

Competing Constructions of Calamity: The April 1991 Bangladesh Cyclone

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On April 30, 1991, a cyclone of unusual intensity hit the coastline of Bangladesh, causing over one hundred thousand deaths and widespread property damage. An international debate ensued over whether the disaster was due to natural phenomena and should be addressed by relief measures, or whether it was due to social, economic, and political factors and should be addressed by structural change in society. This study explores the dimensions of this debate by means of a content analysis of accounts of the cyclone by the Bangladesh media and government, and by the international media and scholarly community.

Bangladeshi accounts of the cyclone emphasize its purported inevitability and natural origins. However, scholars maintain that while cyclones are inevitable, disasters such as occurred in April 1991 are not: they are a function of the historically increasing socioeconomic vulnerability of the Bangladesh population. According to this view, the "natural disaster" of April 1991 could more accurately be called a "social or political disaster." The factor chiefly responsible for transforming natural disasters into sociopolitical disasters is occupation of hazardous areas.

The Bangladesh media and government suggest that the cyclone's impact was worsened by the irrational behavior of individuals and the limited resources of the nation. Non-Bangladeshi accounts focus instead on the poverty of individuals and the structural inequities of society, which compel people to live in hazardous areas. Bangladeshi accounts attempted to link the cyclone to global warming and

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the greenhouse gas emissions of the industrialized nations, thus shifting the focus from internal problems of structure and equity to international problems of structure and equity. Debates such as this promise to become more common, as the global environment becomes increasingly "post-natural" and the framing of relations between population and environment is increasingly contested.

INTRODUCTION

A century ago, the great Bengali poet Rabindranath Tagore (1984) asked of the terrible cyclones that strike Bangladesh, "Why in its midst was the mind of man placed?" The purpose of this study is to ask, more prosaically, "Why in the cyclone's midst is man being placed?" and, to explain this, "Where in the mind of man is the cyclone placed?"

Just before midnight on April 30, 1991, a cyclone of unusual intensity hit the coast of Bangladesh. Accompanied by winds with velocities up to 145 miles per hour and tidal surges up to 20 feet high, it hammered the coastal areas for 7 hours. The storm destroyed 122 miles of coastal embankments, 74,000 acres of crops, and over 900,000 head of cattle; it left ten million people homeless; and human casualties numbered in the hundred of thousands (*Asiaweek*, 5/31/91; *Dhaka Courier*, 5/10-16/91c).

Observers agreed that the cyclone's impact was devastating; but there was marked public disagreement concerning the extent to which the disastrous impact of the cyclone was avoidable or not, the extent to which this impact was to be blamed on society or nature, and the extent to which it could be remedied by structural change in society as opposed to simple relief. The extent of this disagreement suggests a reversal of normal empirical procedures: instead of data being used to settle arguments, the arguments became the means by which the data (the reality of the disaster) were being settled (Rabinow, 1986). This reversal reflects an important ideological component in perception of the disaster, according to the varying social, economic, and political interests of the observer.

The ontology of "disaster" has long been a topic of debate in the field of natural hazard and disaster research, with most attention focusing on the question of whether disasters are exceptional as opposed to normal events. Hewitt (1986), among others, suggests that the traditional differentiation between disastrous events and normal ones represents a false dichotomy and an outmoded paradigm. He maintains that (1) natural disasters are not explained solely by geophysical processes, (2) human perception of natural disasters is not explained by these processes either, and (3) natural disasters are not the function of calamitous as opposed to everyday events

(Hewitt,1986). We share this stance and couple it with perspectives from anthropology and human ecology. We follow Firth (1957), for example, in believing that disasters are likely to be revealing of the social system; and we agree with Vayda and McCay (1975) in believing that a focus on life-threatening hazards is a good way to avoid misdirected attention to “non-problems.” In contrast to these studies, however, our focus is less on local systems than on national and international ones, and we are less interested in studying any single paradigm for interpreting disaster than in comparing paradigms across cultures.

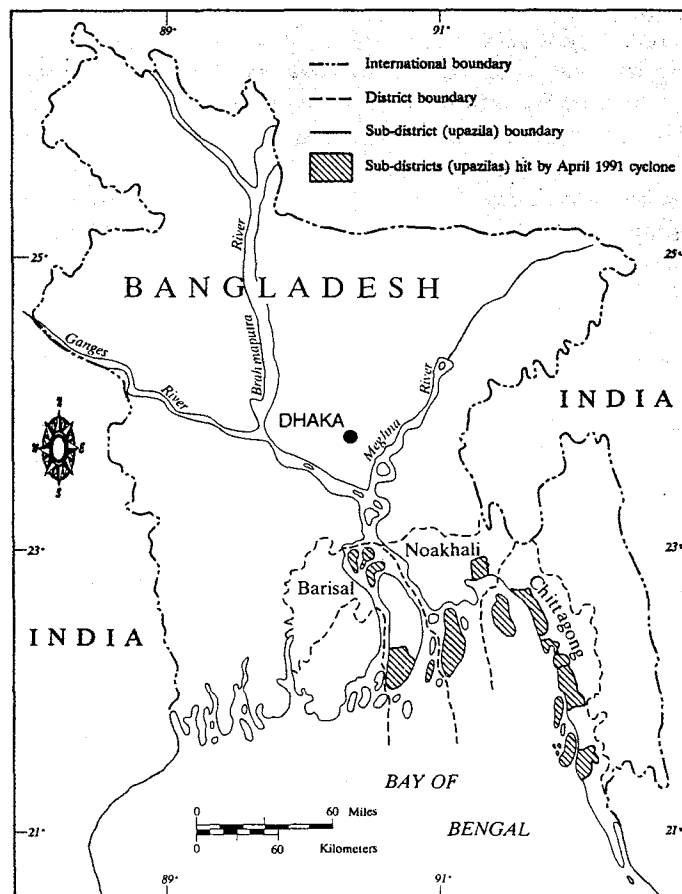
We propose to examine the varying interpretations of the April 1991 Bangladesh cyclone, drawing our data largely from media accounts. We examined all cyclone-related coverage, for four weeks following the storm, in two daily newspapers published in Bangladesh, two each published in India, Pakistan, and Japan, one published in the United Kingdom, and five published in the United States. We also examined eight news weeklies with a similar geographic distribution. We consider the media accounts to be representative of perceptions of the cyclone, but not necessarily representative of the cyclone itself. The focus of this study is not on natural disasters, but on the way that people—especially opinion makers and policymakers—think about natural disasters and why, and how these thoughts are represented through the media for popular consumption. Like Benthall (1991,p.3), we see elements of “narrative convention” in these accounts of disaster, making them the equivalent of contemporary folktales. We supplemented our examination of media accounts of the cyclone with a review of the “grey literature” of the international aid organizations, as well as the scholarly literature on natural disasters (especially in Bangladesh).

