



1.3 RESOURCE ATTACKS

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The central thesis of my presentation is that struggle over natural resources, land, water, food, energy, minerals, timber, and other basic commodities will increasingly dominate the terrain of international conflict in the 21st Century. Competition over these materials has, of course, been a central theme in human conflict since the earliest human recorded history. I think it is destined to be even more pivotal in the years ahead for several reasons.

First, because the international demand for all kinds of resources is growing as a result of population growth; globalization, the spread of industrialization to more and more parts of the world; urbanization; and increased worldwide income levels. Second, global supplies of many renewable resources, especially energy, are shrinking. While certain renewable resources, including fresh water, are not sufficiently abundant to satisfy ever-growing levels of demand. This means that the competition for available supplies is bound to become increasingly fierce. Third, as resource deposits in readily-accessible locations in safe, friendly countries are

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depleted, consuming nations must rely increasingly on supplies acquired from less-easily exploited deposits in remote, unsafe, unfriendly countries. This extends supply lines and exposes those engaged in extractive operations to increased risk of attack from terrorist insurgents and criminal bands.

Fourth, many governments have chosen to securitize key materials, viewing them as essential to national security and thus worthy of protection with military force if necessary. For some countries, such as the U.S. and China, oil is viewed in this manner. For others, including Egypt and Israel, water is seen in this light. Fifth, as the supply of vital materials contracts with respect to demand, their monetary value increases. This makes their ownership that much more attractive to rulers, or would-be rulers, of the countries in which large deposits of them are found. This is the origin of what is called the resource curse: the tendency of the rulers of these countries to retain power at all costs, including military dictatorship or other forms of authoritarian rule, and of their aspiring successors to employ military or violent means to unseat them, thereby acquiring control over the resource wealth for themselves. Many of the internal conflicts now underway in oil and mineral producing areas of the developing world are of this character.

Sixth, because the major resource importing nations, especially the U.S., China, and the European Union countries, are becoming ever more dependent on energy and mineral supplies from once colonial areas of the world in Asia, Africa, and the Middle East, there is a growing presence of giant multinational corporations in these areas. This, in turn, is provoking a certain amount of anti-foreigner and anti-imperialist sentiment that is exploited by various extremist groups, including al Qaeda and its spinoffs.

Seventh and finally, every aspect of the resource equation is bound to be affected by global warming. Although much remains uncertain, it appears that large parts of the developing world will experience a significant reduction in rainfall, jeopardizing the production of food for hundreds of millions of people and forcing many of them to migrate to more favorite(?) locations where

they are likely to encounter fierce resistance from those already occupying those areas.

For all these reasons, I believe that conflict over resources will dominate the terrain of both interstate and intrastate conflict in the decades ahead. Other factors will, of course, play an important role, but disputes over access to and ownership of vital resources will prove increasingly vital. To appreciate this and to better gauge the impact of this trend on American national security policy, it is useful to examine each of these points in greater detail. Some are examined in greater detail than others.

The first is growing international demand. I am not going to say a lot about this because I think it is pretty obvious. You always have to be aware of it because it is the engine for everything else. It is because of sharply rising international demand for all sorts of critical materials, coupled with dwindling supplies, that so many of the other problems arise. This is especially true of demand for energy and water.

According to the U.S. Department of Energy (DoE), world energy consumption is expected to grow by 50 percent over the 25-year period between 2005–30, rising from about 460 to 700 quadrillion British thermal units (BTUs). The projected increase, 240 quadrillion BTUs, is equivalent to current energy consumption by the U.S., Canada, Japan, and Western Europe combined. In other words, it is a colossal amount of additional energy that will have to be acquired from every conceivable source in just a quarter of a century. Procuring this additional energy while simultaneously addressing the challenge of climate change will prove one of the most difficult challenges facing world leaders in the years ahead, as we are already finding in our own country.

A similar challenge arises in the case of food and fresh water. The two of which are closely related; approximately 70 percent of human water usage is devoted to irrigation for food production. The world population is expected to grow by 28 percent between 2008–30 from approximately 6.5 to 8.5 billion people. The need for drinking water and other basic human materials will naturally

grow by a like amount, which is going to put enormous pressure on all supplies of basic resources. This is the demand side.

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What about the supply side? If we could be certain that the global supply of all basic commodities, food, water, land, energy, minerals, and so on was growing in tandem with the increase in world demand, we would not have to worry so much about the prospects for future conflict over resources. However, that is not the case. There is growing evidence that the global supply of many critical materials will not be able to grow enough to meet rising world demand. In some cases, it will actually diminish.

