

ARMY 2040
**THE GLOBAL SECURITY ENVIRONMENT: EMERGING TRENDS AND
POTENTIAL CHALLENGES¹**

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While no one can see the future, it is at least possible to indicate a few of the directions that change is likely to take.

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INTRODUCTION

Clearly the early 21st century has been witness to the development of an international environment marked by considerable uncertainty, volatility and increasingly rapid change. Old familiar “rules of the road” have faded, new ones are beginning to emerge, and events are unfolding at a speed and pace often exceeding the ability of decision-makers to effectively react. Not surprisingly, many analysts now claim that today’s world is more chaotic and unpredictable than at any other period in history.

Nowhere are the challenges more evident than in the sphere of national security. While the threat of global war remains distant, many dangers linger and new challenges are fast emerging. Threats of regional conflict, the proliferation of weapons of mass destruction (WMD) and dangers posed by insurgency and trans-national terrorism not only endure, but in some cases are growing stronger. Problems of state failure and international organized crime persist. Natural disasters and the impacts of climate change increasingly mark the global landscape. And prospects for the conduct of electronic and information attack (e.g. “cyber-warfare”) are on the rise.

Whether the present environment represents an anomaly or is in fact the shape of things to come, is unclear. Still, attempts to understand and if possible, anticipate future challenges are essential for effective security planning. Particularly for Canada, whose vast territory and relatively small population places responsible force planning at a premium, accurate security assessments are a must. In their absence, not only is any realistic determination of the character and level of resources needed to meet future challenges impossible, but the dangers stemming from the threats that ultimately arise may well increase.

¹ The opinions expressed in this paper are those of the author alone and do not necessarily represent those of the Department of National Defence or the Government of Canada.

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³ Martin Van Creveld, *The Transformation of War* (New York: The Free Press, 1991), 198.

Such understanding in fact represents a key component of the Army 2040 project -- an exercise aimed at exploring future demands on Canada's land force -- and what it will require to meet these demands in the decades ahead. Accordingly, a survey of ongoing trends in the international system marks a preliminary step in the process -- offering some insight into the character and evolution of the security environment, and the threats and challenges it could well pose to security planners in future.

THE FUTURE SECURITY ENVIRONMENT: KEY TRENDS

A "Globalizing" World

The term globalization refers to the increased mobility of goods, services, labor, technology and capital throughout the world. While not a new development, this process has increased dramatically with the advent of new technologies, most notably in the area of telecommunications. In fact, the growing interaction which globalization is facilitating continues to revolutionize the international system. Not only has it worked to increasingly integrate national economies but the international system as a whole - dramatically heightening the extent and pace of the flow of ideas, capital, and goods and services within and between societies.⁴

Such "interconnectedness" increases interdependence and can encourage participants to adopt a shared stake in the continued welfare of the system and its parts. By creating greater uniformity across cultures and societies, it may also promote greater unity and openness. Indeed, to the extent that the benefits of globalization tend to favour open markets and societies, incentives to adopt more democratic, and arguably more benign, forms of governance may rise.

Yet, by diffusing power to an ever wider number of actors and eroding state sovereignty, the process has also heightened societal vulnerability to outside threats. External events and methods of attack ranging from cyber-warfare to physical assault pose increased potential for massive societal disruption. And growing access to information and technology is dramatically heightening the potential, both among state and non-state entities, to acquire the means by which to succeed (e.g. weapons of mass destruction and their means of delivery). Meanwhile, increased accessibility to global travel heightens risks of terrorist infiltration and the spread of disease to open societies.

Beyond this, forces of globalization may fuel a backlash - either among those who are largely excluded from sharing in its material benefits, or from societies and cultures threatened by the norms and values that it promotes.