BACKGROUND

Bangladesh occupies most of the Bengal Delta, which is formed by three major river systems—the Ganges, the Brahmaputra and the Meghna—and their more than 200 tributaries (Figure 1). This location makes riverine and marine flooding as prominent in Bangladeshi life as it is in any society on earth. Bangladesh has been hit by seven of the worst nine oceanic storms of the twentieth century (Table 1). As a result, “Flooding is an intimate part of rural life in the villages of Bangladesh, and it is deeply embedded in their culture” (Paul,1984,p.10). As a coastal dweller told a journalist after the April cyclone, “Our life is in the water. We are submerged in water” (*Washington Post*,5/2/91).

Bangladeshis have developed many ways of dealing with the threat of

FIGURE 1. Three Bangladesh districts and ten sub-districts (upazila) hit by the April 1991 cyclone.



floodwaters (although these apply more to riverine floods than to coastal storm surges [Rasid & Paul, 1987]). These include avoiding the threat and mitigating its impact:

Indigenous adjustments to floods include the building of homes on natural levees, sand bars, and raised platforms; the planting of different rice varieties at different levels of the floodplain; the development of 'floating' rice varieties that can grow by more than 15 cm in a 24-h period with rising flood levels; the use of

TABLE 1
The Worst Storms of the Twentieth Century

Year	Loss of Human Life	Location
1991	125,000*	Bangladesh
1985	10,000	Bangladesh
1970	300,000*	Bangladesh
1965	30,000	Bangladesh
1965	17,000	Bangladesh
1965	10,000	Bangladesh
1963	22,000	Bangladesh
1942	40,000	India
1906	10,000	Hong Kong

*Other estimates of losses of life in these two storms range as high as 300,000 and 500,000, respectively.

bamboo stakes and fences to support and protect rice crops; and continuous process of selection by which traditional and modern rice varieties are adapted to localized agroecological conditions (Boyce, 1990, p. 426).

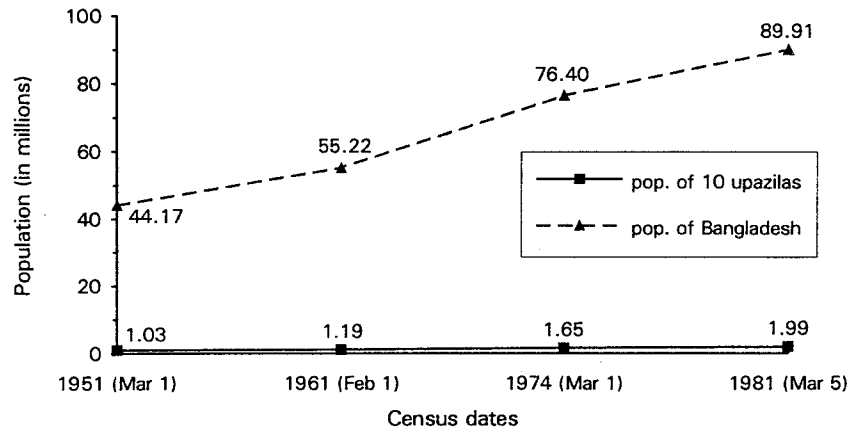
In addition to physical techniques for mitigating flood damage before the fact, Bangladeshis have developed distinctive social strategies for adjusting to such damage after the fact, notably the dispersion of the extended and nuclear family (Feldman & McCarthy, 1983).

Not all of the effects of flooding are bad, however: the negative effects are inundation and erosion, but the positive effects are improvement of soil fertility (cf. Brammer, 1990; Boyce, 1990) and land accretion. Regarding the latter, Islam (1974, p. 23) writes:

The natural land-building process in the deltaic plain creates more and more opportunities for economic activity. The newly formed land areas, locally known as 'char,' are considered to be favorable for crop production.

This creation of land has a special impact in Bangladesh, because of the country's very high population/land pressure. Bangladesh is one of the world's most densely populated countries (and it also has, at 3.1%, one of the world's highest population growth rates). Its 116 million people occupy an area of just 143,330 square kilometers (55,125 square miles), yielding an average population density of over 800 persons per square kilometer.

FIGURE 2. Population (1951-81).



The relative lack of land, coupled with some inequity in its distribution, makes newly accreted land a scarce and valued good—despite its hazards.

The settlement of the *char* lands has undergone some important changes in recent times. These lands formerly were farmed and occupied only on a seasonal basis, by people who had homes (if not land) elsewhere in the country (in areas less vulnerable to riverine or coastal flooding). Now the *char* lands are occupied year-around by people who have no other home. This change is reflected in the population statistics. Analysis of the 1951, 1961, 1974 and 1981 censuses (GOB, 1976, 1983, 1990;

FIGURE 3. Population of 10 upazilas (1951-81).