Now let us take a look at oil, the world’s most important source of energy. According to the most recent DoE projections, world liquids output in 2030, including petroleum, biofuels, and non-conventional petroleum sources, will be about 112.5 million barrels a day, just enough to satisfy anticipated world demand at that time. Most professional energy experts question this optimistic picture, claiming that the world’s liquid output will fall far short of 112 million barrels per day. They do so on several grounds.

First, daily output in many of the most prolific fields, now in production around the world, is declining at a much faster pace than previously thought. Second, the rate of discovery of new oil fields is also declining, meaning that there is less new oil available each year to replace that being extracted from existing fields. Third, most of the untapped fields now in development are located far offshore or in corrupt or unstable countries, raising the startup costs and discouraging investment.

Suffice it to say that many energy professionals now agree that 100 million barrels per day is probably the upper limit for a conventional oil production. This figure will be supplemented by the addition of biofuels and nonconventional oil. However, this will not be enough to avert an eventual contraction in the supply

of petroleum liquids. Moreover, the peak of 100 million barrels will last for only a few years.

After that, conventional oil production will decline. Even with the addition of nonconventional fuels, we will see a contraction in total supply. When this will occur is not exactly known. Most analysts believe it will occur probably between 2015–20, suggesting that the projections offered by the DoE are far too rosy and that we could expect a significant gap between world supply and demand well before 2030.

The picture for natural gas is not as discouraging, if only because natural gas was developed later in the industrial age than oil. Gas, like oil, is a finite substance. It too will reach a peak of production and then commence an irreversible decline probably a decade or so after oil. I do not have time to run through all the other materials. Coal is more abundant, but it too will reach a peak of production and contract probably around the middle of the century. Uranium is now considered sufficient for current needs for quite some time, but if we turn to nuclear power for environmental reasons and ramp up nuclear production, then uranium will become a scarce commodity.

We look at minerals. Some are plentiful like iron. Others including copper, cobalt, and nickel are found in less-abundant deposits. Many of the most prolific of these are already now being exploited. We face shortages of those in the years ahead. When supplies of these and other materials dwindle, whether in absolute terms or in relation to demand, competition for what remains of the available supply is bound to grow. This competition will most often be expressed in financial terms in the form of rising prices as we have seen, but it will also have political and military consequences.

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It is not just the imbalance between supply and demand that is likely to provoke competition and friction, but also the fact that

the major consuming nations must rely increasingly on sources of supply located in distant and troubled areas. This is probably even more important. This is the product of a natural feature of the resource extraction process. Almost invariably, entrepreneurs begin by developing deposits of whichever resources we are talking about that are close at hand, close to the surface, easy to exploit, or are located in countries that are friendly, stable, and respect the law.

It is only when these easily exploited resources are depleted that producers will turn to remote, hard to exploit deposits in countries that are unfriendly, unstable, and corrupt. In the case of many vital resources, especially energy and certain team minerals, this is the point we are at today. Because many consuming nations cannot avoid reliance on these materials, they face an increased threat to their overseas supply lines from terrorism, criminal violence, piracy, and war.

Consider, for example, America's reliance on petroleum. Up until the 1970s, we obtained two-thirds to three-quarters of our petroleum from domestic supplies. We now rely on imports for 60 percent of our petroleum supply. This percentage may drop a bit in the coming years if all of the efforts to increase our reliance on domestic alternatives succeed, but we will continue to rely on imports for at least 50 percent of our petroleum supply for a good decade or two to come.

Now, we used to be able to rely on countries in the Western hemisphere—Canada, Mexico, Venezuela, Columbia, and Brazil—for a good share of our total import supply, but this is no longer the case because most of the supplies in those countries are in decline or their demand is increasing. More and more of their own output will be consumed domestically. As a result, the U.S. will become increasingly dependent on imports from extra hemispheric sources, primarily in the Middle East and Africa.

This means, of course, greater reliance on energy supplies carried by tanker over long distances, in some cases traversing pirate infested or potentially war-affected waterways, such as the Persian Gulf, the Gulf of Guinea, the Red Sea, and the Straits

of Malaka. The same is true of minerals. We have used up a lot of our domestic minerals. We can rely less and less on Western hemisphere minerals, and more and more will have to come from Eurasia and Africa. What is true for the U.S. is increasingly true for China, which used to be self-sufficient for most minerals and energy but is now drawing more from Latin America and Africa. Europe has always relied on seaborne commerce and resources but is becoming more dependent on pipelines. The pipelines of the world are becoming longer and more vulnerable to attack.

