# 1AC

## plan

#### The United States Federal Government should acquire electricity from small modular reactors for its military installations in the United States.

## 1

Water scarcity coming now - it's a threat multiplier that enflames hotspots globally. Specifically, Egypt and Central Asia - their defense isn't predictive

Dinar et al 10/18/12

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In short, predictions of a Water World War are overwrought. However, tensions over water usage can still exacerbate other existing regional conflicts. Climate change is expected to intensify droughts, floods, and other extreme weather conditions that jeopardize freshwater quantity and quality and therefore act as a threat-multiplier, making shaky regions shakier. So what river basins constitute the biggest risks today? In a World Bank report we published in 2010 (as well as a subsequent article in a special issue of the Journal of Peace Research) we analyzed the physical effects of climate change on international rivers. We modeled the variability in river annual runoff in the past and for future climate scenarios. We also considered the existence and nature of the institutional capacity around river basins, in the form of international water treaties, to potentially deal with the effects of climate change. According to our research, 24 of the world's 276 international river basins are already experiencing increased water variability. These 24 basins, which collectively serve about 332 million people, are at high risk of water related political tensions. The majority of the basins are located in northern and sub-Saharan Africa. A few others are located in the Middle East, south-central Asia, and South America. They include the Tafna (Algeria and Morocco), the Dasht (Iran and Pakistan), the Congo (Central Africa), Lake Chad (Central Africa), the Niger (Western Africa), the Nile (Northeastern Africa), and the Chira (Ecuador and Peru). There are no strong treaties governing the use of these water reserves in tense territories. Should conflicts break out, there are no good mechanisms in place for dealing with them. By 2050, an additional 37 river basins, serving 83 million people, will be at high risk for feeding into political tensions. As is the case currently, a large portion of these are in Africa. But, unlike today, river basins within Central Asia, Eastern Europe, Central Europe, and Central America will also be at high risk within 40 years. Some of these include the Kura-Araks (Iran, Turkey, and the Caucasus), the Neman (Eastern Europe) Asi-Orontes (Lebanon, Syria, Turkey), and the Catatumbo Basins (Colombia and Venezuela). CROSSING THE NILE Among the larger African basins, the Nile has the greatest implications for regional and global security. Tensions over access to the river already pit Ethiopia and Egypt, two important Western allies, against one another. Egypt has been a major player in the Middle East Peace Process and Ethiopia is an important regional force in the Horn of Africa, currently aiding other African forces to battle Al-Shabbab in Somalia. Over the years, a number of international water treaties have made rules for the basin, but they are largely limited to small stretches of it. In particular, only Egypt and Sudan are party to the 1959 Nile River Agreement, the principal treaty regarding the river. Egypt, which is the furthest downstream yet is one of the most powerful countries in the region, has been able to heavily influence the water-sharing regime. Upstream countries, such as Ethiopia and Burundi, have been left out, hard-pressed to harness the Nile for their own needs. In 1999, with increasingly vitriolic rhetoric between Egypt and Ethiopia sidetracking regional development, the World Bank stepped up its involvement in the basin. It helped create a network of professional water managers as well as a set of investments in a number of sub-basins. Still, the drafting of a new agreement stalled: upstream countries would not compromise on their right to develop water infrastructure while downstream countries would not compromise on protecting their shares. In 2010, Ethiopia signed an agreement with a number of the other upstream countries hoping to balance against Egypt and Sudan. More recently, the country has also announced plans to construct a number of large upstream dams, which could affect the stability of the region. By 2050, the environmental state of the Nile Basin will be even worse. That is why it is important to create a robust and equitable water treaty now. Such a treaty would focus on ways to harness the river's hydropower potential to satiate the energy needs of all the riparian states while maintaining ecosystem health. The construction of dams and reservoirs further upstream could likewise help even out water flows and facilitate agricultural growth. Projects such as these, mitigating damage to ecosystem health and local populations, would benefit all parties concerned and thus facilitate further basin-wide cooperation. UP IN THE ARAL Another water basin of concern is the Aral Sea, which is shared by Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The basin consists of two major rivers, the Syr Darya and Amu Darya. During the Soviet era, these two rivers were managed relatively effectively. The break-up of the Soviet Union, however, ended that. The major dispute now is between upstream Kyrgyzstan and downstream Uzbekistan over the Syr Darya. During the winter, Kyrgyzstan needs flowing water to produce hydroelectricity whereas Uzbekistan needs to store water to later irrigate cotton fields. The countries have made several attempts to resolve the dispute. In particular, downstream Uzbekistan, which is rich in fuel and gas, has provided energy to Kyrgyzstan to compensate for keeping water in its large reservoirs until the cotton-growing season. Such barter agreements, however, have had limited success because they are easily manipulated. Downstream states might deliver less fuel during a rainy year, claiming they need less water from upstream reservoirs, and upstream states might deliver less water in retaliation. Kyrgyzstan, frustrated and desperate for energy in winter months, plans to build mega hydro-electric plants in its territory. And another upstream state, Tajikistan, is likewise considering hydro-electricity to satiate its own energy needs. Meanwhile, Uzbekistan is building large reservoirs. Although these plans might make sense in the very near term, they are inefficient in the medium and long term because they don't solve the real needs of downstream states for large storage capacity to protect against water variability across time. In fact, both Kyrgyzstan and Uzbekistan, along with Kazakhstan, will see substantial increases in water variability between now and 2050. And so, the need to share the benefits of existing large-capacity upstream reservoirs and coordinate water uses through strong and more efficient inter-state agreements is unavoidable. A stabilized Aral Sea basin would also benefit the United States. With its withdrawal from Afghanistan, Washington has been courting Uzbekistan as a potential alternative ally and provider of stability in the region. The Uzbek government seems willing to host U.S. military bases and work as a counter-weight to Russia. Kyrgyzstan is also an important regional player. The Manas Air Base, the U.S. military installation near Bishkek, is an important transit point. The country is also working with the United States to battle drug trafficking and infiltration of criminal and insurgent groups. Regional instability could disrupt any of these strategic relationships. If the past is any indication, the world probably does not need to worry about impending water wars. But they must recognize how tensions over water can easily fuel larger conflicts and distract states from other important geopolitical and domestic priorities. Since formal inter-state institutions are key to alleviating tensions over shared resources, it would be wise, then, for the involved governments as well as the international community to negotiate sufficiently robust agreements to deal with impending environmental change. Otherwise, freshwater will only further frustrate stability efforts in the world's volatile regions.

#### Those wars go global

Reilly ‘2

(Kristie, Editor for In These Times, a nonprofit, independent, national magazine published in Chicago. We’ve been around since 1976, fighting for corporate accountability and progressive government. In other words, a better world, “NOT A DROP TO DRINK,” <http://www.inthesetimes.com/issue/26/25/culture1.shtml>)

\*Cites environmental thinker and activist Vandana Shiva Maude Barlow and Tony Clarke—probably North America’s foremost water experts

The two books provide a chilling, in-depth examination of a rapidly emerging global crisis. “Quite simply,” Barlow and Clarke write, “unless we dramatically change our ways, between one-half and two-thirds of humanity will be living with severe fresh water shortages within the next quarter-century. … The hard news is this: Humanity is depleting, diverting and polluting the planet’s fresh water resources so quickly and relentlessly that every species on earth—including our own—is in mortal danger.” The crisis is so great, the three authors agree, that the world’s next great wars will be over water. The Middle East, parts of Africa, China, Russia, parts of the United States and several other areas are already struggling to equitably share water resources. Many conflicts over water are not even recognized as such: Shiva blames the Israeli-Palestinian conflict in part on the severe scarcity of water in settlement areas. As available fresh water on the planet decreases, today’s low-level conflicts can only increase in intensity.

#### And nuclear

Weiner ‘90

(Jonathan, Visiting Professor of Molecular Biology at Princeton University. The Next One Hundred Years: Shaping the Fate of Our Living Earth, p. 214)

If we do not destroy ourselves with the A-bomb and the H-bomb, then we may destroy ourselves with the C-bomb, the Change Bomb. And in a world as interlinked as ours, one explosion may lead to the other. Already in the Middle East, from North Africa to the Persian Gulf and from the Nile to the Euphrates, tensions over dwindling water supplies and rising populations are reaching what many experts describe as a flashpoint. A climate shift in the single battle-scarred nexus might trigger international tensions that will unleash some of the 60,000 nuclear warheads the world has stockpiled since Trinity.

#### Water scarcity causes Central Asian war

Nitish Priyadarshi 12, lecturer in the department of environment and water management at Ranchi University in India, “War for water is not a far cry”, June 16, <http://www.cleangangaportal.org/node/44>

That's been a constant dilemma for the Central Asian states since they became independent after the Soviet break-up.

Much of Central Asia's water flows from the mountains of Kyrgyzstan and Tajikistan, leaving downstream countries Uzbekistan, Kazakhstan, and Turkmenistan dependent and worried about the effects of planned hydropower plants upstream.

Tashkent fears that those two countries' use of water from Central Asia's two great rivers -- the Syr Darya and Amu Darya -- to generate power will diminish the amount reaching Uzbekistan, whose 28 million inhabitants to make up Central Asia's largest population.

After the collapse of communism in the 1990s, a dispute arose between Hungary and Slovakia over a project to dam the Danube River. It was the first of its type heard by the International Court of Justice and highlighted the difficulty for the Court to resolve such issues decisively. There are 17 European countries directly reliant on water from the Danube so there is clear potential for conflict if any of these countries act selfishly.

Experts worry that dwindling water supplies could likely result in regional conflicts in the future. For example, in oil-and-gas rich Central Asia, the upstream countries of Kyrgyzstan and Tajikistan hold 90 percent of the region's water resources, while Uzbekistan, the largest consumer of water in the region, is located downstream.

#### Extinction

**Blank 2k** [Stephen J. - Expert on the Soviet Bloc for the Strategic Studies Institute, “American Grand Strategy and the Transcaspian Region”, World Affairs. 9-22]

Thus many structural conditions for conventional war or protracted ethnic conflict where third parties intervene now exist in the Transcaucasus and Central Asia. The outbreak of violence by disaffected Islamic elements, the drug trade, the Chechen wars, and the unresolved ethnopolitical conflicts that dot the region, not to mention the undemocratic and unbalanced distribution of income across corrupt governments, provide plenty of tinder for future fires. Many Third World conflicts generated by local structural factors also have great potential for unintended escalation. Big powers often feel obliged to rescue their proxies and proteges. One or another big power may fail to grasp the stakes for the other side since interests here are not as clear as in Europe. Hence commitments involving the use of nuclear weapons or perhaps even conventional war to prevent defeat of a client are not well established or clear as in Europe. For instance, in 1993 Turkish noises about intervening on behalf of Azerbaijan induced Russian leaders to threaten a nuclear war in that case. Precisely because Turkey is a NATO ally but probably could not prevail in a long war against Russia, or if it could, would conceivably trigger a potential nuclear blow (not a small possibility given the erratic nature of Russia's declared nuclear strategies), the danger of major war is higher here than almost everywhere else in the CIS or the "arc of crisis" from the Balkans to China. As Richard Betts has observed, The greatest danger lies in areas where (1) the potential for serious instability is high; (2) both superpowers perceive vital interests; (3) neither recognizes that the other's perceived interest or commitment is as great as its own; (4) both have the capability to inject conventional forces; and (5) neither has willing proxies capable of settling the situation.(77)

#### Central asia escalates – It’s a geopolitical hub

Arun **Sahgal &**, former Army officer who created the Office of Net Assessment in the Indian Joint Staff, Senior Fellow at the Institute for Defense Studies and Analyses and ‘Distinguished Fellow’ School of Geo-Politics at the Manipal Academy of Higher Education, Vinod **Anand 10**, postgraduate in defence and strategic studies and is an alumnus of Defence Services Staff College and College of Defence Management, “Strategic Environment in Central Asia and India”, <http://www.silkroadstudies.org/new/docs/publications/1004Joshi-V-Strategic.pdf>

The geo-strategic salience of Central Asia today has been underscored by two main factors. First, Central Asia has become important because of the discovery of hydrocarbon reserves and second, it has become a major transportation hub for gas and oil pipelines and multi-modal communication corridors connecting China, Russia, Europe, the Caucasus region, the Trans-Caspian region and the Indian Ocean. Furthermore, whether it was Czarist Russia or the Soviet Union or even the present Central Asian regimes, there has always been a strategic ambition in the north to seek access to the warm waters of the Indian Ocean. Thus Afghanistan, which links Central Asia and South Asia, is a strategic bridge of great geopolitical significance. Central Asia and South Asia are intimately connected not only geographically but also strategically. The Central Asian republics of Turkmenistan, Uzbekistan and Tajikistan have borders with Afghanistan, Iran lies to its west and Pakistan to the east and south. Therefore, the geostrategic significance of Afghanistan is enhanced even though it may not be an oil- or gas-rich country. With the control of Afghanistan comes the control of the land routes between the Indian subcontinent and resource-rich Central Asia, as well as of a potential corridor to Iran and the Middle East. Thus, stability and peace in Afghanistan, and for that matter Pakistan, are a geostrategic imperative. Central Asia has never been a monolithic area and is undergoing a turbulent transitional process with a diverse range of ethnicities and fragmented societies throughout the region. These societal divisions and lack of political maturity compound the social, economic and political challenges. Security and economic issues are the two most important components of the Central Asian states’ engagement with outside powers. Among the states themselves there are elements of both cooperation and competition. Historical legacies, their geo-strategic locations, and above all their perceived national interests profoundly influence the political choices of Central Asian nations. The weaknesses of the new nations in Central Asia pave the way for outside powers to interfere in their internal affairs.

#### Indo-Pak water scarcity’s coming – causes escalatory disputes

Nitish Priyadarshi 12, lecturer in the department of environment and water management at Ranchi University in India, “War for water is not a far cry”, June 16, <http://www.cleangangaportal.org/node/44>

Such is the deep nexus between water and global warming that the increased frequency of climate change-driven extreme weather events like hurricanes, droughts and flooding, along with the projected rise of ocean levels, is likely to spur greater interstate and intrastate migration- especially of the poor and the vulnerable- from delta and coastal regions to the hinterland.

As the planet warms, water grow scarcer. Global warming will endanger the monsoon, which effects much greater than those of drought alone-particularly in India given that 70 percent of India’s rainfall comes from the monsoon.

The declining snow cover and receding glaciers in the Himalayan state of Jammu and Kashmir could trigger renewed hostilities between India and Pakistan, neighbouring states in the South Asian region that are at odds on a host of issues.

The two countries share the Indus River, one of the longest rivers in the world. The river rises in southwestern Tibet and flows northwest through the Himalayas. It crosses into the Kashmir region, meandering to the Indian and Pakistani administered areas of the territory.

Pakistan and India have long been embroiled in a territorial dispute over Kashmir, but have so far managed to uphold a World Bank-mediated Indus Water Treaty (IWT) that provides mechanisms for resolving disputes over water sharing. Any drastic reduction in the availability of water in the region has the potential of causing a war between the hostile south Asian neighbors.

The Indus water system is the lifeline for Pakistan, as 75 to 80 percent of water flows to Pakistan as melt from the Himalayan glaciers. This glacier melt forms the backbone of irrigation network in Pakistan, with 90 percent of agricultural land being fed by the vastly spread irrigation network in Pakistan, one of the largest in the world. Any disruption of water flow would cause a grave impact on agriculture produce in Pakistan.

The Indus Waters Treaty is a water-sharing treaty between the Republic of India and Islamic Republic of Pakistan, brokered by the World Bank (then the International Bank for Reconstruction and Development). The treaty was signed in Karachi on September 19, 1960 by Indian Prime Minister Jawaharlal Nehru and President of Pakistan Mohammad Ayub Khan. The treaty was a result of Pakistani fear that since the source rivers of the Indus basin were in India, it could potentially create droughts and famines in Pakistan, especially at times of war. However, India did not revoke the treaty during any of three later Indo-Pakistani Wars.

Until now, the Indus Water Treaty has worked well, but the impact of climate change would test the sanctity of this treaty. Under the treaty signed in 1960, the two countries also share five tributaries of the Indus river, namely, Jhelum, Chenab, Ravi, Beas and Sutlej. The agreement grants Pakistan exclusive rights over waters from the Indus and its westward-flowing tributaries, the Jhelum and Chenab, while the Ravi, Beas and Sutlej rivers were allocated for India’s use.

Transboundary water sharing between India and Pakistan will become an extremely difficult proposition as surface water would become a scarce commodity with the depletion of water reserves up in the mountains.

The sharing of the Ganges waters is a long-standing issue between India and Bangladesh over the appropriate allocation and development of the water resources of the Ganges River that flows from northern India into Bangladesh. The issue has remained a subject of conflict for almost 35 years, with several bilateral agreements and rounds of talks failing to produce results.

#### Goes nuclear

Zahoor ‘11

(Musharaf, is researcher at Department of Nuclear Politics, National Defence University, Islamabad, “Water crisis can trigger nuclear war in South Asia,” <http://www.siasat.pk/forum/showthread.php?77008-Water-Crisis-can-Trigger-Nuclear-War-in-South-Asia>, AM)

South Asia is among one of those regions where water needs are growing disproportionately to its availability. The high increase in population besides large-scale cultivation has turned South Asia into a water scarce region. The two nuclear neighbors Pakistan and India share the waters of Indus Basin. All the major rivers stem from the Himalyan region and pass through Kashmir down to the planes of Punjab and Sindh empty into Arabic ocean. It is pertinent that the strategic importance of Kashmir, a source of all major rivers, for Pakistan and symbolic importance of Kashmir for India are maximum list positions. Both the countries have fought two major wars in 1948, 1965 and a limited war in Kargil specifically on the Kashmir dispute. Among other issues, the newly born states fell into water sharing dispute right after their partition. Initially under an agreed formula, Pakistan paid for the river waters to India, which is an upper riparian state. After a decade long negotiations, both the states signed Indus Water Treaty in 1960. Under the treaty, India was given an exclusive right of three eastern rivers Sutlej, Bias and Ravi while Pakistan was given the right of three Western Rivers, Indus, Chenab and Jhelum. The tributaries of these rivers are also considered their part under the treaty. It was assumed that the treaty had permanently resolved the water issue, which proved a nightmare in the latter course. India by exploiting the provisions of IWT started wanton construction of dams on Pakistani rivers thus scaling down the water availability to Pakistan (a lower riparian state). The treaty only allows run of the river hydropower projects and does not permit to construct such water reservoirs on Pakistani rivers, which may affect the water flow to the low lying areas. According to the statistics of Hydel power Development Corporation of Indian Occupied Kashmir, India has a plan to construct 310 small, medium and large dams in the territory. India has already started work on 62 dams in the first phase. The cumulative dead and live storage of these dams will be so great that India can easily manipulate the water of Pakistani rivers. India has set up a department called the Chenab Valley Power Projects to construct power plants on the Chenab River in occupied Kashmir. India is also constructing three major hydro-power projects on Indus River which include Nimoo Bazgo power project, Dumkhar project and Chutak project. On the other hand, it has started Kishan Ganga hydropower project by diverting the waters of Neelum River, a tributary of the Jhelum, in sheer violation of the IWT. The gratuitous construction of dams by India has created serious water shortages in Pakistan. The construction of Kishan Ganga dam will turn the Neelum valley, which is located in Azad Kashmir into a barren land. The water shortage will not only affect the cultivation but it has serious social, political and economic ramifications for Pakistan. The farmer associations have already started protests in Southern Punjab and Sindh against the non-availability of water. These protests are so far limited and under control. The reports of international organizations suggest that the water availability in Pakistan will reduce further in the coming years. If the situation remains unchanged, the violent mobs of villagers across the country will be a major law and order challenge for the government. The water shortage has also created mistrust among the federative units, which is evident from the fact that the President and the Prime Minister had to intervene for convincing Sindh and Punjab provinces on water sharing formula. The Indus River System Authority (IRSA) is responsible for distribution of water among the provinces but in the current situation it has also lost its credibility. The provinces often accuse each other of water theft. In the given circumstances, Pakistan desperately wants to talk on water issue with India. The meetings between Indus Water Commissioners of Pakistan and India have so far yielded no tangible results. The recent meeting in Lahore has also ended without concrete results. India is continuously using delaying tactics to under pressure Pakistan. The Indus Water Commissioners are supposed to resolve the issues bilaterally through talks. The success of their meetings can be measured from the fact that Pakistan has to knock at international court of arbitration for the settlement of Kishan Ganga hydropower project. The recently held foreign minister level talks between both the countries ended inconclusively in Islamabad, which only resulted in heightening the mistrust and suspicions. The water stress in Pakistan is increasing day by day. The construction of dams will not only cause damage to the agriculture sector but India can manipulate the river water to create inundations in Pakistan. The rivers in Pakistan are also vital for defense during wartime. The control over the water will provide an edge to India during war with Pakistan. The failure of diplomacy, manipulation of IWT provisions by India and growing water scarcity in Pakistan and its social, political and economic repercussions for the country can lead both the countries toward a war. The existent A-symmetry between the conventional forces of both the countries will compel the weaker side to use nuclear weapons to prevent the opponent from taking any advantage of the situation. Pakistan's nuclear programme is aimed at to create minimum credible deterrence. India has a declared nuclear doctrine which intends to retaliate massively in case of first strike by its' enemy. In 2003, India expanded the operational parameters for its nuclear doctrine. Under the new parameters, it will not only use nuclear weapons against a nuclear strike but will also use nuclear weapons against a nuclear strike on Indian forces anywhere. Pakistan has a draft nuclear doctrine, which consists on the statements of high ups. Describing the nuclear thresh-hold in January 2002, General Khalid Kidwai, the head of Pakistan's Strategic Plans Division, in an interview to Landau Network, said that Pakistan will use nuclear weapons in case India occupies large parts of its territory, economic strangling by India, political disruption and if India destroys Pakistan's forces. The analysis of the ambitious nuclear doctrines of both the countries clearly points out that any military confrontation in the region can result in a nuclear catastrophe. The rivers flowing from Kashmir are Pakistan's lifeline, which are essential for the livelihood of 170 million people of the country and the cohesion of federative units. The failure of dialogue will leave no option but to achieve the ends through military means.

#### Only SMR’s solve

IAEA 7, “Economics of Nuclear Desalination: New Developments and Site Specific Studies”, July, <http://www-pub.iaea.org/MTCD/publications/PDF/te_1561_web.pdf>

Seventy percent of the planet is covered with water, but only 2.5% of that is fresh water. Nearly 70% of this fresh water is frozen in the icecaps of Antarctica and Greenland. Most of the rest is in the form of soil moisture or in deep inaccessible aquifers or comes in the form of heavy rains and floods that are difficult to contain and exploit. Consequently, only less than 0.008% (about 70 000 km3) of the world’s water is readily accessible for direct human use, and even that is very unevenly distributed. Recent statistics show that currently 2.3 billion people live in water-stressed areas and among them 1.7 billion live in water-scarce areas, where the water availability per person is less than 1000 m3/year. In fact, the situation is expected to worsen further since, by 2025, the number of people suffering from water stress or scarcity could swell to 3.5 billion, out of which 2.4 billion would live in water-scarce regions. Water scarcity is a global issue. Every year new countries are affected by growing water problems.