A number of these dangers are increasingly apparent. In the wake of the ongoing US-led war on terror, concerns that porous national borders are creating opportunities for terrorist infiltration and attack remain strong. Others worry that processes of globalization provide a means by which trans-national organized crime may flourish. Outbreaks of Severe Acute Respiratory Syndrome

⁴ Insightful discussions of globalization and its impacts can be found in Thomas L. Friedman, *The Lexus and the Olive Tree* (New York: Anchor Books, 2000), David Held, Anthony McGraw, David Goldbatt and Jonathan Perraton, *Global Transformations: Politics, Economics and Culture* (Stanford: Stanford University Press, 1999), Robert Keohane and Joseph S. Nye, "Globalization: What's New, What's Not (and So What?)," *Foreign Policy*, Spring 2000, 104-119, and Martin Wolf, "Will the Nation-State Survive Globalization?" *Foreign Affairs*, January/February, 2002, 178-191.

(SARS), Mad Cow Disease and Swine Flu underscore the varied dangers flowing from the migration of disease. And recent globalization protests in Canada and elsewhere suggest rising public awareness and sensitivity to the political, economic and social injustices which globalization breeds along with a greater willingness to engage civil disobedience to combat it.

Ultimately, such processes could work to fundamentally alter national social fabrics. In future, it is possible that waves of immigration could gradually change both cultural and linguistic mosaics. It may even alter the locus of political power. Alterations in official language policy and in attitudes toward international affairs could well follow. In North America one result could be a decline in a long-standing European focus toward another, perhaps more “Asia-centric” perspective. As interests and loyalties change, alterations in the character of foreign and defence policy could follow suit. Whatever the ultimate impact however, the ability to remain aloof from the changes generated by the globalization process is bound to dwindle – both in North America and elsewhere.

Rapid Scientific and Technological Innovation

The past decade has seen a marked increase in the pace and potential implications of scientific and technological innovation. Advances in areas such as information and communications technology (ICT), biotechnology, “smart” materials and nanotechnology are occurring at an exponential rate, with potentially revolutionary consequences for humanity.

Such innovations promise a range of benefits in the quality of life including significant eradication of disease and illness, increased human longevity and freedom from want and hunger. Changes in industry are apt to be equally profound. Increased computing power and the development of new improved materials will likely generate a dramatic improvement in the speed and quality of production.

Yet, dangers may arise as well. Unequal access to advances in health and medicine may fuel tensions between rich and poor in both the developed and developing world. In fact, novel techniques such as cloning, stem cell research and germ-line engineering raise the specter of a new class system, differentiated by those possessing the ability to “enhance themselves and their offspring” via such methods and those lacking the means or will, to do so. Ultimately, such developments may even ignite new domestic and international conflicts, pitting advocates of such innovations against a growing neo-luddite movement. Notably, debate over the moral, ethical and philosophical implications that such technologies raise is on the increase. And, as they mature, controversies will doubtlessly intensify.

Radical changes are also underway in the military sphere with recent years witnessing ever-greater integration of information management systems and advanced technologies into military organizations. Examples include enhanced sensing equipment and improvements in the precision, range and lethality of weaponry. Such developments, along with strides in the areas of non-lethal weaponry and robotics, suggest the creation of forces that if properly employed may work to reduce considerably the civilian casualties that often accompany the use of force. Accordingly, force employment may become more humane, and accord more closely with widely held principles of proportionality and non-combatant immunity.⁵

⁵ Obviously, the benefits promised may be highly dependent on intent. For instance, while innovations in robotics may be employed as a means of accomplishing military missions while preserving life, growing

However, other innovations may produce the very opposite effects. Work on highly powerful volumetric devices (i.e. enhanced blast, thermobaric and fuel-air explosives), along with growing interest in the creation of electromagnetic weapons, may result in changes which nullify the precision targeting and scalability of effects inherent in other technologies. In fact, developments in biotechnology hold the potential for engineering diseases capable of wiping out entire peoples.⁶ Innovations elsewhere point to weapons that kill even faster. For instance, advances in laser technology will eventually make possible the capacity for near-instantaneous destruction in the form of directed energy weapons (DEW).

At present, the lion's share of such innovation lies in the West. Yet, given ongoing processes of globalization, possibilities for greater access to such technologies, by friend and foe, will increase, raising potentially profound issues for future stability both regionally and globally.⁷ The ongoing and growing dilemmas posed by the proliferation of nuclear weapons, as well as the acquisition and use of ICT for the conduct of cyber-espionage and warfare offer but two cases illustrating the possibilities and the potential dangers involved. The implications of the diffusion of still more advanced technologies could be even more far-reaching.

