NATO ASSOCIATION OF CANADA

Canada in the World:

Youth Dialogue on Emerging International Security Challenges

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The NATO Association of Canada
Canada in the World: Youth Dialogue on Emerging International Security Challenges
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INTRODUCTION

In the Wales Summit Declaration of 2014, NATO member states agreed that the aggressive actions in Ukraine, the growing instability in the Middle East and North Africa, and the "transnational and multidimensional" threats around the world are fundamentally challenging international security. "These could all have long-term consequences for peace and security in the Euro-Atlantic region and stability across the globe." These changes to the international security environment mean that NATO, and other international organizations, need to remain vigilant. "Political will, resources, and capabilities" are at the core of facing any emerging international security challenges in future decades.

This NATO Association of Canada's (NAOC) Youth Dialogue will examine issues and threats to emerging international security that are developing and changing rapidly. Recently, traditional security threats, such as threats to states by other states and threats to states' survival, have been diminishing, but are still present and at the core of international security. However, non-traditional security threats, such as threats to the economic development of states and of human well-being, are on the rise. These include: migration, energy security, cyber security, counterintelligence, terrorism, and global health issues. These types of emerging international security challenges are becoming priorities, and it is necessary to understand them in order to move forward. The NAOC's Youth Dialogue aims to promote a better understanding of this changing international security environment by examing core threats to stability.

For this dialogue, the NAOC encouraged contributing authors to conduct independent research and form their own positions on the subject matter. The NAOC has facilitated critical research and encouraged debate. Therefore, any views or opinions expressed in this dialogue are solely those of the contributing authors and do not necessarily represent those of the NAOC or its members.

The NAOC firmly believes that addressing today's security challenges requires meaningful engagement with and cultivation of Canada's next generation of leaders. In the spirit of a true dialogue, the NAOC encourages all readers to send comments and responses to info@atlantic-council.ca. All messages will be promptly forwarded to the appropriate author.

The 2004 Hollywood climate fiction-disaster film, The Day After Tomorrow, takes audiences on a ride through a world that is undergoing rapid climate change, resulting in raging storms. Despite the over-dramatized and arguably ill-advised scientific notions surrounding this film, it does depict a realistic future: one in which nature attempts to defeat human beings, and they, in turn, must flee and find refuge. A kind of cleansing retaliation by the Earth we have misused.

In 2014, then United States Secretary of Defense, Chuck Hagel stated that climate change would exacerbate the world's already existing issues, particularly water security and irregular migration. In fact, the Department of Defense created the Climate Change Adaptation Roadmap in order to combat the very real threat it sees climate change posing towards the United States military, and the world.[1] In the same year, NATO also reiterated the security risks of climate change and developed programs for environmental protection and environmental security.[2]

It's happening, arguably.

The effects resulting from climate change are already present. According to NASA, global temperatures have risen 0.8 degrees Celsius since 1880 and global sea levels have risen 178 mm over the past 100 years.[3] Stark examples of climate change are evident particularly in the depletion of Arctic Ice. For example, the Glacier National Park in Montana has lost 123 glaciers since 1910.[4] In 2007, Greenland's Ice Sheet, 1.7 million square kilometres, second only to the Antarctic Ice Sheet, 14 million square kilometres, recorded its largest annual loss of ice and an increase of 30% sheet loss between 1979-2006.[5] The problem with the ice sheets melting is three-fold: 1. rising sea level, 2. weather change, and 3. loss of our climate's history locked in the sheets.

Disagreement persists, however, among scientists over whether climate change is largely due to human activity or if climate change is primarily natural. In 2014 the phrase, "97% of scientists agree climate change is real and man-made" was tossed around haphazardly. The percentage however, was based on the examination of 4,014 academic paper abstracts in a peer-reviewed study developed by over 11 scientists publishing under the collective, Skeptical Science. Simply, the review did not represent the views of all scientists or indicate to what

level the researchers viewed climate change to be man-made. For many, including the climate science community, the blanket statement developed by the media and used by politicians, was highly misleading to the public.[6]

The fact is, however, the effects of climate change remain the same, and the increase of "environmental refugees" or "climate refugees" resulting from these effects, already represents a threat to global stability.

The Environmental Refugee

According to the International Bar Association, there is no current legal definition of "environmental refugee" or "climate refugee," which means the people affected by climate change often fall through the cracks in terms of structural international assistance.[7] However, most activists, as well as the United Nations Refugee Agency (UNHCR), recognize them as people who are forced to flee their homes due to the "effects of climate change," such as natural disasters, crop failures, drought, rising sea levels, etc. In 2013, people displaced by natural disasters reached 22 million, and there is an estimated several million more displaced due to drought, conflict related to climate change and sea level rise, a number that is estimated to reach 200 million by 2050. In response to this estimate, British economist Nick Stern stated in 2009, "there's no way the world can handle that kind of population move in the time in which it would take place."[9]

The Maldives: A Case Study

An important case study regarding the effects climate change can have on a single nation and its population is the Maldives. The tiny nation's 28 islands lie entirely at sea level in the midst of the Indian Ocean, southwest of India and Sri Lanka in the Laccadive Sea. In 2011, it's now ousted president, Mohamed Nasheed, was a primary figure in raising awareness of the existential crisis his country faced due to rising sea levels.[10] Since then, the country has undergone immense political turmoil and its shores continue to recede daily. Evan Puschak, with the Seeker Network, argues that the Maldives will become the "first state in history to be completely erased by the sea." By the end of this century, 77% of the Maldives could be under water thanks to melting ice sheets resulting in rising sea levels. In the National Adaptation Program of Action, developed by the Maldives' Minis-

try of Environment, Energy and Water, from 2006, it was found that the sea level was increasing by a maximum of 7mm/year, indeed a harsh reality for a nation that generally rests 1 meter above sea level.[11]

With a population of over 345,000 people, the Maldives may become the first nation in modern memory to be forced to abandon its country due to climate change. The question remains, where will they go? And where will the hundreds of thousands, and eventually millions, of others go once their shorelines have receded in similar low-lying countries?

The Intergovernmental Panel on Climate Change (IPCC) reported in 2014 that the projected sea level rise by 2100 lies between 26 and 82 cm, depending on the global rise in temperatures. This will inevitably affect over 634 million people living in coastal areas concentrated in countries such as the US, Bangladesh, Japan, Egypt and the Philippines.[12]

The Reality and The Insecurity

The reality of climate change and the impact of "climate refugees" is somewhat lost on people living in developed countries. In a research study published in 2015 by Nature Climate Change, more than 75% of Australians, North Americans and Europeans understood that climate change was real, however, on average, less than 50% viewed it as a danger to their livelihood. While in South America and in countries such as Mexico, India, Tanzania and Morocco, over 90% of people polled worried about the effects of climate change. Dr. Debbie Hopkins, from the University of Otago, stated for The Guardian, "people can be aware of it [climate change] but they see it as a distant risk and don't engage with it much. In many developed countries we have confidence in our adaptive capacity."[13]

Although the impact of "climate refugees" is thought to be felt primarily in developing countries, such as Bangladesh, South Sudan, Somalia, and Pakistan, the effects may be felt here in North America sooner than expected. Giles Slade, a Canadian born writer, argues in his book, *American Exodus: Climate Change and the Coming Fight for Survival*, that migration due to climate change in North America is already underway, particularly stemming from the drought in California, wildfires in the American Southwest, water scarcity, crop failure and droughts in Mexico and Central America. The rise in illegal immigrants to North America over the past several years, Slade argues, can be attributed to their fleeing areas that "can no longer support them." Where will everyone go in the future? He argues Canada, potentially.[14]

Mass migration resulting from climate change, both directly and indirectly, will inevitably strain international infrastructure and its ability to absorb the influx of people fleeing to areas that may not be able to sustain them. This could have a negative impact socially, economically and environmentally on countries if preparations are not made beforehand. The Brookings Institute argued in a recent article that the rhetoric regarding climate change must steer away from simply proving it exists to preparing for the effects it will bring. Climate change will exacerbate the issues faced by weaker states, such as internal conflict, weakened emergency response structures, and healthcare. It will contribute to rising social conflict and mass migration, thereby, drawing for economic and strategic assistance on wealthier states such as the US and Canada, which will be facing their own domestic security issues as well.[15]

In the film The Day After Tomorrow, the fictional US Vice-President states after fleeing to Mexico as a climate refugee:

"These past few days have left us all with a profound sense of humility in the face of nature's destructive power. For years, we operated under the belief that we could continue consuming our planet's natural resources without consequence. We were wrong. I was wrong."

Climate change is the world's reality. However, we are not ready to deal with the insecurity it will bring and the millions it will displace. Most in North America believe it is a distant future, or that we may distance ourselves from its effects. However, if the efforts by our militaries to adapt to climate change are any indication, then we must open our eyes and admit how utterly wrong we are.

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[1] Jim Garamone, "Military Must be Ready for Climate Change, Hagel Says," DOD News, (Oct 13, 2014), http://www.defense.gov/news/newsarticle.aspx?id=123399.

[2] "Environment – NATO's Stake," North Atlantic Treaty Organization, (Dec 9, 2014), http://www.nato.int/cps/en/natohq/topics_91048.htm.

[3] NASA Global Climate Change, "Vital Signs of the Planet," NASA, (last updated August 5, 2015), http://climate.nasa.gov/.

[4] "Global Warming Fast Facts," National Geographic News, (June 14, 2007), http://news.nationalgeographic.com/news/2004/12/1206_041206_global_warming.html.

[5] "Quick Facts on Ice Sheets," National Ice and Snow Data Center, (2015), https://nsidc.org/cryosphere/quickfacts/icesheets.html.

[6] Gayathri Vaidyanathan and ClimateWire, "How to Determine the Scientific Consensus on Global Warming," Scientific American, (July 24, 2014), http://www.scientificamerican.com/article/how-to-determine-the-scientific-consensus-on-global-warming/.

[7] Benjamin Glahn, "Climate Refugees? Addressing the International Legal Gaps," International Bar Association, (2015), http://www.ibanet.org/Article/Detail.aspx?ArticleUid=B51C02C1-3C27-4AE3-B4C4-7E350EB0F442.

[8] "Far Reaching Global Implications," UNHCR, (2015), http://www.unhcr.org/

pages/49c3646c10a.html.
[9] Graham Lanktree, "Surge of 200 million climate change refugees will reverse global health-care progress," International Business Times, (June 23, 2015), http://www.ibtimes.co.uk/surge-200-million-climate-change-refugees-will-reverse-global-healthcare-progress-1507548.
[10] Cole Mellino, "Which Country Will be the First to go Completely Under Water Due to Climate Change?," EcoWatch, (May 22, 2015), http://ecowatch.com/2015/05/22/maldives-underwater-climate-change/.
[11] "National Adaptation Program of Action," Minister of Environment, Energy and Water, Republic of the Maldives, (Dec 27, 2006), http://unfccc.int/resource/docs/napa/mdv01.pdf, 14.