It is for this reason that the Millennium Declaration by UN General Assembly in 2000 set up a target

to halve, by the year 2015, the world population, which is unable to reach, or to afford, safe drinking

water. Vision 21: shared vision for Hygiene, Water Supply and Sanitation, has a target to provide

water, sanitation and hygiene for all by 2025.

Better water conservation, water management, pollution control and water reclamation are all part of the integrated solution to projected water stresses. So too are new sources of fresh water, including the desalination of seawater.

Desalination technologies have been well established since the mid-20th century and widely deployed in the Middle East and North Africa. The contracted capacity of desalination plants has increased steadily since 1965 and is now about 36 million m3/day worldwide, as shown in Figure 1. This capacity could cater to world’s population roughly 6 litres a day per capita of fresh potable water. If this capacity were available to 1.5 billion in the world without direct access to drinking water, it would provide approximately 20 litres/day/capita.

Large scale commercially available desalination processes can generally be classified into two categories: (a) distillation processes that require mainly heat plus some electricity for ancillary equipment, and (b) membrane processes that require only electricity. In the first category (distillation) there are two major processes: multi-stage flash (MSF) and multi-effect distillation (MED). In both processes, seawater is heated; the steam that evaporates is condensed and collected as freshwater; and the residual brine is discharged.

In the second category (membranes) is the reverse osmosis process (RO), in which pure water passes from the high-pressure seawater side of a semi-permeable membrane to the low-pressure freshwater side. The pressure differential must be high enough to overcome the natural tendency for water to move from the low concentration freshwater side of a membrane to the high concentration seawater side in order to balance osmotic pressures.

The energy for the desalination plants is generally supplied in the form of either steam or electricity. Conventional fossil fuel-powered plants have normally been utilized as the primary sources but their intensive use raises increasing environmental concerns, specifically in relation to greenhouse gas emissions (Section 1.3.3). The depleting sources and the future price uncertainty of the fossil fuels and their better use for other vital industrial applications are also the factors to be considered.

1.3. THE ROLE OF NUCLEAR POWER IN DESALINATION

The world energy requirements are presently met from oil, coal, gas, hydro, nuclear and renewable energies in that order as shown in Table 1.

It is now universally recognized that there will be an increase in the world’s requirement for electricity over the next few decades. The present trend towards meeting this demand includes the building of fossil fuel plants, particularly combined cycle gas fired plants.

However, the spiralling increase in greenhouse gas (GHG) emissions has resulted in setting the emission targets in international meetings held at Toronto, Rio de Janeiro and Kyoto. The IAEA predicts that the GHG emissions would be 36-50% higher by 2010 compared to 1990 levels. Many analysts, therefore, feel that the only viable alternative to fossil fuels is nuclear energy to reduce the rate of increase of GHG, particularly, carbon dioxide.

Yet another incentive for nuclear power is to maintain diversity of supply. A national strategy limited to one particular form of energy (fossil fuels) will be vulnerable to increased fuel costs and pressures from exporting countries.

Nuclear power is a proven technology, which has provided more than 16% of world electricity supply in over 30 countries. More than ten thousand reactor-years of operating experience have been accumulated over the past 5 decades.

There are many reasons which favour a possible revival of the nuclear power production in the years to come. It is thus expected that this revival would also lead to an increased role of nuclear energy in non-electrical energy services, which, at the moment, are almost entirely dominated by fossil energy sources. Among various utilization of nuclear energy for non-electrical products, using it for the production of freshwater from seawater (nuclear desalination) has been drawing broad interest in the IAEA Member States as a result of acute water shortage issues in many arid and semi-arid zones worldwide. With technical co-ordination or support of the IAEA, several demonstration programs of nuclear desalination are also in progress in several Member States to confirm its technical and economical viability under country-specific conditions

The desalination of seawater using nuclear energy is a feasible option to meet the growing demand for potable water. Over 175 reactor-years of operating experience on nuclear desalination have already been accumulated worldwide.

1.3.1. Nuclear desalination

In the IAEA terminology, nuclear desalination is defined to be the production of potable water from seawater in a facility in which a nuclear reactor is used as the source of energy for the desalination process. Electrical and/or thermal energy may be used in the desalination process on the same site. The facility may be dedicated solely to the production of potable water, or may be used for the generation of electricity and production of potable water, in which case only a portion of the total energy output of the reactor is used for water production.

The design approaches for a nuclear desalination plant are essentially derived from those of the nuclear reactor alone, with some additional aspects to be considered in the design of a desalination plant and its integration with the nuclear system.

All nuclear reactor types can provide the energy required by the various desalination processes. In this regard, it has been shown that Small and Medium Reactors (SMRs) offer the largest potential as coupling options to nuclear desalination systems in developing countries. The development of innovative reactor concepts and fuel cycles with enhanced safety features as well as their attractive economics are expected to improve the public acceptance and further the prospects of nuclear desalination.

The coupling with nuclear system is not difficult technically but needs some consideration in (a)

avoiding cross-contamination by radioactivity, (b) providing backup heat or power sources in case the

nuclear system is not in operation (e.g. for refuelling and maintenance), (c) incorporation of certain

design features, minimising the impact of the thermal desalination systems’ coupling to the nuclear

reactors (Section 1.6).

1.3.2. Why nuclear desalination?

The International Atomic Energy Agency is a specialized organization of the UN system that seeks to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. The institutional basis for the IAEA’s involvement in nuclear desalination is in its Statute and Medium Term Strategy.

Article II of the IAEA Statute provides that:

“ The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world”.

This refers implicitly to nuclear desalination as an option for the use of nuclear technologies.

The same applies to the Article III of the Statute, which authorizes the IAEA:

“ To encourage and assist research on, and development and practical application of, atomic energy for peaceful uses throughout the world….”; (Article III, A.1); and

“To foster the exchange of scientific and technical information on peaceful uses of atomic energy.” (Article III, A.3).

In addition, Objective A.3 of the Agency’s Medium Term Strategy requires the Agency:

“ To support and facilitate the development of new and emerging applications of nuclear technologies by co-generation and heat applications, including seawater desalination”.

Request of assessing feasibility of using nuclear energy for seawater desalination was first made by the five North African countries to the IAEA in 1989 and the General Conference adopted its resolution to resume the study. These countries are located in semi-arid zones and already suffer from water shortages.

In recent years, interests have been also been indicated by Member States in South and South East Asia for the feasibility, as well as the demonstration, of nuclear desalination projects. The issue has since then been repeatedly stressed at the General Conference (Committee on the Whole) and supported by many Member States including most members of Group-77. The support stems not only from their expectation of its possible contribution to the freshwater issue but has also been motivated by a variety of reasons that include: the economic competitiveness of nuclear desalination in areas lacking cheap hydropower or fossil fuel resources, energy supply diversification, conservation of fossil fuel resources and spin-off effects of nuclear technology for industrial development.

Looking to the future, there are several reasons for focusing now on expanding nuclear power’s contribution to desalination. Apart from the expanding demand for freshwater and the increasing concern about GHG emissions and pollution from fossil fuels, there is a renewed and growing emphasis on small and medium sized nuclear reactors, and this is particularly important for desalination because the countries most in need of new sources of freshwater often have limited industrial infrastructures and relatively weaker electricity grids. The size of the grid limits the possibilities for integrating a co-generating nuclear power plant into the grid to supply the electricity market, in addition to meeting the energy requirements of a desalination plant. The largest power unit that can be integrated into an electricity grid must not exceed about 10-20 % of the total grid capacity. Of course, smaller nuclear reactors would be more appropriate for remote areas that are not suitable for connections to the grid.

For nuclear desalination to be attractive in any given country, two conditions have to be satisfied simultaneously: a lack of water and the ability to use nuclear energy for desalination. In most regions, only one of the two is present. Both are present for example in China, the Republic of Korea, India and Pakistan. These regions already account for almost half the world’s population, and thus represent a potential long term market for nuclear desalination. The market will expand further to the extent that regions with high projected water needs, such as the Middle East and North Africa, increase their nuclear expertise and capabilities.

1.3.3. Environmental impact of desalination by fossil fuelled energy sources

Desalination is an energy intensive process. A future desalination strategy based only on the use of fossil fuelled systems is not sustainable: Fossil fuel reserves are finite and must be conserved for more important uses such as transport, petrochemical industry etc. Besides, the demands for desalted water would continue increasing as population grows and standards of living improve. Conservation measures such as the modernisation of water networks to minimise leakages, the recycling of used water etc. will certainly reduce the future water demands slightly but they would not be able to halt the dissemination of desalination plants and consequently of the fossil fuelled based systems for the production of needed electricity and heat.

The following paragraphs illustrate the damaging consequences of such a policy by taking the example of the Mediterranean region.

Following the recent “Blue Plan” [2], the total available natural water resources (1), based on the statistics from 1990 to 1998, in the principle countries of the Mediterranean region, are as shown in Table 2.

The projected demands (3) for the year 2025 [31] are also included in Table 1.

It is obvious that available natural water resources would rather decrease in 2025 because of increased pollution, over exploitation and other human activities. However, to keep matters simple, it would be supposed that they would remain at the same level as in 1998.

It can be observed that, in 2025, the total projected water deficit (balance) in the Mediterranean region would of the order of 294 km3/per year.

Not all this required capacity would be met by desalination plants. Current contribution of desalination is of the order of 1 to 2 %. If it is supposed that in 2025, this contribution would be about 2.5 %, then the total required desalting capacity would be 7.3 km3/year (20.1 million m3/day).

According to the EC ExternE study2, the total emissions of GHG per MW(e).h of electricity produced by representative fossil fuelled power plants in France, are as presented in Table 3.

The specific heat and electricity consumptions of three main desalination plants are given in Table 4, [3].

The data presented in the above Tables allows to calculate the approximate3 total GHG emissions produced by the fossil fuelled plants and the three desalination plants.

Results for a total desalting capacity of 20.1 million m3/day are presented in Table 5.

It can thus be concluded that for a desalting capacity of 20.1 million m3/day in the Mediterranean region alone, required in 2025, one would produce, depending upon the energy source and the desalination process used,

13 to 264 million tonnes/year of CO2.

1350 to 1 310 000 tonnes/year of SOx.

21 100 to 540 000 tonnes/year of NOx.

1190 to 40 000 tonnes/year of particles.

The potential levels of GHG and particle emissions on the world scale could then be more than double these figures.

These could naturally be avoided through the use of nuclear energy.

#### Key to deescalate conflicts

Palley ‘11

Reese Palley, The London School of Economics, 2011, The Answer: Why Only Inherently Safe, Mini Nuclear Power Plans Can Save Our World, p. 168-71

The third world has long been rent in recent droughts, by the search for water. In subsistence economies, on marginal land, water is not a convenience but a matter of life and death. As a result small **wars have been fought, rivers diverted, and wells poisoned in what could be a warning of what is to come as industrialized nations begin to face failing water supplies.** Quite aside from the demand for potable water is the dependence of enormous swaths of industry and agriculture on oceans of water used for processing, enabling, and cleaning a thousand processes and products. It is interesting to note that fresh water used in both industry and agriculture is reduced to a nonrenewable resource as agriculture adds salt and industry adds a chemical brew unsuitable for consumption. More than one billion people in the world already lack access to clean water, and things are getting worse. Over the next two decades, the average supply of water per person will drop by a third, **condemning millions** of people **to** waterborne **diseases** and an avoidable premature death.81 So **the stage is set for water access wars between** the **first and the third worlds**, between **neighbors** downstream of supply, between **big industry** and big agriculture, between **nations**, between **population** centers, and ultimately between you and the people who live next door for an already inadequate world water supply that is not being renewed. **As populations inevitably increase, conflicts will intensify**.82 It is only by virtue of the historical accident of the availability of nuclear energy that humankind now has the ability to remove the salt and other pollutants to supply all our water needs. The problem is that **desalination is an intensely local process**. Some localities have available sufficient water from renewable sources to take care of their own needs, but not enough to share with their neighbors, and it **is here that the scale of nuclear energy production must be defined locally.** Large scale 1,000 MWe plants can be used to desalinate water as well as for generating electricity However we cannot build them fast enough to address the problem, and, if built they would face the extremely expensive problem of distributing the water they produce. Better, much better, would be to use small desalinization plants sited locally. Beyond desalination for human use is the need to green some of the increasing desertification of vast areas such as the Sahara. Placing twenty 100 MWe plants a hundred miles apart along the Saharan coast would green the coastal area from the Atlantic Ocean to the Red Sea, a task accomplished more cheaply and quickly than through the use of gigawatt plants.83 This could proceed on multiple tracks wherever deserts are available to be reclaimed. Leonard Orenstein, a researcher in the field of desert reclamation, speculates: If most of the Sahara and Australian outback were planted with fast-growing trees like eucalyptus, the forests could draw down about 8 billion tons of carbon a year—nearly as much as people emit from burning fossil fuels today. As the forests matured, they could continue taking up this much carbon for decades.84 **The use of small, easily transported**, easily **sited**, and walk away **safe nuclear reactors dedicated to desalination is the only answer** to the disproportionate distribution of water resources that have distorted human habitation patterns for millennia. Where there existed natural water, such as from rivers, great cities arose and civilizations flourished. Other localities lay barren through the ages. We now have the power, by means of SMRs profiled to local conditions, not only to attend to existing water shortages but also to smooth out disproportionate water distribution and create green habitation where historically it has never existed. **The endless wars that have been fought**, first over solid bullion gold and then over oily black gold, **can now engulf us in the desperate reach for liquid blue gold. We need never fight these wars again as we now have the nuclear power to fulfill the** biblical **ability to “strike any local rock and have water gush forth**.”

#### It’s economically viable

Gamini Seneviratne 7, Nuclear News’s Vienna Correspondent, “Research projects show nuclear

desalination economical”, April, <http://www.ans.org/pubs/magazines/nn/docs/2007-4-3.pdf>

The desalination of seawater using nuclear power is cost-effective compared with other primary energies, according to researchers in 10 countries who have studied various options at specific sites in their own countries. Their findings show nuclear to be at least competitive in all cases.

Researchers from Argentina, China, Egypt, France, India, Korea, Pakistan, Russia, Syria, and the United States focused on the economics of producing potable water by using various desalination technologies and energy sources at particular sites. The participants followed an agreed procedure throughout a coordinated research project (CRP), Economics of Nuclear Desalination— New Developments and Site-specific Studies, set up by the International Atomic Energy Agency. The findings of the studies, carried out over three years and ending in November 2006, are included in a technical document (IAEA-TECDOC) already at the printer.

“There is a dire shortage of fresh water for drinking in many countries already, and when you realize that 70 percent of the planet is covered with water but only 2.5 percent of that is fresh water, it is hardly surprising,” Ibrahim Khamis, who heads the IAEA’s desalination unit, told Nuclear News. He added that 70 percent of that fresh water is frozen in the polar icecaps and Greenland, and most of the rest is in soil moisture, inaccessible underground aquifers, or comes as heavy rain that is difficult to capture. “So only some 0.008 percent, about 70 000 km3, is readily available, and even that is very unevenly distributed.”

According to Khamis, recent statistics show 2.3 billion people living in water stressed areas, 1.7 billion of them in areas where the availability is on average less than 1000 m3 a year. Given human population growth and the increasing demands of industry and agriculture, the projections point to a continuously worsening situation, even if the effects of global warming are not taken into account. Khamis said he foresaw a time when nuclear power will be sought for desalination rather than for electricity generation, at least in some specific regions of the world such as the Middle East. “You can live without electricity for quite a long time; without water, only a matter of days.” The U.S. study, which was undertaken by Argonne National Laboratory (ANL), notes that “the need for fresh water, high-purity water, and other grades of water for various domestic, industrial, and agricultural applications is ever increasing in the United States.” Demand is driven mainly by population, as well as continuous economic and technological growth, and it is predicted that more than an additional 60 billion m3 of water a year will be needed for municipal and light industrial uses by the year 2020. An additional 11–19 liters per day per person will be needed to generate hydrogen, should transportation be based mainly on hydrogen-powered vehicles in the future. “Cogeneration of water and power could offer a major portion of the additional water needed, in addition to providing much needed energy for maintaining sustainable development and growth,” the ANL report says.

The IAEA report says that desalinating seawater is not the only solution under discussion for remedying the water scarcity, but it is an important one. There are essentially two methods: distillation using heat, and the use of membranes and electricity directly. The two main distillation modes, known as multistage flash (MSF) and multieffect distillation (MED), both involve heating seawater to produce steam, followed by evaporation, condensation, and, finally, pure water collection. The method using membranes, which is called reverse osmosis (RO), uses electricity to create a pressure differential across a semipermeable membrane, allowing fresh water to pass through to the low-pressure side, and leaving salty seawater on the high-pressure side.

Desalination plant capacity worldwide is close to 40 million m3 today, mostly by distillation using fossil energy, and mostly in the Middle East and North Africa. Nuclear desalination has so far been exclusively for use within the nuclear power plants themselves, except at the Soviet-built BN-350 fast reactor in Aktau, Kazakhstan, which supplied potable water to local communities until it was shut down in 1999.

Currently, only India supplies nuclear desalinated water outside the plant site. Having earlier used MSF to get plant-use water, it has also integrated RO to the desalination unit at its Kalpakkam pressurized heavy-water reactor (PHWR) in Chenai, and it has begun (experimentally) supplying some water outside the power station. Pakistan has begun a similar project at its Karachi nuclear power plant (KANUPP) to couple a 1600 m3/day MED unit to the nuclear plant, which earlier operated a 454 m3/day RO facility for plant use.

Fresh water is needed for many purposes. Saudi Arabia alone already irrigates crops with desalinated water. A number of countries, notably Egypt, the Persian Gulf States, Israel, Jordan, and Libya, depend on the technology to maintain tourism. Khamis said nuclear desalination has been held back by two key factors: economics, and the unavailability of reactors of appropriate size.

The CRP addressed the former, comparing cost performance between reactor plus desalination method combinations. The perception that nuclear is less cost-effective than other energy sources was repudiated by the studies.

The report says that the country case studies “have shown that in general, the nuclear desalination costs can vary from $0.5 to $0.94/m3 for RO, from $0.6 to $0.96/m3 for MED, and from $1.18 to $1.48/m3 for MSF plants. All nuclear options are economically attractive as compared with the gas turbine combined-cycle–based desalination systems, as long as gas prices remain higher than $150/toe [metric tons oil equivalent] or $21/bbl [barrel].”

## 2

#### Massive expansion of nuclear power’s inevitable worldwide – that causes cascading prolif

John P **Banks and** Charles K **Ebinger 11**, John is a fellow with the Energy Security Initiative at the Brookings Institution, Charles is senior fellow and director of the Energy Security Initiative at the Brookings Institution, “Introduction: Planning a Responsible Nuclear Future” in “Business and Nonproliferation”, googlebooks

Nuclear energy is a twentieth-century innovation but until recently has not spread beyond a relatively small number 0F industrialized nations (see maps on pages 4 5). All this is about to change. With global electricity demand increasing dramatically, greenhouse gas emissions, and energy security becoming national priorities, developed and developing countries alike are reexamining nuclear energy as a means of providing a reliable E scalable source of low-carbon power. The International Energy Agency (IEA) projects that global electricity demand will increase 2.2 percent a year to 2035, with about 80 percent of that growth occurring in emerging economies outside the Organization for Economic Cooperation £ Development (OECD).' Even if new policy initiatives are introduced to lower carbon dioxide (CO2) emissions Q combat global climate change, global energy-related CO2 emissions are expected to increase 21 percent between 2008 2035.1 Emerging market economies account For all of this projected increase in emissions. In the face of rising prices and increasing volatility in the oil market, many of these economies have shifted their attention to nuclear energy as a means of reducing dependence on oil (often a major source of their power generation), improving their balance of payments, and bolstering national energy security.’ Currently, 440 reactors with a total capacity of 375 gigawatts (G\Wc) arc in operation worlclwicle.\* As of March 2011, 65 nuclear reactor units, with a total capacity of 63 G\Ve, are under construction.5 As of April 2011, 158 projects are also on order or planned and 326 proposed." These preparations For replacing or expanding reactor ﬂeets Q For new entries to the marketplace follow a decades-long lull in construction suggest a “nuclear renaissance” has begun. \Y/hile “renaissance” implies a revival or return to a better time. the global expansion of nuclear energy in the coming decades will differ in several resects from the way civilian nuclear power developed between the late 1950s mid-19805. First, the scope and pace of this new deployment could be signiﬁcantly larger than in previous periods of expansion: some recent analyses put installed nuclear capacity up at 550—850 G\Ve by 2035. depending on assumptions about the implementation of low-carbon energy policiesf In IEA projections, a 50 per- cent cut in energy-related CO, emissions by 2050 would require global capacity to reach 1,200 G\Ve, a net addition of 30 G\Ve each year over the next forty years.“ To put this ﬁgure into perspective, during the period of nuclear p0wer’s most rapid expansion (1981-90). capacity increased by only 20 G\Ve a year, slowing to an annual average of 4 G\X/e from 1991 to 2006." To achieve large- scale reductions in energy—related CO: emissions, nuclear capacity must there- lore grow not only faster but also For several decades longer than during nuclear energy's previous “golden age." (As the preface indicates, safety concerns arising in the aftermath ofthe Fukushima accident will slow or scale back nuclear power expansion globally in the short term. At the same time, the longer-term impact of Fukushima on global nuclear power expansion will be less adverse, especially in emerging market countries.) Also different today is the number of countries seeking to build their ﬁrst nuclear power reactor. Some sixty-ﬁve countries have expressed interest in or are actively planning for nuclear power."' As the International Atomic Energy Agency (IAEA) points out, however, most of these countries are merely “con- sidering” the range of issues involved in nuclear power development. Many of them cannot realistically afford the large costs associated with civilian nuclear power programs. According to some analyses, countries with a GDP ofless than $50 billion could not spend several billion dollars building a reactor." ln addi- tion, many aspirant countries still lack the electricity grids required For nuclear power: electricity systems with a capacity below l0 G\Ve are unlikely to be able to accommodate a nuclear reactor.“ Some countries could address this issue by expanding electricity interconnections with neighboring states or developing ower export arrangements; however, these alternatives are not widely available in any case would take time to implement. At the same time, a number of countries have credible plans to become new nuclear energy states (NNES). The IAEA has indicated that ten to twenty-ﬁve countries might begin operating their ﬁrst plants by 2030, whereas since Cher- nobyl only thrce—China, Mexico, Romania—havc brought nuclear plants online for the ﬁrst time.” The following list shows the stages of progress of eleven emerging market countries in their ellorts to develop a civilian nuclear energy programz“ —Power reactors under construction: Iran.“ —Contracts signed, legal regulatory infrastructure well developed: United Arab Emirates (UAE), Turkey. —Committed plans, legal Q regulatory infrastructure developing: Vietnam, jordan. —\Well-developed plans but commitment pending: Thailand. Indonesia. Egypt, Kazakhstan. —Developing plans: Saudi Arabia, Malaysia. Emerging market nations entertaining the construction of new nuclear power capacity lace several critical issues. Domestically, each must establish strong institutions and viable regulatory frameworks addressing health, safety, prolif- eration, environmental concerns while ensuring that adequate human ﬁnancial resources are available for these tasks. Even if a state is willing to buy a nuclear reactor on a “turnkey” basis (paying For an outside operator to build Q run the system), it must still train its own nationals in these various respects Q establish a strong academic industrial culture in all aspects of commercial nuclear operations in order to achieve a sound, sustainable program. The NNES will need to build these capabilities in a sufficient timely manner. New States One of the biggest challenges in any expansion of the civilian nuclear sector is that of maintaining and strengthening the global regime for nuclear proliferation. The changing geopolitical J security environment, combined with the political instability of many regions countries that aspire to develop civilian nuclear reactor technology, has already raised proliferation concerns. Nuclear power reactors could become attractive targets for terrorists, who might also seek access to ﬁssile material for radiological dispersal devices (“dirty bombs”) or for nuclear weapons. With such materials more widely available, the proliferation risks could mount. As commercial enrichment and recycling programs multiply, countries may be tempted also to develop latent nuclear weapons capabilities, especially if they aspire to attain regional predominance, international standing, or the capabilities of regional rivals. An expansion of nuclear energy could further tax an already stressed proliferation regime. In light ofArticle IV of the Nuclear Treaty (NPT), wl1icl1 states that the treat shall not aﬁect the “inalienable right . . . to develop research, production duse of nuclear energy For peaceful purposes without discrimination . . . the right to partici ate in, the fullest possible exchange of equipment, materials H scientiﬁc ii technological information For the peaceful uses olinuclear energy, ” some nations are considering acquisition of fuel cycle capabilities as a way to avoid further dependence on foreign suppliers when they develop nuclear power.“ The NPT contains no provisions to restrict acquisition of such capabilities, although members of the Nuclear Suppliers Group (a voluntary group of nations that restricts nuclear exports) have long practiced restraint on technology transfers of sensitive components of the Fuel cycle. A sharp increase in the demand for nuclear fuel could enhance the commercial attractiveness of uranium enrichment reprocessing, enticing new entrants into the market." Nations with large uranium resources might seek to add value to their uranium exports by moving further up the chain of produc- tion or by expanding current capabilities (Australia, Canada, Kazakhstan, South Africa have all discussed this option recently). Even if the high cost of Fuel cycle activities proves to be a disincentive to their development, the NNES— especially in emerging markets—may consider Fuel supply security exercis- ing sovereign rights under Article IV of the NPT more relevant than economic drivers in their decisions about enrichment or reprocessing.“ With governments playing an increasing role in securing and meeting nuclear contracts, political motivations might also enter into assessments of the nuclear capabilities neces- sary for recipient countries. The great danger in the race to build out new capacity is that some new players may not take proliferation concerns as seriously as existing service providers. To address these issues, there has been a reinvigorated discussion of multilat- eral nuclear approaches (MN/\s). M NAs establish a framework to safeguard Arti- cle IV rights, speciﬁcally by limiting the diffusion ofsensitive nuclear materials E technologies while concurrently guaranteeing long-term supply of nuclear fuel to civilian nuclear power programs. Some steps in this direction include two recently approved fuel banks: the Russian-backed lnternational Uranium Enrich- ment Center in Angarsk the ME/\ Nuclear Threat Initiative Fuel Bank.” The institutional challenges to the regime are compounded both by the actions of rogue states such as Iran’s clandestine nuclear program and North Korea’s nuclear weapons testing Q new uranium enrichment pro- gram, Q by non-state activities such as the operations ofblack market nuclear networks arranged by Pakistani scientist A. Khan. Conﬁdence in the regime’s ability to respond to resolve proliferation threats has thus fallen. New technologies may put further stress on the system. Particularly worrying are the expansion of centrifuge technology, commercialization of the laser enrichment process, development and deployment of next-generation reprocessing techniques that require advanced safeguards, and the potential spread of fast reactors. Although the impact of these dynamics is tlifﬁcult to foresee, the proliferation regime needs to keep pace with the rapidly changing, complex nuclear market, especially those developments activities that facilitate the expansion of uranium enrichment and spent fuel reprocessing. This is a major challenge for a regime already under stress.

