

The Ecological Challenges of War

by

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“[E]nvironmental forces transcend borders and oceans to threaten directly the health, prosperity and jobs of American citizens.... [A]ddressing natural resource issues is frequently critical to achieving political and economic stability, and to pursuing our strategic goals around the world,” according to then U. S. Secretary of State Warren Christopher, in the Spring of 1996.¹ “The next war in our region will be over the waters of the Nile, not politics,” observed Boutros Boutros-Ghali in 1988, then Egypt’s minister of state for foreign affairs.² “Business is business, and capital, money, is a coward. It is drawn to places which have the rule of law, places where there is an accountability of government, educated healthy workforces, secure working conditions. Capital will flee – money will flee from corruption, bad policies. It will flee from conflict. It will flee from sickness,” according to U.S. Secretary of State Colin Powell in Fall of 2001.³

From the pronouncements of these foreign policy leaders, it seems that business people have a profound interest in a stable allocation of natural resources as well as an environment relatively free from violent conflict.⁴ The direct consequences of war involving the destruction of both human life and natural resources directly impact business. For instance, in the conflict between East Timor and Indonesia that began in the mid 1970s, the Indonesian Air Force’s use of napalm was not only a psychologically effective weapon against guerilla forces, it also destroyed forests, crops, and livestock, while poisoning land and water and starting forest fires.⁵ In the 1991 Gulf War, smoke and pollution from sabotaged oil wells have reduced the life expectancy of at least 50,000 people, and between 1990 and 1992, infant mortality increased by 100%.⁶ The destruction of water purification and sewage facilities resulted in raw, untreated sewage and chemicals being dumped into rivers and streets. As a result, incidences of hepatitis increased from 1816 cases in 1989 to 13,776 cases in 1992.⁷ Thirty percent of hospital water was contaminated.⁸ Thus, human and natural resources vital for the operation of business were destroyed.

In Kashmir, extensive deforestation resulted from skirmishes between India and Pakistan and 150,000 Kashmiri Hindus were relegated to refugee camps with limited health care.⁹ The refugee situation was even more pronounced in the conflict in Mozambique from 1980-1992, where over five million people were displaced internally and 1.7 million others fled to other countries.¹⁰ Deforestation has been a problem here too as has the destabilization of coastal mangroves and coral ecosystems.¹¹

Location and disruption of public health infrastructures can have further devastating impacts on the rise of diseases; this may be a central aim of combatants. In the Sudan, for instance, retreating troops intentionally destroyed hospitals and other health facilities.¹² With depleted medical care, incidents of malaria, typhoid, TB, and

meningitis, have now become common in southern Sudan.¹³ The destruction of infrastructure generally has left people with no other choice than to turn to wood as a fuel, thus prompting deforestation; this also accelerates desertification of soil and with fewer windbreaks, more topsoil is blown away by desert winds.¹⁴

Of course, the results of warfare do not create the kind of conditions in which businesses typically flourish and the loss of economic vitality in each of these areas has been documented.¹⁵ Yet, the connection between problematic social effects, violence, and economics runs deep because industrialization of the global economy exacerbates social tensions.¹⁶ Not surprisingly, the fastest growing industry around the world is security and private police protection; this was true even before the terrorist attacks of September 11, 2001.¹⁷ Security systems may provide a measure of stability and protection from violence, but the dynamics driving tensions around the globe are much deeper than can be controlled by adding additional (private or public) police officers. At least in liberal societies, which most of the richest countries of the world emulate,¹⁸ extra security measures are likely to be a necessary but insufficient component of a solution toward the kind of stability needed for business to thrive.

Indeed, research reported by Thomas Homer-Dixon characterizes five social effects that can significantly increase the likelihood of violence in the world, effects that are more complex than can be controlled by security forces: (1) constrained agricultural production, often in ecologically marginal regions; (2) constrained economic productivity, mainly affecting people who are highly dependent on environmental resources and who are ecologically and economically marginal; (3) migration of these affected people in search of better lives; (4) greater segmentation of society, usually along existing ethnic cleavages; and (5) disruption of institutions, especially the state.¹⁹ These kinds of social effects create tensions that can erupt in violent expression. It is difficult to envision how additional security forces will solve the embedded social problems that link violence with economic, social, ethnic, and even religious frustrations.

This article seeks to address these concerns. Part I elaborates ways in which these issues of violence manifest themselves in a globalized economy. Part II discusses the business implications of these tensions and suggests a way in which business can be a mediating actor to lessen these tensions. Part III concludes with a suggestion for a recharacterization of the corporation in a way to sensitize it to the ecological issues necessary to address the potential issues of violence in societies.

I. The Relationship Between the Physical Environmental and War

This section describes four ways in which ecological issues connect with warfare and directly impact violence. These involve: (1) resource scarcity resulting in competition for resources; (2) exacerbation of identity-based tensions, resulting from either competition for scarce resources or from ecological degradation; (3) the impact of disease either as a weapon in its own right or as a consequence of the degradation of infrastructure; and (4) broader issues of sustainability in the face of increasing populations and increasing industrialization.

A. Resource Scarcity and Implications for Business

Contests among nations and states for valuable resources are nothing new. Much of colonial history resonates with the drive for acquisition of material goods, whether gold, spices, fur, or other items. The days of European conquests of the New World may have abated, but violent contests for natural resources still occur throughout the world. Consider in Africa,²⁰ the Democratic Republic of the Congo, where six countries are fighting to control gold, copper, diamonds, and timber.²¹ Although Western interests in Middle Eastern oil tend to be more concerned with protecting access to petroleum rather than controlling it to the exclusion of other countries, it is not inconceivable that disputes for oil could turn into battles over controlling the resource.

The raw contest for control of resources by nation-states who simply need or desire wealth is one example of how the physical environment connects with potential conflict. Michael Klare names three other kinds of conflict, where the control over the natural resource is connected to genuine sovereign claims of nation-states.²² The first of these occurs when the supply of a natural resource extends across the boundaries of adjoining sovereign states. This is the case, Klare says, with an underground oil basin or a large river system.²³ As noted in the opening quotation from Boutros Boutros-Ghali, Egypt's insistence on controlling the waters of the Nile has historically put it at odds with upstream African nations, such as Ethiopia and the Sudan.²⁴ Similarly,²⁵ the concern that an adjoining country that shares a resource might make excessive use of it was one of Iraq's complaints against Kuwait in 1990.²⁶ A second point of contention can arise with respect to an offshore mineral resource where, by exercising sovereign rights of up to two hundred miles under the United Nations Convention on the Law of the Sea,²⁷ multiple states can claim ownership of minerals located in relatively small bodies of water, such as, in the Caspian Sea.²⁸ Third, disputes over control of bodies of water, such as the Persian Gulf or the Suez Canal can cause conflict as well.²⁹

Disputes over any of these four resource-based issues may well spill over into other contests relating to ethnic tensions, as will be described later, but they are important in their own right. In particular, consider the potential problems with respect to the resources of oil and water.

1. Mixing Oil and Water: The Economization of Foreign Policy

It is not a controversial to assert that oil and water are critical for industry.³⁰ Moreover, oil and water are also finite resources that can foreseeably become exhausted in the twenty-first century. Estimates of global oil supplies suggest that there is enough oil to sustain global requirements into the middle part of the century with potentially significant shortages occurring in the second or third decade of this century.³¹ Similarly, although the earth has vast quantities of water, only three percent is fresh water, including a significant amount of that in polar ice caps and glaciers.³² With population growth and higher standards of living, the middle part of the twenty-first century may also see 100% usage of the available supply of fresh water.³³

Similarly, petroleum-based fuels currently account for ninety-five percent of the world's consumed transportation energy.³⁴ There is every reason to believe that the demand for oil, for both transportation and other energy uses, will increase substantially in the future, particularly in Asia and Latin America.³⁵ In China and India alone, countries home to almost half of the world's population, oil consumption is projected to rise 3.8% annually.³⁶ From 1990 to 1996, the Chinese economy expanded by 93%.³⁷ The Department of Energy expects energy consumption to grow by 3.4% annually in Brazil, 3.0% in Mexico, and 3.7% in India between 1997 and 2020.³⁸ It is estimated that by 2020, these four countries will require 151 quadrillion BTUs of energy, or three times the amount needed in 1990.³⁹ With such increasing demands, pressure will likely be applied to the supply of petroleum. Based on studies done by BP Amoco, there are 1,033 billion barrels of oil in existing reservoirs that could be extracted under "existing economic and operating conditions."⁴⁰ Others estimate additional "unproven" reserves of 200 to 900 billion barrels. If the unproven reserves are averaged so as to expect a supply of 1,600 billion barrels being consumed as a current rate of 73 million barrels a day (as of 1999), the current supply would only satisfy demand for sixty years.⁴¹ This estimate itself places exhaustion of oil supplies within the life expectancies of children born at the turn of the millennium, but if the Department of Energy's projection that worldwide oil consumption will rise by 1.9 percent per year between 1998 and 2020 is correct, the resulting consumption of 113 million barrels of oil a day would result in depletion of world oil stocks by 2040 rather than by 2060.⁴²

This supply-demand dynamic places the reliance on the currently preferred fuel for industrialization and transportation within sight of exhaustion.⁴³ This could mean that countries will develop other sources to fuel economic development. It also could mean that the intensity of competition for oil could increase. Because of this dynamic, it is not surprising that many countries have now announced "the economization of foreign policy."⁴⁴

