

Violence and the Natural Environment

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ABSTRACT Three types of contemporary mass violence are largely a Third World phenomenon: religious, economic and group domination forms. Such violence has probably caused 15+ million dead since 1945. Human society in general cannot accept the inevitability of mass violence and is therefore unable to see its effects as anything other than immoral and wasteful of life and materials. There is a need to assess both the short and long term beneficial as much as the malignant consequences as they affect the environment independently of its moral aspects. The paper uses case studies relating to highland Burma circa 1944-45, Rwanda, refugee camps and movements, land-mines, carpet bombing and chemical defoliants. Dictatorships and colonial governments were able to partly suppress mass violence but their successors have inherited tension which have had no outlet for perhaps 50+ years. Neither they nor the United Nations have been able to control these outbreaks of violence. 1988-90 had 140 outbreaks of violence with more than 1000 dead. With material destruction societies are often galvanized to repair the damage using mass human effort, resource knowledge and mechanical expertise which cannot be used so successfully in the slow process of political and economic change. With massive human deaths, despite population growth and economic deprivation being at the root of most mass violence, societies appear unable to take the necessary political and social steps provided by these opportunities, to prevent the recurrence of population pressure.

INTRODUCTION

Mass violence has effects on the natural environment and it has done so throughout recorded history. It is generally assumed that these effects are destructive, malignant and morally indefensible. It is suggested that mass violence can also have environmentally benign effects. Overall mass violence can be seen as a socio-cultural activity which contributes to the management of environmental resources.

There are three types of contemporary mass violence (1) religious, over different assumptions of moral rightness such as fighting over Israel and the Iran-Iraq war (2) economic, fighting over the ownership of resources such as the inva-

sion of Kuwait for oil and inter-tribal fighting in northern Uganda over cattle (3) political, over the domination of one religious or tribal group by another, such as we find in Rwanda and the Sudan.

Only in economically based fighting will an environmental objective be seen as deliberate with a recognized objective to be achieved by socially chosen and often acceptable means. On the other hand, political and social violence is likely to be based on ascriptive ideas, carried out for primary reasons which are as likely as not to be the result of socialisation. The environmental factor is likely to be secondary.

Whatever may have been the causes of mass violence, the consequences are also assessable with their factual influences on the environment. Indeed as facts these have to be seen as independent of moral assessments which may only cloud an evaluation. This has certainly prevented any scientifically detached assessment of mass violence as sometimes being socio-cultural, a practice with in fact benign environmental effects.

There is perhaps an underlying assumption that deliberate resource management is also benign and non-violent, if one leaves aside any consideration that the whole process may be seen by its recipients as violent (Schrijvers, 1993; Giddens, 1996). The mass movement of populations into communal farms or away from dam constructions of course would be experienced as violent by those involved.

There is also the assumption that violence is an ascribed as much as an achieved social effort to sustain an existing society. So resource management, is or at least should be, a planned rational and peaceful activity from which violence is excluded both as a planning possibility and as an inevitable component.

The environment has always been changing for reasons that have nothing to do with human behaviour. One thinks of volcanoes and floods and in that context of environmental change due

to human violence, can never have been globally significant.

Any society, even one that is ostensibly egalitarian, is competitive within itself; between siblings, families and social groups graduating in size from villages to tribes. This competitiveness is disguised by social processes which ensure some measure of stability within the community and which as far as possible reduce potential aggravations. Moreover with increasing social distances between peoples or groups in competition, there are decreasing possibilities of peaceful compromises.

Any social activity will have some effect on the environment. Extracting certain elements such as food, fuel, building materials while replacing them with other elements such as human waste, animal manure, dead bodies; all that makes possible the replanting of crops and trees. Thus violence must be considered as one way in which the inputs and outputs of an environment take place. It is a way in which societies have always periodically influenced their own or other environments.

History shows an enormous amount of violence, but this appears to be divided into long periods in which violence in a variety of situations has been regarded as immoral, such that no right thinking person, group or institution should consider it as socially, politically, economically and environmentally useful. There have also been shorter violent periods in history in which violence has been considered to be morally right and was supported by almost all the institutions within the state and a high proportion of the population. Since violence is always dichotomous, this sense of specific moral rightness only applies to one side.

As violence has been a persistent feature of human social behaviour and the moral attitudes towards it have fluctuated wildly, it is not surprising that mankind has viewed its manifestations ambivalently. No war, seen as morally justified at the time by at least some of the combatants, has survived the scrutiny of historians as being both necessary and moral.