#### The spread of enrichment and reprocessing collapse the entire nonproliferation regime

Anatoly S. Diyakov 10, Professor of Physics and Director of the Center for Arms Control Energy and Environmental Studies at the Moscow Institute of Physics, “The nuclear “renaissance” & preventing the spread of enrichment & reprocessing technologies: a Russian view”, Dædalus Winter 2010

The anticipated growth of nuclear power around the world may lead to the spread of nuclear fuel cycle technologies as well. The expectations associated with a renewed interest in nuclear power and the rate of nuclear power growth in the world may be exaggerated; at the very least we can expect that the growth would occur not immediately, but over a long period. Nevertheless, there are definite concerns about the implications of nuclear power expansion for the nuclear nonproliferation regime. Driving these concerns is a sense that, beyond interest in nuclear power, developing countries also have an interest in retaining their right under the Nuclear Non-Proliferation Treaty (npt) to possess nuclear fuel cycle technologies. A potential spread of nuclear fuel cycle technologies, especially technologies for uranium enrichment and for reprocessing spent fuel to separate plutonium, poses a serious concern to the nuclear nonproliferation regime because enrichment and reprocessing capabilities give states the capability to produce fissile materials for weapons. This is not a new problem. Indeed, as early as 1946, the Acheson-Lillenthal report declared that proliferation risks are inherent to the nuclear fuel cycle. If nations engage in fuel cycle activities it increases the risk of: • Spread of sensitive technologies from declared facilities, resulting in their illegal transfer to other entities; • Diversion of nuclear materials from declared fuel cycle facilities; • Running a military program at undeclared fuel cycle facilities; and • Breakout–that is, withdrawal from the npt and the subsequent use of safeguarded nuclear facilities for military purposes. The reality of these dangers was recently demonstrated by North Korea and the A.Q. Khan network. International Atomic Energy Agency (iaea) Director General Mohamed ElBaradei has said that the fuel cycle is the “Achilles heel” of the nonproliferation system.8 Some countries have already declared their right to acquire enrichment and reprocessing technologies. This right is in fact secured for countries party to the npt. The npt does not restrict peaceful development and use of nuclear power; Article IV of the Treaty asserts, “Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes.” However, in ensuring the right to peaceful use of nuclear energy, the npt also imposes specific obligations upon its member states. In accordance with Article II of the npt, “Each non-nuclearweapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly. ” Article III requires that each Treaty participant state “undertakes to accept safeguards . . . for the exclusive purpose of veri½cation of the ful½llment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons.” The right to develop the nuclear fuel cycle, afforded by the npt, is considered by some to be a loophole in the nonproliferation regime. This loophole, and recent violations of commonly accepted obligations by certain countries, raises questions about the npt’s capacity to protect international security adequately from threats that may occur. It would be wrong to blame the authors of the npt for this loophole. Over the four decades that have passed since the npt ½rst came into effect, the world has changed dramatically. The npt to a large extent was initially intended to prevent creation of nuclear weapons by industrially advanced countries such as West Germany, Italy, Sweden, Switzerland, South Korea, Taiwan, and others, while simultaneously providing them the bene½t of peaceful nuclear use and security guarantees. When the npt was being negotiated in the 1960s, hardly anyone could have imagined that, with time, the main actors in proliferation and the dangers arising from it would come to be those countries that had recently become liberated from Europe’s colonial dominion (at the time called “developing” or “third-world” countries) and also non-state entities– namely, terrorist organizations. Considering that objective forces are compelling more and more countries to turn to nuclear energy to satisfy their energy needs, and that they have the right to develop the nuclear fuel cycle, it is necessary to search for solutions that, on the one hand, would prevent proliferation of sensitive nuclear technologies and, on the other hand, would ensure interested countries guaranteed access to external sources of nuclear fuel cycle services and products.

#### Squo nuclear power means quick breakout—asymmetric development of arsenals creates imbalances that undermine deterrent relationships

Sokolski 9

Henry Sokolski, Executive Director of the Nonproliferation Policy Education Center, 6/1/2009, Avoiding a Nuclear Crowd, http://www.hoover.org/publications/policy-review/article/5534

Finally, several new nuclear weapons contenders are also likely to emerge in the next two to three decades. Among these might be Japan, North Korea, South Korea, Taiwan, Iran, Algeria, Brazil (which is developing a nuclear submarine and the uranium to fuel it), Argentina, and possibly Saudi Arabia (courtesy of weapons leased to it by Pakistan or China), Egypt, Syria, and Turkey. All of these states have either voiced a desire to acquire nuclear weapons or tried to do so previously and have one or more of the following: A nuclear power program, a large research reactor, or plans to build a large power reactor by 2030.

With a large reactor program inevitably comes a large number of foreign nuclear experts (who are exceedingly difficult to track and identify) and extensive training, which is certain to include nuclear fuel making.19 Thus, it will be much more difficult to know when and if a state is acquiring nuclear weapons (covertly or overtly) and far more dangerous nuclear technology and materials will be available to terrorists than would otherwise. Bottom line: **As more states bring large reactors on line more will become nuclear-weapons-ready** — i.e., **they could come within months of acquiring nuclear weapons** if they chose to do so.20 As for nuclear safeguards keeping apace, neither the iaea’s nuclear inspection system (even under the most optimal conditions) nor technical trends in nuclear fuel making (e.g., silex laser enrichment, centrifuges, new South African aps enrichment techniques, filtering technology, and crude radiochemistry plants, which are making successful, small, affordable, covert fuel manufacturing even more likely)21 afford much cause for optimism.

This brave new nuclear world will stir existing security alliance relations more than it will settle them: In the case of states such as Japan, South Korea, and Turkey, it could prompt key allies to go ballistic or nuclear on their own.

Nuclear 1914

At a minimum, **such developments will be a departure from whatever stability existed during the Cold War**. After World War II, there was a clear subordination of nations to one or another of the two superpowers’ strong alliance systems — the U.S.-led free world and the Russian-Chinese led Communist Bloc. The net effect was relative peace with only small, nonindustrial wars. This alliance tension and system, however, no longer exist. Instead, we now have one superpower, the United States, that is capable of overthrowing small nations unilaterally with conventional arms alone, associated with a relatively weak alliance system ( nato) that includes two European nuclear powers (France and the uk). nato is increasingly integrating its nuclear targeting policies. The U.S. also has retained its security allies in Asia (Japan, Australia, and South Korea) but has seen the emergence of an increasing number of nuclear or nuclear-weapon-armed or -ready states.

So far, the U.S. has tried to cope with independent nuclear powers by making them “strategic partners” (e.g., India and Russia), nato nuclear allies (France and the uk), “non-nato allies” (e.g., Israel and Pakistan), and strategic stakeholders (China); or by fudging if a nation actually has attained full nuclear status (e.g., Iran or North Korea, which, we insist, will either not get nuclear weapons or will give them up). In this world, every nuclear power center (our European nuclear nato allies), the U.S., Russia, China, Israel, India, and Pakistan could have significant diplomatic security relations or ties with one another but none of these ties is viewed by Washington (and, one hopes, by no one else) as being as important as the ties between Washington and each of these nuclear-armed entities (see Figure 3).

There are limits, however, to what this approach can accomplish. Such a weak alliance system, with its expanding set of loose affiliations, risks becoming analogous to the international system that failed to contain offensive actions prior to World War I. Unlike 1914, there is no power today that can rival the projection of U.S. conventional forces anywhere on the globe. But in a world with an increasing number of nuclear-armed or nuclear-ready states, this may not matter as much as we think. In such a world, the **actions of just one or two states** or groups that might threaten to disrupt or overthrow a nuclear weapons state **could check U.S. influence or ignite a war Washington could have difficulty containing**. No amount of military science or tactics could assure that the U.S. could disarm or neutralize such threatening or unstable nuclear states.22 Nor could diplomats or our intelligence services be relied upon to keep up to date on what each of these governments would be likely to do in such a crisis (see graphic below):

Combine these proliferation trends with the others noted above and one could easily create the perfect nuclear storm: **Small differences between nuclear competitors** that would **put all actors on edge**; an overhang of nuclear materials **that could be called upon to break out** or significantly ramp up existing nuclear deployments; and a variety of potential new nuclear actors developing weapons options in the wings.

In such a setting, the military and nuclear **rivalries between** states could easily **be much more intense than before**. Certainly **each nuclear state’s military would place a**n even higher **premium** than before **on being able to weaponize** its military and **civilian surpluses quickly**, to deploy forces that are survivable, and to have forces that can get to their targets and destroy them with high levels of probability. The advanced military states will also be even more inclined to develop and deploy enhanced air and missile defenses and long-range, precision guidance munitions, and to develop a variety of preventative and preemptive war options.

Certainly, in such a world, relations between states could become far less stable. **Relatively small developments** — e.g., Russian support for sympathetic near-abroad provinces; Pakistani-inspired terrorist strikes in India, such as those experienced recently in Mumbai; new Indian flanking activities in Iran near Pakistan; Chinese weapons developments or moves regarding Taiwan; state-sponsored assassination attempts of key figures in the Middle East or South West Asia, etc. — **could easily prompt nuclear weapons deployments with “strategic” consequences** (**arms races, strategic miscues, and** even **nuclear war**). As Herman Kahn once noted, in such a world “every quarrel or difference of opinion may lead to violence of a kind quite different from what is possible today.”23 In short, we may soon see a future that neither the proponents of nuclear abolition, nor their critics, would ever want. None of this, however, is inevitable.

#### Prolif cascades cause militarization of disputes—escalates to great power war

Kroenig 9

Matt Kroenig, assistant professor of Government at Georgetown University and a Stanton Nuclear Security Fellow at the Council on Foreign Relations, November 2009, Beyond Optimism and Pessimism: The Differential Effects of Nuclear Proliferation, http://belfercenter.hks.harvard.edu/publication/19671/beyond\_optimism\_and\_pessimism.html

**Nuclear proliferation** can **embolden new nuclear states**, **triggering regional instability that could** potentially **threaten** the **interests of power-projecting states and** even **entrap them in regional disputes**. New nuclear weapon states may be more aggressive and this newfound assertiveness can result in regional instability. I define regional instability as a heightened frequency (but not necessarily the intensity) of militarized interstate disputes among states in a given geographical region. The threat that regional instability poses to power-projecting states is different from the concern about international instability expressed by the proliferation pessimists. Pessimists assume that international instability is bad in and of itself – and they may be right. But, power-projecting states have a different concern. They worry that nuclear proliferation will set off regional instability and that, because they have the ability to project power over the new nuclear weapon state, they will be compelled to intervene in a costly conflict. Power-projecting states could feel the need to act as a mediator between nuclear-armed disputants, provide conventional military assistance to one of the parties in the dispute, or because they have the ability to put boots on the ground in the new nuclear state, potentially be drawn into the fighting themselves.

There is direct evidence that nuclear weapons can contribute to regional instability. Robert Rauchhaus has demonstrated that **nuclear weapon states are more likely to engage in conflict than nonnuclear weapon states**. 46 Michael Horowitz extends this analysis to show that **aggressiveness is most pronounced in new nuclear states** **that have less experience with nuclear diplomacy**.47 These related findings are not due to the fact that dispute-prone states are more likely to acquire nuclear weapons; the scholars carefully control for a state’s selection into nuclear status. Rather, the findings demonstrate that nuclear weapons increase the frequency with which their possessors participate in militarized disputes. Qualitative studies have also provided supporting evidence of nuclear weapons’ potentially destabilizing effects. Research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, **encouraging them to initiate militarized disputes** against India.48

Proliferation optimists counter that nuclear proliferation should increase regional stability, but the most recent empirical investigations undermine the stronger versions of the optimism argument.49 While nuclear-armed states may be less likely to experience full-scale war providing some support for the optimist position, **the preponderance of evidence suggests that nuclear-armed states are more likely to engage in** other types of **militarized disputes**.50 This is true whether only one state or all of the contentious actors in a region possess nuclear weapons.51

Furthermore, for the sake of argument, even if nuclear proliferation does have stabilizing effects as optimists argue, as long as regional conflict among nuclear-armed states is possible, the basic argument presented here still holds. This is because power-projecting states may still feel compelled to intervene in the conflicts that do occur. These are conflicts that they perhaps **could have avoided had nuclear weapons been absent**.

There is direct evidence that regional conflicts involving nuclear powers can encourage power-projecting states to become involved in nuclear disputes. Secretary of State Henry Kissinger was reluctant to aid Israel in the 1973 Yom Kippur War until Israeli Prime Minister Golda Meir threatened that, without U.S. assistance, she might be forced to use nuclear weapons against the Arab armies.52 In response, Kissinger reversed his decision and provided emergency aid to the Israeli DefenseForces.53 The Soviet Union also considered a military intervention to help its Arab proxies in the Yom Kippur War, causing the United States to go on nuclear alert, and leading leaders in both Moscow and Washington to consider the very real possibility that a conflict involving a regional nuclear power could spiral into a superpower war.54 Similarly, in 1999 and 2002, the United States became caught in diplomatic initiatives to prevent nuclear war in crises between the nuclear- armed countries of India and Pakistan.55

Indeed, the expectation that powerful states will intervene in conflicts involving a nuclear-armed state is so firmly ingrained in the strategic thinking of national leaders that small nuclear powers actually incorporate it into their strategic doctrines. South Africa’s nuclear doctrine envisioned, in the event of an imminent security threat, the detonation of a nuclear weapon, not against the threatening party, but over the Atlantic Ocean in an attempt to jolt the United States into intervening on South Africa’s behalf.56 Israel’s nuclear doctrine was also constructed along similar lines. While the Israelis are notoriously silent about the existence and purpose of their nuclear arsenal, Francis Perrin, a French official who assisted in the development of Israel’s nuclear program in the 1950s and 1960s, explained that Israel’s arsenal was originally aimed “against the Americans, not to launch against America, but to say ‘If you don’t want to help us in a critical situation, we will require you to help us. Otherwise, we will use our nuclear bombs.’”57 Similarly, Pakistan’s surprise raid on Indian-controlled Kargil in 1999 was motivated partly by the expectation that Pakistan would be able to retain any territory it was able to seize quickly, because Pakistani officials calculated that the United States would never allow an extended conflict in nuclear South Asia.58

For these reasons, power-projecting states worry about the effect of nuclear proliferation on regional stability. U.S. officials feared that nuclear proliferation in Israel could embolden Israel against its Arab enemies, or entice Arab states to launch a preventive military strike on Israel’s nuclear arsenal. In a 1963 NIE on Israel’s nascent nuclear program, the consensus view of the U.S. intelligence community was that if Israel acquired nuclear weapons, “Israel’s policy toward its neighbors would become more rather than less tough...it would seek to exploit the psychological advantage of its nuclear capability to intimidate the Arabs.”59 President Kennedy concurred. In a letter to Israeli Prime Minister David Ben-Gurion, Kennedy wrote that Israel should abandon its nuclear program because Israel’s “development of such (nuclear) weapons would dangerously threaten the stability of thearea.”60 Similarly, in the case of China’s nuclear program, U.S. officials believed that a nuclear-armed China would “be more willing to take risks in military probing operations because of an overoptimistic assessment of its psychological advantage.”61

More recently, U.S. officials have continued to fear the effect of nuclear proliferation on regional stability. In a 1986 Top Secret CIA Assessment, U.S. intelligence analysts predicted that a nuclear North Korea would have “a free hand to conduct paramilitary operations without provoking a response.”62 Similarly, a U.S. expert testified before Congress in 2006 that “A nuclear arsenal in the hands of Iran’s current theocratic regime will be a source of both regional and global instability.”63

U.S. officials assessed that regional instability set off by nuclear proliferation could compel them to intervene directly in regional conflicts. In the early 1960s, U.S. officials speculated that Israel could potentially leverage its nuclear arsenal to compel the United States to intervene on its behalf in Middle Eastern crises.64 Similarly, in 1965, Henry Rowen, an official in the Department of Defense, assessed that if India acquired nuclear weapons, it could lead to a conflict in South Asia “with a fair chance of spreading and involving the UnitedStates.”65 At the time of writing, U.S. defense strategists are planning for the possibility that the United States may be compelled to intervene in regional conflicts involving a nuclear-armed Iran or North Korea and their neighbors.66

Leaders in power-projecting states also fear that **regional instability set off by nuclear** proliferation could entrap power-projecting states in a **great power war**. Other power- projecting states, facing a mirror-image situation, may feel compelled to intervene in a crisis to secure their own interests, **entangling multiple great powers in a regional conflict**. In a 1963 NIE, U.S. intelligence analysts assessed that “the impact of (nuclear proliferation in the Middle East) will be the possibility that hostilities arising out of existing or future controversies could escalate into a confrontation involving the major powers.”67 President Johnson believed that a nuclear Israel meant increased Soviet involvement in the Middle East and perhaps superpower war.68 If historical experience provides a guide, U.S. strategists at the time of writing are undoubtedly concerned by the possibility that China may feel compelled to intervene in any conflict involving a nuclear-armed North Korea, making the Korean Peninsula another dangerous flash-point in the uncertain Sino-American strategic relationship.

#### Cold War no longer applies—nuclear war

Cimbala 8

Stephen Cimbala, Ph.D., Penn State Brandywine Political Science Distinguished Professor, 2008, Anticipatory Attacks: Nuclear Crisis Stability in Future Asia, Comparative Strategy Volume 27, Issue 2

The spread of nuclear weapons in Asia presents a complicated mosaic of possibilities in this regard. **States with nuclear forces of variable force structure, operational experience, and command-control systems** will be thrown into a **matrix of complex political, social, and cultural** **crosscurrents contributory to the possibility of war**. In addition to the existing nuclear powers in Asia, others may seek nuclear weapons if they feel threatened by regional rivals or hostile alliances. Containment of nuclear proliferation in Asia is a desirable political objective for all of the obvious reasons. Nevertheless, the present century is unlikely to see the nuclear hesitancy or **risk aversion that marked the Cold War**, in part, because the military and political discipline imposed by the Cold War superpowers no longer exists, but also because states in Asia have new aspirations for regional or global respect. 12

The spread of ballistic missiles and other nuclear-capable delivery systems in Asia, or in the Middle East with reach into Asia, is especially dangerous because **plausible adversaries live close together and are already engaged in ongoing disputes about territory** or other issues. 13 The Cold War Americans and Soviets required missiles and airborne delivery systems of intercontinental range to strike at one another's vitals. But short-range ballistic missiles or fighter-bombers suffice for India and Pakistan to launch attacks at one another with potentially “strategic” effects. China shares borders with Russia, North Korea, India, and Pakistan; Russia, with China and North Korea; India, with Pakistan and China; Pakistan, with India and China; and so on.

**The** short flight times **of ballistic missiles between** the cities or military forces of **contiguous states means that very little time will be available for warning and attack assessment** by the defender. Conventionally armed missiles could easily be mistaken for a tactical nuclear first use. Fighter-bombers appearing over the horizon could just as easily be carrying nuclear weapons as conventional ordnance. In addition to the challenges posed by shorter flight times and uncertain weapons loads, potential victims of nuclear attack in Asia may also have first strike–**vulnerable forces and command-control systems** that **increase decision pressures for rapid, and** possibly **mistaken, retaliation**.