Without undertaking a long historical analysis of the connection between economic gain and foreign policy, three important moments in the last sixty years – 1941, 1973-74, and 1989 – demonstrate why countries tend to consider natural resources a cornerstone of their foreign policy. In World War II, for instance, Japan's attempt to gain control over the Dutch East Indies oil producing region triggered the 1941 U.S. oil export embargo on Japan, which in turn led Japan to conclude that war with the United States was inevitable.⁴⁵ Meanwhile, Germany's need for oil prompted, at least in part, its 1941 invasion of the Soviet Union.⁴⁶ The 1973-74 disruption of oil supplies to the West by oil exporting countries in the Middle East not only prompted the West to look for other oil supplies (such as in the North Sea and Alaska), but also led to pronouncements by Secretary of State Henry Kissinger in 1975 and by President Jimmy Carter in 1980 that the U.S. would go to war to protect Persian Gulf oil supplies.⁴⁷ Since the end of the Cold War in 1989, emerging and post-communist countries have tried to adapt to the free market and, in doing so, faced the issue of the need for resources to support economic development. Thus, Russia's President Putin, in 2000, announced a doctrine in which one of the purposes of the country's military would be the "creation of the conditions for

the security of economic activity and protection of the Russian Federation's national interests in the territorial seas, on the continental shelf, and in the exclusive [offshore] economic zone of the Russian Federation and on the high seas."⁴⁸ Similarly, China has focused more of its military attention on the South China Sea, with its reserves of petroleum and natural gas, and Japan has adopted a defense program to protect shipping lanes around the country.⁴⁹ In part, these efforts are simply a continuation of any sovereign's attempt to protect resources important to a given political entity, but when economic development becomes central to a country's foreign policy, then protection of resources necessary for that development becomes critical.⁵⁰

This economization of foreign policy has two particularly significant consequences for purposes of this paper. First, competition is increasingly acute because the supply of oil is concentrated in a few places, a concentration sometimes called the "Strategic Triangle."⁵¹ Second, the competition is not simply among nation-states, but businesses, particularly multinational corporations, are also enmeshed in the competition among countries.

2. Oil Flashpoints: The Strategic Triangle

The Strategic Triangle refers to a region stretching from the Persian Gulf to the Caspian Sea and then to the South China Sea.⁵² These areas possess huge, significantly undeveloped sources of oil and natural gas as well as numerous, unresolved territorial disputes.⁵³

The issues surrounding the Persian Gulf need little elaboration. The region has been the site of two major interventions by the West, led by the United States and Great Britain in the past twelve years, as well as the feature of disputes between powers in the region including between Iraq and Kuwait (and various other parties in the 1991 Persian Gulf War),⁵⁴ Iraq and Iran,⁵⁵ Turkey and Syria,⁵⁶ and Turkey and Iraq.⁵⁷ In addition, because of the unequal distribution of oil revenues benefiting royal or business elite, there is resentment within Middle Eastern countries, often linked with religious dimensions, even when the governments of such countries have provided relatively generous benefits to the general population in terms of education, health care, food, and housing.⁵⁸ Connected with the interests of western countries that have intervened in the region, the volatility of the region is well-known. Because of the dangers of relying upon oil from the Middle East, the United States and others have sought to shift their sources to other regions in the world in an attempt to diversify.⁵⁹ As a result, new areas of development, in regions such as Africa, the Caspian region, and Latin America have become more prominent suppliers of U.S. petroleum needs.⁶⁰ Yet, events suggest that these new locales are not panaceas for stable extraction. The Sudan oil industry, for instance, has become a \$1 million a day profit-maker for the Sudanese government, but the profits seem to have sponsored government war-making capability and activity.⁶¹ Venezuela, South America's major oil producing nation, has been gripped by social and labor unrest.⁶² Two additional potential sources for oil and natural gas – The Caspian Sea Region and the South China Sea Region – merit further exploration.

a. The Caspian Sea Basin

The Caspian Sea Basin may hold the world's second or third largest reserve of oil along with a significant amount of natural gas.⁶³ Projections of its size are ambiguous, but according to some, it holds as much as 270 billion barrels of oil, approximately twenty percent of the world's proven petroleum reserves, an amount second only to the Persian Gulf's 675 billion barrels.⁶⁴ In addition, the region holds 665 trillion cubic feet of natural gas – about 12% of the world's total reserves.⁶⁵

The region's attractiveness as a supplier of oil as an alternative to the Middle East has garnered the attention of the United States, but American interests are of concern to Russia, which considers the Caspian region to be part of its traditional sphere of influence.⁶⁶ Beyond the U.S.-Russian contest for influence, there are “contests boundaries and territorial disputes, the prevalence of authoritarian regimes, severe economic disparities, long-standing regional rivalries, and a cauldron of ethnic and religious strife.”⁶⁷ These animosities have produced fighting in Uzbekistan, Kyrgyzstan, and Dagestan as well as conflicts between Russia and Chechnya.⁶⁸

Interestingly, however, competition for influence in the Caspian region does not so much involve jockeying among the United States, Russia, local governments, Turkey and Iran,⁶⁹ but jockeying among the companies that will do the actual work of drilling, refining, and selling the oil. After all, although governments gain influence and revenues, whether through taxes and fees or, more sinisterly, via bribery and kickbacks, precious few governments actually engage in the oil business. In the Caspian region, the companies seeking to negotiate contracts include BP-Amoco, Chevron, Exxon-Mobil, Royal Dutch/Shell, Elf Aquitaine of France, Agip of Italy, Stat-oil of Norway, Lukoil of Russia, and the China National Petroleum Corporation, and most attempt to partner with state-owned local concerns.⁷⁰ To succeed, however, the companies and the governments must be able to work without an established framework for determining who has rights to offshore drilling in the Caspian Sea.⁷¹ Perhaps more significantly, there are also issues concerning how to transport the oil and natural gas to port because the Caspian Sea is landlocked.⁷² As a result, the oil and natural gas will need to pass through pipelines.⁷³

Passing oil through pipelines is not a benign decision. Indeed, in Afghanistan, the decisions made to determine where Russian oil should pass had dark consequences. After the Soviet Union withdrew from Afghanistan, the country fell into chaotic struggles for control, with no clear authority in the country.⁷⁴ In 1994, some ex-mujahideen fighters, allied with Mullah Mohammed Omar challenged the stronger warlords. In the meantime, several oil companies wished to build a pipeline across Afghanistan to carry oil to Pakistan, seeing the potential for revenue from shipping and transportation if the oil were transferred from Pakistani ports to tankers headed to oil dependent countries. All the while the success of Mullah Omar did not go unnoticed.⁷⁵ Impressed by Omar's success, the Pakistani government provided aid for Omar's group, which the Pakistanis named “The Taliban,” to expand its control from Kabul and Kandahar to the rest of the country to secure the corridor necessary for the pipeline.⁷⁶ Of course, the subsequent history of the Taliban is now, unfortunately, well known after its support of Osama bin

Laden and his Al Qaeda terrorist organization was unearthed.⁷⁷ The interesting feature, however, is that in business's desperate, and to use Secretary of State's Colin Powell's term, cowardly,⁷⁸ need for stability it may seek governmental assistance from sovereigns uninterested in providing justice. In other words, the choices corporations make in maximizing their profitability, particularly in areas of the world where there are major risks of violence, are not benign. The choices to be made by both governments and businesses, in building pipelines, for example, have proven to have significant negative spillover effects.

b. The South China Sea

As noted above it is anticipated that Asia's economic development will spur additional demand for energy.⁷⁹ China's energy needs are expected to double between the years 2000 and 2020 and Japan's needs are expected to increase by twenty-five percent within the same time period.⁸⁰ Together, this would result in these two countries consuming twenty percent of world energy by 2020 - an amount that is equivalent to the consumption of all of Western Europe and Latin America combined.⁸¹ China can turn to coal, which it possesses in abundance, but burning coal results in significant air pollution as well as major contributions to greenhouse gases.⁸² Given China's desire to be the dominant Asian power, as well as its desire to not become dependent on foreign sources of energy, one would expect it to turn its attention to the South China Sea, which it has done.⁸³ In 1992, China formally claimed two islands - the Spratley (a collection of a few hundred rocks, reefs, and inlets covering over eighty thousand square miles, scattered throughout the Sea, and claimed by five other nations)⁸⁴ and the Paracel Islands - demonstrating *de facto* authority to the South China Sea.⁸⁵ In turn, China then provided drilling contracts to several western companies off of the coast of Vietnam and expanded its military force in the region.⁸⁶ That region, bordered on the north by Taiwan and China, on the west by Vietnam, on the south by Indonesia and Malaysia, and on the east by the Philippines, is a vibrant region of burgeoning economic development, along with those of nearby oil-dependent Japan and South Korea, with their own thirst for crude oil and gas.⁸⁷ In addition, shipping from other areas, such as the Persian Gulf and the Caspian Sea, generally cuts directly across the South China Sea so that control of the Sea implies not only extractive, but also transport sovereignty.⁸⁸ It may well be that countries such as Japan, South Korea, and Taiwan wish to benefit from the extraction of oil from the South China Sea, but regardless of extraction of oil, control of the Sea creates potential difficulties for each of these countries.⁸⁹ The explosive part of this scenario involves the overlapping claims for economic development rights in this region and the military means to enforce those claims.⁹⁰ A clash already occurred in 1995 between China and the Philippines over a small islet called Mischief Reef.⁹¹

One question for South China Sea development involves the potential willingness of various countries to go to war for the zones they claim. Although with respect to all oil development involving unsettled claims of sovereign control, whether in Africa, the Caspian Sea, the Middle East, or the South China Sea, the actions taken by corporations to contract with various governments affects geopolitical resolutions of power and

influence. Oil, in short, is not simply about governmental decisions, but also about competition among oil companies.

