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Terrorist Attacks vs Cultural Suicide : Which Most Threatens Human Survival?

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Abstract : On September 11, 2001, terrorists commandeered four commercial airliners and crashed two into the Twin Towers of the World Trade Center in New York City; the third crashed into the Pentagon near Washington, DC; and, in the fourth, some airline passengers resisted the terrorists and the plane crashed in a rural area of Pennsylvania. Since then, the United States has had an almost obsessional fear of terrorists. Former New York City Major Rudy Guliani even used the events of September 11 as a centerpiece in his failed political campaign for the US presidency. Terrorist acts do kill many people and are given much attention in the US news media. However, global climate change and other factors, such as exponential human population growth, have the potential to cause millions, even billions, of deaths – many more than the hundreds and thousands being killed by terrorists. This paper attempts to put the cultural risks in perspective and to propose that inadequate social evolution has placed humankind in a more precarious situation than any terrorist attack could possibly do. What humans are doing to themselves is far more threatening than anything that terrorists have accomplished so far.

Key words : Terrorism, Cultural suicide, Global heating, Overpopulation, Cultural evolution, Hunter/gatherer society.

If moderation is a fault, then indifference is a crime.

Jack Kerouac

The disadvantage of men not knowing the past is that they do not know the present.

G. K. Chesterton

It is far from easy to determine whether she (nature) has proved to man a kind parent or a merciless stepmother.

Pliny the Elder

When writing about highly interactive components, compartmentalizing sections of a manuscript is extremely challenging. In this manuscript, interactions are given the highest priority.

Natural Selection on Human Culture

Biological evolution has clearly not prepared humankind for the global crises it faces in the early 21st century: (1) global heating and other types of climate change, (2) overpopulation (exceeding Earth's carrying capacity), and (3) using resources faster than Earth can regenerate them (ecological overshoot). Cultural evolution could theoretically help resolve these issues. Rogers and Ehrlich (2008) state: "Cultural evolution here refers to changes over time in the nongenetic information possessed by human societies, as affected by processes such as transmission and innovation." Ehrlich and Levin (2005) hypothesized that cultural characteristics that are tested against the environment will evolve at a faster rate than cultural characteristics that are not. Rogers and Ehrlich (2008) have made a persuasive case that cultural evolution does not occur rapidly in small, essentially tribal units. However, the crucial question is: will cultural evolution occur globally in time to avert klimakatstrophe (2007 German Language Association word of the year)?

Background

The genus *Homo* emerged about 2.3-2.5 million years ago and was separated from earlier hominids because of the emergence of tool use, language, and culture. *Homo sapiens* (wise man) is thought to have originated 160,000 years ago, although some subspecies of *Homo sapiens* may have occurred as much as 1.6 million years ago. For most of the time that the genus *Homo* has been on the planet, individuals lived in small, hunter-gatherer groups whose primary subsistence involved the acquisition of edible plants and animals from natural systems. Hunter-gatherer societies were almost certainly non-hierarchical and egalitarian, perhaps for as much as 2 million years. For all of this time, populations remained small. The life was hard, and a woman could not care for two very small children simultaneously and gather food from natural systems.

The Era of Rapid Change

The hunter-gatherer society had relatively mild rates of change for over 1 million years. *Homo sapiens* had a very modest rate of change until the Agricultural Revolution evolved – which Diamond (1987) labels as the worst mistake in the history of the human race: human history, over the past million years, has not been a long tale of progress, and the adoption of agriculture was in many ways a catastrophe from which humankind has never recovered (Diamond, 1987).

McNeill (2000, p. xxii) makes four important points concerning change.

(1) The 20th century was unusual for the intensity of change and the centrality of human effort in provoking it.

(2) This ecological peculiarity (i.e., the centrality of human effects on the environment) is the unintended consequence of social, political, economic, and intellectual preferences and patterns.

(3) Human patterns of thought, behavior, production, and consumption are adapted to the current circumstances – that is, to the current climate (and global biogeochemistry), to the abundance of cheap energy and cheap freshwater, to rapid population growth, and to yet more rapid economic growth.

(4) These preferences and patterns are not easily adaptable should circumstances change.