This potpourri of possibilities challenges conventional wisdom about nuclear deterrence and proliferation on the part of policymakers and academic theorists. For policymakers in the United States and NATO, spreading nuclear and other weapons of mass destruction in Asia could profoundly shift the geopolitics of mass destruction from a European center of gravity (in the twentieth century) to an Asian and/or Middle Eastern center of gravity (in the present century). 14 This would profoundly shake up prognostications to the effect that wars of mass destruction are now passe, on account of the emergence of the “Revolution in Military Affairs” and its encouragement of information-based warfare. 15 Together with this, there has emerged the argument that large-scale war between states or coalitions of states, as opposed to varieties of unconventional warfare and failed states, are exceptional and potentially obsolete. 16 **The spread of WMD** and ballistic missiles in Asia could **overturn** these **expectations for the obsolescence** or marginalization **of major interstate warfare**.

For theorists, the argument that the spread of nuclear weapons might be fully compatible with international stability, and perhaps even supportive of international security, may be less sustainable than hitherto. 17 Theorists optimistic about the ability of the international order to accommodate the proliferation of nuclear weapons and delivery systems in the present century have made several plausible arguments based on international systems and deterrence theory. First, nuclear weapons may make states more risk averse as opposed to risk acceptant, with regard to brandishing military power in support of foreign policy objectives. Second, if states' nuclear forces are second-strike survivable, they contribute to reduced fears of surprise attack. Third, the motives of states with respect to the existing international order are crucial. Revisionists will seek to use nuclear weapons to overturn the existing balance of power; status quo–oriented states will use nuclear forces to support the existing distribution of power, and therefore, slow and peaceful change, as opposed to sudden and radical power transitions.

These arguments, for a less alarmist view of nuclear proliferation, take comfort from the history of nuclear policy in the “first nuclear age,” roughly corresponding to the Cold War. 18 Pessimists who predicted that some thirty or more states might have nuclear weapons by the end of the century were proved wrong. However, **the Cold War is a dubious precedent for the control of nuclear weapons** spread outside of Europe. The military and security agenda of the Cold War was dominated by the United States and the Soviet Union, especially with regard to nuclear weapons. Ideas about mutual deterrence based on second-strike capability and the deterrence “rationality” according to American or allied Western concepts might be inaccurate guides to the avoidance of war outside of Europe.

#### A strong SMR industry’s key to US leadership, market share, and cradle to grave

Mandel 9

(Jenny – Scientific American, Environment & Energy Publishing, LLC, “Less Is More for Designers of "Right-Sized" Nuclear Reactors” September 9, 2009, http://www.scientificamerican.com/article.cfm?id=small-nuclear-power-plant-station-mini-reactor)

Tom Sanders, president of the American Nuclear Society and manager of Sandia National Laboratories' Global Nuclear Futures Initiative, has been stumping for small rectors for more than a decade. American-made small reactors, Sanders insists, can play a central role in global nonproliferation efforts. "Our role at Sandia is the national security-driven notion that it's in the interests of the U.S. to be one of the dominant nuclear suppliers," Sanders said. While U.S. companies have been exiting the industry over the past decades as government and popular support for new construction has waned, Sanders maintains that **strong U.S. participation in the nuclear energy marketplace** would give diplomats a new tool to use with would-be nuclear powers. "It's hard to tell Iran what to do if you don't have anything Iran wants," he explained. Sanders said mini-reactors are ideal to sell to developing countries that want to boost their manufacturing might and that would otherwise look to other countries for nuclear technologies**. If the U**nited **S**tates **is not participating in that market**, he said, **it becomes hard to steer buyers away from technologies that pose greater proliferation risks.** Sanders been promoting this view since the 1990s, he said, when he realized "we were no longer selling nuclear goods and services, so we could no longer write the rules." The domestic nuclear industry had basically shut down, with no new construction in decades **and a flight of talent and ideas overseas**. There is a silver lining in that brain drain, though, he believes, in that U.S. companies getting back into the game now are less tied to the traditional, giant plants and are freer to innovate. A feature that several of the new product designs share is that the power plants could be mass-produced in a factory to minimize cost, using robots to ensure consistency. Also, with less design work for each installation, the time to complete an order would be shortened and some of the capital and other costs associated with long lead times avoided, Sanders said. Another feature he favors is building the plants with a lifetime supply of fuel sealed inside. Shipped loaded with fuel, such reactors could power a small city for 20 years without the host country ever handling it. Once depleted, the entire plant would be packed back up and shipped back to the United States, he said, with the sensitive spent fuel still sealed away inside. Sanders is working on a reactor design hatched by the lab with an undisclosed private partner. He believes it is feasible to build a prototype modular reactor -- including demonstration factory components and a mockup of the reactor itself -- as early as 2014, for less than a billion dollars. A mini-reactor could ring up at less than $200 million, he said, or at $300 million to $400 million with 20 years of fuel. At $3,000 to $4,000 per kilowatt, he said, that would amount to significant savings over estimates of $4,000 to $6,000 per kilowatt for construction alone with traditional plant designs. To get a design ready to build, Sanders is urging a partnership between the government and the private sector. "If it's totally a government research program, labs can take 20 to 30 years" to finish such projects, he said. "If it becomes a research science project, it could go on forever." New approach, old debates So far, **there is no sign that the** government's nuclear gatekeeper, **NRC, is wowed by the small-reactor designs.** NRC's Office of New Reactors warned Babcock & Wilcox in June that the agency "will need to limit interactions with the designers of small power reactors to occasional meetings or other nonresource-intensive activities" over the next two years because of a crowded schedule of work on other proposals. Meanwhile, opponents of nuclear technologies are not convinced that small reactors are an improvement over traditional designs. Arjun Makhijani, who heads the Institute for Energy and Environmental Research, a think tank that advocates against nuclear power, sees disseminating the technology as incompatible with controlling it. "A lot of the proliferation issue is not linked to having or not having plutonium or highly enriched uranium, but who has the expertise to have or make bombs," Makhijani said. "In order to spread nuclear technologies, you have to have the people who have the expertise in nuclear engineering, who know about nuclear materials and chain reactions and things like that -- the same expertise for nuclear bombs. That doesn't suffice for you to make a bomb, but then if you clandestinely acquire the materials, then you can make a bomb." Peter Wilk, acting program director for safe energy with Physicians for Social Responsibility, an anti-nuclear group, argues that expanding nuclear power use runs counter to the goal of nonproliferation. "The whole proposition presupposes an ... international economy in which more and more fuel is produced and more and more waste must be dealt with, which only makes those problems that are still unsolved larger," he said. "It may or may not do a better job of preventing the host country from literally getting their hands on it, but it doesn't reduce the amount of fuel in the world or the amount of waste in the world," Wilk added. And then there is the issue of public opinion. "Imagine that Americans would agree to take the waste that is generated in other countries and deal with it here," Makhijani said. "At the present moment, it should be confined to the level of the fantastic, or even the surreal. If [the technology's backers] could come up with a plan for the waste, then we could talk about export." Makhijani pointed to a widely touted French process for recycling nuclear waste as a red herring (ClimateWire, May 18). "It's a mythology that it ameliorates the waste problem," he said. According to Makhijani's calculations, the French recycling process generates far more radioactive waste than it cleans up. One category of highly radioactive material, which ends up stored in glass "logs" for burial, is reduced, he said. But in processing the waste, about six times the original volume of waste is produced, he said. Much of that must be buried deep underground, and the discharge of contaminated wastewater used in recycling has angered neighboring countries, he said. Operational risk, of course, is another major concern. "One has reduced the amount of unnecessary risk," Wilke said, "but it's still unnecessary risk." He added, "I get the theory that smaller, newer, ought to be safer. The question is: Why pursue this when there are so many better alternatives?" To Sandia's Sanders, Wilke is asking the wrong question. With the governments of major economies like China, Russia and Japan putting support and cash into nuclear technologies, the power plants are here to stay, he believes. "There's going to be a thousand reactors built over the next 50 years," he said. "The question is: Are we building them, or are we just importing them?"

#### Domestic nuclear expansion’s key to leadership and nonprolif

Michael Wallace and Sarah Williams 12, Michael is Senior Adviser at the U.S. Nuclear Energy Project at CSIS, Sarah is a Nuclear Policy Analyst at the Partnership for Global Security at CSIS, “Nuclear Energy in America: Preventing its Early Demise”, October, <http://csis.org/files/publication/120417_gf_wallace_williams.pdf>

America’s nuclear energy industry is in decline. Low natural gas prices, financing hurdles, new safety and security requirements, failure to resolve the waste issue and other factors are hastening the day when existing reactors become uneconomic, making it virtually impossible to build new ones. Two generations after the United States took this wholly new and highly sophisticated technology from laboratory experiment to successful commercialization, our nation is in danger of losing an industry of unique strategic importance, unique potential for misuse, and unique promise for addressing the environmental and energy security demands of the future. The pace of this decline, moreover, could be more rapid than most policymakers and stakeholders anticipate. With 104 operating reactors and the world’s largest base of installed nuclear capacity, it has been widely assumed that the United States—even without building many new plants— would continue to have a large presence in this industry for some decades to come, especially if existing units receive further license extensions. Instead, current market conditions are such that growing numbers of these units are operating on small or even negative profit margins and could be retired early. Meanwhile, China, India, Russia, and other countries are looking to significantly expand their nuclear energy commitments. By 2016, China could have 50 nuclear power plants in operation, compared with only 14 in 2011. India could add 8 new plants and Russia 10 in the same time frame. These trends are expected to accelerate out to 2030, by which time China, India, and Russia could account for nearly 40 percent of global nuclear generating capacity. Meanwhile, several smaller nations, mostly in Asia and the Middle East, are planning to get into the nuclear energy business for the first time. In all, as many as 15 new nations could have this technology within the next two decades. Meanwhile, America’s share of global nuclear generation is expected to shrink, from about 25 percent today to about 14 percent in 2030, and—if current trends continue—to less than 10 percent by mid-century. With the center of gravity for global nuclear investment shifting to a new set of players, the United States and the international community face a difficult set of challenges: stemming the spread of nuclear weapons-usable materials and know-how; preventing further catastrophic nuclear accidents; providing for safe, long-term nuclear waste management; and protecting U.S. energy security and economic competitiveness. In this context, federal action to reverse the American nuclear industry’s impending decline is a national security imperative. The United States cannot afford to become irrelevant in a new nuclear age. Our nation’s commercial nuclear industry, its military nuclear capabilities, and its strong regulatory institutions can be seen as three legs of a stool. All three legs are needed to support America’s future prosperity and security and to shape an international environment that is conducive to our long-term interests. Three specific aspects of U.S. leadership are particularly important. First, managing the national and global security risks associated with the spread of nuclear technology to countries that don’t necessarily share the same perspective on issues of nonproliferation and nuclear security or may lack the resources to implement effective safeguards in this area. An approach that relies on influence and involvement through a viable domestic industry is likely to be more effective and less expensive than trying to contain these risks militarily. Second, setting global norms and standards for safety, security, operations, and emergency response. As the world learned with past nuclear accidents and more recently with Fukushima, a major accident anywhere can have lasting repercussions everywhere. As with nonproliferation and security, America’s ability to exert leadership and influence in this area is directly linked to the strength of our domestic industry and our active involvement in the global nuclear enterprise. A strong domestic civilian industry and regulatory structure have immediate national security significance in that they help support the nuclear capabilities of the U.S. Navy, national laboratories, weapons complex, and research institutions. Third, in the past, the U.S. government could exert influence by striking export agreements with countries whose regulatory and legal frameworks reflected and were consistent with our own nonproliferation standards and commitments. At the same time, our nation set the global standard for effective, independent safety regulation (in the form of the Nuclear Regulatory Commission), led international efforts to reduce proliferation risks (through the 1970 NPT Treaty and other initiatives), and provided a model for industry self-regulation. The results were not perfect, but America’s institutional support for global nonproliferation goals and the regulatory behaviors it modeled clearly helped shape the way nuclear technology was adopted and used elsewhere around the world. This influence seems certain to wane if the United States is no longer a major supplier or user of nuclear technology. With existing nonproliferation and safety and security regimes looking increasingly inadequate in this rapidly changing global nuclear landscape, American leadership and leverage is more important and more central to our national security interests than ever. To maintain its leadership role in the development, design, and operation of a growing global nuclear energy infrastructure, the next administration, whether Democrat or Republican, must recognize the invaluable role played by the commercial U.S. nuclear industry and take action to prevent its early demise.

#### Cradle to grave solves cascades

McGoldrick 11

Fred McGoldrick, CSIS, spent 30 years at the U.S. State and Energy Departments and at the U.S. mission to the IAEA, negotiated peaceful nuclear cooperation agreements with a number of countries and helped shape the policy of the United States to prevent the spread of nuclear weapons, May 2011, Limiting Transfers of Enrichment and Reprocessing Technology: Issues, Constraints, Options, http://belfercenter.ksg.harvard.edu/files/MTA-NSG-report-color.pdf

The U.S. has been exploring the possibilities of developing offers by one or more suppliers to lease or sell power reactor fuel to consumer states, with the understanding that the resultant spent fuel would be returned to one of the supplier countries or to suitable alternative locations, such as a regional or international used fuel storage facility or waste repository, (if a host state can be found), where it would be treated, recycled or where wastes could be ultimately disposed of. 4.3.1 Offering a Broad-based Cradle-to-Grave Fuel Cycle Service. This option would involve a major diplomatic initiative to explore the possibility that one or more supplier states could offer cradle-to-grave services to all states without E&R plants as an incentive for states to forgo the development of such capabilities. Advantages If one or more suppliers could offer a “cradle-to-grave” fuel supply program, it could prove to be far more effective than some other techniques in discouraging the spread of reprocessing facilities. Because the commercial market already provides strong assurance of fresh fuel supply, while management of spent fuel is unresolved, such a service offer could create stronger incentives for countries to rely on international fuel supply than steps such as fuel banks would. Russia has already implemented such a program on a limited scale. Moscow has concluded an agreement to provide fresh nuclear fuel for the Bushehr nuclear power plant in Iran and to take back the used nuclear fuel to Russia. The Russians have also taken back some spent pow- er reactor fuel from East European countries and have indicated that they might be willing to consider taking back spent fuel of Russian-origin in the future—they have recently offered such deals to Vietnam and Turkey—but do not seem ready to accept spent fuel produced from fuel from non-Russian suppliers. If Russia were to offer a broad-based a cradle-to-grave program, **it may put pressure on its competitors in the reactor and enrichment markets to** try to **follow suit**. If a country agreed to accept spent fuel from other countries on a commercial basis, the supplier of the fresh fuel and the country to which the spent fuel was sent would not have to be the same for a cradle-to-grave service to work.

#### Plan accesses a huge export market

Rosner and Goldberg 11

Robert Rosner, Stephen Goldberg, Energy Policy Institute at Chicago, The Harris School of Public Policy Studies, November 2011, SMALL MODULAR REACTORS –KEY TO FUTURE NUCLEAR POWER GENERATION IN THE U.S., <https://epic.sites.uchicago.edu/sites/epic.uchicago.edu/files/uploads/EPICSMRWhitePaperFinalcopy.pdf>

Previous studies have documented the potential for a significant export market for U.S. SMRs, mainly in lesser developed countries that do not have the demand or infrastructure to accommodate GW-scale LWRs. Clearly, the economics of SMR deployment depends not only on the cost of SMR modules, but also on the substantial upgrades in all facets of infrastructure requirements, particularly in the safety and security areas, that would have to be made, and as exemplified by the ongoing efforts in this direction by the United Arab Emirates (and, in particular, by Abu Dhabi). This is a substantial undertaking for these less developed countries. Thus, such applications may be an attractive market opportunity for FOAK SMR plants, even if the cost of such plants may not have yet achieved all of the learning benefits.

The Department of Commerce has launched the Civil Nuclear Trade Initiative, which seeks to identify the key trade policy challenges and the most significant commercial opportunities. The Initiative encompasses all aspects of the U.S. nuclear industry, and, as part of this effort, the Department identified 27 countries as “markets of interest” for new nuclear expansion. A recent Commerce Department report identified that “SMRs can be a solution for certain markets that have smaller and less robust electricity grids and limited investment capacity.” Studies performed by Argonne National Laboratory suggest that SMRs would appear to be a feasible power option for countries that have grid capacity of 2,000-3,000 MW. **Exports of SMR technology** also **could play an important role in furthering non-proliferation policy objectives.** The design of SMR nuclear fuel management systems, such as encapsulation of the fuel, may have non-proliferation benefits that merit further assessment. Also, the development of an SMR export industry would be step toward a U.S.-centric, bundled reliable fuel services.

## solvency

#### DoD acquisition of SMR’s ensures rapid military adoption, commercialization, and U.S. leadership

Andres and Breetz 11

Richard Andres, Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University, and Hanna Breetz, doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, Small Nuclear Reactorsfor Military Installations:Capabilities, Costs, andTechnological Implications, [www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf](http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

Thus far, this paper has reviewed two of DOD’s most pressing energy vulnerabilities—grid insecurity and fuel convoys—and explored how they could be addressed by small reactors. We acknowledge that there are many uncertainties and risks associated with these reactors. On the other hand, failing to pursue these technologies raises its own set of risks for DOD, which we review in this section: first, small reactors may fail to be commercialized in the United States; second, the designs that get locked in by the private market may not be optimal for DOD’s needs; and third, expertise on small reactors may become concentrated in foreign countries. By taking an early “first mover” role in the small reactor market, DOD could mitigate these risks and secure the long-term availability and appropriateness of these technologies for U.S. military applications. The “Valley of Death.” Given the promise that small reactors hold for military installations and mobility, DOD has a compelling interest in ensuring that they make the leap from paper to production. However, if DOD does not provide an initial demonstration and market, there is a chance that the U.S. small reactor industry may never get off the ground. The leap from the laboratory to the marketplace is so difficult to bridge that it is widely referred to as the “Valley of Death.” Many promising technologies are never commercialized due to a variety of market failures— including technical and financial uncertainties, information asymmetries, capital market imperfections, transaction costs, and environmental and security externalities— that impede financing and early adoption and can lock innovative technologies out of the marketplace. 28 In such cases, the Government can help a worthy technology to bridge the Valley of Death by accepting the first mover costs and demonstrating the technology’s scientific and economic viability.29 [FOOTNOTE 29: There are numerous actions that the Federal Government could take, such as conducting or funding research and development, stimulating private investment, demonstrating technology, mandating adoption, and guaranteeing markets. Military procurement is thus only one option, but it has often played a decisive role in technology development and is likely to be the catalyst for the U.S. small reactor industry. See Vernon W. Ruttan, Is War Necessary for Economic Growth? (New York: Oxford University Press, 2006); Kira R. Fabrizio and David C. Mowery, “The Federal Role in Financing Major Inventions: Information Technology during the Postwar Period,” in Financing Innovation in the United States, 1870 to the Present, ed. Naomi R. Lamoreaux and Kenneth L. Sokoloff (Cambridge, MA: The MIT Press, 2007), 283–316.] Historically, nuclear power has been “the most clear-cut example . . . of an important general-purpose technology that in the absence of military and defense related procurement would not have been developed at all.”30 **Government involvement is likely to be crucial for innovative, next-generation nuclear technology** as well. Despite the widespread revival of interest in nuclear energy, Daniel Ingersoll has argued that radically innovative designs face an uphill battle, as “the high capital cost of nuclear plants and the painful lessons learned during the first nuclear era have created a prevailing fear of first-of-a-kind designs.”31 In addition, Massachusetts Institute of Technology reports on the Future of Nuclear Power called for the Government to provide modest “first mover” assistance to the private sector due to several barriers that have hindered the nuclear renaissance, such as securing high up-front costs of site-banking, gaining NRC certification for new technologies, and demonstrating technical viability.32 It is possible, of course, that small reactors will achieve commercialization without DOD assistance. As discussed above, they have garnered increasing attention in the energy community. Several analysts have even argued that small reactors could play a key role in the second nuclear era, given that they may be the only reactors within the means of many U.S. utilities and developing countries.33 However, given the tremendous regulatory hurdles and technical and financial uncertainties, it appears far from certain that the U.S. small reactor industry will take off. If DOD wants to ensure that small reactors are available in the future, then it should pursue a leadership role now. Technological Lock-in. A second risk is that if small reactors do reach the market without DOD assistance, the designs that succeed may not be optimal for DOD’s applications. Due to a variety of positive feedback and increasing returns to adoption (including demonstration effects, technological interdependence, network and learning effects, and economies of scale), the designs that are initially developed can become “locked in.”34 Competing designs—even if they are superior in some respects or better for certain market segments— can face barriers to entry that lock them out of the market. If DOD wants to ensure that its preferred designs are not locked out, then it should take a first mover role on small reactors. It is far too early to gauge whether the private market and DOD have aligned interests in reactor designs. On one hand, Matthew Bunn and Martin Malin argue that what the world needs is cheaper, safer, more secure, and more proliferation-resistant nuclear reactors; presumably, many of the same broad qualities would be favored by DOD.35 There are many varied market niches that could be filled by small reactors, because there are many different applications and settings in which they can be used, and it is quite possible that some of those niches will be compatible with DOD’s interests.36 On the other hand, DOD may have specific needs (transportability, for instance) that would not be a high priority for any other market segment. Moreover, while DOD has unique technical and organizational capabilities that could enable it to pursue more radically innovative reactor lines, DOE has indicated that it will focus its initial small reactor deployment efforts on LWR designs.37 **If DOD wants to ensure that its preferred reactors are developed and available in the future, it should take a leadership role now**. Taking a first mover role does not necessarily mean that DOD would be “picking a winner” among small reactors, as the market will probably pursue multiple types of small reactors. Nevertheless, **DOD leadership would likely have a profound effect on the industry’s timeline and trajectory.** Domestic Nuclear Expertise. From the perspective of larger national security issues, if DOD does not catalyze the small reactor industry, there is a risk that expertise in small reactors could become dominated by foreign companies. A 2008 Defense Intelligence Agency report warned that the United States will become totally dependent on foreign governments for future commercial nuclear power unless the military acts as the prime mover to reinvigorate this critical energy technology with small, distributed power reactors.38 Several of the most prominent small reactor concepts rely on technologies perfected at Federally funded laboratories and research programs, including the Hyperion Power Module (Los Alamos National Laboratory), NuScale (DOE-sponsored research at Oregon State University), IRIS (initiated as a DOE-sponsored project), Small and Transportable Reactor (Lawrence Livermore National Laboratory), and Small, Sealed, Transportable, Autonomous Reactor (developed by a team including the Argonne, Lawrence Livermore, and Los Alamos National Laboratories). However, there are scores of competing designs under development from over a dozen countries. If DOD does not act early to support the U.S. small reactor industry, there is a chance that the industry could be dominated by foreign companies. Along with other negative consequences, the decline of the U.S. nuclear industry decreases the NRC’s influence on the technology that supplies the world’s rapidly expanding demand for nuclear energy. Unless U.S. companies begin to retake global market share, in coming decades France, China, South Korea, and Russia will dictate standards on nuclear reactor reliability, performance, and **proliferation resistance**.