3. Competition for Water

Related to the issues presented by competition for oil are the similar and perhaps more volatile issues surrounding competition for water. With almost three hundred river basins crossing national boundaries⁹² and a six-fold increase in worldwide water use between 1900 and 1995,⁹³ it is not surprising that many commentators predict that contests for water will be a source of violent conflict in the twenty-first century.⁹⁴ Like oil, water crosses boundaries, giving rise to potential disputes over its use.⁹⁵ Additionally, water supply is finite and once readily known supplies are depleted, it is very costly to obtain additional amounts.⁹⁶ And with the use of water so dramatically increasing, flashpoints are bound to occur. An additional unknown factor is the potential impact that may result from changes in the global climate.⁹⁷

More specifically, flashpoints revolve around increasing needs for water as a result of increasing populations. These include both needs for drinking water and water for industrial and agricultural use.⁹⁸ The World Bank estimates that each person requires 36 to 72 cubic meters of water annually to survive.⁹⁹ This number does not include agricultural, industrial, and energy-related production; together, these additional uses dramatically raise each person's yearly needs to approximately 1,000 cubic meters per year, or as much as seventy percent of the world's freshwater supply with the largest use being for agriculture.¹⁰⁰

The combination of increasing population and inaccessibility of much of the fresh water supply complicates its efficient distribution. Increasing populations mean that more people need water to drink, and more land devoted to agriculture. Yet, most of the world's arable land is already under cultivation, so that to make additional land productive, irrigation will be required. Irrigation is dependent on accessing remote water supplies.¹⁰¹ To make matters worse, human beings are able to access less than one percent of the world's fresh water supply because most of the earth's water is trapped in the polar regions and glaciers.¹⁰² After precipitation, evaporation and transpiration, the balance of the annual replenishment of the earth's water supply amounts to forty thousand cubic kilometers.¹⁰³ Half of this is currently lost through flooding and another twenty-percent is carried off into inaccessible locations, such as Siberia.¹⁰⁴ This leaves only 12,500 cubic kilometers of water annually renewable for various human uses, an amount that is probably double existing population needs.¹⁰⁵ Yet, affluence tends to increase water use; for instance, the world's population doubled between 1950 and 1990, but water use (resulting from indoor plumbing, appliances, and the consumption of meat) increased by three hundred percent.¹⁰⁶ It is foreseeable that, with increased population and increased affluence, human beings could fairly quickly reach all of the renewable freshwater and, although underground aquifers are available, once they are used, they – like oil reserves – cannot be replenished.¹⁰⁷ Desalinization is a possibility but is currently very costly. An additional perhaps more significant difficulty is that water availability is not evenly dispersed, but is instead concentrated in areas that are either already

impoverished or also struggling with potential conflicts regarding oil.¹⁰⁸ The Middle East, North Africa, and South Asia are particularly prone to water shortages and huge population increases. They are also already the subject of territorial disputes, some connected with petroleum.¹⁰⁹

With many groundwater resources traversing existing national boundaries and with predictions that by 2025 two-thirds of humanity will suffer from moderate to severe water stress, the opening quotation from Boutros Boutros-Ghali¹¹⁰ that future wars will be fought over water may bear some truth. In addition to the Nile, which is shared by several countries, four countries share the Tigris-Euphrates system and the Jordan River is shared by three countries as well as the Palestinian Authority.¹¹¹

In contrast to Boutros-Ghali's assertion that future wars will not be about politics, but water scarcity, it is important to see that politics is inherently a part of water conflict. First, water conflict tends to exacerbate ethnic tensions that already exist within a given region or country.¹¹² Second, the nature of water flow, particularly with respect to rivers, tends to favor the upstream states in control over the flow.¹¹³ Disputes occur not only among countries, but also within countries such as in India, where farmers in adjoining states have fought over irrigation rights to the Cauvery River and even in the United States, when in the 1920s farmers in eastern California sabotaged the aqueduct system carrying water to Los Angeles.¹¹⁴

Launching hostilities over water historically has occurred as a result of concerns over prestige, security, and survival. Certainly, the canals and irrigation systems of Egypt, Mesopotamia, and China contributed heavily to each country's economic development and security,¹¹⁵ but spectacular projects – such as Nassar's building of the Aswan Dam in Egypt, - also enhanced the prestige and power of the rulers.¹¹⁶ The need to control water supplies remains crucial to each country's security and survival. Egypt's President Anwar el-Sadat, for instance, threatened to bomb water facilities in Ethiopia, where the main contributor to the Nile, the Blue Nile, originates, if Ethiopia diverted water for irrigation projects.¹¹⁷ Similarly, with Egypt, Sudan, Uganda, and Ethiopia all needing to feed burgeoning populations in an arid region of Africa, the danger of conflict grows significantly.¹¹⁸

Tensions also exist in the basins of the Tigris-Euphrates and the Indus rivers. These rivers, which provide the only significant amounts of water for their basins, supported a population of approximately five hundred million people in 1998 with one billion people expected by the middle of the twenty-first century.¹¹⁹ The people living in these regions are divided ethnically and religiously and the rivers themselves often have deep symbolic meaning, suggesting that disputes over the rivers are likely to take on additional elements beyond that of the access to the water.¹²⁰ In addition, while the Nile features only one power, Egypt, with significant military might, these other basins feature many nation-states with substantial military capability.¹²¹ Fortunately, these regions have made efforts to negotiate shared water agreements, but it is clear that there are major demographic and ethnic pressures that could push disputes over water into explosive problems.¹²²

Countries sharing the Tigris-Euphrates River, for instance, are heavily dependent on the river for their freshwater needs, given the common aridity of the region. The rivers are responsible for approximately thirty percent of Turkey's needs, eighty-five percent of Syria's needs, and one hundred percent of Iraq's requirements.¹²³ In response to this dependence, several countries have constructed dams in order to control floods, generate power, and irrigate land.¹²⁴ Turkey has built three dams on the Euphrates and has plans for others in the Tigris; Syria has built one dam on the Euphrates with plans for another; and Iraq has built dams on both the Euphrates and the Tigris Rivers.¹²⁵ Constructing these dams creates potential for reduced water flow and subsequent disputes for downriver countries heavily dependent on water from the rivers. A dispute of this kind broke out in 1990 when Turkey essentially cut off the Euphrates from Iraq and Syria in order to fill the Ataturk Dam Reservoir.¹²⁶ Because the cutoff was taken in the winter before the growing season, practical impacts were minimized, but the capability to control these waters raised serious concerns in downstream Iraq and Syria.¹²⁷ Linked to demands by Turkey for Syria to exercise greater control over groups troublesome to Turkey, this control has resulted in a general sense of unease and potential conflict.¹²⁸ Moreover, greater needs for water to satisfy growing populations suggests the potential for ongoing conflict over the control of water flow.¹²⁹

The Jordan River basin has seen more than its share of violent conflict over the past fifty years. Water stress is a hovering reality in all of the conflicts between Israel and its Arab neighbors. Steps have been taken to attempt to minimize the water-related aspects of this conflict, although there are open questions as to whether they have satisfactorily taken place. Like the Nile, Tigris, and Euphrates basins, the Jordan basin has also seen tremendous population growth. Nearly seven times the number of people lived in the Jordan basin in the 1970s as did in the 1920s with additional significant growth expected.¹³⁰ In the 1970s, the region as a whole began a period of water deficit, where more use was being made of water than was being replenished annually.¹³¹ Israel in particular, has adopted a water management plan through the importation, rather than the growing, of food; if ninety-percent of an individual's 1,000 annual cubic meters of water needed¹³² are for cereals, then it makes sense to import rather than to grow food.¹³³

Yet, flashpoints remain because of the basic problem of a growing population in an arid climate. Moreover, as in other cases, the distribution of water is not even. A central point of contention in the basin is the Israeli strategy of protecting the annual recharge of the Mountain Aquifer in the West Bank, from which Israel obtains some of its water. Israelis require Palestinians to obtain permission to sink wells on the West Bank land – where precipitation runoff flows to the Mountain Aquifer and thereby limit Palestinian use of water.¹³⁴ The result of this and other policies is that Palestinians have access to one hundred five million cubic meters of groundwater while Israel makes use of four hundred fifty million cubic meters.¹³⁵ Without making judgments as to the relative merits of various allocations, the perception created by this difference fuels animosity in the basin.

4. Business Complexities

In recognizing the collisions between resource availability, population growth, and geopolitical quests for power, it is tempting to simply characterize these as issues of concern among nation-states. Yet, this characterization would be simplistic. It is true, for instance, that the contest for the extraction of oil from the Caspian Sea region pits Russia, the United States, Iran, Turkey, and other nations against one another.¹³⁶ Many disputes in the region center around disputed interpretations of the United Nations Convention on the Law of the Sea (UNCLOS). For example Russia and Iran claim that the Caspian is a lake for which there are Soviet-Iranian treaties from the 1940s that control exploitation and distribution of resources. However, if the Caspian is a sea it is under the jurisdiction of UNCLOS.¹³⁷ But it is not just nation-states that are involved. Russian energy firms such as Lukoil and Gazprom and western companies such as BP-Amoco, Chevron, Exxon-Mobil, Royal Dutch/Shell, Elf Aquitaine, Agip, Stat-oil, and China National Petroleum are also involved.¹³⁸ Pakistan's support of the Taliban in Afghanistan as a way to secure oil transportation was borne of pressures and opportunities presented by oil companies as well.¹³⁹ Geopolitical control over natural resources provides security in making oil available to fuel tanks, jeeps, and airplanes. Thus, the contests for control over resources is also very much one among business entities as well as governments.