Literature on war (Richardson, 1950; Riches, 1986) is biased towards identifying the causes and consideration of its origins is best exemplified by the behaviour of pre-industrial peoples.

The ambivalence has seemingly prevented analysts from considering the consequences of violence for the environment. The positive rather than negative values are seen in terms of the survivors and their descendants, now detached from questions of morality. This approach has almost always been to consider the consequences of war as a waste of human lives, abilities and resources.

To take such a scientific view at once clashes with ethical standards. These would generally state that violence is a morally wrong solution to any problem. Hence the problems are two. First ethical viewpoints on events in history vary with time. Analysts traditionally do not take the viewpoint that the bilateral slaughter in Flanders 1914-1918 and its using up of resources such as timber and iron was a necessity. Secondly there is the problem of the parity in violence. Even in retrospect the removal of the Nazi evil and the perpetration of the Holocaust may seem out of proportion to the 80 million dead on both sides in WW2 1939-1945. We cannot know but only suspect that the Nazis would have carried out mass killings of further non-Aryan groups.

This paper attempts to look at violent episodes in history in terms of whether the survivors and their descendants have benefitted environmentally. These events have already occurred and have had these effects. It is unreasonable, and perhaps unscientific, to make ethical points about such past events from which there are contemporary consequences. These consequences are facts, whereas the causes can be only theoretical.

As a species, humans are particularly violent, both as individuals and collectively when compared with some other species (Russell and Russell, 1968). Humans kill for ideological reasons. Mongol ferocity was the result of culture rather than religion or environmental pressures but Tamerlane killed from piety. He represented a synthesis, probably unprecedented in the history of Mongol barbarity and Moslem fanaticism. He symbolizes an advanced form of primitive slaughter, namely that murder is committed for the sake of an abstract ideology as a duty and a sacred mission (Grousset, 1970: 434). To restrain this tendency to violence we have developed a framework of thinking and

moralising that deplores violence as generally amoral and against the best interests of humans.

While it may not be the 'thinking' man's response to certain situations, violence certainly recurs in human history with a persistent regularity. The Indonesian killings of Communists in the 1960s (Cribb, 1996) and the Khmer Rouge killings of Cambodians (Vickery, 1988), may well have totalled a million deaths overall. It is hard, if not impossible, to find any diminution of this propensity to group violence. It is easy to conclude that the misery and destruction caused by it is to the disadvantage of those who suffer. Yet group violence also continues as a way of managing resources.

Rightly or wrongly, Nazi Germany went to war over Lebensraum, while the Japanese conquered colonial Asia, at least initially, to get access to adequate petroleum supplies. More recently the ethnic genocide in Rwanda reduced the population of that state by about a million and it took place against the background of a rapidly increasing population density and finite resources. Those involved sought to gain from their violence and both parties concluded beforehand that there was less to gain from negotiation than meeting violence with violence.

If we can assume that these people involved in violence were not being violent for purely biological reasons, such as a genetic propensity to violence for which there is no primary need, there may well be both covert and overt consequences of such violence, which are overall beneficial for the survival of those involved and their descendants.

CASE STUDIES

(A) The Clash of Environments; North Burma 1945

The situation in the Kodaung Hill Tracts up to 1945 can be seen as a continuing struggle between two types of agricultural societies within a restricted and restricting topographical environment. This was an environment of sharply rising mountains occupied by the animist and Christian Kachins cultivating dry rice on a slash and burn cycle of about seven years. In the valley bottoms were Buddhist Shans and Palaungs cultivating wet rice in permanently irrigated fields.

In theory, it would have been possible to extend the wet fields upwards by terracing, but there were not enough people to do this work and cultivate their own fields as well. The British imposed peace in the hill tracts and the growth of the Kachin population had meant that the slash and burn cycle was, by the late 1940s, less than the required seven years.

In practice both groups had continued with their particular farming practices while there had been persistent and intermittent violence as far back as historical records go (Leach, 1954). The hillmen raided downhill, killing some low level people and taking over their fields, while at the same time marrying into Shan families. Since only men were killed, this violence resulted in a widening of the genetic stock, while the population pressure was also reduced.

With the coming of the British this violent solution with its perennial environmental crisis was no longer possible. However the Japanese occupation of Burma (1942-45) removed civil control over these areas. Since the upland Kachins were pro-Allies, they were provided with arms and formed guerrilla groups.