#### SMR’s are super cost-effective and safe

Ioannis N. Kessides and Vladimir Kuznetsov 12, Ioannis is a researcher for the Development Research Group at the World Bank, Vladimir is a consultant for the World Bank, “Small Modular Reactors for Enhancing Energy Security in Developing Countries”, August 14, Sustainability 2012, 4(8), 1806-1832

SMRs offer a number of advantages that can potentially offset the overnight cost penalty that they suffer relative to large reactors. Indeed, several characteristics of their proposed designs can serve to overcome some of the key barriers that have inhibited the growth of nuclear power. These characteristics include [23,24]: \* • Reduced construction duration. The smaller size, lower power, and simpler design of SMRs allow for greater modularization, standardization, and factory fabrication of components and modules. Use of factory-fabricated modules simplifies the on-site construction activities and greatly reduces the amount of field work required to assemble the components into an operational plant. As a result, the construction duration of SMRs could be significantly shorter compared to large reactors leading to important economies in the cost of financing. \* • Investment scalability and flexibility. In contrast to conventional large-scale nuclear plants, due to their smaller size and shorter construction lead-times SMRs could be added one at a time in a cluster of modules or in dispersed and remote locations. Thus capacity expansion can be more flexible and adaptive to changing market conditions. The sizing, temporal and spatial flexibility of SMR deployment have important implications for the perceived investment risks (and hence the cost of capital) and financial costs of new nuclear build. Today’s gigawatt-plus reactors require substantial up-front investment—in excess of US$ 4 billion. Given the size of the up-front capital requirements (compared to the total capitalization of most utilities) and length of their construction time, new large-scale nuclear plants could be viewed as “bet the farm” endeavors for most utilities making these investments. SMR total capital investment costs, on the other hand, are an order of magnitude lower—in the hundreds of millions of dollars range as opposed to the billions of dollars range for larger reactors. These smaller investments can be more easily financed, especially in small countries with limited financial resources. SMR deployment with just-in-time incremental capacity additions would normally lead to a more favorable expenditure/cash flow profile relative to a single large reactor with the same aggregate capacity—even if we assume that the total time required to emplace the two alternative infrastructures is the same. This is because when several SMRs are built and deployed sequentially, the early reactors will begin operating and generating revenue while the remaining ones are being constructed. In the case of a large reactor comprising one large block of capacity addition, no revenues are generated until all of the investment expenditures are made. Thus the staggered build of SMRs could minimize the negative cash flow of deployment when compared to emplacing a single large reactor of equivalent power [25]. \* • Better power plant capacity and grid matching. In countries with small and weak grids, the addition of a large power plant (1000 MW(e) or more) can lead to grid stability problems—the general “rule of thumb” is that the unit size of a power plant should not exceed 10 percent of the overall electricity system capacity [11]. The incremental capacity expansion associated with SMR deployment, on the other hand, could help meet increasing power demand while avoiding grid instability problems. \* • Factory fabrication and mass production economies. SMR designs are engineered to be pre-fabricated and mass-produced in factories, rather than built on-site. Factory fabrication of components and modules for shipment and installation in the field with almost Lego-style assembly is generally cheaper than on-site fabrication. Relative to today’s gigawatt-plus reactors, SMRs benefit more from factory fabrication economies because they can have a greater proportion of factory made components. In fact, some SMRs could be manufactured and fully assembled at the factory, and then transported to the deployment site. Moreover, SMRs can benefit from the “economies of multiples” that accrue to mass production of components in a factory with supply-chain management. \* • Learning effects and co-siting economies. Building reactors in a series can lead to significant per-unit cost reductions. This is because the fabrication of many SMR modules on plant assembly lines facilitates the optimization of manufacturing and assembly processes. Lessons learned from the construction of each module can be passed along in the form of productivity gains or other cost savings (e.g., lower labor requirements, shorter and more efficiently organized assembly lines) in successive units (Figure 6). Moreover, additional learning effects can be realized from the construction of successive units on the same site. Thus multi-module clustering could lead to learning curve acceleration. Since more SMRs are deployed for the same amount of aggregate power as a large reactor, these learning effects can potentially play a much more important role for SMRs than for large reactors [26]. Also, sites incorporating multiple modules may require smaller operator and security staffing. \* • Design simplification. Many SMRs offer significant design simplifications relative to large-scale reactors utilizing the same technology. This is accomplished thorough the adoption of certain design features that are specific to smaller reactors. For example, fewer and simpler safety features are needed in SMRs with integral design of the primary circuit (i.e., with an in vessel location of steam generators and no large diameter piping) that effectively eliminates large break LOCA. Clearly one of the main factors negatively affecting the competitiveness of small reactors is economies of scale—SMRs can have substantially higher specific capital costs as compared to large-scale reactors. However, SMRs offer advantages that can potentially offset this size penalty. As it was noted above, SMRs may enjoy significant economic benefits due to shorter construction duration, accelerated learning effects and co-siting economies, temporal and sizing flexibility of deployment, and design simplification. When these factors are properly taken into account, then the fact that smaller reactors have higher specific capital costs due to economies of scale does not necessarily imply that the effective (per unit) capital costs (or the levelized unit electricity cost) for a combination of such reactors will be higher in comparison to a single large nuclear plant of equivalent capacity [22,25]. In a recent study, Mycoff et al. [22] provide a comparative assessment of the capital costs per unit of installed capacity of an SMR-based power station comprising of four 300 MW(e) units that are built sequentially and a single large reactor of 1200 MW(e). They employ a generic mode to quantify the impacts of: (1) economies of scale; (2) multiple units; (3) learning effects; (4) construction schedule; (5) unit timing; and (6) plant design (Figure 7). To estimate the impact of economies of scale, Mycoff et al. [22] assume a scaling factor n = 0.6 and that the two plants are comparable in design and characteristics—i.e., that the single large reactor is scaled down in its entirety to ¼ of its size. According to the standard scaling function, the hypothetical overnight cost (per unit of installed capacity) of the SMR-based power station will be 74 percent higher compared to a single large-scale reactor. Based on various studies in the literature, the authors posit that the combined impact of multiple units and learning effects is a 22 percent reduction in specific capital costs for the SMR-based station. To quantify the impact of construction schedule, the authors assume that the construction times of the large reactor and the SMR units are five and three years respectively. The shorter construction duration results in a 5 percent savings for the SMRs. Temporal flexibility (four sequentially deployed SMRs with the first going into operation at the same time as the large reactor and the rest every 9 months thereafter) and design simplification led to 5 and 15 percent reductions in specific capital costs respectively for the SMRs. When all these factors are combined, the SMR-based station suffers a specific capital cost disadvantage of only 4 percent as compared to the single large reactor of the same capacity. Thus, the economics of SMRs challenges the widely held belief that nuclear reactors are characterized by significant economies of scale [19].

#### Role of the ballot’s to simulate enactment of the plan – key to decisionmaking and fairness

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(Carol J., “Democratizing Technology: Citizen & State in West German Energy Politics, 1974-1990” *Polity*, Vol. 25, No. 1, p. 45-70)

During this phase, the citizen initiative attempted to overcome its defensive posture and **implement an alternative politics.** The strategy of legal and technical challenge might delay or even prevent plant construction, but it would not by itself accomplish the broader goal on the legitimation dimension, i.e., democratization. Indeed, it worked against broad participation. The activists had to find a viable means of achieving change. Citizens had proved they could contribute to a **substantive policy discussion.** Now, some activists turned to the parliamentary arena as a possible forum for an energy dialogue. Until now, parliament had been conspicuously absent as a relevant policy maker, but if parliament could be reshaped and activated, citizens would have a forum in which to address the broad questions of policy-making goals and forms. They would also have an **institutional lever** with which to pry apart the bureaucracy and utility. None of the established political parties could offer an alternative program. Thus, local activists met to discuss forming their own voting list. These discussions provoked internal dissent. Many citizen initiative members objected to the idea of forming a political party. If the problem lay in the role of parliament itself, another political party would not solve it. On the contrary, parliamentary participation was likely to destroy what political innovations the extraparliamentary movement had made. Others argued that a political party would give the movement an institutional platform from which to introduce some of the grassroots democratic political forms the groups had developed. Founding a party as the parliamentary arm of the citizen movement would allow these groups to play an active, critical role in institutionalized politics, participating in the policy debates while retaining their outside perspective. Despite the disagreements, the Alternative List for Democracy and Environmental Protection Berlin (AL) was formed in 1978 and first won seats in the Land parliament with 7.2 percent of the vote in 1981.43 The founders of the AL were encouraged by the success of newly formed local green parties in Lower Saxony and Hamburg,44 whose evolution had been very similar to that of the West Berlin citizen move-ment. Throughout the FRG, unpopular administrative decisions affect-ing local environments, generally in the form of state-sponsored indus-trial projects, prompted the development of the citizen initiative and ecology movements. The groups in turn focused constant attention on state planning "errors," calling into question not only the decisions themselves, but also the conventional forms of political decision making that produced them.45 Disgruntled citizens increasingly aimed their critique at the established political parties, in particular the federal SPD/ FDP coalition, which seemed unable to cope with the economic, social, and political problems of the 1970s. Fanned by publications such as the Club of Rome's report, "The Limits to Growth," the view spread among activists that the crisis phenomena were not merely a passing phase, but indicated instead "a long-term structural crisis, whose cause lies in the industrial-technocratic growth society itself."46 As they broadened their critique to include the political **system as a whole**, many grassroots groups found the extraparliamentary arena too restrictive. Like many in the West Berlin group, they reasoned that the necessary change would require a degree of political restructuring that could only be accomplished through their direct participation in parliamentary politics. Green/alternative parties and voting lists sprang up nationwide and began to win seats in local assemblies. The West Berlin Alternative List saw itself not as a party, but as the parliamentary arm of the citizen initiative movement. One member explains: "the starting point for alternative electoral participation was simply the notion of achieving a greater audience for [our] own ideas and thus to work in support of the extraparliamentary movements and initia-tives,"47 including non-environmentally oriented groups. The AL wanted to avoid developing structures and functions autonomous from the citizen initiative movement. Members adhered to a list of principles, such as rotation and the imperative mandate, designed to keep parliamentarians attached to the grassroots. Although their insistence on grassroots democracy often resulted in interminable heated discussions, the participants recognized the importance of experimenting with new forms of decision making, of not succumbing to the same hierarchical forms they were challenging. Some argued that the proper role of citizen initiative groups was not to represent the public in government, but to mobilize other citizens to **participate directly in politics themselves**; self-determination was the aim of their activity.48 Once in parliament, the AL proposed establishmento f a temporary parliamentaryco mmissiont o studye nergyp olicy,w hichf or the first time would draw all concernedp articipantst ogetheri n a discussiono f both short-termc hoicesa nd long-termg oals of energyp olicy. With help from the SPD faction, which had been forced into the opposition by its defeat in the 1981 elections, two such commissions were created, one in 1982-83 and the other in 1984-85.49T hese commissionsg ave the citizen activists the forum they sought to push for modernizationa nd technicali nnovation in energy policy. Although it had scaled down the proposed new plant, the utility had produced no plan to upgrade its older, more polluting facilities or to install desulfurizationd evices. With proddingf rom the energyc ommission, Land and utility experts began to formulate such a plan, as did the citizen initiative. By exposing administrative failings in a public setting, and **by producing a** modernization **plan itself**, the combined citizen initiative and AL forced bureaucratic authorities to push the utility for improvements. They also forced the authorities to consider different technological solutions to West Berlin's energy and environmental problems. In this way, the activists served as technological innovators. In 1983, the first energy commission submitted a list of recommendations to the Land parliament which reflected the influence of the citizen protest movement. It emphasized goals of demand reduction and efficiency, noted the value of expanded citizen participation and urged authorities to "investigate more closely the positive role citizen participation can play in achieving policy goals."50 The second energy commission was created in 1984 to discuss the possibilities for modernization and shutdown of old plants and use of new, environmentally friendlier and cheaper technologies for electricity and heat generation. Its recommendations strengthened those of the first commission.51 Despite the non-binding nature of the commissions' recommendations, the public discussion of energy policy motivated policy makers to take stronger positions in favor of environmental protection. III. Conclusion The West Berlin energy project eventually cleared all planning hurdles, and construction began in the early 1980s. The new plant now conforms to the increasingly stringent environmental protection requirements of the law. The project was delayed, scaled down from 1200 to 600 MW, moved to a neutral location and, unlike other BEWAG plants, equipped with modern desulfurization devices. That the new plant, which opened in winter 1988-89, is the technologically most advanced and environmen-tally sound of BEWAG's plants is due entirely to the long legal battle with the citizen initiative group, during which nearly every aspect of the original plans was changed. In addition, through the efforts of the Alter-native List (AL) in parliament, the Land government and BEWAG formulated a long sought modernization and environmental protection plan for all of the city's plants. The AL prompted the other parliamentary parties to take pollution control seriously. Throughout the FRG, energy politics evolved in a similar fashion. As Habermas claimed, underlying the **objections against particular projects** was a reaction against the administrative-economic system in general. One author, for example, describes the emergence of two-dimensional protest against nuclear energy: The resistance against a concrete project became understood simul-taneously as resistance against the entire atomic program. Questions of energy planning, of economic growth, of understanding of democracy entered the picture. . . . Besides concern for human health, for security of conditions for human existence and protec-tion of nature arose critique of what was perceived as undemocratic planning, the "shock" of the delayed public announcement of pro-ject plans and the fear of political decision errors that would aggra-vate the problem.52 This passage supports a West Berliner's statement that the citizen initiative began with a project critique and arrived at *Systemkritik*.53 I have labeled these two aspects of the problem the public policy and legitima-tion dimensions. In the course of these conflicts, the legitimation dimen-sion emergd as the more important and in many ways the more prob-lematic. Parliamentary Politics In the 1970s, energy politics began to develop in the direction Offe de-scribed, with bureaucrats and protesters avoiding the parliamentary channels through which they should interact. The citizen groups them-selves, however, have to a degree reversed the slide into irrelevance of parliamentary politics. Grassroots groups overcame their defensive posture enough to begin to **formulate an alternative politics**, based upon concepts such as decision making through mutual understanding rather than technical criteria or bargaining. This new politics required new modes of interaction which the old corporatist or pluralist forms could not provide. Through the formation of green/alternative parties and voting lists and through new parliamentary commissions such as the two described in the case study, some members of grassroots groups attempted to both operate within the political system and fundamentally change it, to restore the link between bureaucracy and citizenry. Parliamentary politics was partially revived in the eyes of West German grassroots groups as a legitimate realm of citizen participation, an outcome the theory would not predict. It is not clear, however, that strengthening the parliamentary system would be a desirable outcome for everyone. Many remain skeptical that institutions that operate as part of the "system" can offer the kind of substantive participation that grass-roots groups want. The constant tension between institutionalized politics and grassroots action emerged clearly in the recent internal debate between "fundamentalist" and "realist" wings of the Greens. Fundis wanted to keep a firm footing outside the realm of institutionalized politics. They refused to bargain with the more established parties or to join coalition governments. Realos favored participating in institutionalized politics while pressing their grassroots agenda. Only this way, they claimed, would they have a chance to implement at least some parts of their program. This internal debate, which has never been resolved, can be interpreted in different ways. On one hand, the tension limits the appeal of green and alternative parties to the broader public, as the Greens' poor showing in the December 1990 all-German elections attests. The failure to come to agreement on basic issues can be viewed as a hazard of grass-roots democracy. The Greens, like the West Berlin citizen initiative, are opposed in principle to forcing one faction to give way to another. Disunity thus persists within the group. **On the other hand**, the tension can be understood not as a failure, but as a kind of success: grassroots politics has not been absorbed into the bureaucratized system; it retains its critical dimension, both in relation to the political system and within the groups themselves. The **lively debate** stimulated by grassroots groups and parties **keeps questions of democracy on the public agenda.** Technical Debate In West Berlin, the two-dimensionality of the energy issue forced citizen activists to become both participants in and critics of the policy process.

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In order to defeat the plant, **activists engaged in technical debate.** They won several decisions in favor of environmental protection, often **proving to be more informed than bureaucratic experts** themselves. The case study demonstrates that grassroots groups, far from impeding techno-logical advancement, can actually serve as technological innovators. The activists' role as technical experts, while it helped them achieve some success on the policy dimension, had mixed results on the legitimation dimension. On one hand, it helped them to challenge the legitimacy of technocratic policy making. They turned back the Land government's attempts to displace political problems by formulating them in technical terms.54 By demonstrating the fallibility of the technical arguments, activists forced authorities to acknowledge that energy demand was a political variable, whose value at any one point was as much influenced by the choices of policy makers as by independent technical criteria. Submission to the form and language of technical debate, however, weakened activists' attempts to introduce an alternative, goal-oriented form of decision making into the political system. Those wishing to par-ticipate in energy politics on a long-term basis have had to accede to the language of bureaucratic discussion, if not the legitimacy of bureaucratic authorities. They have helped break down bureaucratic authority but have not yet offered a viable long-term alternative to bureaucracy. In the tension between form and language, goals and procedure, the legitima-tion issue persists. At the very least, however, grassroots action challenges critical theory's notion that technical discussion is inimical to democratic politics.55 Citizen groups have raised the possibility of a dialogue that is both technically sophisticated and democratic. In sum, although the legitimation problems which gave rise to grass-roots protest have not been resolved, citizen action has worked to counter the marginalization of parliamentary politics and the technocratic character of policy debate that Offe and Habermas identify. The West Berlin case suggests that the solutions to current legitimation problems may not require total repudiation of those things previously associated with technocracy.56 In Berlin, the citizen initiative and AL continue to search for new, more legitimate forms of organization consistent with their principles. No permanent Land parliamentary body exists to coordinate and con-solidate energy policy making.57 In the 1989 Land elections, the CDU/ FDP coalition was defeated, and the AL formed a governing coalition with the SPD. In late 1990, however, the AL withdrew from the coali-tion. It remains to be seen whether the AL will remain an effective vehi-cle for grassroots concerns, and whether the citizenry itself, now includ-ing the former East Berliners, will remain active enough to give the AL direction as united Berlin faces the formidable challenges of the 1990s. On the policy dimension, grassroots groups achieved some success. On the legitimation dimension, it is difficult to judge the results of grass-roots activism by normal standards of efficacy or success. Activists have certainly not radically restructured politics. They agree that democracy is desirable, but troublesome questions persist about the degree to which those processes that are now bureaucratically organized can and should be restructured, where grassroots democracy is possible and where bureaucracy is necessary in order to get things done. In other words, grassroots groups have tried to remedy the Weberian problem of the marginalization of politics, but it is not yet clear what the boundaries of the political realm should be. It is, however, the act of calling existing boundaries into question that keeps democracy vital. In raising alternative possibilities and encouraging citizens to take an active, critical role in their own governance, the **contribution of grassroots** environmental **groups has been significant.** As Melucci states for new social movements in general, these groups mount a "symbolic" challenge by proposing "a different way of perceiving and naming the world."58 Rochon concurs for the case of the West German peace movement, noting that its effect on the public discussion of secur-ity issues **has been tremendous**.59 The effects of the legitimation issue in the FRG are evident in increased citizen interest in areas formerly left to technical experts. Citizens have formed nationwide associations of environmental and other grassroots groups as well as alternative and green parties at all levels of government. The level of information within the groups is generally quite high, and their participation, especially in local politics, has raised the awareness and engagement of the general populace noticeably.60 **Policy concessions** and new legal provisions for citizen participation **have not quelled grassroots action.** The attempts of the established political parties to coopt "green" issues have also met with limited success. Even green parties themselves have not tapped the full potential of public support for these issues. The persistence of legitima-tion concerns, along with the growth of a culture of informed political activism, will ensure that the search continues for a space for a delibera-tive politics in modern technological society.61

# 2AC

## iaea

#### Tradeoffs now and monitoring fails

Trevor Findlay, Senior Fellow at Centre for International Governance Innovation and Director of the Canadian Centre for Treaty Compliance. Professor at the Norman Paterson School of International Affairs, 2012, UNLEASHING THE NUCLEAR WATCHDOG: strengthening and reform of the iaea, http://www.cigionline.org/sites/default/files/IAEA\_final\_0.pdf

In spite of this well-deserved reputation and its apparently starry prospects, the Agency remains relatively undernourished, its powers significantly hedged and its technical achievements often overshadowed by political controversy. This evidently prized body has, for instance, been largely unable to break free of the zero real growth (ZRG) budgeting imposed on all UN agencies from the mid-1980s onwards (ZRG means no growth beyond inflation). As a result, the Agency has not been provided with the latest technologies and adequate human resources. Moreover, despite considerable strengthening, its enhanced nuclear safeguards system is only partly mandatory. Notwithstanding the increasing influence of its recommended standards and guides, its safety and security powers remain entirely non-binding. Although the Agency’s long-term response to the Fukushima disaster remains to be seen, its role in nuclear safety and security continues to be hamstrung by states’ sensitivity about sovereignty and secrecy, and by its own lack of capacity. Many states have shown a surprising degree of ambiguity towards supporting the organization both politically and financially. The politicization of its governing bodies has increased alarmingly in recent years, crimping its potential.

Most alarming of all, the Agency has failed, by its own means, to detect serious non-compliance by Iraq, Iran and Libya with their safeguards agreements and, by extension, with the NPT (although it was the first to detect North Korea’s non-compliance). Iran’s non- compliance had gone undetected for over two decades. Most recently, the Agency missed Syria’s attempt to construct a nuclear reactor with North Korean assistance. Despite significant improvements to the nuclear safeguards regime, there is substantial room for improvement, especially in detecting undeclared materials, facilities and activities.6

## at: apartheid

#### Case outweighs

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First, however, let’s provide some context. As I noted above, it is fascinating that in the long history of military technological have/have not dynamics, the international politics of nuclear weaponry has acquired such a strong flavor of moral critique. To my knowledge, after all, one did not see Xiongnu politics emphasizing how darned unfair it was of those nasty Chinese Emperors to monopolize the presumed secrets of China’s bingjia strategic literature. Nor does the unfairness of Byzantine efforts to control the recipe for Greek Fire seem to have become a prevalent trope of Frankish or Persian diplomacy. “Have nots” have surely always coveted powerful tools possessed by the “haves,” or at least wished that the “haves” did not possess them. It seems pretty unusual, however, for non-possessors to articulate such understandable envy and resentment in the moral language of “unfairness,” and to assume that this presumed injustice should motivate the “haves” to change their behavior. This argument seems to be a curiously modern phenomenon.

One might respond that the very specialness of nuclear weapons makes such a position appropriate. After all, while a local monopoly on iron swords may have given the Vikings some advantage in skirmishes with Native Americans in what the Norsemen called Vinland, such technological asymmetry was not strategically decisive. (Indeed, the Vikings seem ultimately to have been pushed out of the New World entirely.) If iron had threatened to offer the Vikings an insuperable advantage, would the Skraelings have been justified in developing a moral language of “have/have not” resentment that demanded either the sharing of iron weaponry or Viking disarmament in the name of achieving a global “iron zero”? I’m skeptical, but for the sake of argument let’s say “maybe.”

The argument that nuclear weapons are “special,” however, is a two-edged sword. Perhaps they are indeed so peculiarly potent and militarily advantageous that their asymmetric possession is sufficiently “unfair” to compel sharing or disarmament. Such an argument, however, sits only awkwardly – to say the least – with the simultaneous claim by many advocates of the “have/have not” critique that nuclear weapons have no real utility in the modern world and can therefore safely be abandoned by their possessors. After all, it is hard to paint nuclear weapons as being strategically decisive and useless at the same time. (If they are indeed useless, the conclusion of “unfairness” hardly sounds very compelling. If they aren’t useless, however, it may be appropriately hard to abolish them.)