The situation in Africa provides an example of the complexity of business-and-government relationships. Although Africa is rife with innumerable disputes, major energy companies have not been prevented from working with local warlords to obtain agreements to extract oil.¹⁴⁰ In this respect, Colin Powell's claim that business will run away from dangerous situations¹⁴¹ may not be as compelling as one might expect. Or, to put it otherwise, businesses value stability, but when faced with an opportunity to secure a valuable resource, businesses, like governments, may resort to the methods necessary to benefit their own self-interest. If this is true, however, there is reason to hold businesses accountable for their actions that contribute to the likelihood of violence; in short, contests for natural resources are not only governmental responsibilities.

The same may be true with respect to water, such as with attempts to privatize water distribution. In Latin America and the Caribbean, for instance, there have been efforts to turn water services over to private ownership.¹⁴² These efforts are not always warmly embraced, in part because of the specter of profiting from a resource that is essential to human survival. In other words, market-oriented solutions may not be perceived as appropriate for a public good, such as clean water.

Oil and water are obvious resources to examine because of their importance to human survivability and economic development. But other natural resources, such as gold, diamonds, timber, and minerals, are valuable.¹⁴³ From the receipts generated by the sale of diamonds, for instance, the governments of Liberia and Sierra Leone are able to pay wages to young boys, equipped with inexpensive guns, to fight in civil wars.¹⁴⁴ This is significant in light of a World Bank study that has found a twenty-fold likelihood of a civil war in countries where the primary export is a single undifferentiated commodity.¹⁴⁵

In Sierra Leone, up to fifty thousand people have been killed since 1991 with hundreds of thousands becoming refugees.¹⁴⁶ Multinational corporations are in the midst of this problem because of their desire for the commodity; thus DeBeers has been the target of considerable criticism for allegedly buying “blood diamonds.”¹⁴⁷ Not insignificantly, Liberia “exported” almost three hundred million dollars worth of diamonds to Belgium in 1998.¹⁴⁸

Contests for “lootable” resources often entail significant ecological damage, such as with the case of clear-cutting valuable, old-timber forests.¹⁴⁹ Seventy-two percent of Liberia’s 2000 timber trade was done in conjunction with French and Chinese companies.¹⁵⁰ This exploitation of natural resources was made possible through the arms trade; not the sale of fighter jets, AWACS surveillance systems, or nuclear know-how, but in the form of 640 million small arms and light weapons.¹⁵¹ There is nearly one weapon for every person of Mogadishu’s 1.3 million population and one can purchase an AK-47 in Mogadishu for a mere two hundred dollars.¹⁵² In Aceh, Indonesia, one can obtain an automatic rifle for the equivalent six U.S. dollars.¹⁵³ With hundreds of millions of dollars being gained by the extraction and export of natural resources, with cheap weapons readily available, with impoverished populations having little alternative means of income, it is unrealistic to lay the issue of war and peace at the feet of only nation-states. Many more actors are involved and the very nature of geopolitical balances of power may be changing in response to the growing influence of multinational corporations.¹⁵⁴

Thus, contests for natural resources are one example of how violence may erupt over the possession of natural resources. Often, however, it is not simply the possession of resources that gives rise to conflict. As already noted, for instance, river basins that are shared by populations with different ethnic and religious memberships make it possible for contests over natural resources to also have a flavor of identity-based conflict.¹⁵⁵ The Caspian Sea area has long had deep ethnic divisions; and the arrival of competing oil companies has exacerbated those divisions.¹⁵⁶ The same is true of contests for “lootable” resources, such as diamonds and timber; they are embedded within historic antagonisms.¹⁵⁷ As a result, it is also important to examine how ecological issues can inflame identity-based tensions.

B. Exacerbation of Identity Tensions

In his research on environmental scarcity and its connection to violence, Thomas Homer-Dixon concludes that scarcity itself does not cause violent conflict, nor rarely does violence have a single cause.¹⁵⁸ Yet a great deal of violence, particularly with respect to violence occurring within preexisting borders is causally related to environmental scarcity.¹⁵⁹ This includes violence that has occurred in Chiapas, Mexico, South Africa, Pakistan, the Philippines, and Haiti.¹⁶⁰ Homer-Dixon suggests that scarcities of cropland, freshwater, and forests contribute to violence by generating social stress that fosters “subnational insurgencies, ethnic clashes, and urban unrest” and that developing countries are particularly prone to these disturbances because they are typically dependent on natural resources.¹⁶¹ Thus, apart from the specific competition for

a particular resource, it is also important to see how competition, or the spillover effects from such contests, can contribute to identity-based tensions that, in turn, can result in violence.

1. Uneven Distribution of Resources

Just as energy and water resources provide an initial lens through which to examine competition over natural resources, it is helpful to contextualize the issues that can arise from identity-based conflicts. Homer-Dixon notes that forty percent of the people on the planet use fuel-wood, charcoal, straw, or cow dung as their main source of energy and up to sixty percent rely on these fuels for at least a part of their primary energy needs.¹⁶² More than 1.2 billion people do not have access to clean drinking water.¹⁶³ The allocation of valuable resources is highly desired and the potentially increased marginalization of those mired in this level of poverty is likely to breed resentment. There are at least two ways in which the distribution of resources can exacerbate simmering identity-based tensions.

The first maldistribution concerns “resource capture” or “structural scarcity.”¹⁶⁴ This occurs when some groups in a given society are able to recognize the value of scarce resources and then act to control large percentages of those resources.¹⁶⁵ Frequently, these powerful groups then also manipulate the power structure of society to access further resources.¹⁶⁶ Recently, two authors have provided perspectives on this issue.

Raimo Vayrynen focuses on rent-seeking activities.¹⁶⁷ Vayrynen describes the use of non-violent rivalries in the creation of “institutional structures and rules that benefit disproportionately some actors and marginalize others.”¹⁶⁸ These structures, Vayrynen argues, are typically applied theoretically to explain domestic inequalities, but they can just as effectively be applied internationally to explain how wealth can be allocated to favored groups through international institutions.¹⁶⁹ In return for these rents, benefited groups return political services; often resulting in corruption.¹⁷⁰ Free markets and democratic institutions threaten rent-seeking activities because competition is enhanced, the relative power of the state decreases, and the relative power of and opportunities for bribery is decreased.¹⁷¹ Generally speaking, Vayrynen argues rent-seeking and corruption foster violence by undermining the social fabric,¹⁷² however, Vayrynen recognizes the possibility that rent-seeking might not foster violence when there is a perceived level of fairness of the redistribution policies of the state and, in some instances, when a patron-client kind of hierarchy has cultural validity in its own right. Vayrynen concludes that the connection between rent-seeking and corruption and violence and stability is not conclusive; stability is most at risk when the rent-seeking is monopolistic, pervasive, reckless, and centralized.¹⁷³ If the state has lost its power, through for instance, open markets, then it may be unable to keep order.¹⁷⁴ Consistent with Homer-Dixon’s insight, Vayrynen’s work maintains that governments are frequently structured to favor certain groups at the expense of others.

In a provocative book, Amy Chua provides a not dissimilar argument and connects it specifically to ethnic violence.¹⁷⁵ Chua’s argument is that the opportunities

presented by free markets have been seized upon by minorities in many countries to significantly enrich themselves, but that majorities in those countries remain impoverished.¹⁷⁶ “Market-dominant minorities may be able to establish and to maintain power in a country” – apartheid in South Africa would be an extreme example – and they exist, she argues throughout the world.¹⁷⁷ She cites the role of the Chinese in the Philippines and elsewhere in Southeast Asia.¹⁷⁸ In Indonesia, for example, Chinese Indonesians comprise only three percent of the population, but control seventy percent of the economy.¹⁷⁹ Similar situations exist in Brazil, Ecuador, Guatemala, West Africa, Nigeria, the former Yugoslavia, and Russia.¹⁸⁰ The concentration of wealth, however, engenders hostility within countries that can be expressed when majority rule democracy comes with it; the majority then has the capability of scapegoating the wealthy minority, almost always with strongly ethnic overtones.¹⁸¹ Chua argues further that this dynamic has consistently resulted in actions of mass murder by the minority against the market-dominant majority; Rwanda is another case in point as are actions in Zimbabwe against white farmers and against Chinese in Indonesia.¹⁸² Even more controversially, Chua argues that the same dynamic is at work with respect to Arab resentment of the (regionally) market-dominant power in the Middle East, Israel,¹⁸³ and against the United States as a (globally) market-dominant power in the September 11 attacks.¹⁸⁴ Thus, according to Chua, governments frequently take on the character of a privileged minority group in the position to benefit itself, at least as long as it can effectively control power and make arrangements to minimize opposition.

Environmental scarcity adds to this dynamic. It is one thing to observe that another ethnic group has better cars or homes. It is another if that “other” group has clean water to drink while one’s children suffer from dysentery caused by drinking dirty water. As already demonstrated, this is one of the problematic perceptions articulated in the ongoing disputes between Palestinians and Israelis on the West Bank.¹⁸⁵ Given the expected population increases in those countries where access to a critical, basic resource such as water is expected to become even harder to obtain, the prospects for environmental scarcity provoking increased ethnic hostilities exists. Adding to the potential is the visual connection provided by contemporary telecommunications and the Internet, where impoverished, suffering populations can see the glitter of the West.