McNeill (2000) also thinks that these points concerning change imply that humans, as a species, are unwittingly choosing a particular evolutionary gambit. McNeill believes that, in the long term, the best survival strategy is to be adaptable – to pursue diverse resources – and to maximize resilience. Some facts have emerged (Brown, 2008) that confirm McNeill's hypotheses.

(1) The eight warmest years on record have all occurred in the last decade.

(2) For seven of the last eight years, the world has consumed more grain than it produced; grain stocks are now at a historic low.

(3) One fifth of the US grain harvest is now being turned into fuel ethanol.

(4) One third of reptile, amphibian, and fish species examined by the World Conservation Union are considered to be threatened with extinction.

(5) Grain yields increased half as fast in the 1990s as they did in the 1960s.

(6) Life expectancy in sub-Saharan Africa today is lower than it was in the late 1980s.

(7) Today's economically recoverable reserves of lead, tin, and copper could be depleted within the next 25 years if their extraction expands at current rates.

(8) Nearly half of the annual global military budget of $1.2 trillion is spent by one country – the United States.

However, Brown (2008) cites some reasons for hope. The number of hopeful occurrences outnumbers the bad news; however, this comparison is deceiving because the bad news is very bad.

(1) South Korea leads the world in paper recycling, recovering an estimated 77% of its paper products.

(2) Conservation agriculture is practiced on more than 100 million hectares around the world.

(3) Four years after London introduced a fee on motor vehicles entering the city center, average car traffic had fallen by 36% while bicycle trips had increased by 49%.

(4) The world produces 110 million bicycles a year, more than twice the annual production of 49 million cars.

(5) Fish farming, largely of herbivorous species, is the fastest growing source of animal protein worldwide, increasing by an average of 7% each year since 1995.

(6) World soybean production has quadrupled since 1977. (However, some of this production is in areas formerly occupied by the Amazon forest – the "lungs of the world.")

(7) Coal use in Germany has dropped 37% since 1990; in the United Kingdom, it has fallen by 43%.

(8) Solar cell production is doubling every two years, making it the world's fastest growing energy source.

(9) Electricity used for lighting around the world can be cut by 65% through efficiency improvements like switching from incandescent bulbs to compact fluorescents.

The world has a fever and the effects on humankind will probably be devastating. The eight adverse factors noted above actually threaten to undermine the global social system and possibly even human survival. The nine hopeful factors are important ways to maintain the cornucopian lifestyle characteristic of the last six decades, but will probably not make a major difference in human survival. If the adverse factors were caused primarily by terrorists, society would be fearful; however, since they originate in the lifestyle of humankind, fear has not yet become an important motivating issue.

Return to a Hunter/Gatherer Subsistence Society

If greenhouse gas emissions continue to increase, or possibly even if they do not, rapid climate change may have a severe, adverse impact on agricultural productivity. If the decline in cheap petroleum and the energy needed for the production and marketing of foodstuffs are added to this situation, agriculture will probably suffer markedly. Also to be considered is the loss of inexpensive, petroleum-derived fertilizers, which could make the consequences equally devastating.

If humankind would again depend upon direct acquisition of foodstuffs, a nomadic or semi-nomadic lifestyle could reemerge. Since hunter/gatherer societies appear to have been the norm for the genus *Homo* for approximately 2 million years, this lifestyle clearly is more sustainable than that of the Industrial Age. How many of the domesticated species discussed by Diamond (1998) will survive is uncertain, but survival will be strongly influenced by the rate of climate change.

If terrorists and bioterrorists were endangering the global food supply, a continued furor would be certain. Since human activities are to blame, the reaction is modest. No terrorists thus far have managed bioterrorism on the scale or complexity that humankind has perpetuated on agricultural productivity. Until robust information is available on the danger of bioterrorists to the food supply, the more sensible approach is to use financial and other resources to reduce risks from already identified sources.

Ocean acidification and overfishing both reduce food supply and fish habitat (e.g., coral reefs). More comprehensive monitoring and surveillance are also essential to track threats to oceanic ecosystems caused by ocean acidification. For example, Leake (2008) notes that humanity currently emits about 49 billion tons of carbon dioxide per year, of which 40-50% is absorbed by the oceans. The absorption of these emissions slows climate change but causes a surge of hydrogen ions in seawater, which, in turn, increases acidity. Should this dynamic change by lowering oceanic absorption of carbon dioxide, the effects on both terrestrial and oceanic ecosystems could be catastrophic. McKibben (2008) states: "In fact, if you want to be realistic – which in my experience increases your changes of being right – the only question is what kind of crisis we're talking about: the nasty kind you get through or the nasty kind you don't get through."

