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### Contention 1: SQ

#### Contention One: The Status Quo

#### First, nano development in Mexico is on the rise – it’s unregulated and risks spinning out of control

Inter Press Service 12 (Tierramérica, “MEXICO: Scientists Call For Regulation of Nanotechnology,” 03/12/2012, http://www.tierramerica.info/nota.php?lang=eng&idnews=3920&olt=568, AC)

MEXICO CITY, Mar 12 (Tierramérica).- Nanotechnology, which is currently unregulated in Mexico, could pose serious threats to human health and the environment, cautions a new study. "Far from a policy of precaution vis-à-vis these new technologies, products are entering the market without regulation to guarantee their safety or labels to inform of their use," researcher Guillermo Foladori of the public Autonomous University of Zacatecas told Tierramérica. Foladori and his colleague Noela Invernizzi are the co-authors of a new report, "Implicaciones sociales y ambientales del desarrollo de las nanotecnologías en América Latina y el Caribe" (Social and Environmental Implications of Nanotechnology Development in Latin America and the Caribbean), presented on Mar. 7 in Mexico City. Nanotechnology involves the manipulation of matter on an atomic and molecular scale to change its physical and chemical properties, and is used in electronic components, cosmetics and packaging, among other products.

#### And, haphazard development risks spilling over

Foladori and Lau 7

(ReLANS coordinators, Doctoral Program in Development Studies Universidad Autónoma de Zacatecas Zacatecas, México, “Nanotechnologies in Latin America,” pg online @ <http://www.rosalux.de/fileadmin/rls_uploads/pdfs/Manuskripte_81.pdf> //um-ef)

At the beginning of 2002, all nanotechnology-related research became an area of strategic importance, with some funding directed to support its development. The Programa Especial de Ciencia y Tecnología 2001-2006 (Special Program for Science and Technology 2001-2006), which is embedded inside the National Development Plan 2001-2006, views nanotechnology as a strategic area within the science of advanced materials. In the same document, the core areas to be developed are depicted in detail and include nanostructures, semiconductors, metallurgy, biomaterials, optical components, advance ceramics and modulation of materials and processes. Additionally, the Development Plan reviews the available resources in research centers with a special focus on human resources, equipment and the connections they have with industry. The Programa Especial points out the pressing need for creating a national plan on nanotechnology development and the necessity to encourage the formation of networks for scientific exchange in the area (CONACYT, 2002). Moreover, the National Development Plan 2001-2006 identifies nanotechnology research as an important subfield inside the energy sector, above all others within the framework of the Instituto Mexicano del Petróleo (“IMP”) (Mexican Institute of Petroleum). The conditions and provisions to create and implement a National Initiative for Nanotechnology Development were present, but the lack of funding and the absence of an executive plan created barriers to fully develop a national initiative for nanotechnology. In this regard, the budget for Science and Technology (“S&T”) has dramatically decreased in the last five years. In the National Development Plan, it was expected that the disbursement for Research and Development (“R&D”) would reach 1% of Gross National Product (“GDP”) by 2006. By 2004 this estimate was reduced to 0.5% of GDP and by 2005 it barely reached 0.4%. This could change at any time. One indicator of change is the report issued by the Committee for Science and Technology of the Senate of the Republic in 2005. In this document, the Committee pronounced itself in favor of preparation for a National Emergency Program for investment in research and teaching of nanotechnology (Comisión de Ciencia y Tecnología, Senado de la República, 2005). Several researchers and specialists in the nanoscience field worked in a partnership to create the Programa Especial de Ciencia y Tecnología 2001-2006, reviewing a large number of national programs for nanotechnology research in other countries, particularly the National Nanotechnology Initiative of the U.S. After a review of nanotechnology initiatives, it is surprising that the Programa Especial does not make any reference to the possible risks to health and the environment related to the use of nanotechnology—neither its ethical and legal implications, nor the public participation in what many scientists see as the most important technological revolution of the 21st century. The absence of concern associated with the use of nanotechnology in México becomes worrying because of the increasing number of laboratories in the area. Furthermore, many of them are already using clean rooms and very sophisticated equipment with the main objective of encouraging the production of nanocomponents for the industrial sector. In the same vein, Argentina and Brazil do not have a program to discuss the implications and risks of nanotechnology, or a plan to supervise the activities related to nanotechnology research and development. In this regard, it is clear that the distance between Latin America and its European and North American counterparts is expanding. Due to the absence of a National Nanotechnology Initiative, México has turned its attention to different research centers in search for bilateral or multilateral agreements to foster the creation of scientific networks in the area. A report, written by Malsch Technovaluation relating to micro- and nanotechnology in México, points out that there are eleven research groups located in three universities and two research institutes, with ninety researchers in the area of nanotechnology (Lieffering, 2004; Malsch, & Lieffering, 2004). Other sources estimate the number of researchers working on nanotechnology in México at between 300 and 500. It is beyond the aim of this article to provide a complete picture of the status of nanotechnology in México, but it is worth mentioning some of the efforts made in this regard.

#### This causes toxic poisoning of the environment

Vandermolen 6

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Environmental Damage. MNT was originally perceived as a potential cure-all for a variety of environmental problems: nanobots in the atmosphere, for example, could physically repair the ozone layer or remove greenhouse gases. Recently, however, NT is increasingly seen as a potential environmental problem in its own right. Both NT and MNT are expected to produce large quantities of nanoparticles and other disposable nanoproducts, the environmental effects of which are currently unknown. This “nanolitter,” small enough to penetrate living cells, raises the possibility of toxic poisoning of organs, either from the nanolitter itself or from toxic elements attached to those nanoparticles.26

#### Extinction

CRN 4

(Center for Responsible Nanotechnology, 4/19/04, “Disaster Scenarios”, <http://crnano.typepad.com/crnblog/2004/07/disaster_scenar.html> //nz)

Subquestion F: Environmental devastation by overproduction? Preliminary answer: It would be easy to build enough nano-litter to cause serious pollution problems. Small nano-built devices in particular will be difficult to collect after use. It will also be easy to consume enough energy to change microclimate and even global climate. Overpopulation is probably not a concern, even in the event of extreme life/health extension. The more people use high technology, the fewer children they seem to have. Provisional conclusion: Several plausible disaster scenarios appear to pose existential threats to the human race.

#### The United States federal government should substantially increase its nanotechnology assistance toward Mexico.

### Contention 2: Mexico

#### Contention Two: Mexico

#### Current nanotech policies avoid places like Latin America

Wilson Center 07

(Woodrow Wilson Internatonal Center for scholars “The promise of Nanotechnology” may 2007 pg online @ <http://www.wilsoncenter.org/article/the-promise-nanotechnology> //um-ef)

The market opportunity is substantial. Nanotechnology has been incorporated into billions of dollars worth of manufactured goods. An online inventory maintained by the Project since March 2006 contains nearly 400 manufacturer-identified, nanotechnology-based consumer products already on the market. The inventory includes a range of fitness, food, electronic, automotive, and home and garden products, and the rapid pace of commercialization will likely continue for the foreseeable future. Many business and government leaders describe nanotechnology as "the next Industrial Revolution," yet the environmental and health impacts remain unknown, and there is great need to assess and study the implications and how institutions can adapt to this new technology. By publishing reports, hosting seminars, conducting surveys, and testifying at congressional and agency hearings, the Project seeks to inform industry, government, and the public about nanotechnology's potential hazards as well as the vast benefits and future opportunities. Health Opportunities Nanomedicine is a rapidly growing field that holds the promise of new vaccines, medical treatments, and cures. By manipulating molecules, scientists will be able to create drugs that treat cancer, engineer materials to replace diseased organs, repair nerve damage, and improve prosthetic limbs, among many other medical breakthroughs. A new report, Nanofrontiers: Visions for the Future of Nanotechnology, released by the Project in conjunction with the National Science Foundation (NSF) and the National Institutes of Health (NIH), summarizes discussions that took place at the Wilson Center among dozens of scientists, engineers, ethicists, policymakers, and other experts on the long-term potential of nanotechnology. One section of the report focuses on the groundbreaking work of biologists and chemists in revolutionizing medicine. One such scientist, Dr. Samuel I. Stupp, director of the Institute of BioNanotechnology in Medicine at Northwestern University, suggests that nanotechnology can be used to mobilize the body's own healing abilities to repair or regenerate damaged cells, and his early clinical studies have yielded incredible results. His work has implications for Parkinson's and Alzheimer's, both diseases in which key brain cells stop working properly. Similarly, Dr. Elias A. Zerhouni, director of the National Institutes of Health, envisions nanotechnology leading to a radical transformation in health care, making it more predictive, preemptive, and personalized. Dr. Stupp said about his work with laboratory animals, "By injecting molecules that were designed to self-assemble into nanostructures in the spinal tissue, we have been able to rescue and re-grow rapidly damaged neurons. The nanofibers—thousands of times thinner than a human hair—are the key to not only preventing the formation of harmful scar tissue which inhibits spinal cord healing, but to stimulating the body into regenerating lost or damaged cells." Advances in nanotechnology have the potential to improve health benefits for the more than five billion people in the developing world. At a Wilson Center seminar in March, Dr. Peter A. Singer, senior scientist at the McLaughlin-Rotman Centre for Global Health and professor of medicine at the University of Toronto, said, "Nanotechnology might provide less-industrialized countries with powerful new tools for diagnosing and treating disease, and might increase the availability of clean water." But there are numerous obstacles. "Business has little incentive to invest as shown by the lack of new drugs for… diseases that disproportionately affect people in developing countries," Singer said. Meanwhile, he added, government foreign assistance agencies and nongovernmental organizations (NGOs) do not focus, or focus adequately, on how nanotechnology could improve health in developing countries. "Countries like Brazil, India, China and South Africa have significant nanotechnology research initiatives that could be directed toward the particular needs of the poor," noted Dr. Andrew Maynard, chief science advisor for the Project. "But there is still a danger—if market forces are the only dynamic—that small minorities of people in wealthy nations will benefit from nanotechnology breakthroughs in the health sector, while large majorities, mainly in the developing world, will not. Responsible development of nanotechnology must include benefits for people in both rich and poor nations and at relatively low cost."

#### Nanotech has the potential to help millions in Latin America

Foladori and Lau 07

(ReLANS coordinators, Doctoral Program in Development Studies Universidad Autónoma de Zacatecas Zacatecas, México, “Nanotechnologies in Latin America,” pg online @ <http://www.rosalux.de/fileadmin/rls_uploads/pdfs/Manuskripte_81.pdf> //um-ef)

There has been little coverage in the international media about the development of nanotechnologies in Latin America; even though some countries in the region have allocated large amounts of resources to get on board the nanotechnological wave. Brazil, in 2001, launched a national program to endorse the formation of research networks on nanotechnnology development. This came about shortly after the United States (US) presented its National Nanotechnology Initiative in 2001 with a budget of USD 500-million. In Mexico, dozens of public research centers entered the new century by signing several research agreements with foreign institutions; these institutions also opened graduate courses centered on nanotechnology- related research. In Argentina, since 2005, the Comisión Nacional de Energía Atómica (National Commission of Atomic Energy) was strengthened by directing most of its scarce resources to promote the development of nanotechnology in the nation. COLCIENCIAS, the Colombian institution in charge of S&T, included, in 2004, the area of “advanced materials and nanotechnology” in its research plan. There are other countries with a smaller presence in the area but that have officially allocated some resources to this purpose or have created centers focused on the R&D of nanotechnologies. Brazil, Argentina and México are the leading countries in nanotechnology R&D in Latin America. In Brazil, there are currently ten scientific research networks working on nanotechnology, all divided according to their areas of interest. Argentina has currently four active networks. In Mexico, the organization is much more decentralized, with the largest university, the Universidad Nacional Autónoma de México (UNAM), concentrating the most the human resources working in the area, with more than 300 researchers. In Colombia there are about 34 research groups undertaking research in nanotechnology. The role of the private sector in nanotechnology development in these countries and in most of Latin America is still ambiguous. History has shown that the Latin American private sector has not been closely engaged with the R&D of new technologies. The general trend is that companies wait for either the government or public research centers to innovate so they can later make free use of the discoveries. Most scientists see this as the most significant disadvantage, particularly, because in this context, there are very limited possibilities to organize innovation around the development of new merchandise. However, the division between the private and the public sector in Latin America can open a window of opportunity to create large public companies with an interest in applying nanotechnology for the well-being of society. This, of course, would have to include most of the nonprofitable areas of nanotechnology development such as: potable water, public health, massive education, popular housing and many others. It is worth mentioning that the main, if not the only, incentive behind nanotechnology development in Latin America is to encourage an increase in competitiveness. This subject is a matter of concern because the region has clear examples of the consequences of the constant search for an increase in international competitiveness while ignoring social indicators. The case of Mexico is, in this regard, very illustrative. There is neither a mechanical nor a linear correlation between good macroeconomic performance and the improvement of the living conditions of the population. The income concentration and inequality are features of the Latin-American social structure that will not be solved, at least mechanically, by just having a better position in the world market. Internationally, there is an ongoing debate about the potential health and environmental risks of the use of nanotechnology. In Latin America, the debate is still at its dawn. In 2007, some institutions in Argentina and Brazil have discreetly raised the importance of discussing those issues. It is clear that the subjects should be opened to the scrutiny of the public in a transparent manner as soon as possible. Further, the discussion about the social and ethical implications of the use of this technology is absent in the institutional and academic arena, even though it has been raised by some trade unions. In the region, where inequality is already an important challenge, the changes in the industrial apparatus that nanotechnology will bring are a matter of concern for the working sector and some other social groups. In this context, it is not a surprise to discover the lack of linkage between R&D and the social needs that are widespread throughout Latin America. This link, of course, is absent inside the nanotechnology programs and is completely ignored in the policy rationale behind their implementation.