A second maldistribution concerns what is done with the “leftovers” of resource use; that is via ecological marginalization.¹⁸⁶ This scenario occurs when the structural distributions already in place join with population growth so that the poor, again typically from the same impoverished ethnic groups, are forced into ecologically marginal living quarters such as upland hillsides, land subject to desertification, and tropical rain forests.¹⁸⁷ This psychological resentment is not necessarily different from that of resource distribution generally; living in a marginalized area contributes to ethnic resentments that can lead to uncontrollable eruptions. As is the case with the location of petroleum and water, these resentments tend to be found in critically important areas of the world where there could be major global spillover effects.¹⁸⁸ These places include South Africa, Mexico, Pakistan, India, and China, the latter two countries comprising over forty percent of the world’s population.¹⁸⁹

In both of these cases, the distribution of either benefits (in terms of desired resources) or costs (in terms of living in degrading conditions) does not typically happen across a demographically neutral board. Instead, certain groups tend to be favored while others tend to be disfavored. Environmental scarcity thus sharpens the potential grievances of rivalries that may often already be simmering in a given country.

2. Struggle to Control Identity

A related but distinguishable category is the struggle to control identity. While the previous discussion concerning the distribution of resources concerned primarily material costs and benefits as well as the social psychological reaction to them, this second category relates to threats to more spiritual identities. These too, can create the conditions for ethnically related violence.

As already discussed, rivers often are imbued with spiritual significance.¹⁹⁰ Whether it be a large river like the Nile¹⁹¹ or the Kunene River separating Angola and Namibia,¹⁹² bodies of water, like other natural resources often embody a deep manifestation of the identity of people. These identifications are critically important. Thomas Friedman characterizes those things that anchor human beings to a rooted identity as “olive trees” and writes, “[o]live trees are important. They represent everything that roots us, anchors us, identifies us and locates us in this world – whether it be belonging to a family, a community, a tribe, a nation, a religion or, most of all, a place called home.”¹⁹³

Although globalization allows for greater interaction among people to cooperate on a range of things that bordered-up societies previously could not have allowed, it also means that within countries, there remains the tug of the olive tree.¹⁹⁴ Re-routing and damming of rivers, clear-cutting forests, and punching holes in the ground can challenge the identities of people for whom these natural things have spiritual significance. Globalization also challenges cultures in that what was familiar is now gone, replaced by what is strange. To the extent this causes consternation in France about the prevalence of Big Macs and Mickey Mouse, this may not be a huge issue.¹⁹⁵ At the same time, as Friedman argues, when there is a sense that a community has lost control of its economic vitality, as has been the case when finance markets move money in and out of a country virtually overnight,¹⁹⁶ one is left with the feeling that no one is in charge except for an arbitrary, faceless “market.”¹⁹⁷ But, as Israeli political theorist Yaron Ezrahi notes: “The most arbitrary powers in history always hid under the claim of some impersonal logic – God, the laws of nature, the laws of the market – and they always provoked a backlash when morally intolerable discrepancies became glaringly visible. The Enlightenment was really the globalization of science and rationality and the backlash came when every thief, crook, exploiter and fraud claimed that whatever he was doing was necessitated by science and logic. The same could happen with globalization.”¹⁹⁸ It is noteworthy that since the end of the Cold War, fewer than ten percent of contemporary wars have begun as interstate conflicts, but issues of religious, ethnic, or national identity have spurred two-thirds of wars.¹⁹⁹ In the West, where since the Enlightenment, it has been common to hear concerns raised about “religious wars,”²⁰⁰ statistics that show that over half of the

wars had a religious dimension may not be surprising. Yet, it is surprising that religious belief systems, which always venerated peace, are so intimately connected with contemporary conflict.

Scott Appleby, a leading authority on fundamentalist religious groups addresses one aspect of this. Appleby concedes that raising the specter of violence is not “normal” for most religions, but argues that often the justification for resorting to violence is an argument that the times are not normal.²⁰¹ Indeed, evidence suggests that many times this characterization is made by groups faced with new threats. Appleby argues that religious extremists typically do not mobilize orthodox believers; instead, they concentrate on the young and untutored during a time when outside pressures threaten traditional ways of life.²⁰² Thus, by shrinking time and space through communications and transportation technologies, modernity has made it much more likely that Sikhs, Buddhists, Christians, Jews, Hindus, Muslims, and nonbelievers live in close proximity to one another, especially in large urban areas around the world. In this globalized milieu, religious extremism – with the violent intolerance of outsiders – has become the response of choice for a disproportionately influential minority within traditional religious communities that feel threatened by the new pluralism.²⁰³ If believers, again typically the young and untutored, think they are threatened, then there is an obligation to fight the enemy by any means.²⁰⁴ The threat is that orthodoxy has not adequately responded to the secular, pluralistic, materialist, feminist West.²⁰⁵ Fundamentalist leaders who are often charismatic mold an attitude of absolute devotion to the will of God, demonizing the infidel, focusing almost exclusively on a very narrow subset of religious doctrine as being the key to religious truth and connecting that truth to political goals.²⁰⁶ “Thus the religious Zionists of the Ichud Rabbanim and their counterparts in the Gush Emunim emphasize one of the 613 Torah mitzvot and subordinate the remaining 612 religious duties to its observance – the commandment to settle the land is tantamount to all other commandments.”²⁰⁷ In short, believers can latch on to a particularly important dimension of religious tradition – in the quoted example, physical real estate – and use adherence to that tradition to express rebellion against a cultural change. Religion can thus be linked to ecological resources and thereby foster additional, militant violence.

Appleby’s account is respectful of religion as a whole, noting how religion can also be “militantly” devoted to peace.²⁰⁸ In his account of fundamentalism, extremists distort a religious tradition that might otherwise be a force for nonviolence. A more cynical view of religion, consistent with Varynen’s and Chua’s analysis of how a minority group can seize control of government and orient policies for personal benefit, is presented by anthropologist Jared Diamond.²⁰⁹ Diamond argues that, historically, human beings tended to live in relatively small bands comprised of between five to eighty people, most of them closely related to each other.²¹⁰ Although there were differences among the relative authority of individuals within these groups, a common feature was that the groups were relatively egalitarian.²¹¹ There were no formal stratification of class hierarchy, no formal legal institutions, such as the police or even codes of law, and no monopolies of information or decision-making.²¹² Yet human beings, beginning in the last few tens of thousands of years, also lived in tribes (usually populated by hundreds of

people), clans, and chiefdoms.²¹³ Tribes,²¹⁴ like bands, also tend to be relatively egalitarian with little institutional formality.²¹⁵

When chiefdoms arose 7,500 years ago, there was potential for greater conflict because people had to live in close proximity with people whom they did not know.²¹⁶ One solution was for the chief to hold a monopoly on force; ideally, that force would be used for the welfare of all members of the chiefdom, but realistically the chief could also be a thief.²¹⁷ A kleptocracy could only flourish if there were reasons for common people to tolerate the transfer of wealth to the elite.²¹⁸ Historically, those reasons were to: (a) disarm the common people and instead arm the elite; (b) make the common people happy through redistribution of resources; (c) use force to create satisfaction through maintenance of a safe, public order; and (d) create an ideology or religion justifying the theft.²¹⁹ The last solution typically came in the form of a notion of the divine connection of royalty.²²⁰ Moreover, the state ideology was able to bind non-kin together in conjunction with a common good that would justify even death for the welfare of others.²²¹ The idea of dying for the state, however Diamond argues, was unthinkable for bands and tribes.²²² Patriotism, he argues, was an unknown commodity.²²³ Diamond argues that fanaticism in war was probably unknown until about six thousand years ago, the time when the great world religions emerged.²²⁴

Regardless of Diamond's conclusions of kleptocracy, the anthropological data concerning bands and tribes on the one hand and chiefdoms (and even larger organizations) on the other suggests potential for violence in a couple of ways. First, within any large religious organization, there may be disaffected members who are reachable by those who are able to articulate the dangers of a materialistic, secular threat. Second, this threat may be articulated in some way by designating an ecological entity as paradigmatic of either that threat or the essential meaning of the religion. This means that natural resources and landmarks which play a prominent role in most religious traditions (of any size) can be pulled into ecological conflict.

Thus, identity-based conflict can result from ecological issues. This can occur through the sharpening of ethnic grievances resulting from one ethnic group obtaining more of the benefits of natural resources and fewer of the costs of environmental degradation. It can also occur through the symbolic associations that the natural environment may carry, which become important for various reasons to religious believers. Those adherents, whose faith may or may not be associated with a particular organized religion, may have their beliefs molded by attention to a natural, ecological resource.

An overarching issue with respect to sustainability is the extent to that a consumption-driven economy can be supported by the natural environment. Evidence mounts daily that humanity will be confronted in this century with major consequences resulting from climate change.²²⁵ Fossil fuels are thought to be the major cause of the greenhouse gas problem.²²⁶ A central threat of climate change is a potential partial melting of polar icecaps, which would raise sea levels and cause severe coastal flooding.²²⁷ This connection of fossil fuel and flooding presents an entirely different

dimension to the issues of oil and water described above.²²⁸ Not only may oil and water be depleted, but there are also impacts on cropland scarcity, tropical deforestation, and depleted fish stocks.²²⁹

The world is faced with a complicated, difficult ecological condition which could provide the breeding ground for many kinds of violence, justified by those who believe that the current system has been unfair to them.²³⁰ It may be comforting to believe that these issues are the province of governments. It seems somewhat unrealistic to believe that governments can solve these issues without the engaged thoughtfulness of the business sector.