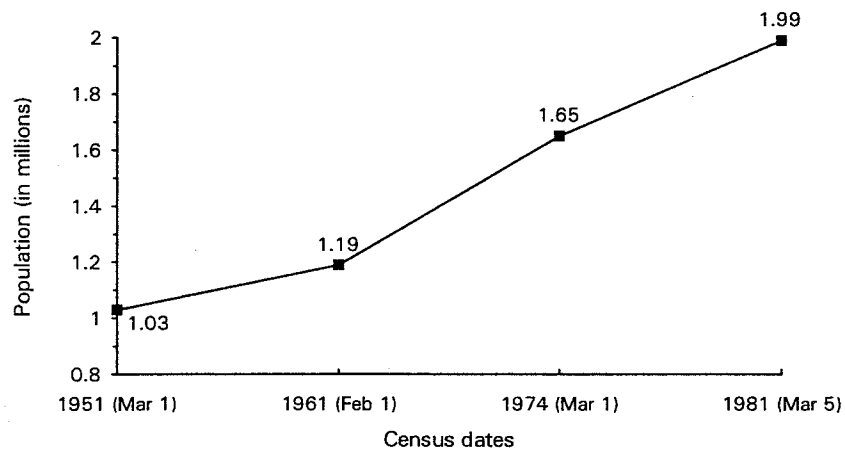
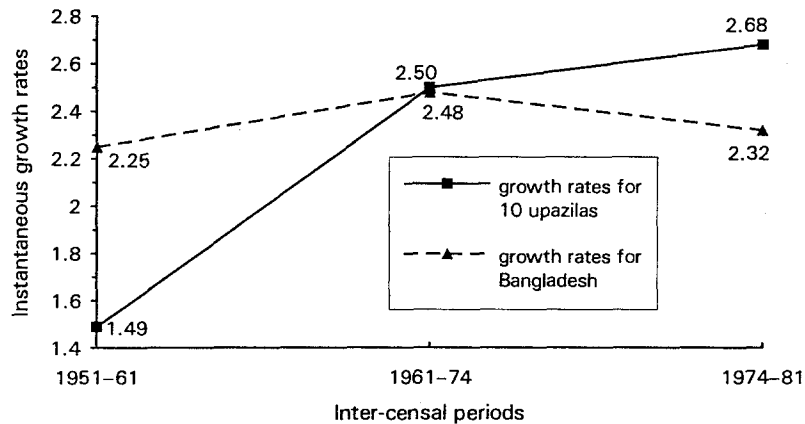


FIGURE 4. Instantaneous growth rates (1995-81).



POPULATION GROWTH (POP, 1951, 1961) shows that population growth in the hazardous coastal regions (specifically in the ten *upazila* "sub-districts" of three districts hardest-hit by the 1991 cyclone) was much lower during the period from 1951 to 1961 than in the country as a whole, about equal from 1961 to 1974, and higher from 1974 to 1981 (Figures 2 to 4). These figures suggest that the hazardous coastal regions were avoided by the population so long as land remained available in the rest of the country. When this ceased to be the case, due not only to demographic but also to political and economic reasons, migration to these regions began to increase, pushing their growth rates above the national average.

THEMES

Several themes dominate accounts of the April cyclone: (1) the extent to which the disaster was inevitable or not, (2) the extent to which it was attributable to natural versus man-made agencies, (3) the impact of internationally generated global climate change, and (4) the impact of locally generated population growth.

1. Inevitability versus Avoidability of Disaster

Bangladeshi accounts of the April cyclone emphasize its purported inevitability. For example, Prime Minister Zia told her countrymen that they would have to live with such disasters, saying, "It [natural calamity] has been a part of our life as it comes every year in one form or another"

(*The Pakistan Times*, 5/10/91). An editorial in one of the country's leading English-language publications takes a similar stance:

We can neither wish nor look away from the natural disasters of cyclones, tornados and floods. They are very much with us and will be forever as the most important geographical fact of life (*Bangladesh Observer*, 5/9/91b).

The inevitability of these disasters is attributed to the geography of Bangladesh, as the citation suggests. The Bangladesh government and media maintain that their nation is cursed with the worst geography in the world. Thus, an editorial in the *Bangladesh Observer* (5/9/91c) claims:

Here is one of the most challenging geographical problems in contemporary history. Nearly three-fourths of the earth is sea laving many a coast from the Mississippi to the Bay of Bengal. But nowhere either coastal rivers or the mountains [sic] off across the upper riparian region pose a natural danger as that to which Bangladesh is exposed. The twin dangers—one from the south and the other from the north—remains our great yet unsolved problem.

A subsequent account in this same daily calls the Bengal Delta "more difficult and challenging than any other coastal zones of the world" (*Bangladesh Observer*, 5/22/91).

These accounts conflate the natural phenomenon of the cyclone with the social-economic phenomenon of cyclone damage. Only in foreign media accounts are the two distinguished:

The Bangladesh cyclone was inevitable. But the fearful death toll was not. Tens of thousands of people were swept away whose lives could have been saved. The thin line of defenses established since the great cyclone of 1970 proved that is possible (*Dawn*, 5/11/91).

Scholars also insist on this distinction. Hewitt (1983, p.198), writing of climatic hazards in the subcontinent, says:

We must reiterate the important distance that exists between the fact of climatic hazard and disaster, and their impact upon the responsibilities of human societies in the region. In virtually no case should the losses from weather, or hunger that can go with

them, be interpreted as a raw expression of imbalance between population and natural resources, brought to a head by weather uncertainty.