In the interim between the departure of the Japanese and the return of the British civil administration, the upland people raided downhill again killing a large number of Buddhists and seizing low level rice fields.

Here were two totally different cultures facing each other in an enclosed environment over which they were not prepared to negotiate. Indeed, what could have been the outcome of any negotiations over land and population levels when the environment could only hold something approaching its present level of population, but with a cycle of seven years for the regeneration of hillsides under shifting cultivation. Violence has reduced the population level to something approaching a sustainable level. Those who initiated the violence justified it in terms of religious and political differences, which predated the war, but which were made worse by the war, when the Kachins and Shans took different attitudes to the Japanese so that the former were able to dominate without fear of retaliation. This violence had an immediate effect. Non-violent alternatives, emigration, birth-control and polyandry, which would have had

long-term effects never evolved.

This was not a Malthusian situation in which those concerned turned to violence because they were short of food. They turned to violence in anticipation of food shortages. It was an anticipatory violence well ahead of food shortages which ensured a reasonable standard of living for the survivors. Here we find a rational example of the social control over environmental resources.

(B) Rwanda Genocide; the Overflowing Environment

A more recent example of the beneficial effects of mass violence is to be found in the mass killings in Rwanda, classified as genocide. Rwanda had an environment which was rapidly approaching saturation point, with a growing population and a lowering of the water table. This need for land was filtered through long standing hostility between the previously dominant minority Nilo-Hamites and the Bantu Hutu majority.

In such a situation those involved can move, change their methods of agriculture to become more intensive, or they can kill to reduce the population to sustainable levels. In Rwanda the population could not move because the surrounding countries, Uganda, Tanzania and Zaire did not want an influx to which tribal labels were attached. The change of agricultural practices implied on such a massive scale would have required a political will and a collective imagination which were beyond their reach. Some radical programme of birth control would have been against almost every aspect of existing social norms which preferred large families with many children and would have had no effect in reducing the pressure on the land for about fifty years. Moreover sharp divisions existed on ethnic rather than religious grounds between the traditional Tutsi minority elite and the proletarian Hutu majority. The potentialities for trouble were made worse by the identity card system for all adults inherited from the Belgians which recorded tribal details.

Whatever political will may have existed could not have maintained the status quo indefinitely so long as the population grew and the amount of land remained limited having lost its

fertility. There was no precipitating food shortage, but the long existing hostility between Tutsi and Hutu provided the trigger for preemptive violence.

Mass killings cleared large areas of population. Gross as it was, this had further benign environmental consequences, as the fields vacated by the dead or the refugees, then had several seasons of relief from cultivation. We may compare that with deserts, which have held down their populations and this limited violence. The much more benign environment in Rwanda developed a much larger population and thus a greater potential for mass violence. Again this was not a Malthusian situation, in which the people acted because of the extreme difficulties which they were already experiencing, but it was rather an anticipatory violence well in advance of extreme conditions.

While it is, of course, almost impossible to separate the moral from the environmental aspects of warfare, with the immediacy of its visible destruction and the punitive losses inflicted on individuals and their families, it is in the long term evaluation that the moral issues surface, but in another form.

Huge population losses probably require fifty years before the demographic pressures on an overcrowded environment will begin again to become a potent source of renewed conflict. The Rwanda losses have given that society a unique opportunity to keep the population size down to a level which will not lead to another cycle of relieving violence. One must say perhaps, for small nations population size will remain an important criterion of political power, rather than an environmental embarrassment for which nothing can be done.

(C) Somalia and Rebellion; 1892-1920

Somalia, between 1892 and 1920, was a case in which there was a prolonged rebellion led by one man, for religious and political reasons (Beachey, 1990). A charismatic leader, Mohammad Abdulla Hassan managed under his policy of religious fanaticism to disrupt the whole country. It involved raiding, killing other Somalis, seizing their cattle, and disrupting a more or less orderly pattern of grazing and water hole use.

For most of Somalia, the annual rainfall is less than 3 inches per year with temperatures rising to 110 degrees in a thus burnt out land. Even in the great central grazing plains of the Haud, which seasonally provide good grass, there are no permanent water holes. There is a permanent migratory search for water in a harsh land in which life is fiercely competitive.

If we can take it that such a land can only hold a certain number of people and livestock, then any activity which restrains their growth in numbers can be seen in the absence of any economic development, as an advantage. It would take the surplus population out of its precarious subsistence existence.