#### Collaboration is key – only way to ensure pro-poor research

Lodwick et al 7 (T. Lodwick\*, R. Rodrigues\*\*, R. Sandler\*\*\*, W.D. Kay\*\*\*\* \* Nanotechnology and Society Research Group (NSRG), Northeastern University \*\*Santa Clara University, School of Law, \*\*\*NSRG, Department of Philosophy and Religion, Northeastern University, \*\*\*\*NSRG, Deapartment of Political Science, Northeastern University, “nanotechnology and the global poor: the united states policy and international collaborations” pg online @ <http://www.nsti.org/procs/Nanotech2007v1/8/T81.501>, AC)

Perhaps the most basic barrier to conducting nanotechnology research is equipment costs. One way for a researcher in a developing nation to reduce these costs is by collaborating with a researcher from another developing nation (South-South collaboration), or with a researcher from a developed nation (North-South collaboration). Each type of partnership has benefits and limitations. While South-South research is more likely to focus on developing world problems, resources may still be constrained; and while North-South collaboration enables access to high-tech facilities, little incentive exists for developed world researchers to partake in such collaborations. The lack of incentives for researchers in the developed world to aid the developing world is a critical barrier to diffusing nanotechnology. There is little or no financial incentive for developed world researchers to make the required effort to work with developing world researchers. Similarly, there are very few funding sources that exist to provide incentives for developed world researchers to independently address the social problems facing the developing world (pro-poor research).

#### Nanotech is critical –provides the best development of disease prevention techniques

VOA News 09(“Nanotechnology Could Improve Health Care in Developing Countries,” pg online @ [http://www.voanews.com/articleprintview/347615.html //um-ef)\](http://www.voanews.com/articleprintview/347615.html%20//um-ef%29%5C)

Scientists say nanotechnology, which involves some of the smallest things on earth, could have a big impact in developing countries. And some of the biggest benefits could come in improving health. Nanotechnology refers to the ability to manipulate materials on the nanometer scale. How small is that? A nanometer is one-billionth of a meter - something like the length of a line,10 atoms long. That's hard to grasp, so nanotech scientist Andrew Maynard explains it with an analogy. If you can imagine a child the size of the Moon, "a tennis ball will be something like 50 nanometers in diameter. Or the head of a pin will be one nanometer in diameter. So the difference in scale, going from human scale to the nanoscale, is the equivalent of taking the moon and putting the head of a pin on the moon." Maynard is chief scientist at the Project on Emerging Nanotechnologies, part of the Woodrow Wilson Center in Washington. At a recent symposium, he said researchers have been using nanotechnology to create products like cosmetics and stain resistant clothing. But some of the most promising uses of nanotechnology are in the health field. In sub-Saharan Africa each year, malaria kills a million children under the age of five. A big part of the malaria challenge is correctly diagnosing patients. Often, anti-malaria drugs are given without a proper diagnosis, to people who may not have malaria. That's not only wasteful, it contributes to drug resistance. Peter Singer of the University of Toronto says a nanotechnology called quantum dots could make it much easier to correctly diagnose malaria, instead of using the traditional method of examining a patient's blood under a microscope. "The bottom line," says Singer, "is that changing the infrastructure from moderate infrastructure like microscopes, to minimal infrastructure, like the quantum dots I was showing you, saves hundreds of thousands of lives for malaria. So this is a serious public health issue at stake, just from a diagnostic." In addition to better diagnostics, nanotechnology could also help in treating disease. For example, as Piotr Grodzinski of the U.S. National Cancer Institute points out, it could help make existing medicines more effective. "You can develop techniques which allow [doctors] to deliver the therapeutic drug or therapeutic treatment locally to the tumor site, and in many cases use much lower dose of the drug, and by that means cause lower side effects." Advances in nanotechnology are coming out of labs in the usual advanced countries. But scientists in developing and emerging countries - China, India and Brazil, for example - are also involved. However, as program moderator Jeff Spieler of the U.S. Agency for International Development cautioned, it's still a big step getting those innovations to some of the world's poorest people. "This to some extent will depend on how many of the new innovations will actually be coming from the laboratories of less developed countries," said Spieler, "and then what is the likelihood of that these advances, even in those laboratories, will find their way into the indigenous populations of those countries and not be picked up by somebody else?" Although nanotech experts stress the potential benefits from the new technology, they also concede that there are risks involved in working with these new nano materials. Andrew Maynard of the Woodrow Wilson Center acknowledged the uncertainties. "If you look at the very simplest case of nanometer-size particles, we know they behave differently in the body and in the environment [compared] to larger, more conventional particles," Maynard explained. "So yes, there are going to be a whole new set of risk issues we need to address, and that's going to require quite a substantial investment in new science to understand what those risks are, but also how to translate and transform that information into effective and safe ways of using the technologies." Among those at risk could be workers involved in manufacturing new nano-scale materials, as well as consumers, such as those taking nano-based medicines.

Disease causes extinction

Naish 12 (John Naish, writer for Daily Mail, citing John Oxford, professor of virology at Queen Mary’s School of Medicine and Dentistry, Scientific Director of Retroscreen Virology Ltd, considered to be the leading expert on disease and viral outbreaks, 10-14-12, “The Armageddon virus: Why experts fear a disease that leaps from animals to humans could devastate mankind in the next five years,” <http://www.dailymail.co.uk/sciencetech/article-2217774/The-Armageddon-virus-Why-experts-fear-disease-leaps-animals-humans-devastate-mankind-years.html>) gz

When the Health Protection Agency warned the world of this newly- emerging virus last month, it ignited a stark fear among medical experts.¶ Could this be the next bird flu, or even the next ‘Spanish flu’ — the world’s biggest pandemic, which claimed between 50 million and 100 million lives across the globe from 1918 to 1919?¶ In all these outbreaks, the virus responsible came from an animal. Analysts now believe that the Spanish flu pandemic originated from a wild aquatic bird.¶ The terrifying fact is that viruses that manage to jump to us from animals — called zoonoses — can wreak havoc because of their astonishing ability to catch us on the hop and spread rapidly through the population when we least expect it. ¶ One leading British virologist, Professor John Oxford at Queen Mary Hospital, University of London, and a world authority on epidemics, warns that we must expect an animal-originated pandemic to hit the world within the next five years, with potentially cataclysmic effects on the human race.¶ Such a contagion, he believes, will be a new strain of super-flu, a highly infectious virus that may originate in some far-flung backwater of Asia or Africa, and be contracted by one person from a wild animal or domestic beast, such as a chicken or pig. ¶ By the time the first victim has succumbed to this unknown, unsuspected new illness, they will have spread it by coughs and sneezes to family, friends, and all those gathered anxiously around them.¶ Thanks to our crowded, hyper-connected world, this doomsday virus will already have begun crossing the globe by air, rail, road and sea before even the best brains in medicine have begun to chisel at its genetic secrets. Before it even has a name, it will have started to cut its lethal swathe through the world’s population.¶ If this new virus follows the pattern of the pandemic of 1918-1919, it will cruelly reap mass harvests of young and fit people. ¶ They die because of something called a ‘cytokine storm’ — a vast overreaction of their strong and efficient immune systems that is prompted by the virus.¶ This uncontrolled response burns them with a fever and wracks their bodies with nausea and massive fatigue. The hyper-activated immune system actually kills the person, rather than killing the super-virus.¶ Professor Oxford bases his prediction on historical patterns. ¶ The past century has certainly provided us with many disturbing precedents. For example, the 2003 global outbreak of Sars, the severe acute respiratory syndrome that killed nearly 1,000 people, was transmitted to humans from Asian civet cats in China.¶ In November 2002, it first spread among people working at a live animal market in the southern Guangdong province, where civets were being sold. ¶ Nowadays, the threat from such zoonoses is far greater than ever, thanks to modern technology and human population growth. Mass transport such as airliners can quickly fan outbreaks of newly- emerging zoonoses into deadly global wildfires. ¶ The Sars virus was spread when a Chinese professor of respiratory medicine treating people with the syndrome fell ill when he travelled to Hong Kong, carrying the virus with him. ¶ By February 2003, it had covered the world by hitching easy lifts with airline passengers. Between March and July 2003, some 8,400 probable cases of Sars had been reported in 32 countries.¶ It is a similar story with H1N1 swine flu, the 2009 influenza pandemic that infected hundreds of millions throughout the world. It is now believed to have originated in herds of pigs in Mexico before infecting humans who boarded flights to myriad destinations. ¶ Once these stowaway viruses get off the plane, they don’t have to learn a new language or new local customs. ¶ Genetically, we humans are not very diverse; an epidemic that can kill people in one part of the world can kill them in any other just as easily. ¶ On top of this, our risk of catching such deadly contagions from wild animals is growing massively, thanks to humankind’s relentless encroachment into the world’s jungles and rainforests, where we increasingly come into contact for the first time with unknown viral killers that have been evolving and incubating in wild creatures for millennia.¶ This month, an international research team announced it had identified an entirely new African virus that killed two teenagers in the Democratic Republic of the Congo in 2009. ¶ The virus induced acute hemorrhagic fever, which causes catastrophic widespread bleeding from the eyes, ears, nose and mouth, and can kill in days.¶ A 15-year-old boy and a 13-year-old girl who attended the same school both fell ill suddenly and succumbed rapidly. A week after the girl’s death, a nurse who cared for her developed similar symptoms. He only narrowly survived.¶ The new microbe is named Bas-Congo virus (BASV), after the province where its three victims lived. It belongs to a family of viruses known as rhabdoviruses, which includes rabies. ¶ A report in the journal PLoS Pathogens says the virus probably originated in local wildlife and was passed to humans through insect bites or some other as-yet unidentified means. ¶ There are plenty of other new viral candidates waiting in the wings, guts, breath and blood of animals around us. You can, for example, catch leprosy from armadillos, which carry the virus in their shells and are responsible for a third of leprosy cases in the U.S. ¶ Horses can transmit the Hendra virus, which can cause lethal respiratory and neurological disease in people. ¶ In a new book that should give us all pause for thought, award-winning U.S. natural history writer David Quammen points to a host of animal-derived infections that now claim lives with unprecedented regularity. The trend can only get worse, he warns.¶ Quammen highlights the Ebola fever virus, which first struck in Zaire in 1976. The virus’s power is terrifying, with fatality rates as high as 90 per cent. The latest mass outbreak of the virus, in the Congo last month, is reported to have killed 36 people out of 81 suspected cases.¶ According to Quammen, Ebola probably originated in bats. The bats then infected African apes, quite probably through the apes coming into contact with bat droppings. The virus then infected local hunters who had eaten the apes as bushmeat. ¶ Quammen believes a similar pattern occurred with the HIV virus, which probably originated in a single chimpanzee in Cameroon. ¶ Studies of the virus’s genes suggest it may have first evolved as early as 1908. It was not until the Sixties that it appeared in humans, in big African cities. By the Eighties, it was spreading by airlines to America. Since then, Aids has killed around 30 million people and infected another 33 million.¶ There is one mercy with Ebola and HIV. They cannot be transmitted by coughs and sneezes. ‘Ebola is transmissible from human to human through direct contact with bodily fluids. It can be stopped by preventing such contact,’ Quammen explains. ¶ ‘If HIV could be transmitted by air, you and I might already be dead. If the rabies virus — another zoonosis — could be transmitted by air, it would be the most horrific pathogen on the planet.’¶ Viruses such as Ebola have another limitation, on top of their method of transmission. They kill and incapacitate people too quickly. In order to spread into pandemics, zoonoses need their human hosts to be both infectious and alive for as long as possible, so that the virus can keep casting its deadly tentacles across the world’s population.¶ But there is one zoonosis that can do all the right (or wrong) things. It is our old adversary, flu. It is easily transmitted through the air, via sneezes and coughs. ¶ Sars can do this, too. But flu has a further advantage. As Quammen points out: ‘With Sars, symptoms tend to appear in a person before, rather than after, that person becomes highly infectious. ¶ ‘That allowed many Sars cases to be recognised, hospitalised and placed in isolation before they hit their peak of infectivity. But with influenza and many other diseases, the order is reversed.’¶ Someone who has an infectious case of a new and potentially lethal strain of flu can be walking about innocently spluttering it over everyone around them for days before they become incapacitated.¶ Such reasons lead Professor Oxford, a world authority on epidemics, to warn that a new global pandemic of animal-derived flu is inevitable. And, he says, the clock is ticking fast.¶ Professor Oxford’s warning is as stark as it is certain: ‘I think it is inevitable that we will have another big global outbreak of flu,’ he says. ‘We should plan for one emerging in 2017-2018.’¶ But are we adequately prepared to cope? ¶ Professor Oxford warns that vigilant surveillance is the only real answer that we have. ¶ ‘New flu strains are a day-to-day problem and we have to be very careful to keep on top of them,’ he says. ¶ ‘We now have scientific processes enabling us to quickly identify the genome of the virus behind a new illness, so that we know what we are dealing with. The best we can do after that is to develop and stockpile vaccines and antiviral drugs that can fight new strains that we see emerging.’¶ But the Professor is worried our politicians are not taking this certainty of mass death seriously enough. ¶ Such laxity could come at a human cost so unprecedentedly high that it would amount to criminal negligence. The race against newly-emerging animal-derived diseases is one that we have to win every time. A pandemic virus needs to win only once and it could be the end of humankind.