2. *Natural versus Social Origins of Disaster*

The debate over whether Bangladesh's disasters are inevitable or avoidable is also a debate over whether they are attributable to natural or human agency. The official Bangladeshi position is that disasters are of natural origin. This is reflected in the consistent reference to nature in accounts of the cyclone by the government and media:

No country has got a worse natural and environmental deal than Bangladesh. It seems to have become the chosen land of monsters which rise from the sea to devour humans and animals, life and property, hope and dignity with a fury against which there is no observable shield of protection. One must seriously consider whether there is a curse on this land or not (*Dhaka Courier*, 5/10-16/91a).

More pointedly, Prime Minister Zia said, "No government has control over natural calamities" (*Bangladesh Observer*, 5/4/91a)—which is, we suggest, why the government is so eager to classify the April disaster as a natural calamity, and thus establish its innocence regarding the attendant damages. The differing implications for the government of a natural versus man-made disaster is reflected in Prime Minister Zia's public effort to distinguish her "natural" cyclone from a "man-made" famine that occurred during the regime of her political opponents:

She [Prime Minister Zia] had a dig at the opposition members who were critical of the government steps to cope with the post-cyclone situation and said no body could forget the memory of the 1974 famine. The famine of 1974 was purely a man made one in which lakhs [hundred of thousands] of people died of starvation, she said. In the face of strong protest from the Awami League members in the House, she wanted to know from them why so many people had to die at that period though there was no natural calamity (*Bangladesh Observer*, 5/4/91a).

The foreign media, governments, and donor agencies did not completely abjure representation of the April cyclone as a natural disaster. The

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adoption in foreign accounts of the theme of culture against nature was supported by powerful, local images such as the following:

In one particularly dramatic discovery, the Associated Press reported that rescue workers are finding hundreds of dead infants and children tied to uprooted trees. The youngsters were put there by their parents who had hoped that the trees, a tall, flexible variety planted to withstand strong winds, would remain standing and keep the children safe from flood waters (*Washington Post*, 5/7/91).

This arresting image focuses attention on the desperate actions of coastal dwellers to protect their loved ones against the brute forces of nature. It defines the tragic dimensions of this situation in a particular, narrow way: the wind and waters were too great, and the trees were not sufficiently tall and strong, to protect the children. The possibility that the presence of the children (and their families) in this hazardous region is the real tragedy is not raised, but some argue that it should be.

Comparative studies suggest that the real cause of disaster is the vulnerability of the population, which is a function of socioeconomic variables (O'Keefe et al., 1976). Susman, O'Keefe, and Wisner (1983, p. 277) maintain that throughout the developing world, the poor and powerless are always the closest to natural hazards and thus they are always the most vulnerable to "natural" disaster:

It is no accident that a major slum in San Juan (Puerto Rico—ironically named 'La Perla') is frequently inundated by high tide; that Rio's infamous *favelas* climb slopes of alpine difficulty; that the poorest urban squatters in much of Asia live on hazardous floodplains; that those people crowded into Recife in north-east Brazil live in, and on, the mud of the tidal estuary, living off the crabs that also inhabit the mud (de Castro 1966); or that a quarter of Kenya's population (including many of the poorest) live in that country's drought-prone 'marginal' lands (Campbell, 1981).

They further suggest that it is not nature but "underdevelopment" that "places marginal people in marginal lands" and they conclude that this throws into question the concept of "natural disaster" or "acts of God" (Susman et al., 1983, pp. 276, 280). Wisner, O'Keefe, and Westgate (1976, p. 548) suggest that the term "natural disaster" should be replaced with the term "social or political disaster."

Wisner (1978) tested this theory by comparing losses to similar natural hazards in countries with similar physical settings but different socio-economic conditions. The countries were Bangladesh and Vietnam (that part of it formerly called North Vietnam), and the hazards studied were a 1970 cyclone in the former and a 1971 cyclone in the latter. The intensity of the two cyclones was similar, and the physical characters of coastal Bangladesh and Vietnam are also quite similar; but the respective losses to the two cyclones were markedly different. There were hundreds of thousands of human casualties in Bangladesh and perhaps just hundreds in Vietnam. Wisner (*ibid.*) attributes this to the difference in the two countries' political-economies. He suggests that workers, and the lives of workers, "count" for less and are thus less protected in Bangladesh than in Vietnam. The implication that the political system of Bangladesh was responsible for the death of hundreds of thousands of its people demonstrates why the Bangladesh government emphasizes the inevitability and naturalness of disaster.

3. The Impact of Internationally-Generated Global Climate Change

When the Bangladesh government is confronted with irrefutable evidence of un-natural disaster, it avoids the attendant implications by expanding the scope of analysis from Bangladesh to the world. It invokes the concepts of "global warming" or the "greenhouse effect":

One [Bangladeshi] expert said the pattern of cyclones and other climatic disturbances has been known since time immemorial in Bangladesh and was accurately predictable. But since the 1980s, the weather in the area has been less predictable. In the 1990s, the pattern of cyclones, floods and other climatic aberrations were baffling the experts who could not fit them into their known formulae. . . . The weathermen point to the continued production of greenhouse gases by advanced countries, despite warnings, contributing to a rise in temperature (*China Daily*, 5/14/91).

This reference to global warming was inspired, in part, by a letter that the chairman of Greenpeace, David McTaggart, sent to the leaders of the world's seven leading industrialized countries and also released to the press. The letter stated in part:

The cyclone that killed at least 125,000 people in Bangladesh may be linked to global warming. . . . The recent loss of life

and devastation in Bangladesh due to cyclones provide a stark reminder of the type of severe climactic events which are predicted in a greenhouse world (*Dawn*, 5/10/91).

McTaggart went on to urge the leaders of the industrialized nations to agree to curb emission of the gases that contribute to global warming and to disasters like the April cyclone in Bangladesh. He stated that the industrialized nations are the major producers and consumers of climate-altering gases, but that the non-industrialized nations of the developing world will suffer the most from climate alteration.