[12] Nell Greenfieldboyce, "Study: 634 Million People at Rish from Rising Seas," NPR, (March 28, 2007), http://www.npr.org/templates/story/story.php?storyId=9162438.
[13] Oliver Milman, "Climate Change,: World's Wealthiest Understand, but Only Half See it as a Threat," The Guardian, (July 28, 2015). http://www.theguardian.com/environment/2015/jul/28/climate-change-worlds-wealthiest-understand-but-only-half-see-it-as-threat.
[14] Stephen Hume, "B.C. should prepare for the climate refugees," The Vancouver Sun, (April 27, 2015), http://www.vancouversun.com/business/Stephen+Hume+should+prepare+climate+refugees/11006297/story.html.
[15] Bruce Jones, "Security Risks: The Tenuous Link Between Climate Change and National Security," Brookings Institute, (May 21, 2015), http://www.brookings.edu/blogs/order-from-chaos/posts/2015/05/21-climate-change-national-security-jones.

A DEFINING THREAT: WATER SECURITY
Usman Javed

Water is widely regarded as the single most essential natural resource. Given the numerous functions of water, it is simply impossible to overstate its importance. Beyond the countless biological and ecological functions, water occupies a place of spiritual importance across religions. It plays the most critical role in the world's key economic sectors. From agriculture and food production to oil and gas, water is the driving force of any economy. As such, water security is essential to all aspects of our livelihood. However, fresh water systems are in great danger due to human activities and stand to further be in danger by anthropogenic causes, creating the problem of water security.[1]

Like any other controversial issue in international relations, the concept of security has been subject to great debate and contention. The notion of "traditional security" is most succinctly defined by Stephen Walt as "the study of the threat, use, and control of military force."[2] Therefore, the concept of security in many parts of the world has been defined narrowly as "military security." However, it is now widely understood that military security is only one aspect of the human security equation, and water can play an instrumental role in international, national, and transnational conflicts.[3]

UN-Water is the United Nations' "inter-agency coordination mechanism for all water-related issues."[4] According to the group, water security should be defined as, "the capacity of a population to safeguard sustainable access to adequate quantities of an acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability."

According to the WHO, 750 million people around the world lack access to safe water, which is approximately one in nine people.[5] The UN estimates that by 2025, "1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world's population could be living under water stressed conditions."[6]

The problems associated with water tensions are interlinked and manifold. Water stress leads to inadequate sanitary living conditions and contaminated water, which can result in cancer, liver and kidney damage or failure, nervous system disorders, damage to the immune system, birth defects, and waterborne diseases.[7]

Food is critical to human life and water is key to food security. All crops and livestock need water to grow and agriculture requires not only large quantities of water for irrigation but also good quality water for several production processes. With estimates that the world's population will surpass the 8 billion mark in 2030 and 9 billion in 2050, the food demand is predicted to increase by 50% and 70% respectively.[8] A water stressed planet will only lead to even more food insecurities.

Water stress can also lead to tensions among different communities, which can result in war and conflict. Water-related climatic hazards such as droughts and floods, which will inevitably result without proper water management, carry the potential to trigger or exacerbate social tensions that may lead to intrastate and interstate conflict.[9] There are 276 international river basins in the world today and 148 riparian countries. 80% of the world's freshwater originates in basins that traverse through more than one country and approximately 2.75 billion people live within transboundary river basins.[10] Moreover, many different regional boundaries, such as provinces, municipalities, ethnicities and tribes, share water resources. As such, water scarcity carries with it great potential to trigger both interstate and intrastate conflict.

The global population is expected to grow to projections of 9 billion by 2050, which raises the question whether there will be sufficient water to support the world's population.[11] According to the WHO, the majority of those affected by water scarcity and sanitation in the world resides in developing countries,[12] which lack ade-

quate resources to support even their current population, and have the least funding for mitigation and adaptation. Similarly, people living in rural areas are disproportionately affected by water scarcity. According to the WHO, 82% of those who lack access to improved water live in rural areas, while just 18% live in urban areas.[13] According to the World Bank Group, rural dwellers lack safe water five times more than urban dwellers.[14]

The InterAction Council claims that the "magnitude of the global freshwater crisis and the risks associated with it have been greatly underestimated."[15] Meaning that if the business as usual scenario continues, the situation can be much worse than what our best current estimates predict. Therefore, water is the defining security threat of the 21st century.

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[1] World Water Assessment Programme. Water in a Changing World. The United Nations World Water Development Report 3 (UNESCO, 2009). <http://www.unesco.org/new/en/naturalsciences/environment/water/wwap/wwdr/wwdr3-2009/>.
[2] Stephen Walt, "The Renaissance of Security Studies," International Studies Quarterly, (1991): 212.
[3] "The Global Water Crisis: Framing the Issue"Eds. Harriet Bigas, Tim Morris, Bob Sandford and Zafar Adeel, Thomas S. Axworthy. (InterAction Council, 2013).< http://inweh.unu.edu/wp-content/uploads/2013/05/WaterSecurity_The-Global-Water-Crisis.pdf>.
[4] "About UN-Water," UN-Water. <http://www.unwater.org/about/en/>.
[5] World Health Organization and UNICEF Joint Monitoring Programme (JMP), 2014. Progress on Drinking Water and Sanitation, 2014 Update.
< http://www.who.int/water_sanitation_health/publications/2014/jmp-report/en/>.
[6] "About UN-Water."
[7] United Nations, 2010, The millennium development goals report: United Nations Department of Economic and Social Affairs. <http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf>.
[8] UN Water for Life. <http://www.un.org/waterforlifedecade/food_security.shtml>.
[9] Rodrigo Vidaurre, et al., 2011. "Climate Change, Hydro-conflicts and Human Security: Achievement of and Gaps in Current Policies. " 1st Policy Brief. EU: Ecological Institute.
[10] De Stefano, Lucia, et al. "Mapping the Resilience of International River Basins to Future Climate Change-Induced Water Variability." Water Sector Board Discussion Paper Series The World Bank, 15 March 2010.
[11] United Nations Secretary-General's High-Level Panel on Global Sustainability, 2012. Resilient People, Resilient Planet: A Future Worth Choosing. New York: United Nations. < http://en.unesco.org/system/files/GSP_Report_web_final.pdf>.
[12] World Health Organization (WHO), 2008. Safer Water, Better Health: Costs, benefits, and sustainability of interventions to protect and promote health.<http://whqlibdoc.who.int/publications/2008/9789241596435_eng.pdf>.
[13] JMP, Progress on Drinking Water and Sanitation.
[14] World Bank, "Rural Water". <http://water.worldbank.org/topics/water-supply/rural-water>.
[15] "The Global Water Crisis: Framing the Issue," InterAction Council."

HOW EUROPE CAN GET OFF RUSSIAN ENERGY
Colin McEwen

The European Union's dependence on Russian oil and natural gas hamstrings its energy security and its relations with Moscow. EU member states have been forced to pay extortion money or risk the loss of central heating in cold winters. Fortunately, the technology exists to greatly reduce the EU's dependency on natural gas in general, and to eliminate the need for Russian gas in particular. For domestic uses, such as heating and transportation, electric alternatives are not only viable alternatives, but are overtaking their conventional counterparts. In manufacturing, where replacing oil or gas is more difficult, interconnections between EU states can improve supply throughout the continent. Finally, for electricity generation, renewable methods show vast potential and can readily overtake the relatively modest amounts of power that oil and gas-fired plants supply.

According to Eurostat in 2013, the twenty-eight member states of the EU collectively imported 33.5% of their crude oil from Russia, and 39.3% of their natural gas.[1] However, this vulnerability is not spread evenly; the Baltic States and Central Europe in particular require a greater share of energy from Russia.[2] Thus, it is there that the EU should properly direct its attention. The measures outlined here will inevitably vary in applicability between different countries, yet all of them will contribute to reducing the need for imported energy.

In the domestic sphere, electric vehicle technology has advanced rapidly. Estonia has already established a nation-wide network of recharging stations,[3] and Tesla Motors' network of "Supercharge" stations has penetrated France, Germany, the United Kingdom, and Scandinavia to a high degree. The same company's latest Model S achieves a range of up to 480 kilometers.[4] Admittedly, only one hundred thousand electric vehicles were sold across the continent in 2014, with another seventy-eight thousand in the first half of 2015. It is the non-member Norway that leads the pack, with one-fifth of all new Norwegian cars being electric.[5]

Electric vehicles are more efficient on a joules-per-kilometer basis, and price is the only significant remaining obstacle, driven by the cost of the battery pack. Local governments, which introduce electric public transit and therefore become customers, can help create economies of scale, reducing the price. Vienna has already done this with its fleet of buses[6] and Amsterdam is planning to do so.[7] Success would greatly reduce the need for oil in general, diminishing the need for foreign supply.

Natural gas imports are usually used for other ends. The electrification of domestic appliances such as central heating units or cooking stoves may not be glamorous,

but it is in their homes that EU citizens will feel the brunt of any Russian restrictions on gas supplies. Systems based on induction heating offer a viable alternative. Not only are they electrically powered, but they also offer a greater flexibility compared to gas-fired units, able to change temperature more quickly and operate more reliably at low temperatures.

Manufacturing that requires either oil or gas cannot be so easily converted, as it would require new technological breakthroughs. Improving the EU's supply chain, however, would be a step towards accommodating this fact. Oil and gas pipelines similar to the existing Baku-Tbilisi-Ceyhan pipeline, which seek to ultimately connect supplies from Azerbaijan and Central Asia through the Caucasus with European customers, are possible but expensive options.[8] If completed, they would certainly improve the energy security of Southern Europe. However, Russia maintains troops in Tajikistan, an air base in Kyrgyzstan, and continues to pressure the countries of Central Asia to join the Eurasian Economic Union.[9] Thus, political interference would still be a worrying factor.

A closer-to-home option is that of interconnecting pipelines between EU member states. Lithuania, for example, recently opened a terminal at the port of Klaipeda for Liquefied Natural Gas (LNG) that has sufficient capacity to meet almost all of the Baltic States' needs. However, it has not yet signed contracts with suppliers for such an amount, nor does it have sufficient connections with Estonia and Latvia to transport this energy. The Gas Interconnection Poland-Lithuania, as well as the undersea electric cable from Lithuania to Sweden,[10] are already under construction and demonstrate the potential for further cooperation of this nature.

The sector of electricity generation holds the most promise for reducing the need for Russian oil and gas, due to the rapid strides of renewable energy. Across the EU, the collective generation capacity of wind, hydro, and solar electricity stands at nearly 40% of the total, even if the total amount generated was less than this would suggest. Perhaps, more importantly, these accounted for three-quarters of all new capacity in 2011,[11] a strong signal that they are beginning to overtake conventional sources. Thus far, these sources have been well integrated into national electricity grids, cycling up or down much more easily than conventional power plants. The

challenge of intermittency can be matched by an excess of supply combined with sufficient storage.