Global Food Supply/Global Population

The Financial Times notes that February (2008) has been the month for revisiting old and unpleasant economic concepts (Thirwell 2008). The United Nations world food program might have to ration food. Global food prices have now risen by more than 75% since their lows of 2000, jumping more than 20% in 2007 alone. Thirwell (2008) remarks that, in China, watchers found themselves casting their minds back to the food price rises of 1988 and the social disturbance, protests, and civil unrest that followed. Even though Thirwell (2008) does not mention bioterrorism in the mixture of economic issues, it could easily exacerbate the already almost catastrophic problem. Bioterrorists with access to crop damaging microbial organisms could easily reduce the supply and cause major social unrest. Disrupting the water supply at critical parts of the growing season could make the crops even more vulnerable to diseases and pests, thus reducing carrying capacity.

The Reverend Thomas Malthus published six editions of his famous treatise, *An Essay on the Principle of Population 1798*, which has been widely criticized then and now by people who have not read the treatise. Malthus (1798) stated: "The power of population is so superior to the power of the earth to produce subsistence for man, that premature death must in some shape or other visit the human race." Terrorism is not necessary to produce a catastrophe but could easily make it worse.

Worst Case Scenario

Hardin (1980) noted: "Transgressing the carrying capacity for one period lowers the carrying capacity thereafter, perhaps starting a downward spiral toward zero." Reduced carrying capacity initially means markedly reducing resistance to disease. In addition, temperature increases toward each pole have already advanced transmission of some diseases, with more diseases likely to become problems in areas where they were unknown or not a major problem. Nightingale (2008) notes that emerging infectious diseases are on the rise, but their monitoring and surveillance is poorly funded, with little where outbreaks are likely to occur. East Asia, the Indian subcontinent, the Niger delta, the Great Lakes region of Africa, and parts of Latin America are particularly vulnerable to the emergence of diseases from wild animals. More monitoring and surveillance are needed to provide early warnings of outbreaks in those regions.

In addition, the World Health Organization's (WHO) annual report states that infectious diseases are spreading faster than ever before (BBC, 2007). The WHO report notes that, with about 2.1 billion airline passengers flying each year, the risk is high for another major epidemic, such as AIDS or Sars or Ebola fever. The report, "A Safer Future," also notes that new diseases are emerging at the "historically unprecedented" rate of one per year.

A huge problem will be determining if a newly developing epidemic was produced and

introduced by bioterrorists. If it was, then steps should be taken to identify the source and attempt to thwart future efforts. However, the spread of the disease should not be attributed to bioterrorism unless robust evidence confirms the intent.

Public Perception

Monbiot (2008) has a detailed description, accompanied by numerous references, of a news release ("Militants will hit Heathrow") claiming that climate change activists planned to use illegal tactics, such as hoax suspicious packages, to cause maximum disruption at one of the busiest times of the year at Heathrow Airport. This rumor, fortunately, fell apart. The important issue is the possibility that security forces, trying to combat all types of terrorism, including bioterrorism, will have their energies diverted to non-problems if unjustified allegations are made or if average citizens repeat unsupported scare rumors.

Tuxworth (2008) reports on a *Future Leaders Survey* that scanned 25,000 applicants to United Kingdom universities and colleges. Eight in ten applicants expect more terrorism. This perception does not seem unreasonable in view of social unrest, ecological disequilibrium, energy costs, food shortages, and resource wars. However, one consideration is whether these public perceptions of relative risks are reasonable. Only time will tell, but fear, especially politically induced fear, should not distort public perceptions of risk.

Conclusions

Arguably, rapid climate change is the major threat to human society since persuasive evidence indicates a major climate tipping point has already been passed (Hansen *et al*., 2008). If present trends persist, additional societal and ecological tipping points will almost certainly be reached. Since most of the components of both societal and ecological multivariate systems are interactive, the components should not be viewed as if they were isolated from each other. Bioterrorism is a good example of this interaction since it is probably the result of both societal stress and ecological disequilibrium. A system perspective is needed to judge properly the risks involved.

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