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My next point is the securitization of natural resource dependency. As the major consumers become more dependent on resources that are at-risk, they are coming to view them more through the lens of national security as something that can legitimately be protected through the use of military force. Of course, nations have always used military force to acquire and protect natural resources. This was a big part of the history of the world from the beginning of the Colonial era right through World War I and World War II.

After World War II, however, the use of force to acquire or protect foreign resource supplies was not viewed as a legitimate cause for initiating combat, at least among the western powers except when such supplies were said to be threatened by the Soviet Union or its clients and surrogates. That threat was, however, the backdrop for some of the most celebrated presidential doctrines of the Cold War era, including the Truman, Eisenhower, and Carter doctrines, all of which were enunciated in response to perceived Soviet-backed threats to Middle Eastern oil.

Of these, the Carter doctrine is the most relevant today. As articulated by then President Jimmy Carter on 23 January 1980, an attempt by an outside force to gain control of the Persian Gulf and thus choke off the flow to Western markets will be regarded as an assault on the vital interests of the U.S. Such an assault will

be repelled by any means necessary, including military force. This was the basis upon which Carter established the nucleus of the U.S. Central Command (CENTCOM).

Although intended at the time to deter Soviet adventurism in the Persian Gulf area, the Carter doctrine's underlying principle has been extended over time to other threats to Persian Gulf oil, including those from Iran and Iraq. During the Iran/Iraq war of 1980-88, for example, President Reagan authorized the use of force to protect Kuwaiti oil tankers against attacks by Iranian gunboats, which became Operation Ernest Will. Then when Iraqi forces invaded Kuwait on 2 August 1990, posing an apparent threat to Saudi Arabian oilfields, the first President Bush concluded that such an assault would threaten vital U.S. interests and thereby justified an American military response, which was the basis for Operation Desert Storm.

A similar policy has since come to govern U.S. links with major oil producers in Africa and the Caspian Sea Basin. The protection of global oil transportation systems has also come to be securitized in this manner. As the U.S. has become more dependent on supplies acquired from distant transoceanic locations and as the threat to oil shipments from pirates and terrorists has grown, the military has been accorded greater responsibility for the flow of global oil flow.

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Under National Security Presidential Directive 41, approved by the most recent President Bush on 21 December 2004, the military services, especially the Navy, are given increased responsibility for protecting the global supply chain, a key component of which is the global oil flow. The Navy and its sister (? brother) services have responded to this with the new guiding doctrine,

a cooperative strategy for 21st Century sea power adopted in October 2007.

In this sense, the flow of oil has been highly securitized by the U.S. Its protection has been designated a matter of national security. The armed forces have been tasked with responsibility for ensuring its safe delivery to the U.S. Other countries have also securitized oil in this fashion. For example, China has behaved in this way with respect to the South and East China Seas.

For some countries, it is water rather than oil that has been securitized. For example, Israel has declared that access to the waters of the Jordan River is vital to its national survival. Water to Israel is not a luxury, former Prime Minister Moshe Sharett once declared. It is not just a desirable and helpful addition to our natural resources. Water is life itself. A similar outlook has long governed Egypt's stance with respect to the Nile River. The next war in our region will be over the waters of the Nile, not politics, then Minister of State for Foreign Affairs Boutros Boutros-Ghali declared in 1988.

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The facts that these states and others not mentioned have securitized vital resources in this manner increases the risk that competition over their procurement will result in crisis in conflict as demand increases and supplies dwindle. This is not to say that conflict over resources is inevitable. I am only suggesting that a predisposition to view resource disputes through the lens of national security will lead to a greater inclination to imply force in a crisis.

As I mentioned earlier, there are two other aspects of this problem. The first is the resource curse because this is the kind of conflict that we are increasingly being drawn into. An increase in the monetary value of vital resources stemming from the growing disparity between supply and demand is also likely to exacerbate

the phenomenon known as the resource curse or the tendency of authoritarian rule in developing nations to receive a large portion of their natural income from the export of a particular raw material.