In addition, the evidence from Germany suggests that this trend can go hand-in-hand with reducing the use of other supplies. Electricity production by natural gas in the first eleven months of 2014 fell by approximately 6.5 terawatt-hours or 18%, compared to the same period in 2013.[12] This picture is complicated by the fact that Germany consumed less electricity as a whole, as coal power plummeted, hydro declined by a similar amount and wind remained essentially unchanged. However, the end result is that a greater portion of the power supply comes from sources not using fossil fuels.

Strategically and economically, the European Union needs to eliminate its reliance on Russian energy. Fortunately, such action is both possible and feasible. With electrification, improved supply, adding interconnections, and expanding renewable energy, the EU can abandon any need to purchase energy from Moscow. The Union will be closer and stronger for it.

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[1] "Energy Production and Imports," last modified July 30, 2015, http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_production_and_imports

[2] Edward C. Chow, "European Energy Security and the Crisis in Ukraine," Hampton Roads International Security Quarterly (Oct 1, 2014): 66.

[3] Antonio Colmenar-Santos, Carlos de Palacio, David Borge-Diez and Oscar Monzón-Alejandro. "Planning Minimum Interurban Fast Charing Infrastructure for Electric Vehicles: Methodology and Application to Spain." Energies 7 (2014): 1219.

[4] Susan Rothgang, Matthias Rogge, Jan Becker, and Dirk Uwe Sauer. "Battery Design for Successful Electrification in Public Transport." Energies 8 (2015): 6716.

[5] Balazs Koranyi, "Norway to review electric car subsidies as sales soar," Reuters, April 20, 2015, Accessed July 23, 2015, http://www.reuters.com/article/2015/04/20/us-norway-autos-idUSKBN0NB1T520150420

[6] Erica Gies, "In Europe, Greener Transit on Existing Infrastructure," International New York Times, July 7, 2013, Accessed July 23, 2015, http://www.nytimes.com/2013/07/08/business/energy-environment/greener-transit-in-europe-built-on-top-of-older-infrastructure.html

[7] Jeroen Trommelen, "Primeur Amsterdam: alle bussen elektrisch," De Volkskrant, 15 April 2015, Accessed July 24, 2015, http://www.volkskrant.nl/economie/primeur-amsterdam-alle-bussen-elektrisch~a3955500/

[8] Emil Souleimanov and Filip Černý, "The Southern Caucasus Pipelines and the Caspian 'Oil Diplomacy': The Issue of Transporting Caspian Oil and Gas to World Markets." Revista de Investigaciones Políticas y Sociológicas Vol. 11(2012): 87-88.

[9] Charles E. Zeigler, "Russia in Central Asia: The Dynamics of Great-Power Politics in a Volatile Region," Asian Perspective 38 (2014): 598.

[10] Nerijus Adomaitis, "We can survive without Russian gas now, says Lithuania's president," October 21, 2014, Accessed July 21, 2015, http://www.reuters.com/article/2014/10/21/us-ukraine-crisis-lithuania-gas-idUSKCN0IA1WW20141021

[11] European Wind Energy Association. Wind in Power: 2014 European Statistics. (Brussels, 2015), 6.

[12] Fraunhofer Institute for Solar Energy Systems ISE, "Electricity production from solar and wind in Germany in 2014," last modified July 21, 2014. http://www.webcitation.org/6RG21ExIC

By Land, Sea, Air, and Cyberspace
Jeff Tian

The dilemma that NATO faces regarding cybersecurity today is one that has garnered much international attention. Buzzwords like 'Snowden', 'Stuxnet', and 'Anonymous' have worked their way into the societal and governmental conscious, with a poll in 2014 by Defense News showing that nearly half of US security officials believe cyberspace to be the greatest threat to national defence. Even mundane topics that seemingly have no influence on national security such as Ashley Madison and Sony demonstrate the hold that cyberspace has on much of the population. It is easy to imagine tensions escalating to a Cold War level, with no fear of mutually assured destruction but instead the tactical destruction of society and infrastructure inexorably linked with cyberspace.

Robert Jervis' Offence-Defence Theory rings especially true for the current situation, with two main factors defining it: the ease of carrying out a cyber attack, and the lack of precedent in dealing with such attacks. The balance between offence and defence has been a problem that many political analysts have struggled with throughout the years. In cyberspace, the two are extremely similar. As a recent New York Times article on Snowden explains, he used the same skills that he was taught in learning to combat hackers as part of the NSA to infiltrate the database. Such ambiguity between offensive and defensive measures are explained by Jervis as creating the worst type of international atmosphere, made "doubly dangerous" by the fact that offence has the clear upper hand.[1]

The ambiguity leads to a cycle where states build up military capabilities just for defensive purposes, but other states regard this as building up their offensive capabilities, and respond by engaging in an arms race. Even worse, offensive cyber attacks are that much more effective for two reasons. First, with the interconnectivity of the world today and the fact that defences are only as strong as their weakest link, it is easy to exploit holes in weaker cyber defences that are connected to greater ones. Every single worker is a security threat just by probability, by going through a list of common passwords and poor security habits.

Second, the cost of launching a cyber attack is far cheaper than setting up a good defence. A basic Distributed Denial of Service (DDoS) attack launched through multiple IP addresses is available to anyone and requires very little effort to set up. In fact, anyone with Google and a credit card could set up the botnet required to carry out the attack within hours. Yet, major companies like Sony and Microsoft have been hit with such attacks with alarming frequency. Surveys show that damages can cost anywhere from $5,000-$100,000 per hour.[2] Furthermore, the ease by which people can commit cyber attacks opens up the possibility of the 'next billion,' the global South that is primed to get on the Web, joining in on the action as well.

Furthermore, there is no clear deterrent for mass cyber attacks as there was for military attacks in the Cold War era. Hackers and botters face no clear reprisal even on a small scale, which does not bode well for international events. Chinese hacking efforts into the Pentagon were met by a collection of fist-shaking and angry words. The US and Israeli Stuxnet virus in Iran was not met with retribution either. Hiding your Internet signature, the IP address, is elementary for anyone remotely technologically proficient, and tracking the attacker through a multitude of false trails and literal Internet tunnels is not an easily available option for governments, especially those without strong infrastructure in place.

The gap between NATO countries in cyberspace knowledge is tremendous and critical, as well. The credibility of a mutual alliance based on real capabilities is shattered by the fact that the more advanced countries are actively suspicious and forcing their own technology and security onto the other countries, rather than hastening cooperation between less developed countries. Snowden's revelations painted a picture of a US that was not necessarily paranoid of NATO countries conspiring against it, but rather has complete disdain for the Internet capabilities of its allies.

The Five Eyes alliance of Australia, Canada, the US, the UK, and New Zealand is a good start in forming intelligence and cyber security partnerships. But, they must cast aside their exclusive membership and enlarge the partnership to truly gain reliability as an allied security measure for all countries in NATO. Without that, the factionalism and paranoia that infected the Cold War era may come to pass again.

What NATO needs to do is establish a clear and regular policy for all of its members. Article 5 of the agreement states that an attack on one is seen as an attack on all, and will be met with vengeance. Although NATO has released a policy that includes cyber attacks within the boundaries of Article 5, the fact that a retributive attack would have to be with common consent is an issue. It

requires all 28 nations in NATO to be on the same level of understanding regarding the cyber, kinetic, and economic impacts of a supposed cyber attack, as well as committing to a standard of aid to the retributive force. While Estonia invoked Article 5 in 2007 after a Russian-sponsored cyber attack, NATO countries were not able to reach a consensus regarding the severity of the attack. Again, closing the knowledge gap between members would help tremendously in creating a safe cyberspace.

As space did before it, cyberspace has added an entirely new dimension to international security that cannot be ignored. The Cold War saw international upheaval over the space race and nuclear development that completely shifted the way governments thought about security. In modern times, cyberspace may do the same, forcing governments to engage in a cyber arms race that may lead to the complete disregard of the very purpose of the Internet, the sharing of ideas and information. States must enhance their defence and deterrent capabilities rather than engaging in such an arms race to avoid the arrival of a second Cold War.

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[1] Jervis, R. "Cooperation Under the Security Dilemma", World Politics vol. 30, no. 2 (1978): 186–214 (Published by Cambridge University Press)
[2] Incapsula. "What DdoS Attacks Really Cost Businesses. http://lp.incapsula.com/rs/incapsulainc/images/eBook%20-%20DDoS%20Impact%20Survey.pdf, 2014.

STRUGGLING TO THWART AN URGENT THREAT: CANADA'S COUNTERINTELLIGENCE EFFORTS
Stefan Konrad

Since the September 11, 2001, attacks, a great deal of public attention has been paid to counter terrorism. The threat posed by Al Qaeda and, more recently, the Islamic State has been at the forefront of public consciousness and government policy for over a decade. However, the "War on Terror" has increasingly obscured other priorities for national intelligence agencies, particularly counter intelligence. Broadly speaking, national intelligence agencies have three major priorities: security intelligence, foreign strategic intelligence, and counter intelligence.[1] Security intelligence is best known to the public as information collected to safeguard against threats to national security and civilian population.[2] Foreign strategic intelligence is information gathered on the activities and policies of foreign governments with the aim of advancing domestic organizations and companies.[3]

In contrast, counter intelligence both encompasses and is completely separate from these other two disciplines. Security and foreign intelligence cannot be properly safeguarded without aggressive counter intelligence policies. Foreign intelligence, in particular, goes hand in hand with counter intelligence. Neither discipline is effective without the other. On the one hand, foreign strategic intelligence can be used to penetrate the intelligence agencies of hostile countries. Whether through interrogating human sources or signal intercepts, foreign intelligence can be used to understand if sensitive state secrets have been revealed.[4] If a hostile intelligence agency has penetrated the domestic government, foreign intelligence can be used to assess the size and seriousness of the breach.[5] On the other hand, counter intelligence is vital for all operations involving the collection of foreign intelligence. If enemy intelligence agencies have already penetrated the home government, any covert operations will either be stopped soon after execution or, even worse, slowly turned against the intelligence agencies that created them.

The most recent grave threat to Canada's Intelligence Community emerged in December 2011 and was later linked to the Russian Federation. The Federal Bureau of Investigation alerted Canadian authorities to the activities of Royal Canadian Navy Sub-Lieutenant Jeffrey Delisle.[6] Delisle's house was subsequently raided that month and he was formally arrested in January 2012. In February 2013, Delisle was formally convicted under the Security of Information Act and sentenced to 20 years in prison and penalized an $111,000 fine.