More importantly, any argument about the destructively “special” character of nuclear weaponry cuts against the “unfairness critique” in that it is this very specialness that seems to rob the “have/have not” issue of its moral relevance. Unlike iron swords, the bingjia literature, Greek Fire, or essentially all other past military technologies the introduction of which produced global control/acquisition dynamics, **nuclear weapons** have **introduced existential questions about the future of human civilization which utterly swamp the conventional playground morality of unfair “have/have not” competition. No prior technology held the potential to destroy humanity, making nuclear weapons** – with the possible exception of certain techniques of biological weaponry – **a sui generis case to which the conventional “unfairness” critique simply does not very persuasively apply.**

III. Implications

Let me be clear about this. The moral critique of nuclear weapons possession may yet speak to the issue of whether anyone should have them. (This is not the place for a discussion of the feasibility of the remedies proposed by the disarmament community, but let us at least acknowledge the existence of a real moral issue.) But this matter has nothing to do with “unfairness” per se – and to the extent that it purports to, one should give it little credence. If indeed nuclear weapons do menace the survival of humanity, it is essentially irrelevant whether their possession is “unfairly” distributed – and it is certainly no solution to make the global balance of weaponry more “fair” by allowing more countries to have them. (Disarmament advocates hope to address the fairness problem by eliminating nuclear weapons, of course, but this is just icing. Disarmament is almost never articulated as being driven primarily by fairness; the critical part of that argument is instead consequentialist, stressing the dangers that any nuclear weapons are said to present.) As a moral critique, in other words, the fair/unfair dichotomy fails to speak intelligibly to the world’s nuclear dilemma. It isn’t really about “fairness” at all.

Given the entanglement of nuclear weapons issues with quasi-existential questions potentially affecting the survival of millions or perhaps even billions of people, moreover, **it stands to reason that an “unfair” outcome that nonetheless staves off such horrors is a perfectly good solution**. On this scale, one might say, **non-catastrophe entirely trumps accusations of “unfairness.” Questions of stability are far more important than issues of asymmetric distribution**.

This, of course, has powerful implications for nonproliferation policy, because pointing out the hollowness of the “unfairness” argument as applied to nuclear weapons suggests the moral sustainability of nonproliferation even if complete nuclear disarmament cannot be achieved and the world continues to be characterized by inequalities in weapons possession. **We forget this at our collective peril**.

Don’t get me wrong. “Unfairness” arguments will presumably continue to have a political impact upon the diplomacy of nuclear nonproliferation, either as a consequence of genuine resentment or as a cynical rationalization for the destabilizing pursuit of dangerous capabilities. (Indeed, one might even go so far as to suspect that the emergence of the “unfairness” critique in modern diplomatic discourse is in some sense partly the result of how morally compelling nonproliferation is, in this context, irrespective of the “fairness” of “have/have not” outcomes. Precisely because **the moral case for nonproliferation-driven inequality is** so **obvious and** so **compelling** if such imbalance serves the interests of strategic stability, perhaps it was necessary to develop a new rationale of “fairness” to help make proliferation aspirations seem more legitimate. Skraelings, one imagines, did not need an elaborate philosophy of “fairness” in order to justify trying to steal iron weapons; the desirability of such tools was simply obvious, and any effort to obtain them unsurprising and not in itself condemnable.) But even in this democratic and egalitarian age, merely to incant the mantra of “unfairness” – or to inveigh against the existence of “haves” when there also exist “have nots” – is not the same thing as having a compelling moral argument. Indeed, I would submit that **we lose our moral bearings if we allow “unfairness” arguments to distract us from what is really important here: substantive outcomes in the global security environment**.

“Unfairness,” in other words, is an overrated critique, and “fairness” is an overrated destination. At least where nuclear weapons are concerned, there are more important considerations in play. Let us not forget this.

**Dickinson**, associate professor of history – UC Davis, **‘4**

(Edward, Central European History, 37.1)

In short, the continuities between early twentieth-century biopolitical discourse and the practices of the welfare state in our own time are unmistakable. Both are instances of the “disciplinary society” and of biopolitical, regulatory, social-engineering modernity, and they share that genealogy with more authoritarian states, including the National Socialist state, but also fascist Italy, for example. And it is certainly fruitful to view them from this very broad perspective. **But that analysis can easily become superficial and misleading**, because it obfuscates the **profoundly different** strategic and local dynamics of power in the two kinds of regimes. Clearly the democratic welfare state is not only formally but also substantively **quite different from totalitarianism.** Above all, again, it has nowhere developed the fateful, radicalizing dynamic that characterized National Socialism (or for that matter Stalinism), the psychotic logic that leads from economistic population management to mass murder. Again, there is always the potential for such a discursive regime to generate coercive policies. In those cases in which the regime of rights does not successfully produce “health,” such a system can —and historically does— create compulsory programs to enforce it. But again, there are political and policy potentials and constraints in such a structuring of biopolitics that are very different from those of National Socialist Germany. Democratic biopolitical regimes require, enable, and incite a degree of self-direction and participation that is **functionally incompatible** with authoritarian or totalitarian structures. And this pursuit of biopolitical ends through a regime of democratic citizenship does appear, historically, to have imposed increasingly **narrow limits on coercive policies**, and to have generated a “logic” or imperative of increasing liberalization. Despite limitations imposed by political context and the slow pace of discursive change, I think this is the unmistakable message of the really very impressive waves of legislative and welfare reforms in the 1920s or the 1970s in Germany.90

Of course it is not yet clear whether this is an irreversible dynamic of such systems. Nevertheless, such regimes are characterized by sufficient degrees of autonomy (and of the potential for its expansion) for sufé cient numbers of people that I think it becomes useful to conceive of them as productive of a strategic coné guration of power relations that might fruitfully be analyzed as a condition of “liberty,” just as much as they are productive of constraint, oppression, or manipulation. At the very least, **totalitarianism cannot be the sole orientation point** for our understanding of biopolitics, the only end point of the logic of social engineering.

**This notion is not at all at odds with the core of Foucauldian** (and Peukertian) **theory.** Democratic welfare states are regimes of power/knowledge no less than early twentieth-century totalitarian states; these systems are not “opposites,” in the sense that they are two alternative ways of organizing the same thing. But they are two very different ways of organizing it. The concept “power” should not be read as a universal stiè ing night of oppression, manipulation, and entrapment, in which all political and social orders are grey, are essentially or effectively “the same.” Power is a set of social relations, in which individuals and groups have varying degrees of autonomy and effective subjectivity. And discourse is, as Foucault argued, “tactically polyvalent.” Discursive elements (like the various elements of biopolitics) can be combined in different ways to form parts of quite different strategies (like totalitarianism or the democratic welfare state); they cannot be assigned to one place in a structure, but rather circulate. The varying possible constellations of power in modern societies create “multiple modernities,” modern societies with quite **radically differing potentials.**91

#### Prolif exacerbates inequality—turns the K

Biswas 1

Shampa Biswas, Whitman College Politics Professor, December 2001, “Nuclear apartheid" as political position: race as a postcolonial resource?, Alternatives 26.4

At one level, as Partha Chatterjee has pointed out, the concept of apartheid relates to a discourse about "democracy." (49) To use apartheid to designate the unequal distribution of nuclear resources then is also simultaneously to draw attention to the undemocratic character of international relations--or, more literally, the exclusion of a group of people from some kind of legitimate and just entitlement. More specifically, to talk in terms of nuclear haves and have-nots is to talk in terms of a concept of democratic justice based on the "possession" (or lack thereof) of something. "Apartheid," as Sumit Sarkar points out, "implies as its valorised Other a notion of equal rights." (50) **But that this something is "nuclear weapons" complicates the issue a great deal.** If the vision of democracy that is implicit in the concept of nuclear apartheid implies a world of "equal possession" of nuclear weapons, a position implied in the Indian decision to test, **that is a frightening thought indeed**. Yet surely even India does not subscribe to that vision of democracy. "Would India," asks Sarkar, "welcome a nuclearised Nepal or Bangladesh?" (51) If Jaswant Singh is serious that "the country"s national security in a world of nuclear proliferation lies either in global disarmament or in exercise of the principle of equal and legitimate security for all," (52) then it should indeed support the "equal and legitimate" nuclearization of its neighbors, which is extremely unlikely given its own demonstrated hegemonic aspirations in the South Asian region. (53) Further, if India does indeed now sign the NPT and the CTBT, and sign them in the garb of a nuclear power as it wants to do, what does that say about its commitment to nuclear democracy? Even if India and Pakistan were to be included in the treaties as NWSs, **all that would do is expand the size of the categories, not delegitimize** the **unequal privileges** and burdens **written into the categories themselves**.

Indian military scientists claim that India has now accumulated enough data for reliable future weaponization without explosive testing, and Indian leaders have, since the tests, indicated more willingness to sign the CTBT. India has already voluntarily accepted restraints on the exports of nuclear-related materials, as required by the NPT. According to an Indian strategic analyst with respect to negotiation of the Fissile Material Cut-Off Treaty, the next major arms-control treaty to be discussed in the Conference on Disarmament, "The key question in relation to the FMCT is not if it is global and nondiscriminatory. It is whether India has sufficient nuclear material at hand to maintain a credible nuclear deterrent." (54) If all India ever wanted was to move from the side of the discriminated to the side of the discriminators, so much for speaking for democratic ideals through the symbol of nuclear apartheid. (55)

There are several troublesome issues here with respect to the concept of "nuclear democracy." On the one hand, it seems clear that **the widespread proliferation of nuclear weapons sits ill at ease with any notion of democratic entitlement.** It seems that **rather than equalizing the possession of nuclear weapons, it would be equalizing the dispossession of nuclear weapons that entails a more compelling democratic logic.** (56) On the other hand, there is also the question of the fundamentally undemocratic nature of nuclear weapons themselves. At one level, the sheer scope of such weapons to kill and destroy indiscriminately (a democratic logic here?) renders any laws of 'just war" moot. As Braful Bidwai and Achin Vanaik point out, the very use of nuclear weapons would be to break the principle of proportionate use of force, and such weapons clearly cannot be made to distinguish between combatants and noncombatants as required in the just conduct of war. (57)

In this context, it might be worth pointing to the 1996 ruling by the International Court of Justice at the Hague that stipulated that the "the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict and, in particular, the principles and rules of humanitarian law." (58) If the regulation of war can be considered a democratic exercise, then nuclear weapons by their very nature make that exercise futile. At another level is the secrecy that has historically and perhaps necessarily accompanied the development of nuclear-weapons programs, relegated to an aspect of the national-security state that is immunized from democratic scrutiny. Chatterjee argues that nuclear weapons involve a technology that is intrinsically undemocratic -- both domestically and internationally -- since the enormous destructive potential that they embody requires a great deal of secrecy and inaccessibility. (59) Itty Abraham's excellent analysis shows how the intertwined emergence of the independent Indian state and the atomic-energy establishment legally foreclosed the democratic and institutional oversight of the entire atomic-energy enterprise because of its proximity to national security. In other words, the state sponsorship and control of nuclear science, and indeed its constitution in and through nuclear science, makes both science and the state susceptible to undemocratic governance. (60)

## at: disarm alt

#### Doesn’t solve

Frank Procida 9, National Intelligence Fellow at CFR, “Unclear Nuclear Logic?”, Foreign Affairs, March/April, http://www.foreignaffairs.com/articles/64662/frank-procida-peter-huessy/unclear-nuclear-logic

The shift in U.S. nuclear policy advocated by Ivo Daalder and Jan Lodal ("The Logic of Zero," November/December 2008) might make sense for a number of important reasons -- not least among them safety, cost, and reducing the risk of annihilation through miscalculation. But it would be naive to expect any of the authors' recommendations to alter the decision-making of the rogue states that are currently pursuing nuclear technology. Assuming it were feasible, even the complete elimination of the United States' nuclear arsenal would almost certainly have little positive effect on Tehran's or Pyongyang's proliferation, as the same complex set of internal and external factors now driving their policies would persist, as would their perceived vulnerability to U.S. conventional superiority. The less drastic measures the authors call for, such as Washington's accepting international oversight over its own fissile material, far from enhancing the likelihood of reaching agreements with rogue states, would probably barely register in negotiations.

## at: water security

#### Your K doesn’t matter because water war is as real as it gets

Dinar 2

SAIS Review 22.2 (2002) 229-253

Water, Security, Conflict, and Cooperation

Shlomi Dinar is a Ph.D. candidate at the Johns Hopkins University School of Advanced International Studies. He is concentrating in environment, negotiation, conflict, and cooperation. This paper is dedicated to the memory of Captain Jerome E. Levy. This paper benefited from the Anna Sobol Levy Fellowship, a fellowship supported by Captain Levy. The author would also like to thank Benjamin Miller, Emanuel Adler, and the editors of this journal for very constructive comments. This article was originally inspired from an essay that originally appeared in International Negotiation. Shlomi Dinar, "Negotiation and International Relations: A Framework for Hydropolitics," International Negotiation 5, no. 2 (2000).

The dichotomy of conflict and cooperation over water and its relationship to national and regional security reflects the reality of hydropolitics. While military clashes have been associated with water, the concept of security does not end with nor does it only imply armed conflict. Because the pursuit of peace, and thus conflict and cooperation, constitutes the flip side of security, water is indeed relevant to the concept of security. It is this phenomenon that traditionalists have cast off as irrelevant and other rejectionists of the environment-security link have ignored.

Linking security with the environment does not increase the possibility that nations will engage in more armed action against other states for the sake of natural resources such as water. Albeit minimal, evidence already exists as to the military skirmishes and military threats that have taken place over water. Nations will engage in armed conflict and political disputes over water **whether or not scholars acknowledge the link** between the environment and security. Similarly, the existence of more than 3,600 water treaties, the oldest dating to 805 AD, demonstrates a rich history of cooperation [End Page 239] over water regardless of scholarly debate on cooperation and the environment. The debate regarding the link between water, conflict, and cooperation is thus futile and has become a scholarly debate marred by polemics and semantics.

Given its geographical attributes, freshwater truly straddles the notion of sovereignty that traditionalists cherish so deeply and the international or regional conception that environmental globalists hold true. The problems that arise from shared water resources are both national and regional in nature. Similarly, the solutions that are needed to solve such problems are both national and regional. Most importantly for the debate on the environment and security, however, the impediments to cooperation and the instigation of conflict over water are both national and international in their sources. States in particular regions will continue to see water as a national security concern. Even though a regional agreement may be the best solution to states' water problems, they will continue to couch their need to access sufficient and clean freshwater in security and nationalist terms.

## kaufman

#### No impact – threat construction isn’t sufficient to cause wars

**Kaufman**, Prof Poli Sci and IR – U Delaware, **‘9**

(Stuart J, “Narratives and Symbols in Violent Mobilization: The Palestinian-Israeli Case,” *Security Studies* 18:3, 400 – 434)

Even when hostile narratives, group fears, and opportunity are strongly present, war occurs **only if these factors are harnessed.** Ethnic narratives and fears must combine to create significant ethnic hostility among mass publics. Politicians must also seize the opportunity to manipulate that hostility, evoking hostile narratives and symbols to gain or hold power by riding a wave of chauvinist mobilization. Such mobilization is often spurred by prominent events (for example, episodes of violence) that increase feelings of hostility and make chauvinist appeals seem timely. If the other group also mobilizes and if each side's felt security needs threaten the security of the other side, the result is a security dilemma spiral of rising fear, hostility, and mutual threat that results in violence. **A virtue of** this **symbolist theory is that symbolist logic explains why** ethnic **peace is more common than ethnonationalist war.** Even if hostile narratives, fears, and opportunity exist, severe violence usually can still be avoided if ethnic elites skillfully define group needs in moderate ways and collaborate across group lines to prevent violence: this is consociationalism.17 War is likely only if hostile narratives, fears, and opportunity spur hostile attitudes, chauvinist mobilization, and a security dilemma.

## accidents

#### No impact

Rod **Adams 12**, Former submarine Engineer Officer, Founder, Adams Atomic Engines, Inc., “Has Apocalyptic Portrayal of Climate Change Risk Backfired?”, May 2, <http://atomicinsights.com/2012/05/has-apocalyptic-portrayal-of-climate-change-risk-backfired.html?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+AtomicInsights+%28Atomic+Insights%29>

Not only was the discussion enlightening about the reasons why different people end up with different opinions about climate change responses when presented with essentially the same body of information, but it also got me thinking about a possible way to fight back against the Gundersens, Caldicotts, Riccios, Grossmans and Wassermans of the world. That group of five tend to use apocalyptic rhetoric to describe what will happen to the world if we do not immediately start turning our collective backs on all of the benefits that abundant atomic energy can provide. They spin tall tales of deformed children, massive numbers of cancers as a result of minor radioactive material releases, swaths of land made “uninhabitable” for thousands of years, countries “cut in half”, and clouds of “hot particles” raining death and destruction ten thousand miles from the release point. Every one of those clowns have been repeating similar stories for at least two solid decades, and continue to repeat their stories even after supposedly catastrophic failures at Fukushima have not resulted in a single radiation related injury or death. According to eminent scientists – like Dr. Robert Gale – Fukushima is unlikely to EVER result in any measurable increase in radiation related illness. One important element that we have to consider to assess cancer risks associated with an accident like Fukushima is our baseline risk for developing cancer. All of us, unfortunately, have a substantial risk of developing cancer in our lifetime. For example, a 50-year-old male has a 42% risk of developing cancer during his remaining life; it’s almost the same for a 10-year-old. This risk only decreases when we get much older and only because we are dying of other causes. It’s true that excess radiation exposure can increase our cancer risk above baseline levels; it’s clear from studies of the survivors of the 1945 atomic bombings of Hiroshima and Nagasaki, of people exposed to radiation in medical and occupational settings, and of people exposed to radon decay products in mines and home basements. When it comes to exposures like that of Fukushima, the question is: What is the relative magnitude of the increased risk from Fukushima compared to our baseline cancer risk? Despite our fears, it is quite small. If the nuclear industry – as small and unfocused as it is – really wanted to take action to isolate the apocalyptic antinuclear activists, it could take a page from the effective campaign of the fossil fuel lobby. It could start an integrated campaign to help the rest of us to remember that, despite the dire predictions, the sky never fell, the predicted unnatural deaths never occurred, the deformations were figments of imagination, and the land is not really irreversibly uninhabitable for generations. The industry would effectively share the story of Ukraine’s recent decision to begin repopulating the vast majority of the “dead zone” that was forcibly evacuated after the Chernobyl accident. It would put some context into the discussion about radiation health effects; even if leaders shy away from directly challenging the Linear No Threshold (LNT) dose assumption, they can still show that even that pessimistic model says that a tiny dose leads to a tiny risk. Aside: My personal opinion is that the LNT is scientifically unsupportable and should be replaced with a much better model. We deserve far less onerous regulations; there is evidence that existing regulations actually cause harm. I hear a rumor that there is a group of mostly retired, but solidly credentialed professionals who are organizing a special session at the annual ANS meeting to talk about effective ways to influence policy changes. End Aside. Most of us recognize that there is no such thing as a zero risk; repeated assertions of “there is no safe level” should be addressed by accepting “close enough” to zero so that even the most fearful person can stop worrying. The sky has not fallen, even though we have experienced complete core meltdowns and secondary explosions that did some visible damage. Nuclear plants are not perfect, there will be accidents and there will be radioactive material releases. History is telling me that the risks are acceptable, especially in the context of the real world where there is always some potential for harm. The benefits of accepting a little nuclear risk are immense and must not be marginalized by the people who market fear and trembling.

## technocracy

#### Nuclear technocracy’s key to solve

Nordhaus 11, chairman – Breakthrough Instiute, and Shellenberger, president – Breakthrough Insitute, MA cultural anthropology – University of California, Santa Cruz, 2/25/‘11

(Ted and Michael, <http://thebreakthrough.org/archive/the_long_death_of_environmenta>)

Tenth, we are going to have to get over our suspicion of technology, especially nuclear power. There is **no credible path** to reducing global carbon emissions without an enormous expansion of nuclear power. It is the only low carbon technology we have today with the demonstrated capability to generate large quantities of centrally generated electrtic power. It is the low carbon of technology of choice for much of the rest of the world. Even uber-green nations, like Germany and Sweden, have reversed plans to phase out nuclear power as they have begun to reconcile their energy needs with their climate commitments. Eleventh, we will need to embrace again the role of the state as a direct provider of public goods. The modern environmental movement, borne of the new left rejection of social authority of all sorts, has embraced the notion of state regulation and even creation of private markets while largely rejecting the generative role of the state. In the modern environmental imagination, government promotion of technology - whether nuclear power, the green revolution, synfuels, or ethanol - almost always ends badly. Never mind that virtually the entire history of American industrialization and technological innovation is the story of government investments in the development and commercialization of new technologies. Think of a transformative technology over the last century - computers, the Internet, pharmaceutical drugs, jet turbines, cellular telephones, nuclear power - and what you will find is government investing in those technologies at a scale that private firms simply cannot replicate. Twelveth, big is beautiful. The rising economies of the developing world will continue to develop whether we want them to or not. The solution to the ecological crises wrought by modernity, technology, and progress will be more modernity, technology, and progress. The solutions to the ecological challenges faced by a planet of 6 billion going on 9 billion will not be decentralized energy technologies like solar panels, small scale organic agriculture, and a drawing of unenforceable boundaries around what remains of our ecological inheritance, be it the rainforests of the Amazon or the chemical composition of the atmosphere. Rather, these solutions will be: large central station power technologies that can meet the energy needs of billions of people increasingly living in the dense mega-cities of the global south without emitting carbon dioxide, further intensification of industrial scale agriculture to meet the nutritional needs of a population that is not only growing but eating higher up the food chain, and a whole suite of new agricultural, desalinization and other technologies for gardening planet Earth that might allow us not only to pull back from forests and other threatened ecosystems but also to create new ones. The New Ecological Politics The great ecological challenges that our generation faces demands an ecological politics that is **generative, not restrictive.** An ecological politics capable of addressing global warming will require us to reexamine virtually every prominent strand of post-war green ideology. From Paul Erlich's warnings of a population bomb to The Club of Rome's "Limits to Growth," contemporary ecological politics have consistently embraced green Malthusianism despite the fact that the Malthusian premise has persistently failed for the better part of three centuries. Indeed, the green revolution was exponentially increasing agricultural yields at the very moment that Erlich was predicting mass starvation and the serial predictions of peak oil and various others resource collapses that have followed have continue to fail. This does not mean that Malthusian outcomes are impossible, but neither are they inevitable. **We do have a choice** in the matter, but it is not the choice that greens have long imagined. The choice that humanity faces is not whether to constrain our growth, development, and aspirations or die. It is whether we will continue to innovate and accelerate technological progress in order to thrive. Human technology and ingenuity have repeatedly confounded Malthusian predictions yet green ideology continues to cast a suspect eye towards the very technologies that have allowed us to avoid resource and ecological catastrophes. But such solutions will require environmentalists to abandon the "small is beautiful" ethic that has also characterized environmental thought since the 1960's. We, the most secure, affluent, and thoroughly modern human beings to have ever lived upon the planet, must abandon both the dark, zero-sum Malthusian visions and the idealized and nostalgic fantasies for a simpler, more bucolic past in which humans lived in harmony with Nature.