Because this income is the only major source of wealth in such a society, those in power, whether a royal family, a tribal group, a military clique, or a political faction, tend to retain power for as long as possible rather than lose control over the allocation of resource royalties or rents. Typically, they use a share of their income to buy off the military and police to ensure their royalty in any clash with opposition forces. As one would expect, the obverse of this phenomenon is a greater likelihood that those who would seek to replace the existing regime and thus alter the allocation of resource rents or keep the money for themselves will employ force in effecting political change.

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Resource rich states in the developing world are therefore especially prone to internal attack from dissident tribes, military cabals, political factions, and ethnic groups. Because the prevailing regime obtains most of its wealth and funds needed to retain the loyalty of security services from foreign energy and mineral firms, these too often become targets of the rebels' wrath.

An important example of this phenomenon is the struggle waged in Nigeria by the Movement for the Emancipation of the Niger Delta, or MEND, against the federal government in Abuja. For the past few years, MEND and a number of other rebel groups have been attacking oil installations in the Delta region, where most of the oil is produced, and kidnapping or killing aid patriot oil workers in an effort to channel some of the vast oil wealth collected by federal officials and bring it back to the Delta, which rarely sees any benefit of the production.

Although probably numbering no more than a few hundred competent and equipped with light weapons alone, MEND and its sister organizations have had a devastating impact on oil production in the Delta area. According to the DoE, as much as one-fourth of Nigeria's daily oil output of approximately three million barrels per day has been shut in due to rebel activity. The resource curse has also spurred the separatist ambitions of various ethnic groups, especially when valuable oil or mineral reserves are located in their imagined ethnic homeland.

In such cases, oil abundance often tends to provoke civil wars by giving people who live in resource rich areas an economic incentive to form a separate state. Indeed, the inhabitants of such areas express a widespread belief that the central government was unfairly expropriating the wealth that belonged to them and that they would be richer if they were to form a separate state. It is precisely these views that are often cited by groups like the Ogadon National Liberation Front and the Front for the Liberation of the Kabinda Enclave to justify their ongoing struggles against the central governments of Ethiopia and Angola, respectively. This is also a factor in Kurdish aspirations to establish an ethnic homeland in Northern Iraq.

Finally, I will discuss terrorism, insurgency, and criminal violence. As production of vital resources has declined in more favorable locations around the world, consuming nations have been forced to rely increasingly on supplies acquired from distant and unfavorable locations, as previously noted. In the case of oil and natural gas, this has been greater reliance on supplies acquired in the Islamic world, notably the Persian Gulf in North Africa. This, in turn, has resulted in the extensive presence of energy and mining companies associated with the major western powers and now China in these areas, often accompanied by an equally conspicuous diplomatic and military presence.

No matter how hard these firms and their home governments try to paint these activities in a benign development friendly light, they are going to be seen by many in these countries through the lens of the colonial experience, which will generate resentment against the intrusion of foreign firms and personnel. The fact that

the outsiders often seem to cozy up to the authoritarian governments that tend to rule these countries in consonance with the resource curse only makes the situation worse.

In some cases, extremist groups, who seek to overthrow the prevailing government, oust the foreigners from the region, and install a revolutionary regime of some sort, have exploited this resentment. By far, the most dangerous product of this phenomenon is al Qaeda and its offshoots. From Osama bin Laden's perspective, the House of Saud has become a willing partner in America's effort to occupy the Middle East in the pursuit of oil and the subjugation of Islam and so must be swept away, along with its American backers.

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Other factors have undoubtedly figured in Osama bin Laden's thinking. However, the link between oil, western economic interests, and the corruption of the royal family is the persistent theme in his repeated calls for violent attacks on the U.S. and the House of Saud. Although bin Laden himself no longer appears capable of playing a direct role in attacks on U.S. and Saudi interests, shadowy groups that share his extremist views have continued to attack key elements of the Saudi oil infrastructure.

The first in a series of such assaults occurred on 1 May 2004, when gunmen killed five Western oil industry workers in Yanbu, the site of a major petrochemical complex. A second attack took place four weeks later when a group of armed militants, said to be allied with al Qaeda, stormed a residential compound occupied by Western oil workers in Kobar and killed 22 people. A far more ominous assault occurred on 23 February 2006, when suicide attackers broke through the outer defense parameter of the Uptake oil processing facility and detonated explosive-laden vehicles inside the kingdom's most important energy installation, jeopardizing potentially 6.8 million barrels of daily oil output.