The losses of men in battles with the colonial forces indicate the intensity of the fighting. Apart from any losses in fighting between the Somalis themselves, 1000 Somali men were killed in March 1900 and, again in May 1901, 1400 in October 1901 and a further 1000 in December 1904, leading up to 200 men in February 1920.

There is little doubt that throughout this period Dervish guerrilla activity held down the population (Tvedt, 1993), not only by moving stolen livestock over the international borders into Ethiopia and Italian Somaliland, but also by reducing the number of breeding Somali males quite substantially.

REFUGEES AND POPULATION CONTROL

Refugees are not only a constant feature of contemporary life but their plight has now become more widely known through the mass media and because the international community and its official and charitable agencies make considerable financial and physical efforts to reduce their misery.

Perhaps refugees were less of a feature in history. There were no means of mechanically transporting masses of people away from disaster and no possibility of national or international aid, for reasons of political insecurity. It is also possible that potential refugees left it too late to walk away from potential disaster. This immobility of the disaster-prone poor may have accounted for most of the estimated 20 million dead in the 1851-64 Taiping Rebellion (Michall, 1966; Wakeman, 1966).

In assessing the environmental effects of refugees, there are three elements to consider; the environment left behind, the refugees themselves in their camps and the receiving environment.

The land that has been abandoned benefits from a reduction in use, and it would be unusual for it to have less than a year's rest. Probably a five year fallow period would be average and sometimes refugees never returned, as with the Greeks who left Turkey in the 1920s (Kinross, 1964). This ended up in an unequal exchange. Greek Moslems left the mainland and Crete in smaller numbers than the Christian Greeks who left Thrace and Asia Minor where some of the villages they occupied are still partially empty today. Generally speaking, the longer the refugees stay away the less likely they are to return. In environmental terms, the reduction in particular populations means that the fields that are consequently left unworked can be seen as having the benefit.

The refugees themselves in today's political climate are likely to be located and concentrated in camps, rather than distributing themselves in a host environment. Expelled farmers however are likely to be seen as unwanted if not parasitic, especially where they have stripped the local environment of all vegetation, and in some cases killed the wildlife, as in National Parks in Uganda. While every effort is made by the international community to help, over great distances, the danger to their personnel and the obstructions and corruption of the host country, mean that mortality is both high and selective.

Children and the old die in well above average numbers and morbidity rises for a wide range of mass diseases which in the home environments, would not be so potentially lethal. The persistent low diet, combined with the inability of women to fight for food when they are caring for children, will have reduced fecundity by widespread amenorrhea. Thus even if their menfolk were present, they would be unlikely to conceive. Thus the whole refugee process has the effect of population reduction, particularly in killing off the young and reducing fertility. That we see as environmentally benign.

A host country does not benefit environmentally by being flooded with strangers. There

is a strain on all its resources, both human and material. The camps themselves have a locust-swarm effect on their immediate environments, since the vegetation is stripped for firewood in ever widening circles. The camps are also foci for diseases, if only because the refugees have had no previous experience of living with the sanitation requirements under such high density conditions. Thus, in environmental terms, the host country is justified in neglecting or obstructing efforts to keep refugees alive, and in doing everything possible to send them back from where they came or at the very least redistribute them in smaller groups away from the borders.

LAND MINES AND THE PRESERVATION OF NATURE

In formal wars, dominated by professional soldiers, land mines are used to restrict and slow down the movement of the opposite forces. Mine fields are clearly marked, and since they can be cleared without particular difficulties, they pose no long-standing threat to human beings. This is not always the case as the Argentinians in the Falklands did not mark their minefields, and they are still being cleared.

Almost all wars however defined later than 1945 have been between non-professional primary forces using military supplies provided by their secondary backers. The fighting is rarely set-piece and has almost always been between irregular forces at irregular times and places. A feature of this type of fighting is to sow land mines around a temporary position, or wherever the enemy might pass. These sites, unmarked on any map, are not marked, nor are the numbers planted known. The numbers planted in the civil wars in Angola, Afghanistan, Eritrea and the Sudan alone must have run into millions.

As fighting stops or moves on, the displaced civilian population which has not been directly involved, returns. The mutilations of the large numbers of such people who have set off these mines testifies to the inhumanity of these relics of war, which were probably of very little military significance except by accident.

It is not the point of this analysis to look at this practice in anything other than environmen-

tal terms. Areas which are known to have been sown with land mines are eventually cleared by professionals but this is a long-term process, which may well take decades. In some environments like Angola and Afghanistan, where the areas with suspected mines is so large, they may never be cleared until the processes of decay activates or deactivates them.