The thesis that developing countries are suffering environmental damage as the result of (in effect) greed and lack of self-control in the industrialized West is inherently appealing to the developing countries, which usually find themselves on the opposite end of this argument. The extent of this appeal is reflected in the wide attention that developing country media devoted to the Greenpeace letter. This includes Bangladesh, in spite of the fact that blaming the April 1991 disaster on the greenhouse effect undercuts the official position that the disaster was natural.

4. The impact of Locally-Generated Population Growth

The view of disaster as avoidable versus inevitable, and as man-made versus natural, is based primarily on a presumed relationship between natural hazards and human demography. This relationship was discussed, either implicitly or explicitly, in almost all accounts of the April 1991 cyclone in Bangladesh, with the notable exception of accounts by the Bangladesh government and media. An example of a non-Bangladeshi account is the following:

Population pressures in the coastal areas of the Bay of Bengal that have intensified alarmingly over the past 10 years made the cyclone that hit Bangladesh on 1 May far more damaging than it need have been. . . . A relief worker told the REVIEW that if the country's population had remained at the 1970 level, casualties would have been very few though damage to property could not have been avoided (*Far Eastern Economic Review*, 5/16/91).

Land scarcity is regarded, therefore, as the linkage between population pressure and cyclone damage. It is this, according to the thesis, that compels poor farmers to settle in the fertile but hazardous accreted shorelands

and islands along Bangladesh's coast. This point was made in almost every foreign account of the April cyclone, of which the following is an example:

Population pressures in Bangladesh are such that people flock to any bit of land that peaks above the sea, for there is no room for them on the mainland. . . . As the population soars, more and more peasants move to the coastal areas and the islands in search of work and of earth to cultivate, whatever the risks (*The New York Times*, 5/11/91).

There was no reference to this theorized association between population/land pressure and risk assumption in any remarks by any Bangladeshi official or journalist in a Bangladeshi publication. The absence of any such reference is "marked," given its prominence in all other media accounts of the cyclone. We suggest that this absence is ideological in nature: references to population are absent because they conflict with government dogma. The government wishes to believe that cyclone losses are the fault of nature (or the industrialized west); references to population/resource pressure and risk assumption instead fault Bangladeshi government and society.

Some of those who have raised the question of population growth, such as Wisner, O'Keefe, and Westgate (1976), argue that it is a response to material uncertainty (and it is this uncertainty—not the population growth that it stimulates—that is the actual cause of increased vulnerability to disaster). This view of population growth was not supported by Robinson's (1986, p.296) study of Bangladesh: he found "no historical evidence to support the notion that fertility in Bangladesh has risen in response to growing economic pressures and uncertainty." Notably missing from this discussion, however, is any reference to the political-economic context of population growth. Even those who argue for an association between population pressure and settlement in Bangladesh's hazardous coastal areas simply assume that the former suffices to explain the latter. One determinant that is overlooked is tenurial relations. Many of the settlers of the hazardous coastal areas are landless tenants, sent there to graze livestock, till the soil, and establish tenure for landlords who dwell in safety inland. These landlords have a self-interest, therefore, in increasing the numbers of people living (and at risk) in these hazardous areas. Their self-interest also may be served by overall growth in the country's population, since this makes it possible to send tenants to such hazardous areas and on terms favorable to the landlord.

ANALYSIS

1. Historical Perspective

There is a major dichotomy among accounts of the April 1991 cyclone in the historical lessons drawn from it. The Bangladesh government and media treat the disaster, in essence, as a confirmation of "the way things are":

Prime Minister Begum Khaleda . . . said Bangladesh would have to live with natural calamities. 'It has been a part of our life as it comes every year in one form or another' (*The Pakistan Times*, 5/10/91).

In contrast, non-Bangladeshi accounts of the disaster treat it as an implicit critique of "the way things are":

The recurrence of such calamities, however, does not mitigate their horrifying implications. Rather, the disaster that befell Bangladesh on April 29 should draw attention to a number of important issues that have to be addressed (*The Herald*, 6/91).

Bangladeshi accounts treat the disaster as confirmation of the inevitability of disasters and the need to accept this inevitability. Non-Bangladeshi accounts treat the disaster as evidence of a problem that needs to be addressed and, thus, avoided, not endured. The Bangladeshi interpretation is based on a view of the disaster as one instance in a recurrent, historical pattern. The director of the Bangladesh Meteorological Department said:

The 29 April cyclone was very destructive. But if one compares it with the Bakerganj cyclone of the late nineteenth century that killed one lakh people, one would conclude that deadly cyclones are nothing new in Bangladesh (*Dhaka Courier*, 5/10-16/91b).

The non-Bangladeshi interpretation is based on a view of the disaster as something of greater historical particularity, which is supported by scholarly work on the subject.

Robinson (1986, p. 295), for example, argues that Bangladesh has a history of natural hazards but not of natural "disasters":

To be sure, cyclones, floods and crop failures did occur then as now. But the impact of such disasters falls far less brutally on a

population possessing an adequate, diversified asset-base. As is well known, there is a kind of nostalgia about the 'Golden Bengal' of a few generations ago.

Robinson's belief that recurrent, severe natural disasters represent something new in Bangladesh's history is in keeping with studies elsewhere around the world. Wisner, O'Keefe, and Westgate (1977,p.47) conclude that:

We found a statistically significant increase in the frequency of 'large scale' disasters—those involving large areas of the earth's surface and long-term ecological balance. There also was an increase apparent in the number of deaths per million of population affected by a given disaster. The most striking increases are seen in the underdeveloped countries.

A summary of their findings is presented in Table 2.