II. The Business Implications

Regardless of whether the evidence is sufficient to insist on the accountability of business to the connection of war and peace, many places around the world are already making the connection. Shell Oil Co., a company currently recognized for its social responsibility efforts, was once vilified for its complicity in the oppression of the Ogoni people in Nigeria and its alleged involvement in the assassination of rebel leader Ken Saro-Wiwa.²³¹ Exxon has faced protests from human rights organizations for not confronting human rights abuses perpetrated by security forces protecting Exxon's pipeline in Indonesia.²³² Apart from ecological examples, disgruntled consumers attacked McDonald's restaurants by breaking windows and smearing the walls with cow dung after it was learned that, contrary to previous announcements, its French fries were cooked in oil containing beef tallow rather than in vegetable oil.²³³ Hindus who had inadvertently violated religious precepts by eating these fries as well as vegetarians were outraged.²³⁴ In January, 2002, Argentine protestors ransacked a McDonald's restaurant in Buenos Aires²³⁵ and the McDonald's restaurant in Quebec City simply closed and removed all identifying signs in advance of the 2001 Summit of the Americas to avoid attracting the interest of demonstrators.²³⁶ Protests against banks in Argentina²³⁷ and Wal-Mart stores in Bonn²³⁸ are additional examples of how corporations are increasingly targeted as responsible parties for a variety of perceived social injustices.

It may or may not be fair for businesses to be targets for protests and it also may be true that governments are responsible for managing the resulting conflicts. But business is involved in all of these issues. Although it may not be a moral requirement for corporations to take responsibility for the issues connected with violence, it would benefit both business and society if they did. As Thomas Friedman puts it, "Arab nationalism, socialism, fascism or communism – while they may have made no economic sense, had a certain inspirational power. But globalization totally lacks this. When you tell a traditional society it has to streamline, downsize and get with the Internet, it is a challenge that is devoid of any redemptive or inspirational force. And that is why, for all of globalization's obvious power to elevate living standards, it is going to be a tough sell to those millions of people who still say a prayer before they ride the elevator."²³⁹

It is plausible that business can do something to contribute to sustainable peace, a peace that endures because it is just. Engaging that connection could well be the free

market's way of addressing the "social void"²⁴⁰ that transactional economics cannot. Businesses are engines of economic development that can be beneficial to social harmony. On one hand, through globalization, businesses consistently reach across borders to allow people from far away places to gain understanding of each other by working together in ways that would otherwise not be possible. Businesses can even do this in creating diverse work forces where members of different ethnic groups may work together for a common project – even if that project is simply that of economic profitability – for the first time. Businesses may be able to, on occasion, mediate conflicts between governments. On the other hand, if businesses are viewed as being exploitative, culturally undermining, greedy, or socially insensitive, they can sow the seeds for potential violence.

Thomas Homer-Dixon²⁴¹ argues that protection from the dilemmas concerning environmental scarcity depends on having better governance to protect the environment, human rights, labor standards, and financial transactions despite no global government.²⁴² Solving these problems requires, he argues, technical ingenuity. That kind of creativity depends on social ingenuity together with adequate background institutions to support public and semi-public goods such as markets, funding agencies, educational and research institutions, and effective governments.²⁴³ Others have argued further that the natural world provides business models, such as biological mimicry, that can be source for ecologically sensitive management.²⁴⁴ Out of the natural environment, therefore, are models for thinking about how businesses can make significant contributions to sustainable peace. For example, the work of William Frederick, a senior business ethicist who draws upon nature, contextualizes a conception of the firm that can seize upon the opportunities for peace that already exist. Frederick argues that all life contains a number of recurring values.²⁴⁵ The first value, economizing, can be seen in the action of plants, via photosynthesis, and animals, via metabolism, converting raw materials into useful energy.²⁴⁶ Business, in a sense, acts as the metabolism for a given society when it efficiently converts natural resources, such as oil for instance, into productive uses. Businesses do not invent wealth *ex nihilo*; rather, they take some thing and make it into a product or service of value to a customer. As such, businesses, and particularly their boards of directors as the leaders of the organization, are mediators of the creation of economic value. One could characterize this naturalistic aspect of business as a structural mediating aspect.

Business can also embrace this economizing function by utilizing natural resources in a way so as to reduce waste, maximize efficiency, and produce profits in a way that does not erode the ability for future businesses to function.²⁴⁷ Businesses would then be a mediator of the acquisition, use, and disposition of natural resources.

A second kind of mediating influence may reflect Frederick's second value: power-aggrandizement.²⁴⁸ Power-aggrandizement refers to an organism's quest for status or power.²⁴⁹ The Constitution of the United States, for instance, constructs a system of checks and balances so that others can throttle competing quests for power.²⁵⁰ Within the corporation, this would involve the rights and duties of the corporate entity as well as the individuals within it. The specification of the rights of people in a community, what the

community can demand from its members, how an institution envisions its duties as a citizen and how others in the society view the institution's citizenship within the culture are questions of justice. Consequently, in such instances, corporations can be viewed as mediators of justice. They mediate duties among their members, between the corporate entity and the community, and between their members and the community. Corporations do this, first, by supporting and subjecting themselves to a rule of law expressed by the community and second, to the extent which they value transparency so that other members of the community may evaluate its actions.

Frederick's third naturalistic value is ecologizing.²⁵¹ This value is one of interconnected webbing among a variety of mutual interdependent species.²⁵² At a broad ecological level, this value explains the interdependent linkages that exist, for instance, in a rain forest, where through no conscious choice, a species' survival is connected to the well-being of other unrelated creatures.²⁵³ In corporate terms, this value is one of connecting individual well-being to that of the well-being of the corporate community. In this respect, business can be characterized as a mediating institution, using the traditional understanding of "mediating institution" to connote a connection between the individual and the community that provides a sense of meaning to the person.²⁵⁴ This may frequently have an internal focus where the corporate community feels like a neighborhood or even a family for its members,²⁵⁵ but it also suggests a dimension of corporate citizenship within the corporation as a member of the community in which it operates. Ecological stewardship would be a significant feature of such citizenship.

Frederick's final value applies primarily to human beings. It is a techno-symbolic value.²⁵⁶ This value refers to the human capability to create symbols – religious, aesthetic, philosophical, linguistic, and technological – and to manipulate the various value cluster interactions.²⁵⁷ This is the human aptitude for philosophy, religion, and language as well as that of play and music. In the terms of Homer-Dixon and Hawken, this is the dimension of human ingenuity that may allow us to transcend the current shortcomings of the free market in order to avoid ecological problems.

Conclusion

We propose sustainable peace as an aim to which businesses should orient their actions both for reasons of the good of avoiding the activities that contribute to the spilling of blood as well as for the good of sustainable economic enterprises, which are fostered by stable, peaceful relationships. Thus, business must do what it does best and address economic development, even in terms of the extraction of natural resources. But it must also be attentive to the rights of others, to the development of community and meaning, and to stop violence when it is likely. Given the dangers ecological stresses pose for the planet, it is hard to think of a more compelling reason to reorient business behavior.

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¹ Quoted in PAUL HAWKEN, AMORY LOVINS, AND L. HUNTER LOVINS, *NATURAL CAPITALISM: CREATING THE NEXT INDUSTRIAL REVOLUTION* 20 (1999).

² Boutros Boutros-Ghali, Minister of State for Foreign Affairs of Egypt, Boutros Boutros-Ghali 1998 (later Secretary-General of the United Nations). Cited in MICHAEL T. KLARE, *RESOURCE WARS: THE NEW LANDSCAPE OF GLOBAL CONFLICT* 12-13 (2001).

³ Quoted in Ted C. Fishman, *The Myth of Capital's Good Intentions*, *HARPER'S MAGAZINE*, August 2002, at 34 (Fishman rejects Powell's statement, arguing that business makes a great deal of money from war and instability).

⁴ Because the term "environment" can refer to legal, governmental, cultural, social, and a variety of other uses in addition to those relating to ecological issues relating to the natural environment, we will primarily use the word "ecological" rather than "environmental" to designate the connection of violence, business, and the natural world.

⁵ Ian Robinson, *The East Timor Conflict*, in *THE TRUE COST OF CONFLICT: SEVEN RECENT WARS AND THEIR EFFECT ON SOCIETY* (Michael Cranna, ed. 1994) 10-11.

⁶ Gregory Quinn, *The Iraq Conflict*, in *THE TRUE COST OF CONFLICT*, *supra* note 5, at 26.

⁷ *Id.* at 29.

⁸ *Id.* at 33.

⁹ Nils Bhinda, *The Kashmir Conflict*, in *THE TRUE COST OF CONFLICT*, *supra* note 5, at 64-65.

¹⁰ Shaun Vincent, *The Mozambique Conflict*, in *THE TRUE COST OF CONFLICT*, *supra* note 5, at 93.

¹¹ *Id.* at 92-93.

¹² Nicholas Shalita, *The Sudan Conflict*, in *THE TRUE COST OF CONFLICT*, *supra* note 5, at 139.

¹³ *Id.* at 139.

¹⁴ *Id.* at 145.