Once an area is known to contain land-mines, the human population does not go there and keeps its domestic animals out as well. In this period between mine sowing and lifting or deactivating, there is in effect the instant creation of a whole series of nature reserves in a very wide variety of environments. Whereas refugees leave their compounds and their fields fallow, mines are sown in valleys, hillsides, on paths, river-banks and water-holes. If environmentalists had wanted to design a range of reserves to cover every natural permutation of soil and vegetation, almost certainly they could not have done better than this random sowing of land-mines.

The mines are probably designed to be set off by a pressure equivalent to the weight of a child, so as to kill or maim humans, and to break the tracks or wheels of armoured and soft-skin vehicles. Thus they would be lethal to the larger herbivores and carnivores. Anything smaller than this would, in practice, have immunity, unless the mines are activated by trip wires. Thus the smaller mammals, birds and reptiles except for ostriches and crocodiles, would certainly benefit. Since all these animals are extensively hunted and trapped, their numbers are bound to increase. Yet in this context, land mines have to be seen as beneficial to the overall environment.

TOWN PLANNING AND CARPET BOMBING

Any large city is in a constant process of regeneration, not only because buildings inevitably age, outlive their particular functional usefulness but also social welfare and political standards will have changed.

Bombing of rural populations is certainly not new. It was a frequent resort of the British with recalcitrant tribes on the North West frontier of

India, the Sudan and Iraq, and indeed, in Oman in 1968. What is new has been the bombing of cities, of which the German bombing of Guernica, in the Spanish Civil War, was the first example.

In WW2 carpet or rather the indiscriminate bombing of cities, either deliberately, or as an accident of bomb aiming technology, became common. The Luftwaffe began with the bombing of London and followed this with "Baedeker" guide book raids on Coventry, Liverpool, Bristol and other cities. The Royal Air Force subsequently extended this to similar night raids on German cities, culminating in the Dresden fire tornado, which killed as many civilians as the Hiroshima atom bomb. In addition the American Army Air Force firebombed virtually all major Japanese cities with the exception of Kyoto as well as being responsible for the atom bomb attacks on Nagasaki and Hiroshima.

The fact that so many people had died or had had their houses and property destroyed simplified planning and led in part to the ease with which rebuilding took place and satellite towns were created, thus easing urban concentrations.

In terms of town planning these city areas which had been carpet bombed, were now "green field" sites cleared of existing buildings on a massive scale. In Burma almost every town on the main railway lines involved in the fighting was virtually flattened; Myitkyina had in fact only one building left standing and that was the currency store beside the Treasury. Much the same applied to Meiktila and Mandalay. Any town planner knows the complications attendant on trying to create something new out of a site which contains existing buildings not to mention roads as well as a resident human population.

While, of course, many valuable and historical buildings were lost of no environmental value, very large numbers of substandard inadequate housing areas were blasted out of existence. The result of this has been, in every carpet bombed city, the construction of better housing and business buildings which have been of considerable benefit to all involved.

It is necessary also to break down the costs which this short-cut by bombing had reduced.

Firstly, there was a cut in legal costs; no compensation had to be negotiated and paid for existing buildings, nor did their existing inhabitants have to be rehoused. There was only the cost of the land to be negotiated. Secondly, the time involved in planning and the start of reconstruction was radically shortened.

There may have been no direct environmental benefits in this short-cutting, but, certainly, the ability to start afresh on a large scale allowed current scientific understandings to be put into planning at a much earlier stage than with the tortuous process of planning with long public enquiries to deal with conflicting interests of people, property, and political ideologies.

WARFARE AND THE MINIMALIZATION OF ENVIRONMENTAL DAMAGE

In areas outside towns, damage caused by high explosives and armoured fighting vehicles is very visible, and it is assessed as destruction. Indeed the whole question of environmental damage has to be assessed, not only in terms of its quantity and its statistical extent but also in terms of property and people, and, more importantly, the range of the damage and its area.

In modern times, there never has been anything approaching total warfare, although it is a common modern term, referring more to the economics of prolonged warfare than to its actual fighting. It is perhaps more appropriate to the operations of Genghis Khan with his policy of whole community genocide rather than that of selective killings as with the Jewish Holocaust and in Indonesia.