#### Their impact is wrong – debate over even the most technical issues improves decision-making and advocacy

**Hager**, professor of political science – Bryn Mawr College, **‘92**

(Carol J., “Democratizing Technology: Citizen & State in West German Energy Politics, 1974-1990” *Polity*, Vol. 25, No. 1, p. 45-70)

What is the role of the citizen in the modern technological state? As political decisions increasingly involve complex technological choices, does a citizen's ability to participate in **decision making** diminish? These questions, long a part of theoretical discourse, gained new salience with the rise of **grassroots environmental protest in advanced industrial states.** In West Germany, where a strong environmental movement arose in the 1970s, protest has centered as much on questions of democracy as it has on public policy. Grassroots groups challenged not only the construction of large technological projects, especially power plants, but also the **legitimacy of the bureaucratic institutions** which produced those projects. Policy studies generally ignore the legitimation aspects of public policy making.2 A discussion of both dimensions, however, is crucial for understanding the significance of grassroots protest for West German political development in the technological age and for assessing the likely direction of citizen politics in united Germany. In the field of energy politics, West German citizen initiative groups tried to politicize and ultimately to democratize policy making.3 The **technicality** **of the issue** **was not a barrier** to their participation. On the contrary, **grassroots groups proved to be able participants in technical energy debate, often proposing innovative solutions to technological problems.** Ultimately, however, they wanted not to become an elite of "counterexperts," but **to create a political discourse between policy makers and citizens** through which the **goals of energy policy could be recast** and its legitimacy restored. Only a deliberative, expressly democratic form of policy making, they argued, could enjoy the support of the populace. To this end, protest groups developed new, grassroots democratic forms of decision making within their own organizations, which they then tried to transfer to the political system at large. The legacy of grassroots **energy protest in West Germany** is twofold. First, it **produced major substantive changes in public policy.** Informed citizen pressure was largely responsible for the introduction of new plant and pollution control technologies. Second, grassroots protest **undermined** the **legitimacy** of bureaucratic experts. Yet, an acceptable forum for a broadened political discussion of energy issues has not been found; the energy debate has taken place largely outside the established political institutions. Thus, the legitimation issue remains unresolved. It is likely to reemerge as Germany deals with the problems of the former German Democratic Republic. Nevertheless, an evolving ideology of citizen participationa vision of "technological democracy"-is an important outcome of grassroots action.

## roleplay

#### Global extinction risks require a revision of the politics of compassion – survival is still paramount. New risks dictate embracing our ethic DEPSITE their impacts

Winchester 94

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Nietzsche's Aesthetic Turn

As uninformed as it is to assume that there is an easy connec- tion between his thought and National Socialism, it is neither diffi- cult nor misguided to consider his lack of social concern. Nietzsche saw one danger in our century, but failed to see a second. His critique of herd mentality reads like a prophetic warning against the dictatorships that have plagued and continue to haunt the twentieth cen- tury. But the context of our world has changed in ways that Nietzsche never imagined. We now have, as never before, the ability to destroy-the planet. The threat of the destruction of a society is not new. From the beginnings of Western literature in the Iliad and the Odyssey, the Western mind has contemplated the destruction that, for example, warfare has wrought. Although the Trojan war destroyed almost everyone involved, both the victors and the van- quished, it did not destroy the entire world. In the twentieth century, what has changed is the scale of destruction. If a few countries destroy the ozone layer, the whole world perishes, or if two countries fight a nuclear or biological war, the whole planet is threatened. This is something new in the history of the world/ The intercon- nectedness of the entire world has grown dramatically. We live, as never before, in a global community where our actions effect ever- larger numbers of the world's population. The earth's limits have become more apparent. Our survival depends on working together to solve problems like global pollution. Granted mass movements have instituted reigns of terror, but our survival as a planet is becoming ever-more predicated on community efforts of the sort that Nietzsche's thought seems to denigrate if not preclude. I do not criticize Nietzsche for failing to predict the rise of problems requiring communal efforts such as the disintegration of the ozone layer, acid rain, and the destruction of South American rain forests. Noting his lack of foresight and his occasional extrem- ism, I propose, in a Nietzschean spirit, to reconsider his particular tastes, without abandoning his aesthetic turn. Statements like "com- mon good is a self-contradiction" are extreme, even for Nietzsche. He was not always so radical. Yet there is little room in Nietzsche's egoism for the kind of cooperation and sense of community that is today so important for our survival. I am suggesting that the time for Nietzsche's radical individualism is past. There are compelling prag- matic and aesthetic reasons why we should now be more open to the positive possibilities of living in a community. There is nothing new about society's need to work together. What has changed is the level of interconnectedness that the technological age has pressed upon us.

#### Embrace compassion because it’s difficult and fraught with risk

Frazer 6

The Review of Politics (2006), 68: 49-78 Cambridge University Press

Michael Frazer's research focuses on Enlightenment political philosophy and its relevance for contemporary political theory. His current book project, “The Enlightenment of Sympathy: Justice and the Moral Sentiments in the Eighteenth Century and Today,” defends a psychologically holistic approach to political reflection through an examination of such authors as David Hume, Adam Smith and J. G. Herder. Dr. Frazer has also published articles on Maimonides, Nietzsche, John Rawls and Leo Strauss in such journals as "Political Theory" and "The Review of Politics." After receiving his B.A. from Yale University and his Ph.D. from Princeton University, Dr. Frazer spent the 2006-7 academic year as a postdoctoral research associate in the Political Theory Project at Brown University.

Assistant professor – HARVARD

There is a second way in which the painful experience of compassion can threaten human excellence. Not only do we risk developing contempt for all but the suffering masses, but we also risk developing contempt for the compassion that forces us to suffer with them. The terrible experience of shared suffering might lead some of the would-be great on a futile quest to abolish human misery. Others, however, are likely to conclude that their sympathetic pain could be most efficiently relieved by extirpating the faculties responsible for it. When we do not hate the suffering of others, but only our own sharing of this suffering, we seek only to banish compassion from our own breasts. Doing so, however, requires us to shield ourselves from the troubling awareness of our fellows' plight, to sever the imaginative and emotional bonds which connect us to others. It requires that we turn against our own strength of intelligence and imagination, that we sacrifice knowledge for ignorance by denying our insights into the human condition. Some of us might succeed in turning ourselves into such isolated, unthinking beings, but such individuals are not destined for creative achievement.

By contrast, the natural philosopher, poet, or psychologist—the born and inevitable unriddler of human souls—could no more destroy his own sense of compassion than he could abolish the human suffering which compassion compels him to share. A futile quest to extirpate his sympathetic sentiments would only turn such an individual against the world, against life, and against himself; in the end, it might even destroy him. Zarathustra does not pass the greatest test of his strength by purging compassion from his psyche. To the contrary, he affirms his painful experience of the emotion as creativity-enhancing and life-promoting. In doing so, Nietzsche's protagonist warns against those who unduly oppose compassion as well as those who unduly celebrate it. Both sides treat pain as something to be soothed away rather than harnessed for creative purposes; they differ only in whether the pain to be alleviated is our own or that of others. From the ethically authoritative perspective of life, both can be seen as opponents of human flourishing.

#### Their own ethics demands utility – a geneaological value system is ultimately rooted in the body – that trumps qualitative determinations

Nussbaum 94

Martha Nussbaum (born Martha Craven on May 6, 1947) is an American philosopher with a particular interest in ancient Greek and Roman philosophy, political philosophy and ethics.

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 We now turn to the heart of the matter, the role of "external goods" in the good human life. And here we encounter a rather large surprise. There is no philosopher in the modern Western tradition who is more emphatic than Nietzsche is about the central importance of the body, and about the fact that we are bodily creatures. Again and again he charges Christian and Platonist moralities with making a false separation between our spiritual and our physical nature; against them, he insists that we are physical through and through. The surprise is that, having said so much and with such urgency, he really is very loathe to draw the conclusion that is naturally suggested by his position: that human beings need worldly goods in order to function. In all of Nietzsche's rather abstract and romantic praise of solitude and asceticism, we find no grasp of the simple truth that a hungry person cannot think well; that a person who lacks shelter, basic health care, and the basic necessities of life, is not likely to become a great philosopher or artist, no matter what her innate equipment. The solitude Nietzsche describes is comfortable bourgeois solitude, whatever its pains and loneli- ness. Who are his ascetic philosophers? "Heraclitus, Plato. Descartes, Spi- noza, Leibniz, Kant, Schopenhauer"—none a poor person, none a person who had to perform menial labor in order to survive. And because Nietzsche does not grasp the simple fact that if our abilities are physical abilities they have physical necessary conditions, he does not understand what the democratic and socialist movements of his day were all about. The pro-pity tradition, from Homer on, understood that one functions badly if one is hungry, that one thinks badly if one has to labor all day in work that does not involve the fully human use of one's faculties. I have suggested that such thoughts were made by Rousseau the basis for the modern development of democratic-socialist thinking. Since Nietzsche does not get the basic idea, he docs not see what socialism is trying to do. Since he probably never saw or knew an acutely hungry person, or a person performing hard physical labor, he never asked how human self-command is affected by such forms of life. And thus he can proceed as if it does not matter how people live front day to day, how they get their food. Who provides basic welfare support for Zarathustra? What are the "higher men" doing all the day long? The reader docs not know and the author does not seem to care. Now Nietzsche himself obviously was not a happy man. He was lonely, in bad health, scorned by many of his contemporaries. And yet, there still is a distinction to be drawn between the sort of vulnerability that Nietzsche's life contained and the sort we find if we examine the lives of truly impov- erished and hungry people. We might say. simplifying things a bit, that there are two sorts of vulnerability: what we might call bourgeois vulnerabil- ity—for example, the pains of solitude, loneliness, bad reputation, some ill health, pains that are painful enough but still compatible with thinking and doing philosophy—and what we might call basic vulnerability, which is a deprivation of resources so central to human functioning that thought and character are themselves impaired or not developed. Nietzsche, focuv ing on the first son of vulnerability, holds that it is not so bad; it may even be good for the philosopher.\*® The second sort. I claim, he simply ne- glects—believing, apparently, that even a beggar can be a Stoic hero, if only socialism does not inspire him with weakness.5"

#### Acting to help others generates meaning

Todd **May 5**, philo prof at Clemson, “To change the world, to celebrate life”, Philosophy & Social Criticism, vol 31, nos 5–6, 517–531

What are we to make of these references? We can, to be sure, see the hand of Heidegger in them. But we may also, and for present purposes more relevantly, see an intersection with Foucault’s work on freedom. There is an ontology of freedom at work here, one that situates freedom not in the private reserve of an individual but in the unfinished character of any historical situation. There is more to our historical juncture, as there is to a painting, than appears to us on the surface of its visibility. The trick is to recognize this, and to take advantage of it, not only with our thoughts but with our lives. And that is why, in the end, there can be no such thing as a sad revolutionary. To seek to change the world is to offer a new form of life-celebration. It is to articulate a fresh way of being, which is at once a way of seeing, thinking, acting, and being acted upon. It is to fold Being once again upon itself, this time at a new point, to see what that might yield. There is, as Foucault often reminds us, no guarantee that this fold will not itself turn out to contain the intolerable. In a complex world with which we are inescapably entwined, a world we cannot view from above or outside, there is no certainty about the results of our experiments. Our politics are constructed from the same vulnerability that is the stuff of our art and our daily practices. But to refuse to experiment is to resign oneself to the intolerable; it is to abandon both the struggle to change the world and the opportunity to celebrate living within it. And to seek one aspect without the other – life-celebration without world-changing, world-changing without life-celebration – is to refuse to acknowledge the chiasm of body and world that is the wellspring of both. If we are to celebrate our lives, if we are to change our world, then perhaps the best place to begin to think is our bodies, which are the openings to celebration and to change, and perhaps the point at which the war within us that I spoke of earlier can be both waged and resolved. That is the fragile beauty that, in their different ways, both MerleauPonty and Foucault have placed before us. The question before us is whether, in our lives and in our politics, we can be worthy of it.

#### We control uniqueness – meaning isn’t doomed, it’s just transient – we should stop suffering when we can

Mitchell Smolkin, doctor who specializes in depression, Understanding Pain, 1989 p75-79

For Camus, the absurdity of the human condition consists in the incongruity between what humans naturally desire, and the reality of the world. Humans naturally desire not to be injured and killed. They desire to understand life and to find meaning in living. They desire to feel at home in the universe. Despite these natural needs, [humanity] man is confronted with a silent universe that does not answer human questions about meaning. He is surrounded by irrational destructiveness, and by the spectre of suffering and pain hurtling out of the void capriciously at human recipients with no regard for their relative merits. Man is estranged from a universe which seems so antagonistic to his natural needs. He feels homeless, in exile, a stranger in his own land. He [Humanity] hears his “nights and days filled always, everywhere with the eternal cry of human pain.”56 Man has been “sentenced, for an unknown crime to an indeterminate period of punishment. And while a good many people adapted themselves to confinement and carried out their humdrum lives as before, there were others who rebelled, and whose one idea was to break loose from the prison house.” Like Ivan Karamozov (Bk V, Chap 4), Camus refuses to accept the idea that future goods such as Divine salvation or eternal happiness “can compensate for a single moment of human suffering,”57 or a child’s tears. Both Ivan Karamozov and Camus believe that “if evil is essential to Divine creation, then creation is unacceptable.” They wish to replace “the reign of grace by the reign of justice.”58 They both assert that no good man would accept salvation on these terms. “There is no possible salvation for the man who feels real compassion,” because he would side with the damned and for their sake reject eternity.59 What is to be gained by rebellion, what are its dangers, and how does one avoid merely “beating the sea with rods” in a nihilistic orgy? With great perceptiveness, Camus discusses these issues in The Rebel. He begins by outlining the entire history of nihilistic rebellion. He admits that once God is declared dead and life meaningless, there is the tendency to rebel in anger by engaging in irrational acts of violence and destruction. Andre Breton has written that the simplest surrealistic act consists “in going out in the Street, revolver in hand, and shooting at random into the crowd.”6° Camus cites “the struggle between the will to be and the desire for annihilation, between the yes and the no, which we have discovered again and again at every stage of rebellion.”61 Citing numerous historical examples, he continually warns against this degeneration of rebellion into crime and murder. Another danger of rebellion which Camus discusses is the sub- stitution of human gods and concepts of salvation for the dead God. This error is more subtle than shooting at random into the crowd, but leads to much more killing and human suffering than the nihilist sniper. Camus criticizes “Nietzsche, at least in his theory of super-humanity, and Marx before him, with his classless society, [who] both replace The Beyond by the Later On.”62 In this respect, these thinkers have not abandoned the notion that history marches toward redemption in which some messianic goal will be realized. Camus urges moderation in the quest for distant goals. He writes, “the absolute is not attained nor, above all, created through history. Politics is not religion, or if it is, then it is nothing but the inquisition.”63 He contrasts rebellion, which he applauds with revolution which leads to murder in the name of vague future goals. “Revolution consists in loving[those] a man who does not yet exist,” and in murdering [those] men who do exist.64 “He who dedicates himself to this history, dedicates himself to nothing, and in his turn is nothing.”65 In The Plague, the character Tarrou renounces his revolutionary past. He states, For many years I’ve been ashamed, mortally ashamed of having been, even with the best intentions, even at many removes, a murderer in my turn. . . All I maintain is that on this earth there are pestilences and there are victims, and its up to us, so far as possible, not to join forces with the pestil- ences.66 Though obviously attuned to the dangers of rebellion, he insists that “these consequences are in no way due to rebellion itself, or at least they occur to the extent that the rebel forgets his original purpose.”67 What is the original purpose that has been forgotten? Rebellion begins because the rebel denounces the lack of justice in the world. He denounces the idea that the end, whether it be the coming of the messianic age, or the revo- lution, or eternal bliss, justifies means which involve so much suffering. Once injustice and suffering are denounced, [people] man needs to exert all his effort against injustice and in solidarity with the sufferers in the world. Killing existing men for a questionable future good, would not be a rational method of exhibi ting solidarity with the sufferers. Nor would solidarity be shown by stoical acceptance of the status quo. Camus urges his rebels to renounce murder completely and work for justice and for a decrease in suffering. Like Dr. Rieux in The Plague, one should take the victim’s side and “share with his fellow citizens the only certitude they have in common—love, exile, suffering.”68 What can be accomplished through rebellion? Camus’ goals are modest. He realizes that the rebel is doomed to “a never ending defeat,”69 in that death, finitude and suffering will always conquer him. He realizes that after [humanity] man has mastered everything in creation that can be mastered and rectified everything that can be rectified, children will still die unjustly even in a perfect society. Even by his greatest effort man can only purpose to diminish arithmetically the sufferings of the world. But the injustice and the suffering will remain and, no matter how limited they are, they will not cease to be an outrage.7° However, there are ephemeral victories and rewards for the rebel. He [One] who dedicates [oneself] himself for the duration of his life to the house he builds, to the dignity of [hu]mankind, dedicates himself the earth and reaps from it the harvest that sows its seed and sustains the world again and again. Those whose desires are limited to man and his humble yet formidable love, should enter, if only now and then, into their reward. They know that if there is one thing one can always yearn for and sometimes attain, it is human love. Society must be arranged to limit injustice and suffering as much as possible so that each individual has the leisure and freedom to pursue his own search for meaning. Future utopias must be renounced, and “history can no longer be presented as an object of worship.”74 “It is time to forsake our age and its adolescent furies,” and to aim for what is possible—more justice, solidarity, and love among [people] men. The rebel must “reject divinity in order to share in the struggles and destiny of all men.”75 Redemption is impossible. Human dignity and love can intermittently be achieved with struggle and constant vigilance against the plague bacillus that “never dies or disappears for good. .. [but can] rouse up its rats again and send them forth to die in a happy city.”76

## ridley

#### Quality of life is skyrocketing worldwide by all measures

Ridley, visiting professor at Cold Spring Harbor Laboratory, former science editor of *The Economist*, and award-winning science writer, 2010

(Matt, *The Rational Optimist*, pg. 13-15)

If my fictional family is not to your taste, perhaps you prefer statistics. Since 1800, the population of the world has multiplied six times, yet **average life expectancy has more than doubled and real income has risen more than nine times**. Taking a shorter perspective, in 2005, compared with 1955, the average human being on Planet Earth earned nearly three times as much money (corrected for inflation), ate one-third more calories of food, buried one-third as many of her children and could expect to live one-third longer. She was less likely to die as a result of war, murder, childbirth, accidents, tornadoes, flooding, famine, whooping cough, tuberculosis, malaria, diphtheria, typhus, typhoid, measles, smallpox, scurvy or polio. She was less likely, at any given age, to get cancer, heart disease or stroke. She was more likely to be literate and to have finished school. She was more likely to own a telephone, a flush toilet, a refrigerator and a bicycle. All this during a half-century when the world population has more than doubled, so that far from being rationed by population pressure, the goods and services available to the people of the world have expanded. It is, by any standard, an astonishing human achievement. Averages conceal a lot. **But even if you break down the world into bits**, **it is hard to find any region that was worse off in 2005 than it was in 1955**. Over that half-century, real income per head ended a little lower in only six countries (Afghanistan, Haiti, Congo, Liberia, Sierra Leone and Somalia), life expectancy in three (Russia, Swaziland and Zimbabwe), and infant survival in none. In the rest they have rocketed upward. Africa’s rate of improvement has been distressingly slow and patchy compared with the rest of the world, and many southern African countries saw life expectancy plunge in the 1990s as the AIDS epidemic took hold (before recovering in recent years). There were also moments in the half-century when you could have caught countries in episodes of dreadful deterioration of living standards or life chances – China in the 1960s, Cambodia in the 1970s, Ethiopia in the 1980s, Rwanda in the 1990s, Congo in the 2000s, North Korea throughout. Argentina had a disappointingly stagnant twentieth century. But overall, after fifty years, **the outcome for the world is** remarkably, astonishingly, **dramatically positive**. The average South Korean lives twenty-six more years and earns fifteen times as much income each year as he did in 1955 (and earns fifteen times as much as his North Korean counter part). The average Mexican lives longer now than the average Briton did in 1955. The average Botswanan earns more than the average Finn did in 1955. **Infant mortality is lower today in Nepal than it was in Italy in 1951**. The proportion of Vietnamese living on less than $2 a day has dropped from 90 per cent to 30 per cent in twenty years. The rich have got richer, but the poor have done even better. **The poor in the developing world grew their consumption twice as fast as the world as a whole between 1980 and 2000**. The Chinese are ten times as rich, one-third as fecund and twenty-eight years longer-lived than they were fifty years ago. Even Nigerians are twice as rich, 25 per cent less fecund and nine years longer-lived than they were in 1955. **Despite a doubling of the world population**, even **the raw number of people living in absolute poverty** (defined as less than a 1985 dollar a day) **has fallen since the 1950s**. The percentage living in such absolute poverty has dropped by more than half – to less than 18 per cent. That number is, of course, still all too horribly high, but the trend is hardly a cause for despair: at the current rate of decline, it would hit zero around 2035 – though it probably won’t. The United Nations estimates that poverty was reduced more in the last fifty years than in the previous 500.

# 1AR

## 2ac discourse

#### Reality outweighs representations

**Wendt, 1999**

Alexander Wendt, Professor of International Security at Ohio State University, 1999, “Social theory of international politics,” gbooks

The effects of holding a relational theory of meaning on theorizing about world politics are apparent in **David Campbell's** provocative study of US foreign policy, which **shows** how the **threats** posed by the Soviets, immigration, drugs, and so on, **were constructed** out of US national security discourse.29 The book clearly shows that material things in the world did not force US decision-makers to have particular representations of them - the picture theory of reference does not hold. In so doing it highlights the discursive aspects of truth and reference, the sense in which objects are relationally "constructed."30 On the other hand, while emphasizing several times that he is not denying the reality of, for example, Soviet actions, he specifically eschews (p. 4) any attempt to assess the extent to which they caused US representations. Thus **he cannot address the extent to which US representations of the Soviet threat were accurate or true** (questions of correspondence). **He can only focus on the nature and consequences of the representations**.31 Of course, there is nothing in the social science rule book which requires an interest in causal questions, and the nature and consequences of representations are important questions. In the terms discussed below he is engaging in a constitutive rather than causal inquiry. However, I suspect **Campbell thinks that any attempt to assess the correspondence of discourse to reality is inherently pointless.** According to the relational theory of reference **we simply have no access to what the Soviet threat "really" was, and as such its truth is established entirely within discourse**, not by the latter's correspondence to an extra-discursive reality 32 **The main problem** with the relational theory of reference **is that it cannot account for the resistance of the world to certain representations, and thus for representational failures or m/'sinterpretations**. Worldly resistance is most obvious in nature: whether our discourse says so or not, pigs can't fly. But examples abound in society too. **In 1519 Montezuma faced the same kind of epistemological problem facing social scientists today: how to refer to people who, in his case, called themselves Spaniards. Many representations were conceivable**, and no doubt the one he chose - that they were **gods - drew on the discursive materials available to him. So why was he killed and his empire destroyed by an army hundreds of times smaller than his own**? The realist answer is that **Montezuma was simply wrong: the Spaniards were not gods, and had come instead to conquer his empire. Had Montezuma adopted this alternative representation of what the Spanish were, he might have prevented this outcome because that representation would have corresponded more to reality. The reality of the conquistadores did not force him to have a true representation**, as the picture theory of reference would claim, **but it did have certain effects - whether his discourse allowed them or not.** The external world to which we ostensibly lack access, in other words. often frustrates or penalizes representations. **Postmodernism gives us no insight into why this is so, and indeed, rejects the question altogether.33** The description theory of reference favored by empiricists focuses on sense-data in the mind while the relational theory of the postmoderns emphasizes relations among words, but they are similar in at least one crucial respect: neither grounds meaning and truth in an external world that regulates their content.34 Both privilege epistemology over ontology. What is needed is a theory of reference that takes account of the contribution of mind and language yet is anchored to external reality. The realist answer is the causal theory of reference. According to the causal theory the meaning of terms is determined by a two-stage process.35 First there is a "baptism/' in which some new referent in the environment (say, a previously unknown animal) is given a name; then this connection of thing-to-term is handed down a chain of speakers to contemporary speakers. Both stages are causal, the first because the referent impressed itself upon someone's senses in such a way that they were induced to give it a name, the second because the handing down of meanings is a causal process of imitation and social learning. Both stages allow discourse to affect meaning, and as such do not preclude a role for "difference" as posited by the relational theory. Theory is underdetermined by reality, and as such the causal theory is not a picture theory of reference. However, conceding these points does not mean that meaning is entirely socially or mentally constructed. In the realist view beliefs are determined by discourse and nature.36 This solves the key problems of the description and relational theories: our ability to refer to the same object even if our descriptions are different or change, and the resistance of the world to certain representations. **Mind and language help determine meaning, but meaning is also regulated by a mind-independent, extra-linguistic world**.