¹⁵ *See generally*, *THE TRUE COST OF CONFLICT*, *supra* note 5.

¹⁶ HAWKEN, ET AL, *supra* note 1, at 8.

¹⁷ *Id.*

¹⁸ *See generally* AMY CHUA, *WORLD ON FIRE: HOW EXPORTING FREE MARKET DEMOCRACY BREEDS ETHNIC HATRED AND GLOBAL INSTABILITY* (2003) (arguing that the simultaneous adoption of majority-rule democracies and free markets is a recipe for violent, ethnic clashes in developing countries).

¹⁹ THOMAS HOMER-DIXON, *ENVIRONMENT, SCARCITY, AND VIOLENCE* 80 (1999).

²⁰ *See, e.g.* GEORGE B.N. AYITTEY, *AFRICA IN CHAOS* 5-6 (1998) (noting the vast material wealth of the African continent and the interest of countries in exploiting that wealth).

²¹ Fishman, *supra* note 3, at 37.

²² *See generally*, KLARE, *supra* note 2.

²³ *Id.* at 19.

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- ²⁴ See, ROBERT O. COLLINS, *THE NILE* (2002) (for a history of the ecological dimensions of the Nile River, particularly as effected by various hydroelectric projects, the attempts to control the river, and the geopolitical rivalries spawned by issues of such control).
- ²⁵ Boutros-Ghali, *supra* note 2.
- ²⁶ KLARE, *supra* note 2, at 22.
- ²⁷ United Nations Convention on the Law of the Sea, Dec. 10, 1982, 21 I.L.M 1261.
- ²⁸ KLARE, *supra* note 2, at 21-22.
- ²⁹ *Id.*
- ³⁰ *Id.* at 19.
- ³¹ *Id.*
- ³² *Id.*
- ³³ *Id.*
- ³⁴ *Id.* at 36-37.
- ³⁵ *Id.* at 38.
- ³⁶ *Id.*
- ³⁷ *Id.* at 16.
- ³⁸ *Id.* at 17; see also INTERNATIONAL ENERGY OUTLOOK, available at <http://www.eia.doe.gov/oiaf/ieo>.
- ³⁹ KLARE, *supra* note 2, at 17.
- ⁴⁰ *Id.* at 41.
- ⁴¹ *Id.* at 42.
- ⁴² *Id.*
- ⁴³ *Id.* at 42-43.
- ⁴⁴ *Id.* at 11.
- ⁴⁵ *Id.* at 31.
- ⁴⁶ *Id.*
- ⁴⁷ *Id.* at 32-33.
- ⁴⁸ Cited in KLARE, *supra* note 2, at 10-11.
- ⁴⁹ *Id.*
- ⁵⁰ *Id.* at 14.
- ⁵¹ *Id.* at 49.
- ⁵² *Id.*
- ⁵³ *Id.*
- ⁵⁴ John Omicinski, *U.S. in for the Long Haul With Persian Gulf Mission*, THE SEATTLE TIMES, Oct. 17, 1997, at A2.
- ⁵⁵ Jay Tolson, *Iraq: After Sadaam*, U.S. NEWS & WORLD REP., Apr. 28, 2003, at 27.
- ⁵⁶ Scott MacLeod, *Syria: The Peace Conflict*, TIME, Oct. 18, 1999, at 56.
- ⁵⁷ Jeffrey Fleishman, *Turkish-Kurdish Rift Muddles War Plans*, L.A. TIMES, Feb. 25, 2003, at A10.
- ⁵⁸ KLARE, *supra* note 2, at 53.
- ⁵⁹ *Id.* at 46.
- ⁶⁰ *Id.*
- ⁶¹ Fishman, *supra* note 3, at 36.

⁶² Scott Wilson, *Political Deadlock Bolsters Chavez; Venezuelan Leader Exploits General Strike to Remake Institutions, Opponents Say*, WASH. POST, Jan. 20, 2003, at A15.

⁶³ KLARE, *supra* note 2, at 81.

⁶⁴ *Id.* at 2 (citing U.S. Department of Energy figures).

⁶⁵ *Id.*

⁶⁶ *Id.* at 83.

⁶⁷ *Id.* at 81.

⁶⁸ *Id.* at 82.

⁶⁹ *Id.* at 84.

⁷⁰ *Id.* at 86.

⁷¹ *Id.* at 88.

⁷² *Id.* at 87-88.

⁷³ *Id.*

⁷⁴ Nazif M. Shahrani, *War, Factionalism, and the State in Afghanistan*, 104 AM. ANTHROPOLOGIST 715, 720, (2002).

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ Michael Elliot, *Special Report: The Secret History*, TIME, Aug. 12, 2002, at 28.

⁷⁸ Powell, *supra* note 3.

⁷⁹ *Supra* notes 35 to 36 and accompanying text.

⁸⁰ KLARE, *supra* note 2, at 113.

⁸¹ *Id.*

⁸² *Id.* at 114.

⁸³ *Id.* at 117.

⁸⁴ *Id.* at 120.

⁸⁵ *See id.* at 117.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *See id.* at 111.

⁸⁹ *Id.* at 117.

⁹⁰ *Id.* at 118.

⁹¹ *Id.* at 125.

⁹² HUSSEIN A. AMERY & AARON T. WOLF, WATER IN THE MIDDLE EAST: A GEOGRAPHY OF PEACE 64 (2000).

⁹³ *Id.* at 2 (citing 1997 report from the Commission on Sustainable Development).

⁹⁴ *Id.* at 64.

⁹⁵ KLARE, *supra* note 2, at 142.

⁹⁶ *Id.*

⁹⁷ *Id.* at 140.

⁹⁸ *Id.* at 142.

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 142-43 (citing World Bank statistics).

¹⁰¹ *Id.* at 143-44.

¹⁰² *Id.* at 143.

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- ¹⁰³ *Id.*
- ¹⁰⁴ *Id.* at 144.
- ¹⁰⁵ *Id.*.
- ¹⁰⁶ *Id.*
- ¹⁰⁷ *Id.* at 143-44.
- ¹⁰⁸ *Id.* at 144-45.
- ¹⁰⁹ *See id.* at 140, 145.
- ¹¹⁰ Boutros-Ghali, *supra* note 2.
- ¹¹¹ KLARE, *supra* note 2, at 145-46.
- ¹¹² *Infra* notes 119 to 122 and accompanying text.
- ¹¹³ AMERY & WOLF, *supra* note 92, at 6.
- ¹¹⁴ KLARE, *supra* note 2, at 147.
- ¹¹⁵ *Id.* at 141, 148.
- ¹¹⁶ *Id.* at 141.
- ¹¹⁷ *Id.* at 153.
- ¹¹⁸ *Id.* at 156.
- ¹¹⁹ *Id.* at 161.
- ¹²⁰ *Id.* at 162.
- ¹²¹ *Id.* at 164. The Jordan River basin includes Israel, Jordan, Syria, and the Palestinian Authority; the Tigris-Euphrates includes Iran, Iraq, Syria, Turkey, as well as Kurdish areas; the Indus includes Afghanistan, China, India, Pakistan, and Kashmir.
- ¹²² *Id.* at 162-64.
- ¹²³ *Id.* at 175.
- ¹²⁴ *Id.* at 176; *see also* Louis Jacobson, *Back to Eden: Restoring the Marshes of Iraq*, WASH. POST, Apr. 28, 2003, at A11.
- ¹²⁵ KLARE, *supra* note 2, at 176.
- ¹²⁶ *Id.* at 177.
- ¹²⁷ *Id.* at 177-78.
- ¹²⁸ *Id.* at 180.
- ¹²⁹ *Id.* at 181.
- ¹³⁰ AMERY & WOLF, *supra* note 92, at 21.
- ¹³¹ *Id.* at xii.
- ¹³² *Id.* at xiii.
- ¹³³ *Id.* at xii.
- ¹³⁴ *Id.* at 34.
- ¹³⁵ *Id.* at 36.
- ¹³⁶ KLARE, *supra* note 2, at 90-92.
- ¹³⁷ *Id.* at 99.
- ¹³⁸ *Id.* at 86-90.
- ¹³⁹ *Id.*
- ¹⁴⁰ *Id.* at 14.
- ¹⁴¹ *Id.*
- ¹⁴² *See, e.g.*, Terence R. Lee & Andre Jouravlev, *Private Participation in the Provision of Water Services: Alternative means for private participation of water services*, (1997), at <http://www.thewaterpage.com/PPP%20Debate%20Lee2.pdf>

