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EDITORIAL

The seeds of terror

'Civilization is a stream with banks. The stream is sometimes filled with blood from people killing, stealing, shooting and doing the things which historians usually record, while on the banks, unnoticed, people build homes, make love, raise children, sing songs, write poetry, and even whittle statues. The story of civilization is the story of what happened on the banks. Historians are pessimistic because they ignore the banks for the river'. This definition of civilization by Will Durant, who coauthored with his wife Ariel the remarkable *Story of Civilization*, is particularly pertinent at present. When the history of the first years of the new century is written, the carnage in New York and Washington and its inevitable aftermath, which we still await, will undoubtedly appear on the pages of history books. In the space of just over an hour we have witnessed a spectacular leap in the 'technology of terror'. By the simple device of infiltrating suicidal pilots into commercial airliners, the familiar act of hijacking, has transformed a plane full of passengers (and fuel) into a guided missile capable of wreaking death and destruction even in the heart of a country, whose airspace is jealously guarded. Every recent advance of communications technology, the Internet and the cellphone among them, have quickly been adapted to facilitate the spread of terrorism. Many of the technologies that have now become a part of civilian life were indeed developed in a military context, with either offence or defence in mind. Unsurprisingly, the enhanced technological sophistication of our everyday life has been mirrored by the growing escalation of the scale and reach of terrorist attacks. While history, religion, nationalism and politics lay the seeds of terrorism, technology (and, inevitably, science) provides access to the means of death and destruction.

The 'fruits' of modern science, poison gases and high explosives, first appeared on the battlefields of the early 20th century. Germany under the Nazis raised the level of application of science in the act of mass murder to a new high, by systematically using hydrogen cyanide (generated from the infamous Zyklon B capsule) to exterminate millions of Jews in concentration camps

across central Europe. The recent, belated apology by the German scientific establishment for the ghastly excesses of scientists under the Nazis is an acknowledgment that scientists of the era participated, sometimes enthusiastically so, in the madness of the times. The Second World War came to an abrupt and immeasurably bloody end, when the discovery of nuclear fission was quickly transformed into an atomic bomb. Hiroshima and Nagasaki were instantly erased and immortalized in the history books. In the years since, the battlegrounds of Vietnam proved a testing ground for many terrible technologies. Most notably, there was the extensive use of Agent Orange by the United States, on the jungle and peoples of Vietnam; the purpose was to defoliate the forests and deprive enemy of cover. The use of the herbicide, belonging to the dioxin family, has had devastating long term effects on people. Crippled and deformed human beings remind us of another time of madness three decades ago. The spectre of the use of chemicals in modern warfare loomed briefly in recent times, during the Gulf War. But, the lessons of history rarely make an impact. The developed countries of the world, led by the United States, have made a virtue of developing the technologies that make nuclear, chemical and biological weapons possible. Inevitably, the poorer countries have made the acquisition of the technologies of destruction a priority. We have thus reached a stage where the weapons of destruction are becoming very widely available and it does not require a strategic analyst to conclude that isolated groups of terrorists will soon have their hands on weapons that can be used on 'high value targets'. The phrases 'terrorist state' and 'state-sponsored terrorism' are being widely used and seem to mean different things to different people.

In this world haunted by terror and counter-terror, reports that 'US military advisers would like to rewrite the treaties banning chemical and biological weapons' are alarming. Their purpose, ostensibly, is to develop 'non-lethal weapons; for example, gases that 'calm crowds rather than kill them' (Edwards, R., *New Scientist*, 16 December 2000, p. 4). Rewriting the existing conventions on biological weapons (1972) or chemical

weapons (1993), in order to legalize development of new military technologies threatens to open a Pandora's box; undoubtedly today's strategic weapons will be used by tomorrow's terrorists. Research in some areas of biology is also raising questions of concern. The development of an extraordinarily lethal, engineered 'mousepox' virus, created ironically enough in research aimed at developing a contraceptive vaccine, has raised the possibility of creating new viruses that will prove lethal to humans. Serendipity, may sometimes be a mixed blessing. A new dimension in the scenarios for biological warfare clearly looms on the horizon (Nowak, R., *New Scientist*, 13 January 2001, p. 4). Enough destructive technologies exist and more will be dreamt up, some by design others by accident, even as the world wrestles with the discomfiting realization that every valuable technological advance may prove to be a double-edged sword.

Technological progress has also widened disparities between the rich and poor countries. In India, excessive consumption by those who have is creating an unbridgeable gulf between the rich and the poor. Even as the disparities increase, so do the tensions. The world has not been helped when some of the poorest countries of the world have been used as the staging ground for demonstrating the reach of modern weaponry and the power of Western states. The world has been ill served when religion has been used as a weapon, carefully cultivated when it is directed towards one side but abhorred when it attacks the hand that has fed it. We live in a world that appears to be under a unique threat, cre-

ated by the marriage of technological sophistication and fanaticism, fuelled by religion and ideology. The world will become even more dangerous as the richest countries attempt to use economic and military power to create an order which has only one purpose – maintenance of a society whose abilities to consume are matched only by their inability to recognize the growing tension in the world around them. Every international agreement ranging from those on controlling green house gas emissions to those relating to trade barriers and intellectual property rights perpetually face the threat of an American veto. Any agreements that seek to limit, contain and destroy stockpiles of chemical, biological and nuclear weapons lie under the same cloud. If the world is a dangerous place today, it is because the seeds of terrorism were sown in the past and the tree of terror has been painstakingly nourished over the decades. In this technologically sophisticated world the Newtonian dictum that every action has an equal and opposite reaction is followed in the world of geopolitics; indeed, unlike in mechanics, the reactions in the real world are often disproportionate in their magnitude. The Gandhian adage that if 'an eye for an eye' was an acceptable response we would all soon be blind, has generally been forgotten. But, it is important to learn some lessons from the events in New York and Washington and all that has gone before. Otherwise, the thousands of innocents who have died, would have died in vain.

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