It was later revealed that Delisle had first started spying for Russia's Foreign Intelligence Service (SVR) in 2007 and met his handlers both at various domestic and international locations. Unlike many similar cases, Delisle never received a large financial reward for his spying (roughly $71,000 over four years). As was made clear during the legal proceedings, Delisle's primary motivation was personal. He first visited the Russian embassy in Ottawa shortly after learning about his wife's affair with another man. Despite his relatively low rank, Jeffrey Delisle had unusually high access to some of the West's most sensitive defence intelligence. Deslisle's work as an analyst at HMCS Trinity gave him access to the Stone Ghost network. Though formally run by the United States' Defense Intelligence Agency, the net-

work contained intelligence collected by all members of the Five Eyes' Alliance, which is an intelligence sharing agreement between Canada, US, UK, Australia, and New Zealand.[7]

Jeffrey Delisle's spying for Russia is an important case study for Canadian counterintelligence experts. His case revealed a number of troubling problems in Canada's approach to counterintelligence. After Delisle's arrest, it was revealed that the Canadian Security Intelligence Service had been aware of his activities months before the Royal Canadian Mounted Police were ever notified. In fact, the RCMP only formally became involved in December 2011 after the Federal Bureau of Investigation independently informed it of Delisle's activities.[8]

Another troubling fact that emerged was that the Royal Canadian Navy had no clear record of what files Delisle accessed or when. To this day, the full extent of his spying has never been properly quantified. The only reason that Delisle was able to betray his country in the first place was due to massive security failures at HMCS Trinity. Despite the high security classification of the facility, computers with access to sensitive databases were connected to removable storage devices. According to publically available information, Delisle transferred highly confidential files using a floppy disk to a second, less protected, computer. He then transferred the files to a USB device, which he routinely took outside the facility.[9]

These revelations have several important insights. First, removable storage devices should never, under any circumstances, be connected to computers on closed networks, particularly those with access to the most classified databases. Second, there should have been a real-time record of the files searched for and accessed by each user. If such a system had been implemented, Delisle's activities might have been detected much earlier by software algorithms. Thirdly, all personnel leaving and entering facilities with the highest-level classifica-

tions should be routinely searched. Fourth, Delisle's marital problems and history of financial troubles should have been red flags for the RCN and CSIS.[10] Even if Deslisle had not voluntarily approached the Russians, his difficult personal circumstances would have made him more vulnerable to manipulation by hostile foreign intelligence agencies.

In summary, the threat of espionage by hostile foreign governments is still very real in 2015. Though counter-intelligence has become overshadowed by counterterrorism, it remains essential in preventing serious breaches of Canada's most sensitive information. The globalized highly interconnected nature of the modern world means that Canada is seen as an individual target, and also a gateway to the wealth of information available through the Five Eyes' Alliance.

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[1] Cox, Jim. "Intelligence: Definitions, Concepts and Governance." 21 December, 2009. Ottawa, Ontario: Library of Parliament. http://www.parl.gc.ca/content/lop/researchpublications/prb0922-e.htm.
[2] Ibid.
[3] Ibid.
[4] Cooper, Barry. "CFIS: A Foreign Intelligence Service for Canada." Ottawa, Ontario: Defence and Foreign Affairs Institute, November 2007.
[5] Ibid.
[6] Taber, Jane. "Canadian spy Jeffrey Delisle gets 20 years for selling secrets to Russia." 8 February, 2013. The Globe and Mail. http://www.theglobeandmail.com/news/national/canadian-spy-jeffrey-delisle-gets-20-years-for-selling-secrets-to-russia/article8390425/.
[7] "Navy spy Delisle sentenced to 20 years in prison." 8 February, 2013. Canadian Broadcasting Corporation. http://www.cbc.ca/news/canada/nova-scotia/navy-spy-delisle-sentenced-to-20-years-in-prison-1.1129694.
[8] Bronskill, Jim and Murray Brewster. "Jeffrey Delisle case: CSIS secretly watched spy, held file back from RCMP." 26 May, 2013. The Toronto Star. http://www.thestar.com/news/canada/2013/05/26/jeffrey_delisle_case_csis_secretly_watched_spy_held_file_back_from_rcmp.html.
[9] Milewski, Terry. "5 plot lines in the Jeffrey Delisle navy spy case." 27 October, 2012. The Canadian Broadcasting Corporation. http://www.cbc.ca/news/politics/5-plot-lines-in-the-jeffrey-delisle-navy-spy-case-1.1202762.
[10] Wark, Wesley. ";Spy, Russians, Secrets, Sold': In the Jeffrey Delisle affair, one thing is certain - baffling incompetence on all sides." April 2013. The Literary Review of Canada. http://reviewcanada.ca/magazine/2013/04/spy-russians-secrets-sold/.

THE EVOLUTION OF AVIATION SECURITY
Sandra Song

Civil aviation[1] has facilitated and revolutionized the way people and objects are transported around the world. According to the International Civil Aviation Organization (ICAO),[2] in 2012 alone, "approximately 31.2 million departures[3] were performed by scheduled commercial operators, representing an increase of 3.5 per cent over [a] three-year period". With air traffic expected to double within the next 15 years, civil aviation has become an evolving topic in the field of international security.

Dating back as early as the 1940s,[4] "terrorists and criminals have used aircraft to conduct unlawful [activities]".[5] However, September 11, 2001 marked a definitive turning point in the concept of aviation security. Up until that point, the possibility of hijacking a commercial aircraft to be used as a weapon to inflict significant damage against civilians and infrastructure had never been considered or executed. As the rate of civil aviation is expected to increase over time, it suggests that aircraft and airports are vulnerable to becoming potential targets

to carry out acts of terror.[6] "Aviation is a preferred terrorist target because it offers a large number of potential victims, a high economic impact and publicity value."[7] Even if the intended damages are unsuccessful, it still meets many of the attacker's goals.[8] This demonstrates the growing need to safeguard civil aviation from becoming "an expedient distribution channel"[9] that could penetrate a high volume of fatalities.

In the wake of 9/11, the perception of threats heightened, which resulted in increasingly stricter aviation security measures.[10] Since terrorism is an international issue that can affect multiple states within the span of a few hours, nations have come together to establish and implement effective aviation security procedures.[11] On November 19, 2001, the US took the first step by signing the Aviation and Transportation Security Act (ATSA) into law. As a result, the Transportation Security Administration (TSA) was created to oversee security screenings in all modes of travel.[12]

A timeline of high threat and increased security

Prior to 9/11, there was little general screening for passengers and checked luggage. Starting in January 2002, the TSA introduced two-stages of baggage screening that all airlines had to adopt. The processes required that "each piece of checked luggage was matched to a passenger on board a flight, or screen checked baggage for explosives with one of four options: explosion detection system (EDS) machines, explosion trace detection (ETD) machines, bomb-sniffing dogs, or manual searching of bags."[13]

With the heightened number of attempted acts of terror in civil aviation shortly after 9/11, the process of arriving at the airport and boarding an aircraft has been transformed into a series of time-consuming inconveniences. As a result, the majority of airlines have instructed passengers to arrive at least two hours before take-off. This is to allow sufficient time to pass through the various security checkpoints. Throughout this process, passengers could be "randomly selected for additional screening, including hand searching of their carry-on bags, in the boarding area."[14]

On December 22, 2001, there was an attempted attack on American Airlines, Flight 63 from Paris to Miami. The attacker tried to ignite an explosive device that was concealed in his shoes. His attempts failed when passengers and cabin crew overpowered him.[15] This became the point when air travellers were required to remove their shoes for x-ray screening.

In August 2006, approximately 10 commercial airliners heading to the US, Canada and the UK were the targets of an attack. British officials were the first to discover liquid explosives that were hidden in the carry-on bags.[16] This resulted in an immediate ban on all liquids, gels and aerosols in carry-on bags with the exception of baby milk.[17] The complete ban of liquids was soon adjusted to allow passengers to carry liquid toiletries in a clear plastic bag. The new restriction also required liquids and gels to be in containers less than 100mL, without exceeding a combined volume of one litre.

On December 25, 2009, an international flight from Amsterdam to Detroit experienced a failed al Qaeda bombing attempt. The convicted individual had concealed a plastic explosive in his underwear that did not detonate as planned. In response to the failed attack, full body scanners at airports were installed and implemented to detect non-metallic materials that could pose a threat.[18]

The listed events indicate that the "time between arriving at the airport and boarding the plane is the latent period during which dangerous objects can be detected and attacks prevented by confiscation, explosive disarmament, or arrest."[19]

Is the sky our limit?

Security measures in the field of commercial aviation have developed and come a long way since 9/11. The use of new technologies and screening methods has significantly diminished the number of attempted attacks in airports or on flights, but it is not foolproof.

Aviation security is continuing to evolve by learning from the past. It is a difficult feat to try and prevent foreseeable schemes. We are now living in a world where passengers have come to accept these inconvenient security measures as part of routine airport procedures.[20] At the moment, this may be the only realistic option to move towards the horizon of aviation security.

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[1] For the purpose of this research, civil aviation will be regarded as planned and programmed flights from one point of departure to its scheduled destination. This applies to all non-military aviation.

[2] The ICAO is a specialized agency under the United Nations. It is also recognized as the Chicago Convention of 1944. Signed by 191 Signatory States, its purpose is to develop a set of standards and policies to safely and effectively regulate international air travel.

[3] State of Global Aviation Safety. 2nd ed. Montreal: International Civil Aviation Organization, 2013, pp. 5-9. According to ICAO, the departures are based on figure from UN Member State regions.
[4] Esther, Charles. Syd's Pirates: A Story of an Airline. Sydney: Durnmount, 1983. The first commercial aircraft hijacking occurred in July 1948. Terrorists managed to gain control of a Cathay Pacific Airways seaplane from Hong Kong. It crashed in the sea off of Macau, killing all 26 passengers and crewmembers, except for one attacker.
[5] Price, Jeffrey C., and Forrest, Jeffrey S. Practical Aviation Security: Predicting and Preventing Future Threats. 2nd ed. Amsterdam: Elsevier, Butterworth-Heinemann, 2013, p. 1.
[6] Miller, J. M. "Conceptualizing the Hijacking Threat to Civil Aviation." Criminal Justice Review, 2007, p. 210.
[7] "Canada's National Civil Aviation Security Program." Transport Canada. 2013, p. 4.
[8] Ibid., p. 5.
[9] Supra note 7.
[10] Birkland, Thomas A.. "Learning and Policy Improvement After Disaster: The Case of

Aviation Security." American Behavioral Scientist 48 (2004), p. 384.
[11] Sweet, Kathleen M. Aviation and Airport Security: Terrorism and Safety Concerns. 2nd ed. Boca Raton, Florida: CRC Press, Taylor & Francis Group, 2009, p. 49.
[12] "Timeline Manuscript - Transportation Security Administration." 2005, at p. 3.
[13] Blalock, Garrick, Vrinda Kadiyali, and Daniel H. Simon. "The Impact Of Post-9/11 Airport Security Measures On The Demand For Air Travel." The Journal of Law and Economics, 2007, p. 734.
[14] Ibid., p. 733
[15] Supra note 14.
[16] Ibid., p. 4.
[17] Linos, Eleni, Linos, Elizabeth, and Colditz, Graham. "Did You Pack Your Bags Yourself?." British Medical Journal 335 (2007), p. 1290.
[18] Mahadevappa, Mahesh. "Use of full body scanners at airports." British Medical Journal 340, no. 7745 (2010), p. 491.
[19] Supra note 19, p. 1291.
[20] Supra note 13, p. 146.