Scholars attribute this historical development to changes not in nature but in society. Wisner, O'Keefe, and Westgate (1977,p.48) reject the idea that the increased frequency and severity of disasters are due to changes in the underlying natural phenomena (which they say have a fixed and "mathematically reconstructible probability"). They seek an explanation not in any heightened ferocity of nature, but in the heightened vulnerability of society, which is primarily economic in nature. Shaw (1989, p.11) writes:

Serious floods have affected the area for centuries, but over the past few decades the adaptive capacity of the majority of Bangladeshis has been eroded further and further. Deteriorating levels of poverty have meant that increasing numbers of households can no longer afford a bed, cannot spare the necessary

TABLE 2

Global Incidence of Large-Scale Disasters: 1919-71

Period	Average Number of Disasters Annually
1919-71	4.8
1951-71	10.0
1968-71	13.0

Source: Wisner, O'Keefe, and Westgate (1977, 47/Table 1).

labour and money to build a false roof or to repair the plinth of their homes, have no surplus to enable them to absorb the losses of a spoiled harvest, and have moved into more marginal and flood-prone areas.

2. *The Guilty Party*

Time magazine (5/13/91), in its cover story on the April 1991 cyclone, said, "The aftermath of a fierce cyclone looks like a judgement. But no reasonable attempt to comprehend Bangladesh's afflictions could find a moral in them." Quite the contrary, much of the subsequent public discussion of the cyclone reflects an attempt to find this moral, to assign responsibility (or avoid responsibility). The culprit is variously identified as the individual, poverty, Bangladesh society, or the global community.

The Individual. Discussions of individual responsibility focus on use or non-use of government-built shelters. Concrete community shelters are one of the few effective methods of protection against the high winds and storm surges that accompany cyclones (Rasid & Paul, 1987). The Bangladesh government, in the two decades since the deadly 1970 cyclone, built several hundred of these shelters and developed a warning system designed to give coastal dwellers time to reach the shelters before life-threatening storms hit. There was a widespread belief in the aftermath of the April 1991 cyclone that coastal dwellers failed to heed the public warnings and failed to utilize the shelters; and there was much speculation as to why this happened. The reported reasons tended to be practical ones, like concern for material goods:

Disaster shelters have been built for people who are afraid, with good reason, to leave their own mud and straw houses. They are afraid, they said this week, of thieves and robbers (*The Pakistan Times*, 5/8/91).

Since these reasons, while well-founded, proved to be ill-considered when weighed against life itself, what emerges from these accounts is a picture of people who acted rationally but yet foolishly. The following vignette is typical of many that were published:

Raham Ali's one-band radio had warned him of the approaching hurricane and instructed him to evacuate to a safer place. But Raham Ali, living in a small fishing village of Sandwip with his family of five he did not want to move to the cyclone shelter

two miles away leaving behind his newly built tin-roofed house, two cows and other household belongings unprotected. 'What if the storm doesn't come?' So he stayed on while the sea washed away his family members and everything else he possessed. After two days of waiting he now finds himself in a long queue for relief handouts in front of the nearest upazila office, without any idea as to how he will restart his life (*Dhaka Courier*, 5/24-30/91).

The effect of such accounts is to focus attention (and, implicitly, blame) on the character of the coastal settlers. One government official, when informed of our study, suggested that we should try to determine what characteristics distinguish the people who went to the shelters from those who did not go. This effectively preempts the broader and more important question: What characteristics distinguish the people who have to settle in the hazardous coastal regions from those who do not? Some officials focused not on the inadequacy of the coastal dwellers' response, but on the inadequacy of the warning system—but the effect is the same: it narrows the scope of investigation, and thus possible culpability, to the coastal zone as opposed to Bangladesh society as a whole.

Poverty. Most foreign accounts of the cyclone identified poverty—Bangladesh's per capita income of \$170/person/year is one of the lowest in the world—as one of the factors that contributed to the disaster. Some foreign accounts raised the further issue of the linkage between poverty and vulnerability (and a related issue, population growth) on the one hand, and the structure of Bangladesh society on the other:

Hundreds of thousands of Bangladeshis have been living on relatively new silt islands in the estuaries of rivers in defiance of the law. . . . Many Bangladeshis on the islands were tending the cattle or crops of landlords who live safely on the mainland (*The New York Times*, 5/3/91).

Many of those who drowned in the flood were landless squatters who moved to precarious silt islands that periodically emerge and submerge . . . [in the] Ganges River. When a new island appears a few feet above sea level, nearby landlords are allotted ownership rights and encourage impoverished, indebted peasant laborers to take up residence, providing the owner with effective control of the new land (*Washington Post*, 5/5/91).

This pattern is not peculiar to Bangladesh. Susman, O'Keefe, and Wisner (1983,p.280) note that around the world, "Underdevelopment is placing marginal people in marginal lands." This is a function not of conscious policy decisions, but of implicit structural relations:

The rich countries and rich elites within poor countries do not conspire to starve the poor, to shift them into dangerous places like Nazis shifting Jews to death camps. But we believe that the international divisions of labour among rich and poor countries and market forces within the poor, under-developed capitalist economies of the third world cause the poorest of the poor to live in the most dangerous places (Wisner, O'Keefe & Westgate,1976,p.547).

References to poverty are much scarcer in Bangladeshi accounts of the cyclone, and there is *no* mention in them of the role that tenurial relations play in putting this population at risk. (There is not even any mention of the fact that many or most of the victims were tenant farmers.) Any references to poverty and tenurial relations in this context would suggest that the disaster has social, economic and political determinants, which are far more problematic for the government than the natural or global environmental determinants that it chooses to see. The exceptional cases in which the government does refer to the material needs of the people are illuminating:

Officials say part of the reason the April 29 cyclone was so disastrous was that so many trees have been cut in low-lying Bangladesh. Environment Minister Abdullah Al-Noman said last month that much of the cyclone loss could have been avoided if the country had retained a natural shield against storms. . . . They blame the loss mainly on the need for wood as fuel and to build homes (*Japan Times*,6/5/91a).