In response to these assaults, the Saudis, no doubt in cooperation with U.S. counterterrorism officials, have stepped up their defenses at major oil installations and have worked energetically to crush remnants of al Qaeda in the kingdom. Terrorist violence of this sort, specifically targeted at oil installations and personnel, has erupted in other countries where al Qaeda-like organizations have sprung up. In Algeria, for example, another group linked to al Qaeda known as the Solafus Group for Preaching and Combat (GSPC), attacked a convoy of vehicles transporting employees of Halliburton and the Algerian state-owned oil company Sanatruck on 10 December 2006, killing an Algerian driver and wounding four Britains and one American. In a communiqué claiming responsibility for the attack, GSPC said that it was determined to drive American companies out of Algeria. GSPC is now known as al Qaeda and the Islamic Magram.

Aside from terrorist attacks of this sort, which are driven by an explicit ideological impulse, the safe delivery of resource supplies from distant locations are imperiled by criminal activities, including piracy on the high seas and pipeline attacks by organized criminal bands. Although always a factor in international commerce, such attacks appear to be growing in number and degree of organization as economic conditions deteriorate in many parts of the world.

I was going to talk about global warming, but I don't think it is necessary for me to do that. As we go further into the future, though, global warming is going to primarily affect water supplies in many parts of the world, creating huge numbers of environmental refugees and provoking conflict over what remains of available water supplies.

What then do I see are the implications of all this for U.S. national security? If current trends persist, it seems to me inevitable that the U.S. military will increasingly evolve into a global resource protection service. The armed services will be asked to devote an ever-increasing portion of their time, manpower, and capabilities to the protection of overseas resource deposits and facilities, along with the governments that grant us access to

those deposits, and the sea lanes that connect us to those foreign sources of supply.

This is readily apparent, I believe, in such key strategic documents as NSPD 41 and the Navy's 2007 policy statement, "A Cooperative Strategy for 21st Century Sea Power." Perhaps there are some in the military community who feel comfortable with these developments or simply believe that it is not their place to question them. However, I feel compelled to point out that this trend poses enormous costs and risks for this nation. The deployment of American combat forces in overseas resource zones inevitably stokes the hostility of those who recall the transgressions of the Colonial era or otherwise recent foreign intrusion into their homeland and so adds to the intensity of anti-Americanism in these areas.

The close ties our government has fostered with petro regimes and other authoritarian governments afflicted by the resource curse further fans the flames of anti-Americanism and contributes to the recruiting success of extremist organizations. All too often American soldiers themselves become the target of militant attack, adding to the costs and risks of such operations. There are good reasons to ask moreover whether the use of military force is a cost-effective means of ensuring access to resource supplies in embattled areas abroad.

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If you believe, as I do, that the first Gulf War, the current war in Iraq, and the permanent deployment of substantial U.S. forces in the Persian Gulf area can be at least partially tied to this objective, then we have spent in the vicinity of two or three trillion dollars over the past few decades, not to mention the high cost in human life, without seeing a noticeable increase in the safety of Persian Gulf oil deliveries. Would the flow of oil have been less safe in the absence of such expenditures? Perhaps. I think at that

level of expenditure, we could have long since devised better and safer ways to address our energy needs.

What this suggests, I believe, is that U.S. military policy and resource behavior are two sides of the same coin. The greater our dependence on imported materials that must be acquired from distant and dangerous locations in a world of every growing resource competition and conflict, the greater the likelihood that we will rely on military force to ensure our access to such supplies.

If we continue to securitize and make it a matter of policy that we use force, we could be entering an era of recurring resource wars at great cost to the nation's treasury, morale, and military preparedness. The only way to avoid this fate is to significantly reduce our reliance on imported materials through increased conservation and the development of alternatives derived from domestic materials. As our reliance on imports diminishes, we can place greater trust in market forces to provide us with the imported materials we still require.

After all, while some foreign producers may be closed to us through choice, others no doubt will be happy to take our money, especially in these times of economic hardship. Increased conservation and the accelerated development of homegrown alternatives to imported materials should therefore be viewed as national security priorities as a far better investment than some of the military solutions that have been proposed to safeguard foreign supplies.

I will conclude then by stating that the dangers posed by growing resource competition and inadequate supply, coupled with the growing impact of climate change, are destined to intrude into every aspect of international and national affairs. One aspect of this is an increase in interstate and intrastate conflict, but this is not the only major aspect. Ultimately, every aspect of human life will be affected by these developments. Becoming more aware of the significance of global resource trends is therefore essential to an understanding of the human predicament today.