THE JIHADIST NEXT DOOR: HOMEGROWN JIHADISTS AND THEIR THREAT TO CANADIAN NATIONAL SECURITY
Trevor Schenk

On October 20, 2014, in St-John-sur-Richelieu, Quebec, Martin Couture-Rouleau, a Canadian citizen and recent religious convert, deliberately targeted and struck two Canadian Armed Forces (CAF) personnel with his vehicle, killing Warrant Officer Patrice Vincent, before later being killed himself by police officers. Couture-Roulau had been known to the RCMP's Integrated National Security Investigations unit in Montreal as a radical supporter of the Islamic State (IS).

Two days later in Ottawa, Michael Zehaf-Bibeau, also a Canadian citizen, shot and killed CAF reservist, Corporal Nathan Cirillo, who was standing on ceremonial sentry duty at the Canadian National War Memorial. He then stormed the Centre Block of Parliament where he was shot and killed by officers and Sergeant-at-Arms of the House of Commons, Paul Vickers.

This attack at the very heart of Canadian democracy, on the sacred open-to-the-public grounds meant to represent freedom and liberty, has led to questions about how to respond to the emerging threat of "lone wolf" and "homegrown" terrorism in Canada.
In 2014, according to Canadian Security agencies, there were an estimated 130 Canadians actively participating in a variety of conflicts abroad, and another list of 90 suspected extremists who were being monitored by the RCMP and believed to have intentions to become extremist travelers. The Canadian government has also acknowledged that some 80 citizens have also returned to Canada after traveling abroad for suspected "terrorism related purposes."[1]

Combined data from the Soufan Group and the International Centre for the Study of Radicalization (ICSR) estimated that between December 2013 and October 2014, 70 Canadians travelled to Syria to join terrorist groups. This is compared to an estimated 130 Americans, 250 Australians, and 488 British in the same time period. When analyzed on a *per capita* basis, Canada

had approximately five times more travellers than the US but much fewer than Australia and the UK, placing it somewhere in the middle ground in terms of extremist travellers.[2]

The most notable hub for extremist travellers has been Calgary, where an estimated 30 local residents have travelled abroad to participate in foreign conflicts. This included five men who all attended the Islamic Information Society of Calgary, a small religious centre located on the ground floor of an apartment building where they all lived: Farah Mohamed Shirdon (died fighting with IS in 2014), Damion Clairmont (died fighting with al-Nusra in Syria), Salman Ashrafi (died fighting with IS in Iraq) and Greg and Collin Gordon (died fighting with IS in Syria).

Canadians who engage in terrorist related activity abroad not only put other people's lives at risk but they also tarnish Canada's reputation abroad. And for those who do not die fighting, there is the potential that they will come home with the knowledge, skills, experience and the will to carry out attacks in Canada. They may also become involved in other terror related activities like fundraising, propaganda or training for other individuals who want to travel abroad and fight. The question then is why are so many young people drawn to the movement, and what is the best strategy in combating radicalization and preventing violent extremism?

The most evident recruitment tools for extremist groups have been the Internet, social media, and charismatic preachers in mosques, prayer rooms, and virtual spaces through the distribution of online sermons.[3] Most notable are figures like English speaking, American born and educated Anwar al-Awlaki, member of al-Qaeda in the Arabian Peninsula (AQAP), who had the ability to influence individuals from the West and elsewhere to participate in terrorism. Although he was killed in a US drone strike in 2011, his message and online sermons

continue to recruit individuals long after his death proving that the Internet is a powerful medium connecting Westerners to militant Islamism.[4]

Canada is identified as a liberal, diverse and tolerant multicultural state, so the question why some individuals so dramatically reject this identity in favour of violent extremism is a difficult one to answer, especially when some of those who have travelled abroad to fight have been successful in their personal and professional lives.[5]

Some of the drivers that have been identified are a sense of alienation in a non-Islamic society, religious naiveté, economic marginalization, and a desire for excitement in otherwise boring lives.[6] Groups like IS have waged a successful propaganda campaign drawing parts of their legitimacy from the perception that they are a global force who can offer money, sex, violence, a new empowered identity, a life of notoriety, and a starkly different life from the one people knew in Canada.[7]

Another major trigger for extremism is the specific policy initiatives of the host country. There are many examples, not just in Canada, where interventions in Muslim countries are used as justification for extremists who argue that they are legitimately protecting a religious and cultural heritage from Western Imperialism. The "Toronto 18" plot explicitly cited Canadian participation in the war in Afghanistan as their primary motivation for violence. More recently, Canada has been targeted by IS propaganda because of its participation in the current war in Iraq and Syria.

Even with this information on the drivers and triggers, there is still no simple generalization to be made about the commitment to violence of extremists. Belief in a cause in itself is an unreliable predictor of an individual's predisposition towards actually committing a violent act of terrorism.[8] There is hope however as there is still the potential to intervene and stop an individual

from committing an act of violence even after they have been radicalized.

Government, law enforcement, and communities all have a role to play in the prevention of radicalized individuals' taking the next step into violence. But it is the community which is closest to the individual, family members, peers, religious and community figures, and teachers, who are in the best position to recognize a radicalized individual and intervene before it is too late. Outreach and engagement networks built up by local police, RCMP, and by advisory and liaison groups like the Cross-Cultural Roundtable on Security are also vital to this mission.[9]

Most importantly, the Canadian government, law enforcement agencies, spy agencies, and communities must continue to build on the institutions and initiatives already in place and create a strong counter narrative that challenges and disproves the lies of terrorist organizations like IS. It is also important to remember that there is nothing inevitable or irreversible about holding radical views; it is always possible for individuals to disengage from the world of extremism.

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[1] McCoy, John, and W. Andy White. "Homegrown Terrorism in Canada: Local Patterns, Global Trends." Studies in Conflict and Terrorism 38 (2015): 253-74
[2] Ibid., p.256
[3] Ibid., p.258
[4] Ibid., p.259
[5] Ibid., p.269-70
[6] Skillicorn, David, Christian Leuprecht and Conrad Winn. "Homegrown Islamist Radicalization in Canada: Process Insights from an Attitudinal Survey." Canadian Journal of Political Science 45(4) (Dec 2012): p. 932
[7] McCoy and White, Op. Cit., p. 269
[8] Sillicorn, Leuprecht and Winn, Op. Cit., p. 935
[9] "2014 Public Report On The Terrorist Threat To Canada." http://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/2014-pblc-rpr-trrrst-thrt/index-eng.aspx. 2014. Web. 16 July 2015.

THE TERROR-CRIME NEXUS: CONNECTIONS BETWEEN TERRORISM AND ORGANIZED CRIME
Kevin Hempstead

Modern non-state security threats are more interconnected than analysts give credit to. One common misassumption is that of rational centralized agents, consisting of both a leader and a hierarchical chain of command. When IS gained notoriety in northern Iraq, much attention was given to the leadership of Abu Bakr al-Baghdadi. As stated in the National Post, his removal is the equivalent to "cutting the head off the snake," and, thus, dismantling the Islamic State.[1] Similarly, US drone strikes on terrorist operatives have been directed to-

wards individuals because of either their notoriety or their terrorist tendencies.[2]

Yet, these strategies miss the main organizational similarity of most non-state security threats, which is that they are entities based on informal relationships rather than formal hierarchies. Thus, they are more interconnected than the West often realizes. Two major points clarify this argument.

Firstly, terrorist groups are networked organizations, as are transnational crime organizations whose criminal activities surpass borders and have international effects. As these groups need to be fluid and need to operate under high-pressure circumstances, either while under attack or because they risk capture and, therefore, they operate solely through underground channels.

These organizations have changed drastically since the Cold War. Due to the Internet, these groups have greater capacity for communication and logistical planning, as well as for contacting similar groups. John Arquilla and Don Ronfeldt were the first to notice this trend in 2001, coining the term "netwars" on how contemporary US enemies are not organizations, but rather groups of networks.[3] Al-Qaeda represents this tendency well, being several client organizations with relative autonomy rather than a centralized unit. While the main group remains in Iraq, clients exist in Syria, Yemen, and Mali. They communicate and work with one another though the main group in Iraq does have significant influence over the others. Al-Qaeda's continued existence after the loss of Osama bin Laden is due to fluid organizational structure.[4]

Secondly, their networked nature allows for greater collaboration. Since the end of the Cold War, most terrorist organizations lost state financing and had to rely on organized crime to maintain financial solvency. For example, Hezbollah responded to insecurity within the Middle East by establishing a stronger base in Latin America, including partnerships with Mexican drug trafficking organizations (DTOs), money laundering, and human smuggling. These additional revenue streams provided assistance to their operations both in Lebanon and abroad.[5]

Due to globalization, international crime has boomed under the informal economy, the economic activities, enterprises, and workers that remain unregulated by states, providing new revenue opportunities to terrorist organizations. The United Nations Office on Drugs and Crime (UNODC) estimated that in 2009 transnational organized crime (TOC) was valued at $870 billion, approximately 1.5% of global GDP.[6] And, because of the wide expansion of world trade and free trade zones, criminal groups can more easily transfer illicit goods and launder money with less risk than before. According to estimates, only 10% of the 25 million cargo containers that enter US ports annually are checked for illegitimate products.[7]

This expansion into transnational crime necessitates linkages with other terrorist and international crime groups. Terrorist groups rarely act independently to suc-

cessfully launder cash or engage in smuggling, and, thus, work with other crime groups. With regards to Hezbollah, when Lebanese drug lord Chekry Harb was arrested in Colombia in 2008, he was discovered to be the hub between the Lebanese organization and the South American cocaine traffickers.[8] Through Operation Titan, Colombian investigators uncovered a number of transactions and communications between Hezbollah and a number of Colombian armed groups, including the Revolutionary Armed Forces of Colombia (FARC). While their motives are completely different, the interconnectedness of the informal economy brings them towards a common purpose.