The government blames the deforestation on subsistence uses of wood, which therefore implicates mainly the local population. The local population itself has quite a different view:

For fifty to sixty miles along the coastline of Magnama, Chokoria, a strange sight meets the eye. . . . This stretch, about two to three miles wide, used to be a thick mangrove forest. Now all that is left of the natural forest is acres of butchered tree

stumps leaving Magnama open to the onslaught of tidal waves and winds. Local people said the trees had been cut for the development of the shrimp culture project. Had the forest been there, the cyclone could not devastate the land so absolutely, they lamented (*Dhaka Courier*, 5/31/91-6/6/91).

Shrimp culture, a highly lucrative industry that has sprung up along Bangladesh's coast in recent years, is not a subsistence enterprise of local people, but a capital-intensive enterprise involving outside developers and funding. Therefore, the urban and market-oriented business sector is responsible for this part of the coastal deforestation and, by implication, cyclone damage—a fact that was omitted from the official's comments on the topic.

Bangladesh Society and the World Community. Bangladeshi accounts of the cyclone tend to focus not on the poverty of individuals (e.g., the storm's victims), but the poverty of the country as a whole. National poverty is blamed for the insufficiency of structural measures to prevent storm losses, and the insufficiency of emergency assistance measures after the fact. The director of the Bangladesh Red Crescent Cyclone Project was reported as saying:

It has to be said that the urgent need of its heavily concentrated population—including food imports—and its inadequate agricultural and industrial output, do not allow the Bangladesh economy to spare large sums for disaster-response programmes (*The Herald*, 6/91).

In the wake of the cyclone, the government accordingly made massive requests to foreign donors for food assistance. Foreign observers suggest that Bangladesh's problem is not simply one of resource shortages, however. Thus, an FAO (1991) analysis found that while the April 1991 cyclone caused "substantial" crop losses, the losses amounted to only 1% of total national production. Bangladesh needs food assistance not because of a national food shortage, but because of a national food distribution problem. Bangladesh has a chronic inability to transfer food from food-surplus areas to food-deficit areas (Boyce, 1990; Montgomery 1985).

When Bangladeshi officials and journalists are not blaming the nation's poverty, they blame the west. Thus, in what appears to be a settling of the score with western critics of environmental policies in the developing world, we read as follows:

Poor countries are not very ecology conscious but they are not responsible for the Greenhouse Effect which is what is becoming the single most important source of wholesale destruction of mankind and earth. It is the richer and developed ones with their vast greed for a lifestyle which is killing much of the rest of earth (*Dhaka Courier*, 6/7-13/91).

The importance to the government of this shift in focus on equity issues, from a domestic to an international level, is made explicit in a call to frame disasters as an international problem and responsibility:

While the poor countries must become more ecologically conscious and encourage conservation and decontamination of their water bodies, they must also practice 'disaster diplomacy' energetically abroad. Those countries which are directly responsible for what is happening to the seas and which are often the earliest to arrive with relief and sympathy once disaster strikes because of their own policies must be convinced somehow that they must accept responsibility and pay for the damages caused. Our diplomats must be made more articulate in the art of environmental advocacy and negotiations (*Dhaka Courier*, 6/7-13/91).

3. The Solution

Political-Economic Considerations. Political-economic implications partially determine the types of measures proposed to deal with disasters like the April 1991 cyclone. Measures involving structural change threaten existing political-economic structures and thus are not favored by the Bangladesh government and elite (cf. Hewitt 1983), in contrast to which relief reinforces such structures and so is favored. As Susman, O'Keefe, and Wisner (1983, p. 279) write, "The provision of relief usually reinforces the *status quo ante*, namely the process of underdevelopment that produced such vulnerability in the first place."

Bangladesh's Prime Minister proposed, in effect, no solution at all, standing fast with her assertion that natural calamity is "a part of our life" (as noted earlier). The Bangladesh media counseled acceptance, not just of calamity but of after-the-fact responses to calamity:

Our responsibility to those who are alive and all those who will again face the prospect of death is to make sure that we know

that disasters are going to be part of our life . . . but our attempts to bring short and long term relief to them becomes part of our life too (*Dhaka Courier*,5/17-23/91).

An emphasis on relief, as opposed to structural reform, is evident in the various recommendations that were published in the wake of the cyclone, such as the following:

Bangladesh needs: National Institution for Coastal Studies; permanent structural measures like Dutch Delta Plan, German dike system in the light of positive environmental assessment; Cyclone preparedness—improved awareness response; Evacuation programme horizontal and vertical (regional and international coordination), sociological, psychological technique, to improve evacuation; Risk assessments—educational aspects to increase awareness; Emergency programme to fight against pollution like oil spill (disaster programme, regional & international cooperation); Protection from water supply contamination, disease and starvation; Rapid land reclamation and afforestation programme (*Bangladesh Observer*,5/22/91).

Demographic and political-economic factors (as discussed here) are completely missing from this list. This studied avoidance of structural issues is clearly seen in the government's proposals to remedy deforestation:

Bangladesh must establish a coastal 'green belt' to help protect itself against disasters such as the April cyclone . . . Prime Minister Begum Khaleda Zia said Wednesday. 'We have to take tree plantation as the most powerful weapon to protect ecological balance,' she told a seminar in Dhaka marking World Environment Day (*Japan Times*,6/5/91a).

The failure to identify those responsible for past deforestation means that special interests like the shrimp-farm operators have nothing to fear. Indeed, the exhortation to the public to solve the problem suggests that it is not special interests that are at fault but the public itself.