#### Nanotech solves disease—reject generic defense—quantum dots sidestep conventional disease prevention

Court et al 04(E. Court\*, A. Daar\*\*, E. Martin\*\*\*, T. Acharya\*\*\*\*, P. Singer\*\*\*\*\* \*University of Toronto Joint Center for Bioethics, Canada \*\*McLaughlin Centre for Molecular Medicine and Departments of Public Health Sciences and Surgery, University of Toronto; University of Toronto Joint Center for Bioethics, Canada \*\*\*University of Toronto Joint Center for Bioethics, Canada \*\*\*\*University of Toronto Joint Center for Bioethics, Canada \*\*\*\*\* University of Toronto Joint Center for Bioethics, Canada; Department of Medicine, University of Toronto, Canada, “Will Prince Charles et al diminish the opportunities of developing countries in nanotechnology?”, 01/28/2004, <http://nanotechweb.org/cws/article/indepth/18909//VS>)

Nanotechnology offers a range of potential benefits for developing countries. Nanometre-sized quantum dots can be used to tag biological molecules for the identification of proteins that indicate disease status7 without many of the drawbacks associated with conventional organic dyes used to mark cells8. Quantum dots could eventually be used in clinical diagnostic tests to quickly detect molecules associated with cancer cells and HIV/AIDS. This has great relevance to developing countries, where over 95% of new HIV infections occurred in 20029. Quantum dot optical biosensors can be used for the detection of TB10, which along with HIV and Malaria is responsible for half of infectious disease mortality in developing countries11. In India, the Central Scientific Instruments Organization has recently announced plans for the development of a prototype nanotechnology-based TB diagnostic kit which would reduce the cost and time required for TB tests and also use a smaller amount of blood for testing12. Further, quantum dots and other nanomaterials could be integrated with microtechnology to develop inexpensive miniaturized devices for medical diagnostics. The size of these devices would allow them to be easily used in remote regions. Vaccinations that have greatly reduced child mortality in developing countries13 could be administered in a more controlled and targeted manner using nanoparticle delivery systems14, 15. Two US-patented nanoparticle drug delivery systems16, 17 developed by researchers at the University of Delhi have already been transferred to Indian industry for commercialization. Nanotechnology-based bone scaffolds have the ability to repair damaged skeletal tissue caused by injury resulting from road traffic accidents, the so-called “unseen epidemic” 18 of developing countries. In China, a recently developed nanotechnology bone scaffold has been tested in 26 hospital patients19. Enzyme biosensors can be used to monitor soil and crop toxicity levels to improve agricultural quality control in developing countries20. Water purification technologies have been recognized as one of several key nanotechnology applications for developing countries21. The University of Brazil is currently conducting research on nanomagnets that would be attracted to oil to aid the clean-up of large oil spills. Many of these activities, of course, also hold promise for economic development.

#### And, Mexico is key – Provides a Nano Model for Developing Countries –

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As one of the handful of countries pursuing nanotechnology development in Latin America, ¶ and the one with perhaps the closest relationship with U.S.-based nanotechnology partners, ¶ México assumes a leading position in the appropriate development and implementation of the ¶ industry. Over the long-term, if México achieves some measure of success in ensuring that the ¶ nanotechnology industry development is carried out in a reflexive and responsive manner, ¶ while compensating for the potential social / economic / legal / environmental pitfalls, it will ¶ become the model to be emulated as nanotechnology endeavors are pursued by others in the ¶ region. These issues are at the core of the project conducted during the research visit in ¶ Twente. ¶ A further benefit accrues from integrating partnerships with European partners, in the ¶ strengthening of the network of researchers and the transfer of knowledge in both directions. ¶ Given the situation in México, with an entirely science- and business-driven conceptualization ¶ of nanotechnological development, there is a need to undertake an assessment of these new ¶ technologies, and augment existing analytical capacity to implement appropriate reflexive and ¶ above all social assessments.

### Contention 3: U.S.

#### Contention Three: The United States

#### First, U.S. Tech Leadership is collapsing and that’s an existential risk

Dr. Hummell et al 12(Robert Hummel, PhD1,\*, Policy Research Division, Potomac Institute for Policy Studies,, Patrick Cheetham1, Justin Rossi1, Synesis: A Journal of Science, Technology, Ethics, and Policy 2012 “US Science and Technology Leadership, and Technology Grand Challenges,” pg online @ <http://www.synesisjournal.com/vol3_g/Hummel_2012_G14-39.pdf> //um-ef)

Taken together, there is no direct evidence that the US has been overtaken in quality of S&T output, and most indications support the notion that the US leads the world in **s**cience **and** **t**echnology in all fields. **However, the trends are not favorable** to maintenance of this position, and it seems likely that in some fields, **US leadership could falter**. When such cross-over might occur, or in what fields, and whether it is inevitable, is uncertain. DoD policy implications While **a gradual decline in US S&T leadership** does not provide a “Sputnik moment” (65),ix it **poses** no less of **an existential threat**. When technical innovations occur in potentially adversarial countries or domains, a strategy that relies on technological superiority for defense capabilities will no longer suffice. **If a potential adversary can introduce a disruptive technological capability, they can then use deterrence or influence to control behaviors, compete economically, secure scarce resources, and control diplomatic agendas** **The US strategy continues to depend on technological superiority**. Thus from a DoD perspective, it is imperative that the US maintain its position of technological leadership. A Senate Armed Services Committee (subcommittee on Emerging Threats and Capabilities) hearing on the “Health and Status of the Defense Industrial Base and its S&T-related elements” (66)xi took place in May 2011, and highlighted some of the issues and potential solution paths. Those testifying called for a comprehensive strategy for the US to maintain technological leadership well into the 21st century. Many other specific suggestions were made during that hearing as to ways to support the industrial base and to assist the partnership of DoD and the defense industrial base to utilize technology advances efficiently. Future prospects Many remedies have been proposed to ensure continued US technology leadership, in the face of challenges and stresses within the US S&T enterprise. Some of the typical concerns are overall funding levels, DoD funding for S&T, the efficiency of the application of funds to S&T, and the emphasis of disciplines within S&T. Other concerns include regulations and impediments to research in S&T, and the production rate of scientists and the career opportunities. We have noted many of these issues in our survey of elements of the S&T enterprise. The larger concern is over the respect in which science and technology is held within our society. Since research is an intermediate product, often accomplished years before product and societal benefits, there is often little appreciation of the role of the researcher and inventor. After World War II, there was great respect afforded scientists, particularly physicists. Post-Sputnik, there was a deliberate effort to elevate the stature of science and technology, and the manned space program certainly contributed to societal respect. Some argue that it is because there has been a precipitous off-shoring of manufacturing that the generation of new ideas has moved overseas (67). Andy Grove of Intel makes a complementary argument: That as manufacturing moves overseas, American companies lose the knowledge of how to scale up new ideas to full-scale production (68). Both arguments suggest there are reduced incentives for domestic research as manufacturing moves elsewhere, and lead to the conclusion that research is best performed by those with familiarity of product production. Thus, they argue that we need to reinvigorate manufacturing and production for economic vitality so that technology development and leadership will follow. And, indeed, the nation has an Advanced Manufacturing Initiative, and many cite a resurgence of domestic manufacturing as incentives normalize to less favor off-shoring. Summing up the landscape The US has the best universities, the most winners of the Nobel Prize, the best young scientists, and the largest investment in research and development of any nation on earth. So how can it be that the US is apparently losing its lead in science and technology? The answer isn’t that the US has slowed down, although according to some the rate of technical progress has, indeed, slowed. The fact is that the competition has discovered the importance of innovation, and has begun to reap rewards from speeding up. We have seen that China especially is mustering its considerable resources to develop what they call an “innovation economy,” but that other nations, as well as Europe, highly value science and engineering, and implicitly or tacitly have begun to challenge US technology leadership. At the same time, the globalization of research and ease with which international science collaborations take place mean that continued US leadership requires full engagement with the international scientific community. Thus, impediments to exchange of information and bureaucracy in the conduct of US research are counter-productive. According to Bill Gates, you always have to renew your lead.xii The US has the resources and infrastructure necessary to maintain and renew a lead in technology. But momentum is not sufficient. In light of concerted efforts in other nations, coasting in science and technology will jeopardize national security, and also jeopardize the economic and societal benefits of being first to market with technological innovations. No single agency or entity within the United States can enact a strategy to renew the technology lead. Instead, continued US technical leadership will require a dedicated and coordinated effort throughout the society.

#### And, Locking-in Tech leadership reduces conflict

Goldstein 07Avery Goldstein, David M. Knott Professor of Global Politics and International Relations at the University of Pennsylvania, Associate Director of the Christopher H. Browne Center for International Politics, Senior Fellow at the Foreign Policy Research Institute, holds a Ph.D. from the University of California-Berkeley, 2007 (“Power transitions, institutions, and China's rise in East Asia: Theoretical expectations and evidence,” Journal of Strategic Studies, Volume 30, Number 4-5, August-October, Available Online to Subscribing Institutions via Taylor & Francis Online, p. 647-648)

Two closely related, though distinct, theoretical arguments focus explicitly on the consequences for international politics of a shift in power between a dominant state and a rising power. In War and Change in World Politics, Robert Gilpin suggested that peace prevails when a dominant state’s capabilities enable it to ‘govern’ an international order that it has shaped. Over time, however, as economic and technological diffusion proceeds during eras of peace and development, other states are empowered. Moreover, the burdens of international governance drain and distract the reigning hegemon, and challengers eventually emerge who seek to rewrite the rules of governance. As the power advantage of the erstwhile hegemon ebbs, it may become desperate enough to resort to the ultima ratio of international politics, force, to forestall the increasingly urgent demands of a rising challenger. Or as the power of the challenger rises, it may be tempted to press its case with threats to use force. It is the rise and fall of the great powers that creates the circumstances under which major wars, what Gilpin labels ‘hegemonic wars’, break out.13 Gilpin’s argument logically encourages pessimism about the implications of a rising China. It leads to the expectation that international trade, investment, and technology transfer will result in a steady diffusion of American economic power, benefiting the rapidly developing states of the world, including China. As the US simultaneously scurries to put out the many brushfires that threaten its far-flung global interests (i.e., the classic problem of overextension), it will be unable to devote sufficient resources to maintain or restore its former advantage over emerging competitors like China. While the erosion of the once clear American advantage plays itself out, the US will find it ever more difficult to preserve the order in Asia that it created during its era of preponderance. The expectation is an increase in the likelihood for the use of force – either by a Chinese challenger able to field a stronger military in support of its demands for greater influence over international arrangements in Asia, or by a besieged American hegemon desperate to head off further decline. Among the trends that alarm [end page 647] those who would look at Asia through the lens of Gilpin’s theory are China’s expanding share of world trade and wealth (much of it resulting from the gains made possible by the international economic order a dominant US established); its acquisition of technology in key sectors that have both civilian and military applications (e.g., information, communications, and electronics linked with the ‘revolution in military affairs’); and an expanding military burden for the US (as it copes with the challenges of its global war on terrorism and especially its struggle in Iraq) that limits the resources it can devote to preserving its interests in East Asia.14 Although similar to Gilpin’s work insofar as it emphasizes the importance of shifts in the capabilities of a dominant state and a rising challenger, the power-transition theory A. F. K. Organski and Jacek Kugler present in The War Ledger focuses more closely on the allegedly dangerous phenomenon of ‘crossover’– the point at which a dissatisfied challenger is about to overtake the established leading state.15 In such cases, when the power gap narrows, the dominant state becomes increasingly desperate to forestall, and the challenger becomes increasingly determined to realize the transition to a new international order whose contours it will define.