Likewise, the purported connection between al-Qaeda and the Italian mafia shows how different illegal groups co-exist. Italian authorities have long suspected that the two have had contact since 1998, being engaged in a human smuggling operation and moving thousands of people across the Mediterranean Sea for money.[9] Each illegal migrant was sold at an estimated cost of $4,000; al-Qaeda made millions of dollars on these transactions. Further proof was found in 2006, when FBI agents caught a mafia member attempting to sell missiles to al-Qaeda.[10]

The connections within the informal economy also show why failing states, governments that do not have a monopoly of power and cannot provide services, become an issue of international security. With these institutions, governments and oppositions blend into organized crime, and, thus, become an easy gateway for money, underground transactions, and weapons. Scholars analyzing regions ranging from Africa to Russia have already noted how one of the largest obstacles to modernizing governance is the overwhelming power of networks and informal governance. Leaders consistently prefer personal gains by accessing black market deals over legitimate rule.[11] Groups in North Africa, such as al-Qaeda in the Islamic Maghreb (AQIM), are reliant on the drug trade going through weak states like Mali and Libya to raise finances for their operations.[12] While weak states are integral for terrorist groups to gain a foothold, as seen in the rise of IS in Northern Iraq, they are equally important in securing funding and operations to maintain their activities.

Thus, the ongoing "War on Terror" is gradually coming into view as a wider war on the informal economy. The US government has recognized the interconnectedness of crime, terror, and failed states. The 2011 Department of Defence Counternarcotics & Global Threats Strategy made note of "the confluence of dispersed and decentralized global networks of criminals and terrorists [that]

enable both to fulfil their objectives by leveraging each other's strengths." [13]

The next necessary step is to translate this recognition into policy. The removal of a single operative like al-Baghdadi will have little effect on the underground networks that proliferate around him. Despite the actual failure in curbing illegal trade when the FBI closed the online Silk Road marketplace,[14] tactics similar to those may have a larger cumulative effect than another air strike. To dismantle terrorist threats, NATO and the United States must disrupt their networks, rather than their leaders.

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[1] Qassim Abul-Zahra and Vivian Salama, "ISIS Leader Abu Bakr Al-Baghdadi wounded in air strike that killed his 'very close companion'" The National Post, November 9, 2014.
[2] Scott Shane, "Drone Strikes Reveal Uncomfortable Truth: U.S. Often Unsure About Who Will Die," The New York Times, April 23, 2015.
[3] John Arquilla and David Ronfeldt, Networks and Netwars: The Future of Terror, Crime, and Militancy, (New York: RAND Corporation, 2001), p. 30.
[4] Leah Farrall, "How al-Qaeda Works: What the Organization's Subsidiaries Say About Its Strength," Foreign Affairs (March/April 2011), https://www.foreignaffairs.com/articles/south-asia/2011-02-20/how-al-qaeda-works.
[5] Steven Alfonso, "Why Organized Crime and Terror Groups are Converging," Security Intelligence, September 4, 2014, http://securityintelligence.com/why-organized-crime-and-terror-groups-are-converging/#.VbZ0OvlVikp.
[6] "Transnational Organized Crime – the Globalized Illegal Economy, The United Nations Office on Drugs And Crime, http://www.unodc.org/documents/toc/factsheets/TOC12_fs_general_EN_HIRES.pdf.
[7] Alfonso, "Op. Cit."
[8] Celina Realuyo, "The Terror-Crime Nexus," PRISM 5.1 (September 2014), http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?id=188444
[9] Jennifer Hesterman, The Terrorist-Crime Nexus: An Alliance of International Drug Cartels, Organized Crime, and Terror Groups, (Boca Raton, FL: CRC Press, 2013), p. 73
[10] Ibid., p. 75
[11] Alena V. Ledeneva, Alena V, Can Russia Modernise?: Sistema, Power Netorks and Informal Governance, (Cambridge, UK: Cambridge University Press, 2013), p. 7.
[12] Erin Banco, "Afghan Opium Shipments are Fueling Terrorist Groups in West Africa," International Business Times, July 15 2015, http://www.ibtimes.com/afghan-opium-shipments-are-fueling-terrorist-groups-west-africa-2004094.
[13] Department of Defense Counternarcotics & Global Threats Strategy, U.S. Department of Defense, https://www.hsdl.org/?view&did=721746.
[14] Kathleen Caulderwood, "Silk Road Closure: Darknet Economy Thriving A Year Later," International Business Times, October 10 2014, http://www.ibtimes.com/silk-road-closure-darknet-economy-thriving-year-later-1702543.

THE RISE OF THE NARCO-STATE
Paul Pryce

One of the most significant security threats facing the international community in the 21st century is the rise of the 'narco-state'. In 2000, prior to the NATO intervention in Afghanistan, the United Nations Office for Drug Control and Crime Prevention (UNODCCP), now known as the UN Office on Drugs and Crime (UNODC), estimated that the Taliban and al-Qaeda controlled 70.4% of global opium production, convertible into 280 tonnes of heroin.[1] Since then, there has been a growing awareness among policymakers and law enforcement officials of the important intersection between narcotics trafficking and the financing of terrorism. With the global cocaine market valued at approximately $88 billion annually, even a small share could finance horrendous campaigns of violence anywhere in the world.

The close relationship between narcotics trafficking and terrorism has become especially apparent to the Economic Community of West African States (ECOWAS). According to a 2013 report by the ECOWAS Intergovernmental Action Group Against Money Laundering in West Africa (GIABA), the Revolutionary Armed Forces of Colombia (FARC) has been using several West African countries as a transit hub for cocaine shipments to Europe, with some of the proceeds of these smuggling operations going to al-Qaeda in the Islamic Maghreb (AQIM).[2] Roughly 13% of the cocaine that travels from Latin America to Europe each year is believed to pass through West Africa.

The Republic of Guinea-Bissau, a small Portuguese-speaking West African country that neighbours Senegal and Guinea, may have been the first to succumb to the growing influence of the international drug trade. Since gaining independence from Portugal in 1974, Guinea-Bissau has not seen a president successfully serve a full five-year term, with many removed from office in military coups. For example, President Joao Bernardo Vieira was killed by Bissau-Guinean soldiers in March 2009 after four years in power. During the 2012 presidential election, General Antonio Indjai, top commander of the country's armed forces, seized power and claimed that leading candidate Carlos Gomes Junior had been planning to hand Guinea-Bissau over to Angolan rule.

Antonio Indjai is representative of the problems a narco-state, or countries at risk of becoming narco-states, face. According to an indictment filed by the United States Department of Justice in March 2013 with the US District Court for the Southern District of New York, Indjai liaised with FARC to organize cocaine shipments from Colombia to destinations in Europe and the US with Guinea-Bissau as the transit point.[3] Indjai's destabilizing actions and refusal to accept civilian authority over the military were intended to protect his trafficking operations.

In the 2012 election, Carlos Gomes Junior campaigned on an anti-corruption platform promising to pursue an ambitious program of military reforms until Indjai inter-

vened. In late 2013, when interim president Manuel Serifo Nhamadjo called for Indjai to retire from the military, another coup was threatened as the general asserted that 'only a democratically elected' head of state could force his resignation. This disdain for civilian authority has permeated throughout the ranks of Guinea-Bissau's military to such an extent that Transparency International's Corruption Perceptions Index ranks Guinea-Bissau 154 out of some 174 countries for levels of corruption, while the 2013 edition of the Freedom House annual report, Freedom in the World, refers to "pervasive" corruption as one of the greatest impediments to development in Guinea-Bissau.

It was only through economic sanctions from ECOWAS and the presence of troops from the ECOWAS Mission in Guinea-Bissau (ECOMIB) that new elections were held in April 2014, in which Jose Mario Vaz was elected with 61.9% of the vote. By September 2014, the president was successful in ousting Indjai, a good first step on the path to reforming the Bissau-Guinean military.[4] This may in fact be the best antidote to the narco-state, aggressively pursuing security sector reform (SSR). A concept which first emerged in the 1990s amid the collapse of the Soviet Union and the Warsaw Pact, SSR is intended to rebuild dysfunctional security institutions in such a way that those institutions become better able to provide state security while also honouring norms of good governance and the rule of law.

This is also where NATO and its member states could make a valuable contribution. The NATO-Colombia Accord established in 2013 sets out provisions for intelligence sharing that are specifically concerned with enhancing the ability of Colombian and NATO forces to intercept narcotics shipments before they reach Bissau-Guinean waters. But, attempting to contain a narco-state will never be as effective a policy as ending the culture of corruption upon which a narco-state is built. From February 2008 to August 2010, the European Union deployed a mission in support of SSR in Guinea-Bissau, but its work ended unsuccessfully as there was insufficient political will in the host country to seriously pursue a reform agenda. The dismissal of Indjai from his post should be seen as a sign from the new government that it is indeed receptive to SSR proposals.

The International Crisis Group has identified a number of actions that can be taken beyond the deployment of a NATO SSR mission.[5] In particular, ECOMIB may require financial support in order to ensure its continued presence until the end of President Vaz's mandate in 2019. Having one president complete a five-year term would go some way toward entrenching democratic traditions and civil institutions in Guinea-Bissau, discouraging future generations from seeing violence as a solu-

tion to political and economic challenges. For President Vaz's part, he must stay the course on his plans to downsize the military, in particular the $270 million special pension fund established in March 2015 to finance the retirement of hundreds of armed forces personnel. In the nearby island nation of Sao Tomé and Principe, the failure to pay regular wages to some troops nearly precipitated a coup against President Manuel Pinto da Costa in February 2014, for example.[6]

Supporting Guinea-Bissau in its democratic transition would also help NATO learn how to implement SSR in other countries at risk of becoming narco-states. Even as Guinea-Bissau attracts the attention of American and European law enforcement officials, other African countries are beginning to play a significant role in narcotics trafficking, such as Mozambique's growing importance as a hub for hashish and heroin trafficked by sea from Pakistan, Afghanistan, and India. The UNODC recently reported that each year 22 tonnes of heroin is trafficked to East Africa, namely to Eritrea, Somalia, and Tanzania.[7] Though some of this is moved to other regions of Africa and onward to Europe, East Africa's local heroin consumption is estimated to be worth $160 million a year, surpassing piracy as the pre-eminent source of revenue for regional organized crime. Just as cocaine helps finance AQIM's campaign of suicide bombings and beheadings of foreign nationals in North Africa, heroin has become an important financial support for al-Shabaab's war against the internationally recognized government of Somalia.

Elsewhere in the Global South, the risk of more countries descending to narco-state status is even greater. Since a crackdown on drug cartels in Mexico, Guatemala has taken on strategic importance as another transit point for cocaine and other narcotics trafficked from Latin America into the US. In Paraguay, the overlap between drug smugglers and military officials is strikingly similar to Indjai-era Guinea-Bissau, especially since the 'soft coup' of President Fernando Lugo in 2012.[8]

After 13 years of state-building efforts in Afghanistan, NATO has a uniquely deep understanding of the nexus between state corruption, drug trafficking, and terrorism. Addressing that relationship in Guinea-Bissau and the many countries like it may be the most important mission for the next 50 years of the Alliance.