Politics versus Political Economy. The Bangladeshi government drew considerable criticism for its handling of relief operations in the wake of the April cyclone. The head of the political opposition, Sheikh Hasina, even suggested that Zia's government should voluntarily depart:

If the Government had any respect to moral and democratic values it would have resigned following its failure in saving the lives of lakhs of people and protecting the loss of national properties worth millions of dollars (*Bangladesh Observer*,5/9/91a).

The Prime Minister retorted that the opposition was out to unseat her not because of anger at her failure in coping with the cyclone but out of jealousy at her success:

Khaleda told a group of political activists who joined her Bangladesh Nationalist Party that her government had saved millions of people made destitute by the cyclone April 29, which killed more than 133,000. 'Certain quarters are unhappy at the success and are resorting to terrorism and hostility to destabilize the government,' she said (*Japan Times*,6/5/91b).

Such acrimonious exchanges between government and opposition notwithstanding, the opposition's stance regarding the cyclone and cyclone relief was remarkably similar to the government's. All of the opposition's criticisms of the government handling of the disaster were minor in nature. They did not suggest that the government should have done anything dramatically different, but only that it should have done a better job at what it did:

Sheikh Hasina [of the opposition] said it was true that the people were forewarned of the impending danger, but alleged that adequate measures were not taken to save life and property (*Bangladesh Observer*,5/4/91b).

The opposition did not raise any of the political-economic issues that have been raised in this study regarding why people were living in the hazardous zone in the first place, what their relations were with mainland landlords, what role commercially oriented deforestation along the coast played in the disaster, and so on. The opposition's failure to raise these issues makes it clear that the debate between the government and opposition over the April cyclone is "political" in the truest sense of the word: it is generated by political factionalism, not by any difference of opinion regarding the essential political-economic structure of society.

International Considerations. Bangladesh's appeal for assistance in the wake of the April cyclone had to compete with appeals from almost a dozen other countries, resulting in a "disaster calculus" like the following:

The 217 km ph cyclone and seven metre tidal wave which swept south east Bangladesh in the early hours of April 30 have taken more lives in a few hours than the invasion of Kuwait, the offensive by the coalition forces, the Iraqi-Kurdish casualties following the Gulf War and the recent earthquake in Armenia, all taken together (*Asahi Evening News*,5/9/91).

With great competition for finite resources, and given the “numbing regularity” with which Bangladesh is struck by disasters (*San Francisco Chronicle*,5/1/91), there was anxiety among relief workers that Bangladesh would be overlooked. But the regularity with which Bangladesh must make such appeals is counter-balanced by its skill in making them. Bangladesh has the reputation for being “the world’s experts at marketing disasters” (Walden 1991). It can be argued, however, that Bangladesh is merely responding to the demands of the international community. Every year in Bangladesh, 300,000 children—or perhaps twice as many casualties as occurred in the April 1991 cyclone—die of simple diarrhea-related diseases (Boyce, 1990). Is it the fault of Bangladesh, or the world donor community, that the “biblical doom” of a cyclone can draw assistance (*Time*,5/13/91), but quiet deaths from diarrhea cannot?

CONCLUSIONS

This analysis of the debate over the cause and prevention of “natural disasters” in Bangladesh demonstrates that the framing of the debate is “contingent.” The factors that are considered to be “given” as opposed to debatable vary from one party to another according to political-economic interests. Each of the following factors is considered to be variable by at least one of the parties involved in the disaster debate, while it is considered to be immutable by at least one other party: climate, the incidence and intensity of cyclones, the extent of cyclone damage, the political-economic structure of society, and population growth (Table 3).

Hewitt (1986, p.9) draws a felicitous analogy in his study of disaster, likening the treatment of disaster by technocratic society to the treatment of madness in the Age of Reason as analyzed by Foucault. The difference here is that we are looking at more than one society, and thus more than one treatment. Further, we are looking at the interaction between the differing treatments and conceptions—at, in short, the dialogue between them. Hewitt (1986, p.14) has critiqued the “monologue” within natural hazards research, which he sees as having contributed to the predomi-

TABLE 3

The Dimensions of Disaster Discourse

Dimension	Source of Discourse	
	Bangladesh	Non-Bangladesh
Nature of disasters	Inevitable	vs. Avoidable
	Natural origin	vs. Man-made origin
Guilty party	The individual	vs. The society
	or Industrial nations	vs. Bangladesh
Role of population	None	vs. Some (as an intermediate variable)
Solution	Relief	vs. Structural change
	and Change by industrial nations	vs. Change by Bangladesh

nance of an invalid paradigm. Post-Modernists have critiqued the monologue in western representations of the developing world, which has not allowed alternative and counter-representations to emerge. From these perspectives, the East-West (or North-South) dialogue that is developing on the subject of natural disasters is a desirable one. Desirable or not, however, this dialogue promises to become increasingly prominent, not because we live in a post-modern world, but because we live in a "post-natural" world.

McKibben argues in his (1989) work, *The End of Nature*, that human society's impact on the atmosphere of our planet has changed the meaning of nature. He writes:

We have not ended rainfall or sunlight. . . . But the *meaning* of the wind, the sun, the rain—of nature—has already changed. Yes, the wind still blows—but no longer from some other sphere, some inhuman place (McKibben, 1989, p.48).

McKibben asks how this will change our view of our environment, but he does not ask how this will affect our views of each other.

The alacrity with which Bangladesh took up the idea of western culpability for global warming suggests that allocation of responsibility for processes that formerly were perceived to be natural will become a major focus of East-West discourse in the future. It also suggests that this dis-

course is important—in the sense that it is perceived as an important arena of contest by the participants in the discourse—and thus it merits scholarly attention.

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