#### And it’s key to stability deterrence and leadership

Fedoroff 8 – subcommittee on research and science education, committee on science and technology, House of Representatives, 110 Congress, administrator of USAID, science and technology advisor to the Secretary of State and US Department of State (Nina, “International Science and Technology Cooperation,” Government Printing Office, 4/2/2008, <http://www.gpo.gov/fdsys/pkg/CHRG-110hhrg41470/html/CHRG-110hhrg41470.htm>)//RH

Chairman Baird, Ranking Member Ehlers, and distinguished members of the Subcommittee, thank you for this opportunity to discuss science diplomacy at the U.S. Department of State. The U.S. is recognized globally for its leadership in science and technology. Our scientific strength is both a tool of “soft power” – part of our strategic diplomatic arsenal – and a basis for creating partnerships with countries as they move beyond basic economic and social development. Science diplomacy is a central element of the Secretary’s transformational diplomacy initiative, because science and technology are essential to achieving stability and strengthening failed and fragile states. S&T advances have immediate and enormous influence on national and global economies, and thus on the international relations between societies. Nation states, nongovernmental organizations, and multinational corporations are largely shaped by their expertise in and access to intellectual and physical capital in science, technology, and engineering. Even as S&T advances of our modern era provide opportunities for economic prosperity, some also challenge the relative position of countries in the world order, and influence our social institutions and principles. America must remain at the forefront of this new world by maintaining its technological edge, and leading the way internationally through science diplomacy and engagement. Science by its nature facilitates diplomacy because it strengthens political relationships, embodies powerful ideals, and creates opportunities for all. The global scientific community embraces principles Americans cherish: transparency, meritocracy, accountability, the objective evaluation of evidence, and broad and frequently democratic participation. Science is inherently democratic, respecting evidence and truth above all. Science is also a common global language, able to bridge deep political and religious divides. Scientists share a common language. Scientific interactions serve to keep open lines of communication and cultural understanding. As scientists everywhere have a common evidentiary external reference system, members of ideologically divergent societies can use the common language of science to cooperatively address both domestic and the increasingly transnational and global problems confronting humanity in the 21st century. There is a growing recognition that science and technology will increasingly drive the successful economies of the 21st century. Science and technology provide an immeasurable benefit to the U.S. by bringing scientists and students here, especially from developing countries, where they see democracy in action, make friends in the international scientific community, become familiar with American technology, and contribute to the U.S. and global economy. For example, in 2005, over 50% of physical science and engineering graduate students and postdoctoral researchers trained in the U.S. have been foreign nationals. Moreover, many foreign-born scientists who were educated and have worked in the U.S. eventually progress in their careers to hold influential positions in ministries and institutions both in this country and in their home countries. They also contribute to U.S. scientific and technologic development: According to the National Science Board’s 2008 Science and Engineering Indicators, 47% of full-time doctoral science and engineering faculty in U.S. research institutions were foreign-born. Finally, some types of science – particularly those that address the grand challenges in science and technology – are inherently international in scope and collaborative by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to earth. ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world – Japan, Korea, China, E.U., India, Russia, and United States – representing 70% of the world’s current population.. The recent elimination of funding for FY08 U.S. contributions to the ITER project comes at an inopportune time as the Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project had entered into force only on October 2007. The elimination of the promised U.S. contribution drew our allies to question our commitment and credibility in international cooperative ventures. More problematically, it jeopardizes a platform for reaffirming U.S. relations with key states. It should be noted that even at the height of the cold war, the United States used science diplomacy as a means to maintain communications and avoid misunderstanding between the world’s two nuclear powers – the Soviet Union and the United States. In a complex multi-polar world, relations are more challenging, the threats perhaps greater, and the need for engagement more paramount. Using Science Diplomacy to Achieve National Security Objectives The welfare and stability of countries and regions in many parts of the globe require a concerted effort by the developed world to address the causal factors that render countries fragile and cause states to fail. Countries that are unable to defend their people against starvation, or fail to provide economic opportunity, are susceptible to extremist ideologies, autocratic rule, and abuses of human rights. As well, the world faces common threats, among them climate change, energy and water shortages, public health emergencies, environmental degradation, poverty, food insecurity, and religious extremism. These threats can undermine the national security of the United States, both directly and indirectly. Many are blind to political boundaries, becoming regional or global threats. The United States has no monopoly on knowledge in a globalizing world and the scientific challenges facing humankind are enormous. Addressing these common challenges demands common solutions and necessitates scientific cooperation, common standards, and common goals. We must increasingly harness the power of American ingenuity in science and technology through strong partnerships with the science community in both academia and the private sector, in the U.S. and abroad among our allies, to advance U.S. interests in foreign policy. There are also important challenges to the ability of states to supply their populations with sufficient food. The still-growing human population, rising affluence in emerging economies, and other factors have combined to create unprecedented pressures on global prices of staples such as edible oils and grains. Encouraging and promoting the use of contemporary molecular techniques in crop improvement is an essential goal for US science diplomacy. An essential part of the war on terrorism is a war of ideas. The creation of economic opportunity can do much more to combat the rise of fanaticism than can any weapon. The war of ideas is a war about rationalism as opposed to irrationalism. Science and technology put us firmly on the side of rationalism by providing ideas and opportunities that improve people’s lives. We may use the recognition and the goodwill that science still generates for the United States to achieve our diplomatic and developmental goals. Additionally, the Department continues to use science as a means to reduce the proliferation of the weapons’ of mass destruction and prevent what has been dubbed ‘brain drain’. Through cooperative threat reduction activities, former weapons scientists redirect their skills to participate in peaceful, collaborative international research in a large variety of scientific fields. In addition, new global efforts focus on improving biological, chemical, and nuclear security by promoting and implementing best scientific practices as a means to enhance security, increase global partnerships, and create sustainability.

#### Funding cuts in USAIDS now—plan funding key to solve

Miotke 8 – subcommittee on research and science education, committee on science and technology, House of Representatives, 110 Congress, Foreign Service Officer, Deputy Assistant Secretary of State for Science, Space, and Health (Jeff, “International Science and Technology Cooperation,” Government Printing Office, 4/2/2008, [http://www.gpo.gov/fdsys/pkg/CHRG-110hhrg41470/html/CHRG-110hhrg41470.htm)//RH](http://www.gpo.gov/fdsys/pkg/CHRG-110hhrg41470/html/CHRG-110hhrg41470.htm%29//RH)

USAID USAID plays a significant role in integrating the products of S&T to meet the challenges of economic, environmental, and social development. USAID supports research primarily in the areas of agriculture and health and is directed towards applied problems. The technologies and results from research and development supported by other federal agencies and the private sector is, however, integrated across the Agency's work in areas such as information technology, infrastructure, climate change, energy, clean water, environmental management, social safety nets and education. Among federal agencies, USAID has the unique mandate for applied work on the ground in more than seventy developing countries. USAID leverages the expertise of U.S. universities, private companies, and other federal agencies in partnerships with governments, research institutions, and the private sector in developing countries. In recent years, USAID funding cuts have greatly scaled back the Agency's support for training in science and technology compared to the 1980s. The Agency still supports modest programs of capacity building as integral to its agricultural research and higher education development programs. USAID is seen as an international leader in areas such as agricultural biotechnology, contraceptives research, nutrition, vaccines, and the application of geospatial information to climate analysis and response. USAID is one of the only donors to support the development of improved crops using modern biotechnology, providing broader access to this technology by scientists, and eventually small farmers in Africa and Asia. USAID is also a major donor to the Consultative Group on International Agricultural Research (CGIAR), a network of research centers in developing countries which formed the basis of the Green Revolution. Rising international food prices due to rising food demands threatens the welfare of the world's poor. USAID's leadership in the CGIAR will be a critical component of an international effort to raise productivity and meet this growing food demand. USAID's program to apply geospatial information technology to improve disaster response, weather forecasting, and monitoring of fires, ocean tides, and air quality in Central America was highlighted as an early accomplishment under GEOSS and is now expanding with USAID support to Africa. USAID invests in bilateral scientific cooperation between the U.S. and Pakistani research and engineering communities. A series of some 40 cooperative R&D efforts, involving several hundred researchers and students on both sides, focus on areas that contribute to broader USAID development objectives in public health, agriculture, water and the environment, education and other sectors. The program, implemented by the National Academy of Sciences, is a true bilateral partnership, with USAID funding U.S. research partners and the Government of Pakistan funding the Pakistani scientists and engineers. All of this activity is implemented under the auspices of an S&T cooperation agreement negotiated by OES.

#### Assistance in nanotech enhances US technology leadership

Mendis 04

[Dr. Patrick Mendis adjunct associate professor of economics and management at the UMUC Graduate School of Management and Technology at the University of Maryland “Science, Technology, And Intellectual Property Rights In American Foreign Policy”. Journal of Technology Law & Policy.Vol 9 June 2004 Issue 1.<http://grove.ufl.edu/~techlaw/vol9/issue1/mendis.html>]

In coming years, global S&T cooperation will open a wide range of opportunities to advance America's foreign policy and international trade promotion goals including: 1. By reaching out to scientists, scholars, and technology-minded young entrepreneurs in other countries, the United States would promote American idealism and democratic governance because international S&T activities are a neutral and apolitical instrument for peaceful change. 2. International S&T collaboration facilitates democratic changes and promotes open trade with other countries. This would lighten the American military's mission to protect national security and maintain global peace. 3. Within the framework of global institutions, American S&T collaborative agreements help create a better environmental, scientific, and technological infrastructure in other countries promoting American business and economic interests and to protecting IPRs and equitable access lo their markets. This is an extension of the U.S. Constitution and its enshrined democratic values which can be shared broadly with other nations. 4. By implementing the Agenda 21 of the Rio Earth Summit of 1992 in Brazil and subsequently the World Summit on Sustainable Development of 2002 in Johannesburg in South Africa, the United States helped efforts to create a series of MEAs that will demand transnational solutions in science and technology fields. The American leadership in new geospatial technology, biotechnology, and nanotechnology will not only promote economic growth domestically but also enhance the stewardship of the global environment and sustainable development strategies. 5. By promoting the current status of cooperative S&T agreements, the United States enhances its ability to deal with global dangers like terrorism, narcotics, and other criminal activities that threaten our national security and domestic peace and prosperity.