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- ¹⁴³ KLARE, *supra* note 2, at 190.
- ¹⁴⁴ See Fishman, *supra* note 3, at 37-38.
- ¹⁴⁵ Paul Collier, *The Market for Civil War*, FOREIGN POLICY, 38 (May/June 2003).
- ¹⁴⁶ KLARE, *supra* note 2, at 192.
- ¹⁴⁷ *Id.* at 191-92; see Thomas W. Dunfee & Timothy L. Fort, *Corporate Hypergoals, Sustainable Peace, and the Adapted Firm*, 36 VAND. J. TRANS. L. 563 (2003) (providing a more in-depth analysis of the bloody diamonds controversy).
- ¹⁴⁸ Fishman, *supra* note 3, at 38.
- ¹⁴⁹ KLARE, *supra* note 2, at 210.
- ¹⁵⁰ Fishman, *supra* note 3, at 38.
- ¹⁵¹ *Id.* at 39.
- ¹⁵² *Id.*
- ¹⁵³ *Id.*
- ¹⁵⁴ See generally, PHILIP BOBBITT, THE SHIELD OF ACHILLES: WAR, PEACE AND THE COURSE OF HISTORY (2002).
- ¹⁵⁵ *Id.*
- ¹⁵⁶ KLARE, *supra* note 2, at 97.
- ¹⁵⁷ *Id.* at 190.
- ¹⁵⁸ HOMER-DIXON, *supra* note 19, at 7.
- ¹⁵⁹ *Id.* at 7.
- ¹⁶⁰ *Id.*
- ¹⁶¹ *Id.* at 12.
- ¹⁶² *Id.* at 13.
- ¹⁶³ *Id.*
- ¹⁶⁴ *Id.* at 15.
- ¹⁶⁵ *Id.*
- ¹⁶⁶ *Id.*
- ¹⁶⁷ RAIMO VAYRYNEN, GLOBALIZATION AND LOCAL VIOLENCE: A THEORY AND EMPIRICAL INQUIRIES Chapter I at 26 (forthcoming) (manuscript on file with authors).
- ¹⁶⁸ *Id.* at 26.
- ¹⁶⁹ *Id.* at 27.
- ¹⁷⁰ *Id.* at 29
- ¹⁷¹ *Id.* at 30.
- ¹⁷² *Id.* at 31-32.
- ¹⁷³ *Id.* at 33.
- ¹⁷⁴ *Id.*
- ¹⁷⁵ CHUA, *supra* note 18.
- ¹⁷⁶ *Id.* at 6-7.
- ¹⁷⁷ *Id.*
- ¹⁷⁸ *Id.*
- ¹⁷⁹ *Id.*
- ¹⁸⁰ *Id.*
- ¹⁸¹ *Id.*
- ¹⁸² *Id.* at 231.
- ¹⁸³ *Id.* at 211.

¹⁸⁴ *Id.* at 230-31.
¹⁸⁵ *Id.*
¹⁸⁶ HOMER-DIXON, *supra* note 19, at 16.
¹⁸⁷ *Id.*
¹⁸⁸ *Id.* at 18-19.
¹⁸⁹ *Id.*
¹⁹⁰ *Supra* note 120.
¹⁹¹ See COLLINS, *supra* note 24, for a discussion of the religious significance of the Nile River to the communities through which the river flows.
¹⁹² Carol Ezzell, *The Himba and the Dam*, SCI. AM. (June, 2001) at 81.
¹⁹³ THOMAS L. FRIEDMAN, THE LEXUS AND THE OLIVE TREE 31 (2000).
¹⁹⁴ *Id.* at 31.
¹⁹⁵ Barbara Robinson, *Disney Displayed Cultural Ignorance in Planning Paris Park*, LAS VEGAS REVIEW-JOURNAL, Sept. 3, 1993, at 11B.
¹⁹⁶ *Is it at Risk? Globalisation*, THE ECONOMIST, Feb. 2, 2002, available at 2002 WL 7245017.
¹⁹⁷ FRIEDMAN, *supra* note 193, at 191.
¹⁹⁸ *Id.* at 191.
¹⁹⁹ R. SCOTT APPLEBY, THE AMBIVALENCE OF THE SACRED: RELIGION, VIOLENCE, AND RECONCILIATION 17 (2000).
²⁰⁰ See Timothy L. Fort, *Religion and Business Ethics: The Lessons from Political Morality*, 16 J. BUS. ETHICS 263, 268-69 (1997)(describing the consequentialist concerns of philosophers and legal scholars with respect to the incendiary dimensions of allowing religion to play a part in politics).
²⁰¹ APPLEBY, *supra* note 199, at 88.
²⁰² APPLEBY at 17.
²⁰³ *Id.* at 58.
²⁰⁴ *Id.* at 90-91.
²⁰⁵ *Id.*
²⁰⁶ *Id.*
²⁰⁷ *Id.*
²⁰⁸ Appleby, *supra* note 201 at 7.
²⁰⁹ JARED DIAMOND, GUNS, GERMS, AND STEEL, THE FATES OF HUMAN SOCIETIES (1999).
²¹⁰ *Id.* at 267.
²¹¹ *Id.* at 269.
²¹² *Id.*
²¹³ *Id.* at 270-71.
²¹⁴ *Id.* at 271.
²¹⁵ *Id.* at 271-73.
²¹⁶ *Id.* at 273.
²¹⁷ *Id.* at 273-76.
²¹⁸ *Id.* at 276.
²¹⁹ *Id.* at 277.
²²⁰ *Id.* at 277-78 (specifically citing the example of the kings and gods of Hawaii).
²²¹ *Id.* at 278, 281.

²²² *Id.* at 281.

²²³ *Id.*

²²⁴ *Id.* at 281-82.

²²⁵ *Climate Panel Reaffirms Major Warming Threat*, N.Y. TIMES, Jan. 23, 2001, at F8, cited in Donald O. Mayer, *Corporate Governance in the Cause of Peace: An Environmental Perspective*, 35 VAND. J. TRANS. L. 585, 609 (2002).

²²⁶ *Id.*

²²⁷ Clare Nullis, *UN Report Warns of Global Climate Changes*, CHI. TRIB., Feb. 20, 2001, at 4.

²²⁸ Mayer, *supra* note 225, at 617.

²²⁹ HOMER-DIXON, *supra* note 19, at 63.

²³⁰ Mayer, *supra* note 225, at 618.

²³¹ William E. Newberry & Thomas N. Gladwin, *Shell and Nigerian Oil*, in ETHICAL ISSUES IN BUSINESS: A PHILOSOPHICAL APPROACH 522 (Thomas Donaldson & Patricia H. Werhane, eds., 7th ed. 2002).

²³² Jane Perlez, *Indonesia's Guerilla War Puts Exxon Under Siege*, N.Y. TIMES, July 14, 2002, International Section, at 1.

²³³ Laurie Goodstein, *For Hindus and Vegetarians, Surprise at McDonald's Fries*, N.Y. TIMES, May 20, 2001, at A1.

²³⁴ *Id.*

²³⁵ Anthony Faiola, *Argentine Peso Quickly Sinks After Government Lets it Float: Protests Against Economic Changes Turn Violent in Capital*, WASH. POST, Jan. 13, 2002, at A23.

²³⁶ *Protestors in Quebec Tear Down Part of Barricade, Throw Objects and Police*, ST. LOUIS POST-DISPATCH, April 21, 2001, at 6.

²³⁷ Faiola, *supra* note 235.

²³⁸ Toby Helm, *Bush Protests Off to Early Start*, LONDON DAILY TELEGRAPH, May 22, 2001, at B1.

²³⁹ FRIEDMAN, *supra* note 193, at 341.

²⁴⁰ See Lee A. Tavis, *Corporate Governance and the Global Social Void*, 35 VAND. J. TRANS. L. 487 (2002).

²⁴¹ See HOMER-DIXON, *supra* note 19, at 28-31.

²⁴² *Id.* at 206-07. Although there is much to admire in Homer-Dixon's insight, we will take issue with his pejorative characterization of the problem of small groups as contributors to the creation of technical and social ingenuity. In short, consistent with some of the arguments noted in this chapter already from the work of Jared Diamond, human beings are simply biologically predisposed to work in small groups. It may well be the case that this predisposition has frequent negative consequences, but it is an aspect of human nature that must be dealt with and, in fact, turned into a positive rather than to dismiss it.

²⁴³ *Id.* at 110.

²⁴⁴ HAWKEN, ET AL, *supra* note 1, at 15. As an example of the possibilities of biomimicry, Hawken et. al. writes that "[b]usiness is switching to imitating biological and ecosystem processes replicating natural methods of production and engineering to manufacture chemicals, materials, and compounds, and soon maybe even

microprocessors. Some of the most exciting developments have resulted from emulating nature's life-temperature, low-pressure, solar-powered assembly techniques, whose products rival anything human-made. Science writer Janine Benyus points out that spiders make silk, strong as Kevlar but much tougher, from digested crickets and flies, without needing boiling sulfuric acid and high-temperature extruders. The abalone generates an inner shell twice as tough as our best ceramics, and diatoms make glass, both processes employing seawater with no furnace." HAWKEN, ET. AL, *supra* note 1, at 15.

²⁴⁵ WILLIAM C. FREDERICK, *VALUES, NATURE & CULTURE IN THE AMERICAN CORPORATION* (1995).

²⁴⁶ *Id.* at 30.

²⁴⁷ *See generally*, HAWKEN, ET AL, *supra* note 1.

²⁴⁸ FREDERICK, *supra* note 245, at 57-78.

²⁴⁹ *Id.*

²⁵⁰ *See* RICHARD PIPES, *PROPERTY AND FREEDOM* 121-58 (1999).

²⁵¹ Frederick, *supra* note 245, at 134-67.

²⁵² *Id.*

²⁵³ *Id.*

²⁵⁴ *See generally*, TIMOTHY L. FORT, *ETHICS AND GOVERNANCE: BUSINESS AS MEDIATING INSTITUTION* (2001).

²⁵⁵ *Id.*

²⁵⁶ *See generally* FREDERICK, *supra* note 245, at 200. Frederick used the term "technological values" but later refined this term to "techno-symbolic." *See* William C. Frederick, *An Appalachian Coda: The Core Values of Business*, *BUSINESS AND SOCIETY*, June 1, 1999, available at 1999 WL 14532099.

²⁵⁷ FREDERICK, *supra* note 245, at 172.