The static warfare on the Western Front (1914-18) in primary terms left most of France and Germany untouched, except for the withdrawal of able-bodied men, draft horses, and a shortage of certain supplies. Much the same would apply to the fighting in WW2 but to a lesser extent. There was very little static warfare and only a few areas remained environmentally neutralised for as much as six months. It was a moving and very localised carpet of destruction. The experience of Vietnam showed that rare animals moved away from the fighting but came back afterwards.

Thus, much of the WW2 combat shattered small areas and then moved on, leaving the inhabitants to return, recover their fields and rebuild. The mass of France, Germany, Burma and the Philippines remained untouched. Certainly, a number of small environments such as Tarawa and Iwojima islands in the Pacific and their defenders were virtually annihilated, but it seems doubtful that the marine environment suffered severely.

So we have relatively small areas in which surface environmental damage was highly visible, but it does not take long to recover. Flanders, in terms of the quantity of high explosive rained on to it must have been the equivalent of an enormous scrap yard of iron fragments. Yet within 20 years nothing of this destruction remained visible, except for some specially preserved exhibition areas. In the tropics the recovery was even quicker. Thus in north Burma there was very little to see of the destruction after two years.

Farmers in these areas are not going to let good land lie fallow, particularly when they are subsistence agriculturalists and, even more so, when their crops and animals feed the towns and provide them with a livelihood. Indeed this destruction could be seen as providing the stimulus to start again.

CHEMICAL DEVOLIANTS AND THE ENVIRONMENTAL VACUUM

When we look at the use of chemicals in warfare the consequences are probably shorter in time than the reduction in population levels. The objectives of the two atom bombs and the use of gas in WW1 were to win the war without the Allies having to invade Japan or to enable local advances to take place; they were not aimed specifically at environmental damage.

Operation Orange in Vietnam 1970-1 was the first instance in war of modern technology being used deliberately to destroy parts of a country's ecosystem which had provided cover for the enemy's foot-borne supply convoys and for the concentration of troops. While it is estimated that the American and South Vietnamese destroyed about 2.2 million hectares of forest and farmland over 10 years, it is important to remember that there had previously been an an-

nual loss of 200,000 hectares of forest land annually due to forest fires, agricultural clearance, firewood needs, and timber extraction. So it would appear that there is a possible equivalence between these two estimates of environmental damage (Kemf and Quay, 1991).

It is also possible that something approaching a rural clearance has occurred parallel to the carpet bombing of European and Japanese cities. One may add that the response has been in some ways parallel in that planners in the denuded landscapes (such as the 100 kilometre stretch along the 17th parallel), were faced with a clear area problem. They could plan in the first instance, without being bothered with human populations, which would have been in the way.

The benign aspects of this environmental destruction have been the concentration of ideological, political and economic resources. That resulted in a considerable degree of success over a 20 year span, aided by the destruction and dispersal of the population. This attention to the environment would not have occurred on the basis of the known annual destruction rate of forests. Overall it seems that environmental damage is shorter in time span than the recovery of populations.

CONCLUSIONS

There appear to be several tentative conclusions that arise from these assessments of widespread and persistent violence.

1. Societies will act as a result of a Malthusian situation and this type of violence will continue over centuries, as an adjustment to environmental overcrowding.
2. In colonial societies, the invading powers with their overall concern for law and order, no longer permitted these violent solutions to environmental overcrowding. Since such adjustments have no longer taken place, there has been a build up to a much greater level of violence after political independence.
3. Where between national societies there is environmental pressure which is the subject of prolonged tensions, the United Nations does not have any power parallel to that of a colonial power to stop violence and so the tensions continue. There seems to be an

example of this in Israeli-Palestinian tensions and the remarks of the United States arbitrator about "knocking their heads together".

4. Where there has been massive material destruction, societies appear to react to repair the damage in ways that are usually an improvement on the previous environment. In addition such societies are able to take action over wide-ranging environmental problems which existed before, but for which they did not have either the political will or energy to attempt to rectify piecemeal at that time when the situation had been possibly modifiable. This destruction can be assessed as environmentally benign.
5. Where there has been massive human destruction, societies appear to be unable to take the opportunity to prevent a recurrence of the population pressures, which may or may not have directly contributed to the original violence, but which may well contribute to further violence in the not too distant future. These human losses appear to be too traumatic for the survivors to recognize the environmental advantages of smaller populations once they have occurred. It also appears that some societies do not have the political will to keep their populations from expanding catastrophically. These situations can be described as initially environmentally benign, but that the opportunity provided for future environmental relief has not been taken.

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