#### Nanotech development ensures regulation

Lodwick et al 07 (T. Lodwick\*, R. Rodrigues\*\*, R. Sandler\*\*\*, W.D. Kay\*\*\*\* \* Nanotechnology and Society Research Group (NSRG), Northeastern University \*\*Santa Clara University, School of Law, \*\*\*NSRG, Department of Philosophy and Religion, Northeastern University, \*\*\*\*NSRG, Deapartment of Political Science, Northeastern University, “nanotechnology and the global poor: the united states policy and international collaborations” pg online @ http://www.nsti.org/procs/Nanotech2007v1/8/T81.501 //um-ef)

However, the greatest potential for a broad initiative rests with the main foreign aid organizations, the U.S. Agency for International Development (USAID) and the Millennium Challenge Corporation (MCC), which have experience funding development related research. Although USAID currently lacks any programs linking nanotechnology and development, its Collaborative Agricultural Biotechnology Initiative (CABIO), designed to bring biotechnology to developing nations, serves as a promising framework for nanotechnology. CABIO funds partnerships between U.S. research organizations and developing world scientists to tackle specific issues. For example, with USAID funding, researchers at Purdue University have worked closely with African scientists to develop a strain of sorghum resistant to the parasitic weed striga. After many years, a successful strain was developed which has helped prevent famine ensure food security through responsible science [6]. In addition to establishing and supporting partnerships, USAID’s biotechnology efforts including sponsoring developing world students for U.S. graduate degrees and supporting agricultural education in participating countries. USAID also helped develop India’s Department of Biotechnology. And CABIO works to build regulatory capacity to ensure safe biotechnology practices. Each of these types of efforts--building partnerships and collaborations, supporting education in the US and in country, building institutional capacity, and researcher exchanges--could be extended to nanotechnology. Overall, USAID’s biotechnology experience provides a sound model for infusing nanotechnology into development.

#### US nanotech leadership ensures controlled military nanotech

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MOLECULAR NANOTECHNOLOGY (MNT), when fully developed, will provide the basis for the next technological revolution, possibly the most beneficial and yet most disruptive in human history. By allowing inexpensive mass production with atomic-level precision, this infant technology has the potential to create whole new classes of weapons and economic, political, and social disruptions serious enough to threaten international security. To minimize the threats while maximizing the benefits of MNT’s impending development, the United States should take the lead in creating a cooperative strategy of international regulation and do so as soon as possible. MNT’s arrival will cause an avalanche of problems and threats, many of which the human race has not yet encountered; the control strategy must therefore be ready before that day arrives.

#### Unregulated development risks an arms race

Gubrud 97 (Mark Avrum Gubrud, a research associate, Center for Superconductivity Research (University of Maryland, College Park), is ''a physicist, writer and social activist, November 1997, <http://www.foresight.org/Conferences/MNT05/Papers/Gubrud/>, “Nanotechnology and International Security”)

The greatest danger coincides with the emergence of these powerful technologies: A quickening succession of "revolutions" may spark a new arms race involving a number of potential competitors. Older systems, including nuclear weapons, would become vulnerable to novel forms of attack or neutralization. Rapidly evolving, untested, secret, and even "virtual" arsenals would undermine confidence in the ability to retaliate or resist aggression. Warning and decision times would shrink. Covert infiltration of intelligence and sabotage devices would blur the distinction between confrontation and war. Overt deployment of ultramodern weapons, perhaps on a massive scale, would alarm technological laggards. Actual and perceived power balances would shift dramatically and abruptly. Accompanied by economic upheaval, general uncertainty and disputes over the future of major resources and of humanity itself, such a runaway crisis would likely erupt into large-scale rearmament and warfare well before another technological plateau was reached. International regimes combining arms control, verification and transparency, collective security and limited military capabilities, can be proposed in order to maintain stability. However, these would require unprecedented levels of cooperation and restraint, and would be prone to collapse if nations persist in challenging each other with threats of force. If we believe that assemblers are feasible, perhaps the most important implication is this: Ultimately, we will need an integrated international security system. For the present, failure to consider alternatives to unilateral "peace through strength" puts us on a course toward the next world war.

#### US action and model is key to cooperation and transparency

Altmann 2k4

(Jurgen, Phd. physics doctoral dissertation on laser radar (University of Hamburg, Germany, since 1985 he has studied scientific-technical problems of disarmament, first concerning high-energy laser weapons, founded the Bochum Verification Project (Ruhr-University Bochum, Germany) that does research into the potential of automatic sensor systems for co-operative verification of disarmament and peace agreements. In recent years, he has studied military uses of, first, microsystems technologies and then nanotechnology, with a view towards preventive arms control (both at University of Dortmund, Germany). University of Dortmund). cofounder of the German Research Association Science, Disarmament and International Security FONAS, and currently is a deputy speaker of the Committee Physics and Disarmament of the German Physical Society, military uses of nanotechnology: perspectives and concerns, security dialogue, vol 35, pg online @ [http://scx.sagepub.com/content/34/1/115.full.pdf+html](http://scx.sagepub.com/content/34/1/115.full.pdf%2Bhtml) )

It is predicted that nanotechnology (NT) will bring revolutionary changes in many areas, with the potential for both great benefits and great risks. Developments in the military could entail specific dangers, containment of which will need special analysis and effort. Military research and development in NT is expanding rapidly. Potential future applications span all areas of warfare. Special dangers to arms control and stability may arise from new biological weapons and microrobots. For humans and society, non-medical body implants – possibly made more acceptable via the military – raise a number of problems concerning human nature. Further research is needed to find the best way to avoid possible dangers. For the near and medium term, several guidelines for limits and restrictions are suggested. As a first step, transparency and international cooperation should be improved\*\*. NANOTECHNOLOGY (NT) WILL BE THE BACKBONE of the next fundamental technology wave.1 Science and technology have advanced to a point where structuring matter at the nanometre scale (1nm = 10-9m, a billionth of a metre) is becoming routine. Scanning-probe microscopes now allow us to image and move single atoms on a surface. In the life sciences, molecular processes within cells are being elucidated, microelectronics are being reduced to below 100nm, and the first cosmetics containing nanoparticles are already on the market. Increasingly powerful computers allow ever better modelling of matter at the atomic and molecular scale. Expecting huge markets in the future, both governments and large and small enterprises have greatly increased their NT research and development (R&D). In 2003, government spending alone represents $650–800 million in each of Western Europe, Japan, the USA and the rest of the industrialized countries (Roco, 2003). NT is predicted to produce revolutionary changes, bringing far-reaching consequences in many areas. Expected benefits include stronger, lighter and smart materials, computers that are smaller, consume less power and are far more powerful, diagnostics and therapy at the singlecell level, reduction of resource use and pollution, and miniaturized, highly automated space systems (see, for example, Roco & Bainbridge, 2001: 3–12). Some visions of NT reach farther: to artificial intelligence of human capability and beyond; robotics from nano to macro scale; nanodevices within the human body that eradicate illness and ageing or interface with the brain; and universal molecular assemblers capable of self-replication, leading to superautomated production.2 Whether such visions can be realized has been disputed, particularly with regard to the assembler concept.3 However, following the precautionary principle, one should take these possibilities seriously as long as they have not been demonstrated to be impossible for fundamental or technical reasons. Some were discussed at a recent workshop sponsored by the US government on improving human performance through the convergence of nano, bio, information and cognitive science and technology (NBIC) – for example, nano-implant devices, slowing down or reversing ageing, direct brain–machine interfaces and ‘artificial people’.4 Yet, while opening up fundamentally new possibilities, NT also poses grave risks, among them environmental pollution, increased inequality, invasion of privacy, displacement of human workers and physical harm. Molecular NT would increase the risks even further – as consequences of automatic production, or through accidents or malevolent use of self-replicating systems, for example.5 Debate on the general risks posed by NT has already begun. The US National Nanotechnology Initiative/National Science Foundation and the European Commission have explicitly recognized the need to investigate the societal implications of NT (Roco & Bainbridge, 2001; Roco & Tomellini, 2002). However, there is a paucity of ethical, legal and social research (Mnyusiwalla, Daar & Singer, 2003). This is even more the case regarding risks from military uses of NT. The aim of this article is to raise awareness of the dangers connected with military NT activities and to offer some preliminary recommendations.6 After a brief overview of the literature, the article presents a summary of current military R&D on NT in the USA. It then discusses potential military uses of NT before turning, in the subsequent section, to the question of preventive arms control, which leads to a concluding discussion and recommendations. Aspects of molecular NT are discussed in separate paragraphs. Previous Writing on Military NT Up until now, there has been practically no scholarly research on military NT. The topic has been discussed mainly in government papers, conferences, military journals and popular media. Seen from a narrow national-security standpoint, NT provides grand new options for the military. For the year 2030 or after, the UK Ministry of Defence foresees nano-solar cells and nanorobots designed for a range of purposes – including medical robots used internally in humans and microplatforms for reconnaissance (UK Ministry of Defence, 2001). The US National Nanotechnology Initiative (NNI) has referred to the possibility of information dominance through nanoelectronics; virtual reality systems for training; automation and robotics to offset reductions in manpower, reduce risks to troops and improve vehicle performance; higher-performance platforms with diminished failure rates and lower costs; improvements in chemical/biological/nuclear sensing and casualty care; improvements in systems for non-proliferation monitoring; and nano-/micromechanical devices for control of nuclear weapons (Roco & Bainbridge, 2001: 10–11). The national-security panel of the US NBIC workshop stated that in ‘deterrence, intelligence gathering, and lethal combat . . . it is essential to be technologically as far ahead of potential opponents as possible’ (Asher et al., 2002). Others have looked with a wider angle and have hinted at potential harmful uses of nanoweapons or the potential for controlled distribution of biological and nerve agents (ESANT, 1999; Meyer, 2001; Smith, 2001). Questions have been posed as to killing by robots (Metz, 2000; Crow & Sarewitz, 2001).7 Some authors acknowledge that national security will have to be sought in a context of global security (Yonas & Picraux, 2001; Petersen & Egan, 2002). Aside from such hints, discussions of strategy and security have not yet taken up NT in a systematic fashion. Dangers from military uses of molecular NT were already under discussion when the vision was first described to the general public (Drexler, 1986: 171–202). Destabilizing effects and arms races arising in particular from exponentially growing autonomous production were considered by Gubrud (1997). Joy’s (2000) warnings about genetics, NT and robotics have become widely known, and have evoked much critical comment. However, this has been mainly directed at general aspects rather than the dangers posed by military/terrorist uses (e.g. Brown & Duguid, 2001; Tolles, 2001; Smith, 2001). Moreover, the little arms-control discussion that exists has mostly addressed molecular NT. Drexler (1986: 171–202) argued in general terms for international agreements, but finally recommended ‘active shields’: nanomachines that, like the white blood cells of the human immune system, would ‘fight dangerous replicators of all sorts’. However, the feasibility of such shields seems even more unclear than that of self-replicating systems themselves. Gubrud (1997) stated that not producing weaponry en masse would be verifiable, calling for a space weapons ban and recommending a single global security regime. The Foresight Guidelines (Foresight Institute, 2000), suggesting rules to prevent runaway replication, mention the risk of military abuse, but explicitly reject limitations by treaty because ‘a 99.99% effective ban would result in development and deployment by the 0.01% that evaded and ignored the ban’. Truly 100% verifiability can of course never be achieved, but a strong verification regime could restrain the technological development of leading states that might otherwise be caught in an accelerating arms race. I

n order to prevent NT-enabled mass destruction, Howard (2002) has presented two alternative approaches: reserving ‘inner (atomic and molecular) space’ for peaceful exploitation, or preserving it as a ‘sanctuary’, forbidding nanotechnological exploration and engineering completely.8 While other countries are certainly active in military R&D of NT, there can be little doubt that the USA is spending far more than any other country, and maybe more than the rest of the world combined.9 Military R&D in the USA is much more transparent – not only in comparison to, for example, Russia or China, but also relative to countries such as the UK, France or Germany. Because US military NT activities provide an important precedent, they will be briefly described here.

#### And, the plan is a long-term engagement strategy that provides a platform for S&T leadership and U.S. Science Diplomacy

Dolan 12(Bridget M. Dolan, “Science and Technology Agreements as Tools for Science Diplomacy: A U.S. Case Study,” Science & Diplomacy, Vol. 1, No. 4 (December 2012), pg online @ http://www.sciencediplomacy.org/files/science\_and\_technology\_agreements\_as\_tools\_for\_science\_diplomacy\_science\_\_diplomacy.pdf //um-ef)

As this paper has elaborated, U.S. decisions to enter into S&T agreements are often motivated by the desire to transform a diplomatic relationship, promote public diplomacy, enhance a diplomatic visit, and/or advance U.S. national security. An S&T agreement can be a limited one-time deliverable or it can be a launching pad for extensive engagement. While the discussions above have focused on drivers for S&T agreements from the U.S. perspective, for these agreements to be effective tools of science diplomacy, implementation matters. In the last decade, the number of S&T agreements involving the United States has doubled. At the same time allocation of U.S. federal resources to designated international programs that support engagement in science and technology has not kept pace.11 Some science diplomacy practitioners and academics in the United States and abroad are concerned that an S&T agreement with the United States, while once considered an important tool, is no longer taken seriously.12 As these types of formal intergovernmental agreements continue to expand, however, the long-term benefit to official and nongovernmental relations between countries depends upon the ability to foster substantial scientific cooperation. It is essential that these agreements and science diplomacy more generally—while cognizant of the realities of limited resources—are ambitious enough to foster meaningful international partnerships.