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[1] UNODCCP, "2000 Annual Opium Poppy Survey: Afghanistan," https://www.unodc.org/pdf/publications/report_2000-12-31_1.pdf

[2] ECOWAS GIABA, "Terrorist Financing in West Africa," 2013, http://www.giaba.org/media/f/632_TF-in-West-Africa.pdf

[3] Adam Nossiter, "US Indicts Guinea-Bissau's Military Chief in Drug Case," New York Times, 18 April 2013, http://www.nytimes.com/2013/04/19/world/africa/us-indicts-guinea-bissaus-military-leader-on-drug-charges.html?_r=0

[4] BBC, "Guinea-Bissau army chief Antonio Indjai sacked," 16 September 2014, http://www.bbc.com/news/world-africa-29220830

[5] International Crisis Group, "Security Sector Reform in Guinea-Bissau: An Opportunity Not to Be Missed," 2015, http://www.crisisgroup.org/en/regions/africa/west-africa/guinea-bissau/b109-security-sector-reform-in-guinea-bissau-an-opportunity-not-to-be-missed.aspx

[6] Reuters, "President says discontent in Sao Tome army, plays down fears of uprising," 11 February 2014, http://www.reuters.com/article/2014/02/11/us-saotome-army-idUSBREA1A1TJ20140211

[7] Walter Menya, "East Africans consume cocaine worth $160m a year," Africa Review, 9 September 2013, http://www.africareview.com/Special-Reports/-/979182/1985080/-/sqbsbpz/-/index.html

[8] Adam Isacson, "The US Military in the War on Drugs" in Coletta Youngers & Eileen Rosin (Eds.) Drugs and Democracy in Latin America: The Impact of US Policy, 2005, p.24

THE FUTURE OF THE COMMUNITY REPRESENTATIVE: INTERNATIONAL ORGANIZATIONS AND INSTITUTIONS IN THE EMERGING SECURITY ENVIRONMENT

Corinne Stancescu

In a speech delivered in September 1919, Woodrow Wilson said "I can predict with absolute certainty that within another generation there will be another world war if the nations of the world do not concert the method by which to prevent it."[1] By the end of World War I, the international community did manage to arrange and coordinate a method to prevent future threats through a system of international organizations and institutions, specifically through the League of Nations. A crucial aspect of future international security will be the importance and usage of these international organizations (IO) and institutions (II).

Driving forces in the international system since WWI, with the League of Nations, IOs and IIs have been used numerous times since to prevent and mitigate conflicts and interstate relations. For emerging international security challenges in future decades, IOs and IIs will need to focus on their central characteristics and attributes, in order to continue to be properly used within the international system. These characteristics and attributes, which were central to the conception and creation of IOs and IIs, include, centralization, independence, and the ability to act as a community representative in the international system.

Since the League of Nations, the international system has developed into a network of IOs and IIs, including the United Nations (UN) and the North Atlantic Treaty Organization (NATO). A formal international organization is defined by its international membership, its agency and ability to set its own agenda, and its ability to regulate many of the social, political and economic issues experienced around the world.[2] International institutions, also called international regimes, are defined by their ability to set rules, norms, principles, and procedures; to govern international state behaviour; and to "stipulate the ways in which states should cooperate and compete with each other," according to John Mearsheimer.[3]

The central difference between IOs and IIs is that institutions may not have organizations associated with them, while organizations, like the UN, may include institutions, like the International Court of Justice (ICJ). However, their value in the international system, and to states, must always outweigh their cost. IOs and IIs must always offer a supplement to the state system, but not necessarily replace the state system. IOs and IIs are, therefore, "vehicles of cooperation,"[4] through which even powerful states act due to their efficiency. International membership in IOs and IIs has systematically reduced the likelihood of violent conflict among member states.[5]

IOs and IIs allow for "the centralization of collective activities through a concrete and stable organization structure and a supportive administrative apparatus."[6] It is through these collective activities that efficiency is enhanced, as well as the organization's ability to affect the understandings, environment, and interests of states. The concrete and stable organization structure allows for "a stable negotiating forum," fast response to developments, and the strengthening of issue linkages "by situating them within common organizational structures."[7] "Pooling," a common effort that allows for burden sharing, limits competition for influence, avoids gaps in coverage, and encourages participation.[8] An example of this is the NATO Integrated Command, which "operating hierarchically on behalf of member states as residual claimants, organizes, monitors, disciplines participants in the joint activities of the alliance."[9] The limitation of centralization is the disproportionate influence of powerful states. However, by constitutionalizing fixed rules and procedures, weaker states are protected. Centralization is essentially, therefore, the proper and mechanical functions of IOs and IIs.

The ability to act with independence within defined spheres of influence allows IOs and IIs the ability to operate as autonomous and neutral actors in the management of interstate relations. This autonomy and neutrality allows for a buffer between the direct pressures and

biases of states and the fostering of interstate collaboration. Through independence, an IO can increase efficiency by affecting the legitimacy and impartiality of individual and collective state actions. Examples of this are international financial institutions (IFI) like the World Bank and the International Monetary Fund (IMF). An IFI's independence allows for development assistance without the same level of direct influence as aid from a state would. As well, restrictions imposed by IFI's on states would not carry nearly the same level of political implications and economic dependence. However, this independence and autonomy is limited by states' interest and power. In this way, an IO and II can be seen as a "neutral information provider, trustee, and arbiter" in the international system.[10]

As a community representative in the international system, an IO or II creates and implements community values and norms, assists in the enforcement of international commitments, and develops and expresses community values and norms. These values and norms cannot be enforced traditionally, but do have an important effect on the moral authority over state behaviour. For example, the Universal Declaration of Human Rights, which was created and adopted under the leadership of the UN, cannot be enforced, but its "explicit and sweeping formulation of standards has significantly affected state behaviour and character."[11] Therefore, as community representatives, IOs and IIs can more efficiently express these values and norms in the international system.

While there are still obvious limitations to IOs and IIs, efforts must be made to eliminate them so that IOs and IIs are capable of adding value to the international system. As opposed to other options including decentralized cooperation, informal consultation, and treaty rules, IOs and IIs are much more efficient in ruling over the international system. In this way, IOs and IIs will need to focus on their central characteristics and attributes, in order to continue to be properly used within the international system and for future emerging international security challenges.

"According to mainstream analysis, the coming decades will see a decline in state sovereignty, a power shift from states to international or non-state networks, and an increase in the destructive power of these non-state actors."[12] So, in the emerging international security system, there needs to be a new emphasis on prevention and resilience, specifically in infrastructure, like that of IOs and IIs.

This prevention and resilience can only be achieved through IOs and IIs. Centralization can lead to efficient and organized collective activities, and independence can lead to the legitimacy and impartiality of these activities. These collective activities will be determined and expressed by the values and norms that define IOs and IIs. In this way, prevention and reliance, for emerging international security challenges, can only be achieved through the functions and characteristics of IOs and IIs.

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[1] Webster's Guide to American History (Springfield: Merriam Webster, 1971), p. 405.
[2] Beth Simmons and Lisa Martin, Handbook of International Relations (New York: Sage, 2001), p. 193.
[3] Ibid.,, pp. 194.
[4] Kenneth Abbott and Duncan Snidal, "Why States Act Through Formal International Organizations," Journal of Conflict Resolution 42.1 (1998): p. 4.
[5] Ibid.
[6] Ibid.
[7] Abbot and Snidal, p. 10.
[8] Ibid., p. 13.
[9] Ibid., p. 15.
[10] Ibid., p. 20.
[11] Ibid., p. 24.
[12] Michael Ruhle, "NATO and Emerging Security Challenges: Beyond the Deterrence Paradigm," American Foreign Policy Interests 33.6 (2011): p. 279.

HOW POOR GOVERNANCE THREATENS GLOBAL SECURITY: CAPACITY AND CONFLICT
Vanessa Hayford

In 2007, Naomi Klein discussed the rise of free market capitalism in her novel *The Shock Doctrine*. According to Klein, capitalism begs for a blank canvas created by a shock to the system, like a terrorist attack, a natural disaster, or a serious economic downturn.[1] While Klein's description of the Shock Doctrine was used to explain how political crises and natural disasters have been used to push unfamiliar free market policies on unsuspecting societies, today's international security context contends with a shock that operates in reverse. Rather than the occurrence of a catastrophic event that gives rise to new policies, a lack of sustainable governance contributes to global insecurity. Underdevelopment and the accompanying lack of capacity to create and sustain the most crucial societal and economic structures creates a new type of blank canvas: a vacuum, which political strife would most likely fill.

Capacity and Vulnerability to Conflict

In recent years, development discourse has begun to place an emphasis on state capacity. This is described as "the degree of control that state agents exercise over persons, activities and resources within their

government's territorial jurisdiction."[2] Scholars such as Francis Fukuyama have argued that higher levels of capacity, in the realms of basic infrastructure development, rule of law, and social programming, is a "universal requirement" in making a state less vulnerable to security threats.[3]

It must be acknowledged, however, that not all states with low levels of capacity are economically underdeveloped. It is not poverty that directly contributes to conflict. Rather, it is the inability of a state to control and execute its most elementary governance functions, which ensure that the resources in the state translate to economic growth and guarantee basic civic freedoms for its citizens. This ultimately makes way for the precursors to conflict.

This notion is supported by the theory of relative deprivation, made popular by Ted Robert Gurr. The theory states that the likelihood of conflict is directly related to what people in a state believe they are entitled to, known as "value expectations," and what they believe they are capable of achieving and sustaining, known as "value capabilities."[4] Gurr's theory explains that as the gap between expectations and capabilities increases, so, too, does the risk for political conflict. When institutions cannot provide at least the minimum of what its people expect, citizens are more likely to lose trust in their government. According to the United Nations Department of Economic and Social Affairs (UN DESA), 65% of the factors that cause individuals to lose faith in their government are related to social ills such as poverty and inequality.[5] The other 35% correspond with governance issues within the context of peace and security.[6]

The events of the Arab Spring show that Gurr's theory is indeed valid. The Organization for Economic Cooperation and Development (OECD) has noted that nearly half of all fragile states today are middle-income, resource rich countries, such as Libya, Syria and Egypt.[7] While these countries did experience macroeconomic growth, the Arab Spring and its resulting political conflicts began after decades of institutional deterioration and civil discontent.[8] The people in these affected countries did not feel that their government was meeting their expectations and was resistant to doing so, prompting a series of protests and the creation of opposition forces. The descent into conflict was a result of the various regimes' rampant corruption and refusal to embrace political reform, earning them very low rankings with Freedom House in the areas of civil liberties and democratic governance.[9]

It is clear, therefore, that the absence of capacity begets the presence of political clashes. The nature of conflict today also means that isolated and internal instances of capacity deficiency run the risk of negatively affecting surrounding states. This has been experienced in the Horn of Africa, where state fragility and persistent political conflict has caused heightened insecurity, political instability and refugee issues to spill over into other countries in the region.[10]

Capacity Building

In order to mitigate the degenerative politics and lack of capacity that leads to instability, efforts must be made to fill the precarious void left by underdevelopment with effective and sustainable capacity building initiatives, which serve to improve a state's institutional competency so that it can govern itself better.

