Miguel Island in the Azores (Chester et al., 1999). In this predominantly agricultural and strongly Catholic area a study we carried out of probable reactions of the people to a future eruption uncovered a resistance to evacuate which was based on a strong attachment to land, farm and pedigree livestock herds built up over several generations. Religious beliefs were not an important factor. Also the fact that the city of St. Pierre on Martinique in the Caribbean was not evacuated in advance of the 1902 eruption in spite of the increasingly threatening activity of Mount Pelée volcano had little to do with religion, but rather reflected the Governor's desire not to postpone an imminent

election and the fact that a previous eruption in 1851 had merely covered St. Pierre with a thin layer of ash. Many conservative voters lived in St. Pierre and the Governor did not want any of them to leave (Scarth, 2002).

One feature to emerge from our study of historic eruptions and earthquakes over the course of the past century, is that Christian belief has neither inhibited more practical measures being taken to reduce hazard exposure, nor has it prevented people accepting help from the civil authorities. Believing in two mutually incompatible explanations, or holding one view yet acting contrary to it, is often termed *parallel practice* - sometimes inaccurately *cognitive dissonance* - and this is a particular feature of many closely studied responses in societies with a popular Catholic ethos. For example in southern Italy there is no evidence to suggest that strong adherence to the rituals and beliefs of popular Catholicism has prevented people obeying the authorities over such measures as evacuation, this behaviour being a good example of individuals hedging their bets. Even when people have embraced a *retributive* theodicy, there is additionally no evidence that outside help has been resisted.

When the occurrence of *parallel practice* is combined with a post-Leibnizian *liberationist* theodicy and new more vulnerability-focused approaches to hazards, it is possible to see synergies developing. Civil defence planners can more easily make use of the often substantial financial and human resources of Christian denominations and their associated charities. Virtually every community in a country with a Christian history has a church, which is not only a religious focus but a social one, with clergy acting as a useful 'resource' in identifying victims and providing counselling, relief and leadership. Under a *liberationist* approach, the presence of the divine is located in disaster victims and is not perceived as being within the geological processes that caused the earthquake or volcanic

eruption and this new perspective is already informing Christian attitudes towards disaster relief, being enthusiastically embraced by international Christian charities which seek to provide disaster relief and assist economic development.

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