## 2AC Economic Engagement

#### Counter-interpretation: Economic Engagement is aid, not trade

**Haas and O’Sullivan, 2k** - \*Vice President and Director of Foreign Policy Studies at the Brookings Institution AND \*\*a Fellow with the Foreign Policy Studies Program at the Brookings Institution (Richard and Meghan, “Terms of Engagement: Alternatives to Punitive Policies” Survival,, vol. 42, no. 2, Summer 2000, <http://www.brookings.edu/~/media/research/files/articles/2000/6/summer%20haass/2000survival.pdf>

Architects of engagement strategies can choose from a wide variety of incentives. Economic engagement might offer tangible incentives such as export credits, investment insurance or promotion, access to technology, loans and economic aid.3 Other equally useful economic incentives involve the removal of penalties such as trade embargoes, investment bans or high tariffs, which have impeded economic relations between the United States and the target country. Facilitated entry into the economic global arena and the institutions that govern it rank among the most potent incentives in today’s global market. Similarly, political engagement can involve the lure of diplomatic recognition, access to regional or international institutions, the scheduling of summits between leaders – or the termination of these benefits. Military engagement could involve the extension of international military educational training in order both to strengthen respect for civilian authority and human rights among a country’s armed forces and, more feasibly, to establish relationships between Americans and young foreign military officers. While these areas of engagement are likely to involve working with state institutions, cultural or civil-society engagement entails building people-to-people contacts. Funding nongovernmental organisations, facilitating the flow of remittances and promoting the exchange of students, tourists and other non-governmental people between countries are just some of the possible incentives used in the form of engagement.

#### Here’s ev – Its means belonging to

**Dictionary.com, 9** (based on Collins English Dictionary, <http://dictionary.reference.com/browse/its?s=t>)

its (ɪts)

— determiner

a. of, belonging to, or associated in some way with it: its left rear wheel

 b. ( as pronoun ): each town claims its is the best

## 2ac case

#### More S&T needed to maintain leadership – NSB report shows US will be overcome by Asian S&T

NSF 12 – US government agency that supports research and education in science and engineering (“New Report Outlines Trends in U.S. Global Competitiveness in Science and Technology,” National Science Board, 1/17/12, <http://www.nsf.gov/nsb/news/news_summ.jsp?cntn_id=122859&>)//RH

The United States remains the global leader in supporting science and technology (S&T) research and development, but only by a slim margin that could soon be overtaken by rapidly increasing Asian investments in knowledge-intensive economies. So suggest trends released in a new report by the National Science Board (NSB), the policymaking body for the National Science Foundation (NSF), on the overall status of the science, engineering and technology workforce, education efforts and economic activity in the United States and abroad. "This information clearly shows we must re-examine long-held assumptions about the global dominance of the American science and technology enterprise," said NSF Director Subra Suresh of the findings in the Science and Engineering Indicators 2012 released today. "And we must take seriously new strategies for education, workforce development and innovation in order for the United States to retain its international leadership position," he said.

**Prices declining now – upped production and decreased threats**

#### Lynch, 9/24

Michael Lynch, spent nearly 30 years at MIT as a student and then researcher at the Energy Laboratory and Center for International Studies. He spent several years at what is now IHS Global Insight and was chief energy economist. He is currently the president of Strategic Energy and Economic Research, Inc., and he lectures MBA students at Vienna University. He has been president of the US Association for Energy Economics and he serves on the editorial boards of three publications. “A Triple Witching Hour for Oil Prices in 2014?,” 9/24/13, http://www.forbes.com/sites/michaellynch/2013/09/24/a-triple-witching-hour-for-oil-prices-in-2014/

The Fed’s decision last week not to begin the tapering off of its Quantitative Easing saw oil prices shoot up about $2 a barrel. If the minds of commodity traders were linear (insert your comment here), then that would imply that about $15 of the current oil price of $105 a barrel was due to the pump priming (financial, not physical) of the Fed. This would conform to the current futures strip, which puts the ***mid-2015*** price at about $90. Interestingly, there has been a modest oil price decline in recent days ***despite*** the fact that the likelihood of a US-led military strike on Syria, and some kind of retaliation in the Arabian/Persian Gulf, has declined and the potential for an end to economic sanctions against Iran has increased. These have been core concerns for the oil market recently, but the improvements have not moved prices much as of yet. But wait, there’s more! Sudanese production now appears likely to continue uninterrupted, and Libyan supplies, seriously reduced by disputes at the ports, are apparently on the verge of being restored. Nigeria is also reported to have restored 400 thousand barrels a day of its production, lost to thieves, and Iraqi production appears to be stable, with several new fields starting up. Most amazing, the supergiant Kashagan oil field, long delayed, has now begun production at an initial level of 40 thousand barrel a day, expected to reach 160 by next year. Admittedly, production levels in each country are uncertain and likely to be volatile, but if they remain relatively steady, it will make a big difference to the world market balance. Only in Nigeria has the disruption been long-lasting, due to both physical attacks on the infrastructure and regional instability that slowed repairs. The others all involve decisions that can change on a dime, and are likely to be only occasionally problematic. And finally, the question of **Iranian supply**. With negotiations likely to proceed, some **buyers will be more willing to take some of Iran’s surplus** barrels and there will be an increasing perception that they will return to the market at pre-sanction levels, adding about 1 million barrels a day of supply. Oil prices are notoriously volatile, being subject to unpredictable political events. But the combination of restored production and new flows, reduced liquidity from the Fed, and an easing of geopolitical threats could bring about something like a triple witching hour for them, perhaps by next summer. Given that the decline in gold prices has inflicted pain on smaller, high-cost miners with lots of debt, even though gold prices remain well above historical norms, a similar pull-back in oil prices could have the same impact in the upstream petroleum sector, disproportionately hitting those with high debt ratios.

## 2AC CP

#### 2. Rogue actors

Gopalan and Abbott, 12 ( Sandeep, Kenneth, Former Professor of law and current Head of the Dept. of Law at the National Univ. of Ireland, Maynooth, Professor of Law at Arizona State
University, “Models for the International Regulation of Nanotechnology"06/25/2012, Paper presented at the annual meeting of the International Studies Association, Town & Country Resort and Convention Center,)//DH

These characteristics suggest that international environmental agreements have limited applicability as models for NT regulation in the near term. Given the political and practical impediments to successful negotiations, states have only demonstrated the necessary commitment in dealing with a limited set of harmful substances. It is difficult to imagine states undertaking such a burdensome process to address the hypothetical risks of future NT products or processes that have yet to inflict any known environmental harm; moreover, no known NT applications pose such serious risks that a ban or severe restriction seems appropriate. If environmental risks of NT appear in the future, however, these agreements will provide important lessons. 2. Non-Proliferation Arms Control Agreements Arms control treaties, especially those that seek to prevent the proliferation of weapons of mass destruction (WMD), provide another transnational model of potential relevance to NT. Examples include the 1968 Nuclear Non-Proliferation Treaty (NPT), 36 the 1972 Biological Weapons Convention (BWC), 37 and the 1993 Chemical Weapons Convention (CWC). 38 Several aspects of these agreements limit their applicability as models for NT. First, non-proliferation treaties seek to control technologies (i.e., nuclear, chemical or biological weapons, or inputs to them) that are clearly dangerous, as indicated by the term “WMD.” Notwithstanding some extreme scenarios, it is unlikely that current or near-term applications of NT will rise to the same level of threat. In the long term, some NT applications could present a WMD threat, but that is likely far in the future. States are unlikely to act until the risks are more concrete and immediate. Second, existing arms control treaties only apply to states. Their impact on non- state actors is indirect at best (e.g., the CWC and BWC require state parties to prohibit activities on their territory that are prohibited directly for them). Yet non-state actors, particularly transnational terrorist networks, may present the greatest threat of turning NT to malevolent uses. Another implication of this statist focus is the requirement of state consent; states can choose not to ratify these agreements and can drop out if they join. All three WMD treaties have experienced states, often those presenting the greatest threat, electing not to ratify the agreement, withdrawing from it, or failing to comply with its obligations. 39 If a rogue state were to seek to use NT for malevolent purposes, current “Geneva style” arms control agreements would likely be ineffective. Nevertheless, if predictions as to the potential military applications of NT are borne out, 40 at some point in the future states may be forced to consider arms control agreements to restrain a NT arms race or the aggressive state use of NT for weapons purposes, in part because of the lack of good alternatives. In such a situation, current agreements do suggest some lessons. One of the principal tensions in the NPT results from its two-tier membership structure, in which some states – those grandfathered as of 1968 – are permitted to possess nuclear weapons while others are prohibited. The Director of the IAEA, Mohamed ElBaradei, recently emphasized this tension by stating: “I repeat that it is time to abandon the unworkable notion that it is morally reprehensible for some countries to pursue nuclear weapons but morally acceptable for others to rely on them.” 41 The lesson may be that an agreement to control NT weapons should be negotiated before any “early adopter” states actually acquire them, or alternatively that any such nations be required to relinquish their NT weapons as a condition for international agreement. Another lesson is that the technology transfer and assistance provisions of agreements like the NPT and BWC have been a strong inducement for developing countries to participate. These provisions require developed countries to share nuclear and biological information and technologies with developing countries for use in legitimate peaceful activities. Such provisions could provide a similar incentive for developing countries to enter agreements designed to control NT weapons. A third lesson is that arms control regimes that include a formal oversight body are on the whole more successful than more decentralized regimes. In particular, the International Atomic Energy Agency (IAEA) has played a critical role in the stability and effectiveness of the NPT (as evidenced by its receipt of the 2005 Nobel Peace Prize), and the Organization for the Prohibition of Chemical Weapons has played an equally effective, if less visible role in the CWC. In contrast, the lack of an oversight body in the BWC has led to ineffective monitoring and leaves the UN Security Council as the only enforcer of the convention, creating a sense of instability around the treaty. 42

#### Immediate, unilateral U.S. action on nanotech is key to solve terrorism

Paarlberg, 4 (Robert L., professor at Wellesley College and Associate at the Weatherhead Center for International Affairs at Harvard University, “Knowledge as Power¶ Science, Military Dominance, and U.S. Security”, International Security Volume 29 issue 1, 2004,)//DH

The war against international terror should be fought with science, rather than at the expense of science. The homeland security strategy of the United States should include much larger science investments in disciplines such as chemistry, physics, biotechnology, nanotechnology, and information technology, where promising new counterterror applications are sure to be found. Smart societies can develop not only smart new weapons for conventional use abroad, but also smart new capabilities for threat detection and soft target protection [End Page 150] at home. For example, nanofabrication may hold the key to a timely detection system for some terror bombing threats. Silicon polymer nanowires 2,000 times thinner than a human hair can cheaply detect traces of TNT and piric acid in both water and air, and might someday be developed and deployed into "smart" cargo containers, to protect against terrorist bombs. New information technologies using powerhouse terascale computing capabilities may soon be able to help in tracking and anticipating the behavior of terror networks.90 New systems capable of detecting dangerous amounts of radiation are increasingly affordable and unobtrusive, and the Department of Homeland Security has proposed development of a fully networked national sensor system to monitor the air continuously for pathogens, dangerous chemicals, and other public hazards. One line of defense already in place in thirty cities is a Lawrence Livermore National Laboratory-designed system for monitoring the air for biological attack.