## A2 turns the case

#### Not true - empirics

Fuhrmann 11

(Matthew, Stanton Nuclear fellow at CFR, “Nuclear Inertia,” <http://www.slate.com/articles/health_and_science/green_room/2011/04/nuclear_inertia.single.html>, AM)

For the past two years, I've been building a data set that can help answer this question. It contains the location and date of every nuclear power plant constructed in every country in the world between 1965 and 2000—based on records maintained by the International Atomic Energy Agency—and every significant nuclear accident during that time. I also collected country-level statistics on other factors that are thought to influence nuclear-power development: economic welfare, energy security, and energy production capacity, for example.

The nearly 75 nuclear accidents in the database include widely remembered disasters, such as Three Mile Island (TMI) in 1979 and Chernobyl in 1986, but also less-known incidents, such as the reactor meltdown in Buenos Aires, Argentina, in 1983 and an uncontrolled nuclear chain reaction in Tokaimura, Japan, in 1999 that killed two people.

Japanese authorities recently rated Fukushima at the highest possible severity level (Level 7), a designation shared only by Chernobyl. (TMI was classified as Level 5.) Given that the last accident of this magnitude crippled the nuclear industry, it may be tempting to conclude that the crisis in Japan will substantially curtail global nuclear power development. According to my database, however, it seems this judgment may be premature.

Nuclear-reactor construction is dominated by inertia. Harvesting nuclear energy is incredibly expensive at first, but much cheaper once the infrastructure is in place. Nevertheless, countries with a lot of money invested in nuclear energy have been surprisingly reluctant to give it up—even after major nuclear accidents. States that were not heavily invested, however, have often been quick to cancel their nuclear plans after accidents in other countries.

My analyses confirmed the conventional wisdom that TMI and Chernobyl stymied the global nuclear industry. A simple comparison between construction rates in the pre- and post-Chernobyl eras indicates that states were about 75 percent less likely to build reactors following the Soviet accident.

But Chernobyl and TMI aside, nuclear accidents generally have not deterred countries from building additional plants—even when the accidents happen within their borders. India, for example, began construction on four new reactors following the release of helium and heavy water at the Rajasthan Atomic Power Station in February 1995. \*

Countries with nuclear power plants under construction prior to Three Mile Island continued to build reactors at a slower, though still steady pace—at least one new plant per country every seven years, on average, over the next two decades. In these countries—a group that includes Czechoslovakia, France, Pakistan, and South Korea—the accidents at Chernobyl and TMI raised concerns about the safety of nuclear power plants, but these fears were rarely sufficient to derail entrenched national interests.

## water K

#### Perm solves – we can critique security but still assess the water war impacts

Dinar 2

SAIS Review 22.2 (2002) 229-253

Water, Security, Conflict, and Cooperation

Shlomi Dinar is a Ph.D. candidate at the Johns Hopkins University School of Advanced International Studies. He is concentrating in environment, negotiation, conflict, and cooperation. This paper is dedicated to the memory of Captain Jerome E. Levy. This paper benefited from the Anna Sobol Levy Fellowship, a fellowship supported by Captain Levy. The author would also like to thank Benjamin Miller, Emanuel Adler, and the editors of this journal for very constructive comments. This article was originally inspired from an essay that originally appeared in International Negotiation. Shlomi Dinar, "Negotiation and International Relations: A Framework for Hydropolitics," International Negotiation 5, no. 2 (2000).

Can some sort of compromise be sought in this ongoing debate? One issue often neglected in the traditional school of security studies is that, in addition to the study of war as a part of security, one must also consider the study of peace. While traditionalists and other critics have mounted a compelling attack on the expansion of the concept of security, the relevance of hydropolitics to conflict and cooperation and thus peace studies is clear. Therefore, the door should be open to a great variety of causal factors, theories, and explanations under the condition that they logically and empirically affect war, peace, and nonmilitary causes or means affecting national as well as regional and international security. 28 The water-security link is therefore valid so long as hydropolitics logically and empirically affects conflict and cooperation, which in turn affects national, regional, and international security. Therefore, water scarcity and hydropolitics should be considered part of the security field to the extent that freshwater issues affect the likelihood of violence, war, or peace. 29

## 1ar technocracy

#### Engagement with technocracy is more effective than passive rejection

**Jiménez-Aleixandre**, professor of education – University of Santiago de Compostela, and Pereiro-Muñoz High School Castelao, Vigo (Spain), **‘2**

(Maria-Pilar and Cristina, “Knowledge producers or knowledge consumers? Argumentation and decision making about environmental management,” International Journal of Science Education Vol. 24, No. 11, p. 1171–1190)

If science education and environmental education have as a goal to develop **critical thinking and** to promote **decision making**, it seems that the acknowledgement of a variety of experts and expertise is of relevance to both. **Otherwise citizens could be unable to challenge a common view** that places economical issues and technical features over other types of values or concerns. As McGinn and Roth (1999) argue, citizens should be prepared to participate in scientific practice, to be involved in situations where science is, if not created, at least used. The assessment of environmental management is, in our opinion, one of these, and citizens do not need to possess all the technical knowledge to be able to examine the positive and negative impacts and to weigh them up. The identification of instances of scientific practice in classroom discourse is difficult especially if this practice is viewed as a complex process, not as fixed ‘steps’. Several instances were identified when it could be said that students acted as a knowledge-producing community in spite of the fact that the students, particularly at the beginning of the sequence, expressed doubts about their capacities to assess a project written by experts and endorsed by a government office. Perhaps these doubts relate to the nature of the project, a ‘real life’ object that made its way into the classroom, into the ‘school life’. As Brown et al. (1989) point out, there is usually a difference between practitioners’ tasks and stereotyped school tasks and, it could be added, students are not used to being confronted with the complexity of ‘life-size’ problems. However, as the sequence proceeded, **the students assumed the role of experts**, exposing inconsistencies in the project, offering alternatives and discussing it with one of its authors. The issue of expertise is worthy of attention and it needs to be explored in different contexts where the relationships among technical expertise, values hierarchies and possible biases caused by the subject matter could be unravelled. One of the objectives of environmental education is to **empower people with the capacity of decision making**; for this purpose the acknowledging of multiple expertise is crucial.

## A2 roleplaying bad

#### Simulation allows us to influence state policy AND is key to agency

**Eijkman 12**

The role of simulations in the authentic learning for national security policy development: Implications for Practice / Dr. Henk Simon Eijkman. [electronic resource] <http://nsc.anu.edu.au/test/documents/Sims_in_authentic_learning_report.pdf>. Dr Henk Eijkman is currently an independent consultant as well as visiting fellow at the University of New South Wales at the Australian Defence Force Academy and is Visiting Professor of Academic Development, Annasaheb Dange College of Engineering and Technology in India. As a sociologist he developed an active interest in tertiary learning and teaching with a focus on socially inclusive innovation and culture change. He has taught at various institutions in the social sciences and his work as an adult learning specialist has taken him to South Africa, Malaysia, Palestine, and India. He publishes widely in international journals, serves on Conference Committees and editorial boards of edited books and international journal

However, whether as an approach to learning, innovation, persuasion or culture shift, policy simulations derive their power from two central features: their combination of simulation and gaming (Geurts et al. 2007). 1. The simulation element: the unique combination of simulation with role-playing.The unique simulation/role-play mix enables participants to create **possible futures** relevant to the topic being studied. This is diametrically opposed to the more traditional, teacher-centric approaches in which a future is produced for them. In policy simulations, possible futures are much more than an object of tabletop discussion and verbal speculation. ‘**No other technique** allows a group of participants to engage in collective action in a safe environment to create and analyse the futures they want to explore’ (Geurts et al. 2007: 536). 2. **The game element:** the interactive and tailor-made modelling and design of the policy game. The actual run of the policy simulation is only one step, though a most important and visible one, in a collective process of investigation, communication, and evaluation of performance. In the context of a post-graduate course in public policy development, for example, a policy simulation is a dedicated game constructed in collaboration with practitioners to achieve a high level of proficiency in relevant aspects of the policy development process. To drill down to a level of finer detail, **policy** development simulations—as forms of interactive or participatory modelling— are particularly effective in developing participant knowledge and skills in the five key areas of the policy development process (and success criteria), namely: Complexity, Communication, Creativity, Consensus, and Commitment to action (‘the five Cs’). The capacity to provide effective learning support in these five categories has proved to be particularly helpful in strategic decision-making (Geurts et al. 2007). Annexure 2.5 contains a detailed description, in table format, of the synopsis below.

## impacts

#### K can’t turn the case

**Sharpe**, lecturer, philosophy and psychoanalytic studies, and Goucher, senior lecturer, literary and psychoanalytic studies – Deakin University, **‘10**

(Matthew and Geoff, Žižek and Politics: An Introduction, p. 231 – 233)

We realise that this argument, which we propose as a new ‘quilting’ framework to explain Žižek’s theoretical oscillations and political prescriptions, raises some large issues of its own. While this is not the place to further that discussion, we think its analytic force leads into a much wider critique of ‘Theory’ in parts of the latertwentieth- century academy, which emerged following the ‘cultural turn’ of the 1960s and 1970s in the wake of the collapse of Marxism. Žižek’s paradigm to try to generate all his theory of culture, subjectivity, ideology, politics and religion is psychoanalysis. But a similar criticism would apply, for instance, to theorists who feel that the method Jacques Derrida developed for criticising philosophical texts can meaningfully supplant the methodologies of political science, philosophy, economics, sociology and so forth, when it comes to thinking about ‘the political’. Or, differently, thinkers who opt for Deleuze (or Deleuze’s and Guattari’s) Nietzschean Spinozism as a new metaphysics to explain ethics, politics, aesthetics, ontology and so forth, seem to us candidates for the same type of **criticism, as a reductive passing over** the **empirical and analytic distinctness of** the **different** object **fields in complex societies.**

In truth, we feel that Theory, and the continuing line of ‘master thinkers’ who regularly appear particularly in the English- speaking world, is the last gasp of what used to be called First Philosophy. The philosopher ascends out of the city, Plato tells us, from whence she can espie the Higher Truth, which she must then bring back down to political earth. From outside the city, we can well imagine that she can see much more widely than her benighted political contemporaries. But from these philosophical heights, we can equally suspect that the ‘master thinker’ is also **always in danger of passing over** the **salient differences** and features of political life – differences only too evident to people ‘on the ground’. Political life, after all, is always a more complex affair than a bunch of ideologically duped fools staring at and enacting a wall (or ‘politically correct screen’) of ideologically produced illusions, from Plato’s timeless cave allegory to Žižek’s theory of ideology.

We know that Theory largely understands itself as avowedly ‘post- metaphysical’. It aims to erect its new claims on the gravestone of First Philosophy as the West has known it. But it also tells us that people very often do not know what they do. And so it seems to us that too many of its proponents and their followers are mourners who remain in the graveyard, propping up the gravestone of Western philosophy under the sign of some totalising account of absolutely everything – enjoyment, différance, biopower . . . Perhaps the time has come, we would argue, less for one more would- be global, allpurpose existential and political Theory than for a **multi- dimensional and interdisciplinary** critical **theory**

Marked

that would challenge the chaotic specialisation neoliberalism speeds up in academe, which mirrors and accelerates the splintering of the Left over the last four decades. This would mean that we would have to shun the hope that one method, one perspective, or one master thinker could single- handedly decipher all the complexity of socio- political life, the concerns of really existing social movements – which specifi cally does not mean mindlessly celebrating difference, marginalisation and multiplicity as if they could be suffi cient ends for a new politics. **It would be to reopen critical theory and non- analytic philosophy to the other intellectual disciplines**, most of **whom** today **pointedly reject Theory’s legitimacy,** neither reading it nor taking it seriously.

## fw—at: smith

#### Life affirmation is an infinitely regressive standard for framework—it’s possible to do both

Clare Hemmings 5, feminist theory prof at the London School of Economics, Invoking Affect, Cultural Studies Vol. 19, No. 5 September 2005, pp. 548 /567

While appreciative of a critical focus on the unusual, which is to say the non-socially-determined, not as a bid for group rights, but a bid for social transformation, I remain sceptical of what is often a theoretical celebration of affect as uniquely situated to achieve this end. This article explores my scepticism of such affective celebration through close engagement with Sedgwick’s (2003) and Massumi’s (2002) work on the subject. Both authors are well-respected contributors to contemporary cultural theory, and both have recently published monographs invoking affect as the way forward within that arena. For both authors it is affect’s difference from social structures that means it possesses, in itself, the capacity to restructure social meaning. But both authors are thereby presented with something of a problem. As prominent cultural theorists, they cannot fail to be aware of the myriad ways that affect manifests precisely not as difference, but as a central mechanism of social reproduction in the most glaring ways. The delights of consumerism, feelings of belonging attending fundamentalism or fascism, to suggest just several contexts, are affective responses that strengthen rather than challenge a dominant social order (Berlant 1997). Sedgwick and Massumi do both acknowledge this characteristic of affect in their work, but do not pursue it, interested instead as they both are in that ‘other affect’, the good affect that undoes the bad. It is difficult to maintain such an affective dichotomy of course, particularly in light of their own professed irritation with cultural theorists’ tendency to divide the world up into good and bad, repressive or subversive and so on, as I discuss in more detail below. But unfortunately neither author offers any explanation as to the relationship between these ‘two kinds’ of affect, which means the relationship remains dyadic.

Instead, both authors negotiate a way out of their own uncomfortable critical position by turning the question of affective freedom back onto the cultural critic, leaving it up to her or him to decide whether the direction they wish to pursue is one of the pessimism of social determinism (including bad affect) or the optimism of affective freedom (good affect). Two points come to mind at this point. Firstly, this question to the critic is hardly an open one. ‘Wouldn’t you rather be free?’ can hardly elicit a negative response in anyone but the most hardened cultural theorist, whose hardness is indeed evidenced by that response. Secondly, as part of persuading the critic that the question is a valid one, both the ills of cultural theory to date and the restorative power of affect need to be overstated. My overarching contention in this article, then, is that while affect may be an interesting and valuable critical focus in context, it often emerges as a rhetorical device whose ultimate goal is to persuade ‘paranoid theorists’ into a more productive frame of mind.

## A2 victimization

#### Images of suffering are key to compassion

**Porter 6**, Prof & head of the School of International Studies at the University of South Australia, (Elisabeth, Hypatia 21.4, project muse)

I have explained what constitutes suffering and that attentiveness affirms dignity. I clarify further the nature of attentiveness. If morality is about our concerned responsiveness, attention is the prerequisite to intense regard. Iris Murdoch borrowed the concept of "attention" from Simone Weil "to express the idea of a just and loving gaze" (1985, 34) on the reality of particular persons. Part of the moral task is, as Murdoch reiterated, to see the world in its reality—to see people struggling in pain and despair. Weil, too, gave "attention" a prominent place, grounded in concrete matters of exploitation, economic injustice, and oppression.[23](http://muse.jhu.edu/journals/hypatia/v021/21.4porter.html#FOOT23) Her emphases were pragmatic in struggling against the debilitating nature of life—how "it humiliates, crushes, politicizes, demoralizes, and generally destroys the human spirit" (quoted in R. Bell 1998, 16)—and idealistic in striving to put ideals into practice. Too readily, we think about suffering in the height of media accounts of famine, suicide bombings, terrorist attacks, refugee camps, and war's destructive impact, and retreat quickly into our small world of self-pity. As Margaret Little explains, Murdoch's point was that "the seeing itself is a task—the task of being attentive to one's surroundings" (1995, 121). We need to "see" reality in order to imagine what it might be like for others, even when this includes horrific images from war violence.[24](http://muse.jhu.edu/journals/hypatia/v021/21.4porter.html#FOOT24) Yet despite the presence of embedded journalists, media reporting of such events as the invasion of Iraq has remained entirely typical in that "the experience of the people on the receiving end of this violence remains closed to us" (Manderson 2003, 4). Without political imagination, we will not have compassionate nations. "Without being tragic spectators, we will not have the insight required if we are to make life somewhat less tragic for those who . . . are hungry, and oppressed, and in pain" (Nussbaum 1996, 88). In order for political leaders to demonstrate [End Page 113] compassion, they should display the ability to imagine the lives led by members of the diverse groups that they themselves lead. Otherwise, dispassionate detachment predominates and acts like the 2003 invasion of Iraq lead to talk of freedom without seeing fear, assume liberation without replacing the losses, and abuse power without addressing people's pain. "The difference, for instance, between someone who discerns the painfulness of torture and someone who sees the *evil* of it is that the latter person has come to see the painfulness as a reason not to torture" (Little 1995, 126). Attentive ethics in international relations is about priorities and choices.

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Even if **we** should adopt a **personal stance** of life affirmation, refusing to **allow others** to **embrace their lives** is worse than the embrace itself

Alex **Scott**, MD, Rush Medical College, Author, **2008**, Schopenhauer’s The World as Will and Idea <http://www.angelfire.com/md2/timewarp/schopenhauer.html>

**Schopenhauer** also **argues that the voluntary renunciation of egoism is achieved by a denial of the will-to-live. Morally right action may consist of denying one's own will-to-live, and may consist of not denying the will-to-live which is affirmed by other individuals**. Morally right action may also consist of **not forcing other individuals to submit to one's own will-to-live, and** may consist of **not forcing other individuals to deny their own will-to-live**. Justice may be achieved when the affirmation of the will-to-live by one individual does not conflict with the will-to-live of any other individual. According to Schopenhauer, justice is merely the negation of injustice. I**f an action by one individual does not deny the affirmation of the will-to-live by any other individual, then that action is not morally wrong**.

## A2 death k

#### The search for an authentic relationship to death devalues life

Theresa **Sanders 6**, theology prof at Georgetown, Tenebrae: Holy Week after the Holocaust, googlebooks

In her book Spirit of Ashes: Hegel, Heidegger, and Man-Made Mass Death, Edith Wyschogrod presents a history of how Western philosophers have thought of the meaning of death and its relation to life. She explains that for the most part, death has been viewed according to what she calls the “authenticity paradigm.” This paradigm is governed by “the assumption that a good death, even if not free of pain, is the measure of a good life.” The ultimate test of one’s life, according to this model, is whether one meets the inevitability of death with unflinching acceptance or with terror before the unknown. Wyschogrod offers two examples of the authenticity paradigm, one ancient and one more modern. The first comes from Plato’s Phaedo, which records the death of Socrates. According to the Phaedo, Socrates met his death not only with calm but with positive good cheer, taking time to instruct his disciples and to offer them words of encouragement even as the hemlock neared his lips. Because he had so thoroughly examined the nature of death while still alive, for him death held neither surprise nor sting. Socrates was able to accept the possibility that death would mean sinking into non-existence, even as he hoped that it might lead him to the freedom of the unimpaired soul, and the truth that is the goal of all philosophers. He underwent a “good death” because of the thoughtfulness and courageous quality of his life. Wyschogrod’s second example comes from the poetry of Rainer Maria Rilke. For Rilke, she says, death is not so much a future event as it is a dimension of the present. She explains that for the poet, “Only by integrating death into the texture of life is an authentic living and dying possible.” In this view, life can only be experienced in its depths if death is not only accepted but is allowed to illuminate each moment. And yet death does not thereby become the victor over life. Instead, death is the very condition of life; it is what makes the intensity of each moment possible and what makes each moment worth living. This point is crucial to Wyschogrod’s argument, as she believes that it is what differentiates Rilke’s situation from our own. For Rilke, she explains, there is a continuity that binds the present and the future together. She cites the first of Rilke’s Duino Elegies: “True it is strange to inhabit the earth no longer, / to use no longer customs scarcely required, / not to interpret roses, and other things / that promise so much, in terms of a human future…and to lay aside / even one’s proper name like a broken toy.” Even as the poem contemplates the disruption between the cares of the living and the concerns of the dead, it asserts a continuity between them. Explains Wyschogrod, “For this reason the fundamental assumption, the hidden premise, which undergirds this verse is the indestructability of an accustomed field of reference – “the things that promise so much,’ ‘customs scarcely acquired,’ ‘roses,’ ‘the name laid aside’ – since these are the stuff through which any meaningful grasp of the future comes about.” However, says Wyschogrod, the possibility of anticipation, of “looking forward to,” is precisely what has been called into question by the twentieth century and the advent of mass death. The threat of annihilation made possible by nuclear holocaust overwhelms any poetic holding-in-balance of life and death. We face, she observes, the prospect of wiping not only ourselves but all earthly being out of existence. This possibility of pure annihilation opens up a breach between our present and our future. In contemplation of mass destruction, we can no longer imagine, as Rilke did, the dead gently laying aside their customs, their roses, and their names like so many broken toys. We do not have the luxury of imagining individual souls parting reluctantly from those whom they leave behind, and thus no one to weight the meaning of death with a counterbalancing intensity of life.

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Concludes Wyschogrod, “By destroying the system of meanings which rendered death-accepting behavior possible, the effect of man-made mass death has undercut the power of the authenticity paradigm which permitted mastery over death.” What can we say, then, about the Catholic admonition to remember that we are dust and that we will return to dust? Let us begin with what we cannot say. We cannot simply comfort ourselves with the idea that death is a part of life, that is always has been and always will be, and that our deaths will clear the way for the generation of new life. Not only has the projection towards “always” been called into question, but the notion that death contributes to life has been overshadowed by the possibility of the complete annihilation of all life. Moreover, death as the origin of life has been given sinister meaning by the calculations of Nazism: the use of human remains as fertilizer and stuffing for mattresses, among other things. Such economics turn imagery of the “cycle of life” into mockery.