It is widely agreed that there are levels of capacity that must be addressed by capacity building initiatives in order to reduce the threat of conflict. On the individual level, citizens of a state must be afforded the opportunity to develop knowledge and skills so that they may embark on constructive opportunities that will improve their quality of life and well being.[11] Without the ability to ensure their own socioeconomic security, citizens may become discontented and resort to armed groups, criminal networks and other situations that eventually fuel conflict.

The institutional level requires the governing bodies to effectively cater to the needs of the population, by providing both sound governance and desired social programs.[12] Working to balance a state's governance expertise with its people's expectations will also promote cooperation between citizens and the state, as well as promote resilience to circumstances that may otherwise cause internal tensions. Finally, societal capacity building creates and encourages the opportunity for individuals to develop their own capacities and allows them the chance to expand these capacities as circumstances permit.[13]

Two fundamental obligations for the state are to cater to the needs of its inhabitants and to maintain security. When the state is unable to do so, it leaves an empty space that allows tensions to brew. Once conflict occurs, a vicious cycle is created. A state will struggle to build its capacity, and it will struggle further to resolve the conflict if it does not have capacity. Though it is indisputable that many elements can be blamed for instigating conflict, it is difficult to dispute that lack of capacity is a catalyst for political struggles.

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[1] Klein, Naomi (2007). The Shock Doctrine: The Rise of Disaster Capitalism. Toronto, ON, Canada: Random House Publishing.

[2] Ottervik, Mattias (2013). Conceptualizing and Measuring State Capacity: testing the validity of tax compliance as a measure of state capacity. The Quality of Government Institute, University of Gothenburg, p. 3.

[3] Altschuler, Glenn C. "Political Order and Political Decay by Francis Fukuyama: review". SFGate, October 29, 2014.

[4] Curley, John P. et al. (1972). Books Reviewed. Fordham Urban Law Journal, 1(2), p. 335.

[5] Khan, M. (2007). Building Trust in Government: Concepts and Issues. Building Trust Through Civic Engagement. United Nations Department of Economic and Social Affairs, p. 4.

[6] Curley, John P. et al. (1972). Books Reviewed. Fordham Urban Law Journal, 1(2), p. 335.

[7] Fragile States 2014: Domestic Revenue Mobilisation in Fragile States. OECD, p. 17.

[8] Freedom House (2011). After the Arab Spring: The Uphill Struggle for Democracy.

[9] Ibid.

[10] The African Capacity Building Foundation (2004). Reconstruction and Capacity Building in Post-Conflict Countries in Africa: A summary of lessons of experience from Mozambique, Rwanda, Sierra Leone and Uganda, p. 2.

[11] Ibid., p. 9.

[12] Ibid.

[13] Ibid.

THE THREAT TO GLOBAL HEALTH SECURITY: ANTIBIOTIC RESISTANCE
Kelsey Berg

Technology, the practical application of scientific knowledge, is a double-edged sword that humanity has struggled to wield since pre-historic time. Industrialization, nuclear energy, and the Internet are all examples of how advancements in how we move, energize, and communicate have each led to unintended consequences on global security. Now, one of our most valuable medical advancements is showing the devastating consequences that arise from misuse. The rise of resistance to antibiotics, a technology that promised unprecedented protection and longevity, is of great threat to global health security.

Threat to Security

The antibiotic era is said to have begun after the Second World War.[1] Canadian scientist Alexander Fleming is credited with discovering penicillin in 1928, the first antibiotic. However, it was not until the large-scale operations of WWII, when antibiotics were found to improve the mortality rate for combat medical procedures, that mass production was pursued. In 1945, industrial manufacturing methods for penicillin were patented and antibiotics became widely available for public use.[2]

Since their introduction 70 years ago, millions of metric tons of antibiotics have been produced and employed for a wide variety of purposes.[3] The effect on society has been profound. Immunity from fatal diseases, massive gains in agricultural yields, and greater lifespan are all a result of effective antibiotic use. However, these gains are not guaranteed to last. Bacteria follow the same evolutionary curve of all organisms; random mutations give bacteria defence capabilities against antibiotics, and once non-resistant bacteria are killed off by medication, the resistant strains become dominant.

Unfortunately, bacterial evolution is occurring at a far greater rate than human ability to respond.[4] Significant rates of antibiotic resistance have been found in all regions of the world.[5] In the US, antibiotic resistance has been attributed to at least 2 million illnesses and 23, 000 deaths annually.[6] Unfortunately, a lack of worldwide surveillance measures leaves the full extent of the problem largely unknown.[7]

Origins of Resistance

The potential for resistance has been anticipated since the very discovery of antibiotics. In his Nobel Prize acceptance speech in 1945, Alexander Fleming cautioned that the negligent use of antibiotics would lead to immunity within bacterial strains causing illness, death, and eventual loss of the technology itself.[8]

Predictive models on antibiotic resistance trends indicate that both the cost to health and economic security are high. Already, antibiotic resistant infections are lengthening hospital stays, increasing costs per patient, and contributing to overall higher rates of illnesses and death.[9] Without immediate action, antibiotic resistance could cost up to $100 trillion and 10 million deaths per year by 2050.[10] Considering the secondary effects of antibiotic resistance, such as foregoing invasive medical procedures or closing large scale livestock operations, it is difficult to fully grasp the health and economic implications of a world without antibiotics.

The expansiveness of the problem stems from years of overuse. Today, up to 50% of all antibiotics are prescribed unnecessarily.[11] For example, many people take antibiotics as treatment for a cold, which is a viral infection.[12] Instead of being used as a last resort against bacterial infections, antibiotics are frequently used when they will provide no added health benefit, or even as a replacement for proper sanitation. The more that antibiotics are used, the quicker strains will evolve to be resistant.

The spread of resistance can also be attributed to over-reliance on medication, and little investment into other infrastructure solutions. The medication provides an

inexpensive way to ward off illnesses in overcrowded environments, eliminating the need to reduce unsanitary conditions. Densely crowded populations, where waste management is poor and antibiotic use is high, provide the ideal environment for resistance to develop.[13]

Another significant factor is that antibiotics are unprofitable for pharmaceutical manufacturers. The cost of developing any new drug is between $400-800 million.[14] Antibiotics, used only for days or weeks at a time, rarely provide a return on this investment.[15] The low profitability of antibiotics has caused many companies to completely abandon this field of research.[16] No new classes of antibiotics have been developed since 1987, meaning that emerging strains must be combated with antibiotics that are nearly 30 years old.[17] The rise of infections impervious to all available drug therapy, combined with the absence of new medication to take their place, has had scientists calling this the "post antibiotic era" for nearly a decade.[18]

The Future of Antibiotic Use

The crisis expands beyond the field of healthcare. The majority of antibiotics are used in human food sources. In the US, upwards of 80% of antibiotics are used for agricultural purposes.[19] Antibiotic use in humans is increasing, but not nearly as much as antibiotic consumption in livestock.[20] Antimicrobials, a broad category of medication which combat bacterial, viral, and fungal infections all of which can develop resistance to medication, are expected to see a 67% rise in consumption by 2030. In developing economies like Russia, India, and China, antimicrobial consumption will increase by 99%.[21] This rapid increase is due to the growing demand for meat products combined with the oft-times lax industry standards on sanitary conditions in emerging markets.[22] Again, a low-cost and relatively easy solution is being applied, without thoughtful consideration for the long term costs.

Overcoming Vulnerability

Hubris has been ventured as the cause of the imminent post-antibiotic age.[23] The advent of antibiotics has dramatically changed human health and well-being, but the idea that they will never fail is an overestimation of the man-made defence system and a critical underestimation of the forces it can protect us against.

This year, the WHO published a worldwide analysis on the global state of antibacterial resistance and preparedness in face of the crisis. The humbling report acknowledged that nations are not prepared for a threat of this magnitude. However, the findings also draw attention to the new state of global agreement on the profound threat of antibacterial resistance. More countries are dedicating resources to preserving the power of antibiotics. The shortcomings of current surveillance, standards of use, and innovation have been recognized and are being systematically addressed.[24] As with all great threats to security, the question now is if immediate action can remedy years of mismanagement.

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[1] Rustam I. Aminov. 'A Brief History of the Antibiotic Era: Lessons Learned and Challenges for the Future'. Frontiers in Microbiology, 1 (2012), p. 134.

[2] Ibid.

[3] Davies, Julian and Davies, Dorothy. "Origins and Evolution of Antibiotic Resistance." Microbiol. Mol. Biol. Rev 47 no.3 (2010) p. 417

[4] "Global Risk Report, 2013". World Economic Forum. 2013, p. 28

[5] "Worldwide country situation analysis: response to antimicrobial resistance." World Wide Health Organization. 2015, p. 1

[6] "Antibiotic Resistance Threats in the United States." Centers for Disease Control and Prevention. 2013, at pp. 13

[7] "Antimicrobial resistance: global report on surveillance." World Health Organization. 2014, p. XIX

[8] Fleming, Alexander. "Penicillin." Nobel Lecture. 1945.

[9] Lloyd-Smith, P. et al. "Economic analysis of vancomycin-resistant enterococci at a Canadian hospital: assessing attributable cost and length of stay." J Hosp Infect. 85 no.1. 2013, p. 54

[10] "Antimicrobial Resistance: tackling a crisis for the health and wealth of nations." Review on Antimicrobial Resistance. 2014, p. 6

[11] Watkins, LF., et al. "Knowledge and Attitudes Regarding Antibiotic Use Among Adult Consumers, Adult Hispanic Consumers, and Health Care Providers — United States, 2012–2013." Morbidity and Mortality Weekly Report (MMWR), 64 no. 28. 2015.

[12] Ibid.

[13] Supra, note 3.

[14] "Technological Challenges in Antibiotic Discovery and Development: A Workshop Summary". National Research Council. 2014., p.3

[15] Ibid.

[16] Ibid.

[17] Ibid., p. 8

[18] Alanis, AJ. "Resistance to antibiotics: are we in the post-antibiotic era?" Arch Med Res 36 no.6. 2005, p. 697

[19] Van Boeckel, Thomas P, et al. "Global trends in antimicrobial use in food animals." Proceedings of the National Academy of Sciences of the United States of America. 2015 [abstract].

[20] Van Boeckel, Thomas P, et al. "Global antibiotic consumption 2000 to 2010: an analysis of national pharmaceutical sales data." The Lancet Infectious Diseases 14 no.8. 2014, p. 742

[21] Supra, note 20

[22] Supra, note 5, p. 29

[23] Supra, note 4, p. 28

[24] Supra, note 5, pp.26