**Otherwise nuclear war**

**Ayson 10** - Professor of Strategic Studies and Director of the Centre for Strategic Studies: New Zealand at the Victoria University of Wellington

(Robert, “After a Terrorist Nuclear Attack: Envisaging Catalytic Effects,” Studies in Conflict & Terrorism, 33.7, InformaWorld)//BB

But these two nuclear worlds—a non-state actor nuclear attack and a catastrophic interstate nuclear exchange—are not necessarily separable. It is just possible that some sort of terrorist attack, and especially **an act of nuclear terrorism, could precipitate a chain of events leading to a massive exchange of nuclear weapons between two or more of the states that possess them**. In this context, today’s and tomorrow’s terrorist groups might assume the place allotted during the early Cold War years to new state possessors of small nuclear arsenals who were seen as raising the risks of a catalytic nuclear war between the superpowers started by third parties. These risks were considered in the late 1950s and early 1960s as concerns grew about nuclear proliferation, the so-called n+1 problem. It may require a considerable amount of imagination to depict an especially plausible situation where an act of nuclear terrorism could lead to such a massive inter-state nuclear war. For example, in the event of a terrorist nuclear attack on the United States, it might well be wondered just how Russia and/or China could plausibly be brought into the picture, not least because they seem unlikely to be fingered as the most obvious state sponsors or encouragers of terrorist groups. They would seem far too responsible to be involved in supporting that sort of terrorist behavior that could just as easily threaten them as well. Some possibilities, however remote, do suggest themselves. For example, **how might the United States react if it was thought or discovered that the fissile material used in the act of nuclear terrorism had come from Russian stocks**,40 and if for some reason Moscow denied any responsibility for nuclear laxity? The correct attribution of that nuclear material to a particular country might not be a case of science fiction given the observation by Michael May et al. that **while the debris resulting from a nuclear explosion would be “spread over a wide area in tiny fragments, its radioactivity makes it detectable, identifiable and collectable, and a wealth of information can be obtained from its analysis: the efficiency of the explosion, the materials used and, most important … some indication of where the nuclear material came from**.”41 Alternatively, **if the act of nuclear terrorism came as a complete surprise, and American officials refused to believe that a terrorist group was fully responsible** (or responsible at all) **suspicion would shift immediately to state possessors**. Ruling out Western ally countries like the United Kingdom and France, and probably Israel and India as well, authorities in Washington would be left with a very short list consisting of North Korea, perhaps Iran if its program continues, and possibly Pakistan. But at what stage would Russia and China be definitely ruled out in this high stakes game of nuclear Cluedo? In particular, **if the act of nuclear terrorism occurred against a backdrop of existing tension in Washington’s relations with Russia and/or China, and at a time when threats had already been traded between these major powers, would officials and political leaders not be tempted to assume the worst?** Of course, **the chances of this occurring would only seem to increase if the United States was already involved in some sort of limited armed conflict with Russia and/or China, or if they were confronting each other from a distance in a proxy war**, as unlikely as these developments may seem at the present time. The reverse might well apply too: should a nuclear terrorist attack occur in Russia or China during a period of heightened tension or even limited conflict with the United States, could Moscow and Beijing resist the pressures that might rise domestically to consider the United States as a possible perpetrator or encourager of the attack? **Washington’s early response to a terrorist nuclear attack on its own soil might also raise the possibility of an unwanted (and nuclear aided) confrontation with Russia and/or China**. For example, **in the noise and confusion during the immediate aftermath of the terrorist nuclear attack, the U.S. president might be expected to place the country’s armed forces, including its nuclear arsenal, on a higher stage of alert. In such a tense environment, when careful planning runs up against the friction of reality, it is just possible that Moscow and/or China might mistakenly read this as a sign of U.S. intentions to use force** (and possibly **nuclear force) against them**. In that situation, **the temptations to preempt** such actions **might grow**, although it must be admitted that any preemption would probably still meet with a devastating response.

## 2AC Heidegger

#### 2. Perm do both: “Sow” the text languages together in preparation for cultivation of paths outside of metaphysics; this is a prerequisite to alt solvency and doesn’t sever

Martin Heidegger, 1977**,** “The Question Concerning Technology,” pg. 55

That thinking, which is essential and which is therefore everywhere and in every respect preparatory, proceeds in an unpretentious way. Here all sharing in thinking, clumsy and groping though it may be, is an essential help. Sharing in thinking proves to be an unobtrusive sowing—a sowing that cannot be authenticated through the prestige or utility attaching to it—by sowers who may perhaps never see blade and fruit and may never know a harvest. They serve the sowing, and even before that they serve its preparation. Before the sowing comes to the plowing. It is a matter of making the field capable of cultivation, the field that through the unavoidable predominance of the land of metaphysics has to remain in the unknown. It is a matter first of having a presentiment of, then of finding, and then of cultivating, that field. It is a matter of taking a first walk to that field. Many are the ways, still unknown, that lead there. Yet always to each thinker there is assigned but one way, his own, upon whose traces he must again and again go back and forth that finally he may hold to it as the one that is his own—although it never belongs to him—and may tell what can be experienced on that one way.

#### 4. The alternative is nihilism—this also answers any ontology first arguments

Fain 11—Lecturer in the Committee on Degrees in Social Studies at Harvard University, Ph.D. in Philosophy and Psychoanalysis (Lucas, March 2011, *The Review of Metaphysics*, “Heidegger's Cartesian nihilism,” Academic OneFile, RBatra)

That Heidegger transforms happiness, classically understood as the completion of human nature, into the anxiety of being-towards-death may be deduced from the fact that it is death which signifies Dasein's "authentic potentiality-for-being-a-whole," (45) **with the consequence that ethical virtue is replaced by Dasein's pure resolve in the face of nothing**. That Heidegger's conception of care may likewise be construed as an impoverished version of the Platonic doctrine of eros is plainly evident by its purely formal structure, which renders it devoid of any capacity to rank-order objects of desire. (46) By way of contrast, Platonic eros moves hierarchically between the human and the divine (that is to say, between the base and the noble), whereas Heideggerian care moves horizontally, we should even say "horizonally," in the sense that "the ontological meaning of care is temporality," and "the existential-temporal condition of the possibility of the world lies in the fact that temporality, as an ecstatical unity [of future, past, and, present], has something like a horizon." (47) That horizon is circumscribed by Dasein's thrownness into the future, and Dasein's ownmost future is, of course, its death. Hence we read, "The primary phenomenon of primordial and authentic temporality is the future," and "The ecstatical character of the primordial future lies precisely in the fact that the future closes one's potentiality-for-being." (48) It is therefore through Dasein's resolute anticipation of its death that the meaning of being reveals itself as the "temporalizing of temporality." (49) But temporality reduced to itself is stripped of all love, beauty, and value. **It means simply the opening up of one's future possibilities, which is to say that the authentic meaning of being is without value, and being without value is meaningless, which is finally to say that the meaning of being terminates in nihilism.** (50) Heideggerian fundamental ontology does not therefore escape from Nietzschean chaos. Rather, it returns us to it, only without the noble illusion that life requires us to make it lovable. (51) **And this remains the case no matter whether we prefer the early language of "resoluteness" or Heidegger's later "turn" into Gelassenheit or "releasement."** For insofar as Heidegger's turn (Kehre) is meant to free the meaning of being from its attachment to any notion of active or passive willing, for example, of the kind indicated by the language of resolution, it releases us ever deeper into the nullity within which the world comes to presence. (52)

So much for the meaning of being. Despite his revolutionary proclamations, Heidegger holds us in a double bind. On the one hand, the history of metaphysics (and its completion in the era of modern technology) (53) grips us in a nihilistic forgetting of the question of being. On the other hand, fundamental ontology empties the meaning of being of value, and this too is nihilism. (54) What matters in the last analysis, however, is not whether Heidegger is a nihilist, but whether his teaching is the true teaching. And if, as Leo Strauss once said, our capacity to evaluate Heidegger's teaching comes down to a question of competence, our measure of competence depends on our capacity for valuation, or more accurately, for prudential judgment or a capacity to discern what makes it right. (55) Yet, on the basis of Heidegger's existential analysis, there can be no such ground of legitimation apart from the pure instance of resolution (Entschluss). And this is because fundamental ontology cannot tell us on the basis of its questioning into being why such questioning should be desirable, or why we should want to invoke a spiritual revolution that founds itself on the abstract question of being. **Instead, there must be some more primordial notion of the good that first directs us to the question of being**--as Nietzsche would say, to the question of being as a value. In saying this, however, I do hot wish to suggest that there must be some objective or quasi-objective standard of the good that is somehow "out there" waiting to be discovered, as if it were a vein of gold embedded in the rock. Yet it is plainly evident that a more primordial access to the good must underlie any capacity for rank-ordering values or existential possibilities, and it is precisely this feature of human experience that fundamental ontology abandons or occludes by abstracting the question of being from the so-called ontic or inauthentic dimension of ordinary experience.

Stated simply, **there is no reason why the question of being should be foundational for the future of philosophy**. Yet it must be said that Heidegger never relinquished his revolutionary aspirations for bringing metaphysics to its end. For as clearly as the text of 1927 stated the need to put the future of philosophy on "new foundations" (neue Fundamente), (56) Heidegger persisted up to and through 1959 in the hope that the turn to the question of being would promise a "new ground and foundation" (neuen Grand und Boden) upon which it might be possible to confront the epoch of metaphysical nihilism. (57) Of course, it may be entirely true that our releasement into the mystery of being grants us "the possibility of dwelling in the world in a totally different way." (58) **The question is why this should be at all desirable, especially if the thinking of being expires in nihilism.** And it is here that we find Heidegger without argument. As we read in a relevant passage from the "Letter on Humanism" of 1949:

Whether the realm of the truth of being is a blind alley or whether

it is the free space in which freedom conserves its essence is

something each one may judge after he himself has tried to go the

designated way, or even better, after he has gone a better way,

that is, a way befitting the question. (59)

I note in passing that we shall also have to judge whether the essence of freedom is itself a blind alley. But this just affirms my larger point. Heidegger returns us to the question of competence. But since fundamental ontology cannot stand the question of competence, we are left simply with a decision that leaves the future of philosophy hanging on the angst-ridden resolve that affirms itself in the face of death. (60) And this is Cartesianism all over again, in the sense that Heidegger's subordination of ethics to ontology--the decisive severing of the human relation to the good from the foundations of philosophy--amounts to the most radical late modern expression of the Cartesian legacy. **Rather than saving us from our fall into modern decadence, Heidegger's thought results finally in a deepening of the modern crisis.**

####  ( ) Life is a prerequisite to value to life

Wapner 3 (Paul Wapner, associate professor and director of the Global Environmental Policy Program at American University; “Leftist Criticism of 'Nature',” Winter 2003, http://dissentmagazine.org/article/?article=539)

All attempts to listen to nature are social constructions-except one. Even the most radical postmodernist must acknowledge the distinction between physical existence and non-existence. As I have said, postmodernists accept that there is a physical substratum to the phenomenal world even if they argue about the different meanings we ascribe to it. This acknowledgment of physical existence is crucial. We can't ascribe meaning to that which doesn't appear. What doesn't exist can manifest no character. Put differently, yes, the postmodernist should rightly worry about interpreting nature's expressions. And all of us should be wary of those who claim to speak on nature's behalf (including environmentalists who do that). But we need not doubt the simple idea that a prerequisite of expression is existence. This in turn suggests that preserving the nonhuman world-in all its diverse embodiments-must be seen by eco-critics as a fundamental good. Eco-critics must be supporters, in some fashion, of environmental preservation.

## 2ac Debt Ceiling/CR

#### No debt deal- republicans will bundle

Herman 9/27 (Malia Rulon Herman is a writer for USA Today. “Debt-ceiling measure puts Keystone supporters at odds” <http://www.usatoday.com/story/news/politics/2013/09/27/pipeline-supporters-split-on-strategy/2886071/> September 27, 2013)

WASHINGTON – Some proponents of the Keystone XL pipeline are eyeing a mid-October deadline for raising the nation's debt ceiling as a tool to win approval for the long-delayed project.¶ House Republicans plan to make a debt-ceiling hike contingent on a list of party priorities that include delayed implementation of the 2010 health care law, an overhaul of the tax code and a broad rollback of environmental regulations. One item on the list is language requiring the administration to approve the 1,700-mile pipeline.¶ "We feel like this is our only option," Republican Rep. Lee Terry of Nebraska told the New York Times this week.¶ Republican Rep. Steve Daines of Montana also was considering the plan.¶ "We will be taking time in the coming days to review the House proposal and are open to including provisions to approve the construction of the Keystone XL pipeline in this package," said his spokeswoman, Alee Lockman. "Steve is committed to doing what he can to get this job-creating project approved."¶ House Republicans remained uncertain Friday about when they would vote on legislation to raise the nation's borrowing authority. A vote could come Saturday, Sunday or next week.¶ President Barack Obama has said he won't negotiate on the debt ceiling. He and most Democrats, including Montana Sens. Max Baucus and Jon Tester, are calling for a "clean" debt-ceiling bill free of other provisions.¶ "No one is a bigger supporter of the Keystone Pipeline than Max, and Max will be the first one to support effective legislation that actually gets the pipeline built," Baucus spokeswoman Jennifer Donohue said. "But playing politics with America's ability to pay our bills by bringing outside issues into the debt ceiling debate will hurt Montana jobs without getting us any closer to building the Keystone pipeline."¶ Tester, through a spokeswoman, agreed.¶ "Jon continues to support the Keystone Pipeline but believes a vote to raise the debt ceiling should be a clean vote focused on protecting our credit rating," spokeswoman Andrea Helling said. "He would not support efforts to add any additional measures to the bill."¶ The pipeline, in the works for more than five years, is a flashpoint for environmentalists. They say transporting such large amounts of oil across the country puts many areas at risk.¶ Supporters counter that the $5.3 billion project would create 42,000 jobs across the country and generate much-needed tax revenue in several states.¶ The pipeline would move thousands of barrels of crude each day from Canada to the Gulf Coast for refining. Oil also would be transported from the Bakken region in Montana and North Dakota.¶ Oil produced in these regions now is transported across the U.S. by trucks and rail.

#### Continuing resolution thumps debt ceiling

Berman and Becker, 9/27

Russell Berman and Bernie Becker, news reporters for The Hill; “House GOP leaders shift focus back to government funding bill,” 9/27/2013, http://thehill.com/homenews/house/325113-house-gop-shifts-focus-back-to-government-funding-bill //bghs-ms

House Republicans will meet Saturday in the Capitol to plot their next moves in the fiscal fight, lawmakers said Friday. GOP leaders are returning their focus to a stopgap spending bill after they could not secure votes for a debt ceiling measure. Majority Leader Eric Cantor (R-Va.) signaled the House would now vote first on a continuing resolution (CR) to keep the government funded before turning to the debt ceiling bill, which has yet to be formally released. “We are looking at making sure we finish the business of the CR and, as we know, the debt ceiling is going to be upon us in the next couple of weeks,” Cantor told The Hill Friday. “But our focus right now is seeing what comes back on the CR.”

#### 1. Mexican engagement is politically popular

**Palmer 12** – Reuters contributor (Doug, “Boehner urges deeper US engagement in Latin America”, 5/8/12; <http://www.reuters.com/article/2012/05/08/usa-trade-boehner-idUSL1E8G81HM20120508>)//Beddow

WASHINGTON, May 8 (Reuters) - The U.S. **Congress' top Republican on Tuesday called for deeper U.S economic engagement with Latin America, but also expressed concern over Iranian influence in the region and the "alarming willingness" of some governments to abandon international norms**. "In both Colombia and Mexico, and the entire hemisphere, the U.S. must be clear that we will not disengage in the fight for free markets and free, secure people," U.S. House of Representatives Speaker John Boehner said in remarks prepared for delivery at the U.S. State Department. "We must be clear that we will be there, with our friends and partners in the region, committed to fighting and winning the war for a free, stable, and prosperous hemisphere," Boehner said, speaking to the Council of Americas, an organization representing companies that do business in the region. Boehner is due on Tuesday to receive an award from the group for his work last year on winning congressional approval of free trade agreements with Colombia, Panama and South Korea. The pacts were negotiated during the Republican administration of former President George W. Bush, but President Barack Obama, a Democrat, did not submit the agreements to Congress until late 2011, after negotiating changes to make them more palatable to Democrats and securing a commitment for renewal of a worker retraining program known as trade adjustment assistance. "When the Colombia Free Trade Agreement enters into force (on May 15), it will be an important moment for the prosperity of our hemisphere. It is equally important that the Panama Free Trade Agreement be fully implemented in the months ahead," Boehner said, referring to the Obama administration's ongoing work with Panama to implement that agreement. Boehner said it was important the United States "keep the momentum going" by negotiating new agreements to open markets to American exports, and said he was disappointed Obama has not sought legislation known as "Trade Promotion Authority" which would help the White House do that. Meanwhile, Boehner called Iran's attempt to gain influence in the region a "major threat" to democracy and prosperity. Iranian President Mahmoud Admadinejad's visit to Venezuela and Cuba "underscored the designs Iran has for expanding its influence in Latin America, and its eagerness to forge bonds with governments in the Western Hemisphere that have demonstrated a lesser interest in freedom and democracy," Boehner said. In an apparent reference to Argentina's expropriation of Spanish oil giant Repsol's subsidiary YPF and the billions in unpaid debt obligations the country still owes foreign investors, Boehner said the United States "must also be clear about what we expect from all of our neighbors." "We will insist that every nation honor the rule of law, meet its obligations, and respect international norms. That means paying debts to bondholders; honoring legal commitments and the decisions made by international arbiters; and respecting private property," Boehner said. "Some governments in the region have demonstrated an alarming willingness to drift away from such norms when it suits their objectives. When this occurs, it's harmful not only to the people of those countries, but to the potential of all of the Americas. And it cannot be excused."

## 1ar Heidegger

#### 8. Turn—only the neg forgets Being and forsakes politics by abandoning empiricism

Latour 2 – Professor, Paris Institute of Political Studies (Bruno, Environmentalism, ed Direk, p 303)

Who has forgotten Being? No one, no one ever has, otherwise Nature would be truly available as a pure 'stock'. Look around you: scientific objects are circulating simultaneously as subjects objects and discourse. Networks are full of Being. As for machines, they are laden with subjects and collectives. How could a being lose its difference, its incompleteness, its mark, its trace of Being? This is never in anyone's power; otherwise we should have to imagine that we have truly been modern, we should be taken in by the upper half of the modern Constitution. Has someone, however, actually forgotten Being? Yes: anyone who really thinks that Being has really been forgotten. As Levi-Strauss says, 'the barbarian is first and foremost the man who believe in barbarism.' (Levi-Strauss, [1952] 1987. p. 12). Those who have failed to undertake empirical studies of sciences, technologies, law, politics, economics, religion or fiction have lost the traces of Being that are distributed everywhere among beings. If, scorning empiricism, you opt out of the exact sciences, then the human sciences, then traditional philosophy, then the sciences of language, and you hunker down in your forest -- then you will indeed feel a tragic loss. But what is missing is you yourself, not the world! Heidegger's epigones have converted that glaring weakness into a strength. 'We don't know anything empirical, but that doesn't matter, since your world is empty of Being. We are keeping the little flame of Being safe from everything, and you, who have all the rest, have nothing.' On the contrary: we have everything, since we have Being, and beings, and we have never lost track of the difference between Being and beings. We are carrying out the impossible project undertaken by Heidegger, who believed what the modern Constitution said about itself without understanding that what is at issue there is only half of a larger mechanism which has never abandoned the old anthropological matrix. **No one can forget Being, since there has never been a modern world**, or, by the same token, metaphysics. We have always remained pre-Socratic, pre-Cartesian, pre-Kantian, pre-Nietzschean. No radical revolution can separate us from these pasts, so there is no need for reactionary counter-revolutions to lead us back to what has never been abandoned. Yes, Heraclitus is a surer guide than Heidegger: 'Einai gar kai entautha theous.'

## 1ar ptx

#### No deal now

Feraro & Younglai, 9/26 (Thomas & Rachelle, “No clear path to ending U.S. debt limit, spending impasse,” Reuters, http://www.reuters.com/article/2013/09/26/us-usa-fiscal-idUSBRE98N11220130926)//BI

U.S. House of Representatives Republicans on Thursday refused to give in to President Barack Obama's demand for straightforward bills to run the government beyond September 30 and to increase borrowing authority to avoid a historic default. In a direct challenge to Obama, they said they will seek a one-year delay in the full implementation of the national healthcare law known as "Obamacare" in return for raising U.S. borrowing authority by enough to let Treasury borrow through the end of 2014. The move does not bode well for prompt resolution of these fiscal battles that could lead to a government shutdown on October 1 and a default in mid-October. Precious time will be consumed on both issues as they bounce back and forth between the Republican-controlled House and the Democratic Senate, with each party anxious to make the other look uncompromising and thus responsible for any economic damage that might occur. Treasury Secretary Jack Lew has informed Congress that the government will exhaust its borrowing authority by October 17, after which it could default on its loans. Furthermore, House Republicans will not accept a temporary government spending bill the Senate is poised to pass to avert federal agency shutdowns, House Speaker John Boehner warned. In a government shutdown, agencies like the FBI, Education Department, Defense Department and Environmental Protection Agency would have to limit their operations on October 1, the first day of the new fiscal year. While Social Security retirement checks would go out, there could be delays due to a lack of workers. Asked by a reporter whether the House would sign off on an emergency bill the Senate is expected to pass on Friday, which simply extends current funding for another six weeks, Boehner replied: "I do not see that happening." The top House Republican made his remarks after a closed meeting with his rank and file. The political fighting over raising the $16.7 trillion debt limit prompted Doug Elmendorf, the head of the non-partisan Congressional Budget Office, to warn Congress: "Defaulting on any obligation of the U.S. government would be a dangerous gamble." If the dire warning sounded familiar, that is because this marks the fourth major standoff between House Republicans and Obama over fiscal issues since 2011, when they began tangling over spending cuts, tax hikes and rising government borrowing. White House spokesman Jay Carney on Thursday called Republican tactics on the debt limit a "political extortion game." Obama repeatedly has warned that he wants a debt limit increase with no strings attached. Along those lines, the White House on Thursday also said that it would not go along with a Republican proposal authorizing completion of the Keystone oil pipeline running from Canada to the U.S. Gulf of Mexico as part of a debt limit increase bill. REPUBLICAN INFIGHTING Republicans face internal challenges in the high-stakes fight over the basic functions of the U.S. government. Some of the party's most conservative members were balking at their leaders' debt limit plan, which was widely seen as an opening move subject to negotiation, saying it does not do enough to rein in government spending. Representative Tim Huelskamp of Kansas, speaking to reporters, said he and at least 17 other Republicans would oppose the measure, leaving the bill short of enough votes for passage, assuming all Democrats voted 'no.' At the same time, some centrist Republicans think it is counter-productive to wage yet another fight against Obamacare, especially on a bill as important as the debt limit. Instead, aides said, they want to use the debt limit to leverage savings in major federal retirement and healthcare programs. In exchange, deep, across-the-board spending cuts that hit the Pentagon and domestic programs in March would be canceled under that strategy. Representative Pete Sessions of Texas, a senior House Republican, confidently told reporters that even with all the disagreements over a debt limit bill, there would not be a government default. "We are still in September for a mid-October deadline," Sessions said. Referring to Obama's recent deal with Russian President Vladimir Putin over Syria's chemical weapons, Sessions added: "Why would the president negotiate with the Russian president but not with us?" With the current fiscal year ending in just five days and no laws in place to fund the government in the new year, House Republicans also discussed the possibility of widespread government agency shutdowns beginning on Tuesday. "We did discuss contingency plans in case of a shutdown; what we have to do in terms of furloughs and continuing services," Representative John Fleming of Louisiana told reporters. He added that letting government funding run out, even temporarily, "is not a goal at all." But it was still unclear whether the House and Senate could work out their differences in time. ADD-ON MEASURES House Republicans passed an emergency spending bill last week to defund Obamacare. But with Democrats standing firm against that tactic, Republicans have begun looking at other items their conservative members might attach to the bill. Senate Democrats intend to pass a "clean" bill to keep the government running from October 1 to November 15 and send it to the House as the clock ticks down to the expiration of government funding at midnight on Monday. Republican Representative Tom Cole of Oklahoma said there are discussions in the House about attaching a measure, which he did not specify, to the funding bill that has bipartisan support in the Senate. One such measure could be the proposed repeal of a medical device tax that would collect $30 billion over 10 years and help pay for some of the costs of Obamacare. Few Republican add-on measures, if any, are likely to be palatable to Democrats, but are aimed at pleasing conservative Tea Party activists who want to shrink government, even if it means provoking confrontations with the White House that are likely to fail. Senator Charles Schumer of New York, the third-ranking Democrat in the Senate, said his party was "resolute" against any such add-ons to the emergency spending bill. Similarly, the White House declared that it would reject the medical device tax repeal in exchange for keeping the government running. "We are not accepting riders. We want a clean CR," Schumer said referring to the government funding bill that is known as a "continuing resolution" or "CR."