Demographic Stressors

Additional pressures will arise from demographic shifts. In the developing world, trends indicate continued population growth and rapid urbanization. By mid-century, population in less developed regions will account for 7.94 billion people or 86.5 percent of total global population. And that of the world's 50 least developed countries is projected to double. More than two-thirds of the population in the developing world moreover, will reside in rapidly expanding urban areas.

Such increases could well place enormous stress and strain on the world's natural resources. They will also tax host societies and the regimes that govern them. Urban areas may be especially hard-hit, as natural growth combines with significant in-migration to magnify population pressures and overwhelm available services and infrastructure. Already, an estimated 25 to 50 percent of urban dwellers in developing countries live in impoverished slums with little or no access to water and sanitation.⁸ And many regions are not likely to experience much relief in the years ahead. Particularly in the Middle East, Sub-Saharan Africa, and South Asia, such forces will continue to strain scarce resources – sowing seeds for rising poverty, disease and instability along the way. One result may be increased civil unrest and internal wars. Another may be humanitarian crises. Still another could be alterations of regional power balances to an extent that could eventually increase inter-state tensions and perhaps even the prospect of war

access to such technology could offer new and relatively inexpensive means of destroying it. Indeed, in the hands of terrorist groups, such devices could eventually reduce the need for suicide bombers.

⁶ Indeed, recombinant DNA technologies (i.e. "gene cloning") are already raising the theoretical prospect of weapons capable of wiping out specific ethnic and racial groups. As such, genocidal possibilities cannot be discounted. For critical assessments of such threats, see Raymond Zilinskas (ed.), *Biological Warfare: Modern Offense and Defense* (Boulder: Lynne Rienner Publishers, 2001) and Joshua Lederberg, (ed.), *Biological Weapons: Limiting the Threat*, (Cambridge: The MIT Press, 1999).

⁷ Notably, such innovations are already raising fears concerning an extension of military competition to cyber-space and outer space.

⁸ See, Central Intelligence Agency, *Long-term Global Demographic Trends: Reshaping the Geopolitical Landscape* (Washington D.C.: Central Intelligence Agency, July 2001); and Brian Nichiporuk, *The Security Dynamics of Demographic Factors* (Santa Monica CA: RAND, 2000).

(e.g., due to trans-national refugee flows, and/or the state weakness that overpopulation may help to generate).⁹

Problems will be magnified in some regions due to the existence of a significant youth cohort ("youth bulge," 14-25 year olds) – placing particularly high demands on host states for employment and essential services. Left unaddressed, such demands will fester and lead to increasing disenchantment with the status quo – conditions which could insure ready recruits for groups bent on overturning it. In fact, significant youth cohorts have already contributed to political unrest and civil strife in Algeria, Sri Lanka, Turkey and Iran.

Meanwhile, developed countries – both in the West and elsewhere – will increasingly confront problems associated with population decline and aging. Already, the number of people aged 60 or over in the developed world has surpassed the total number of children aged 15 and under. By 2050, that number will more than double in size. In Europe for instance, more than 133 million people will be 65 or older by mid-century. Indeed, old-age dependency ratios may well double.¹⁰ And in Japan, that total will exceed more than one third of total population.¹¹

Such dynamics threaten a significant reduction in tax revenues at the same time that demands for key social services will be rising.¹² The impacts, both for domestic and foreign policy, are likely to be profound. Dwindling populations will generate greater reliance on technology as a substitute for manpower, with efforts toward automation becoming especially prominent. Pressures to liberalize immigration and refugee policy may increase as the need for able-bodied workers and an expanded tax base rises. Alternatively, concerns over national identity and security may work to temper openness -- generating greater efforts to provide foreign aid as a means of checking immigration flows and/or to engage in greater internal policing and surveillance of those admitted into receiving nations. Yet whatever the course chosen – the challenges will be considerable.

Shifting Power Balances

Western – and particularly US -- global hegemony will endure in the near term. To be sure, challenges to US and -- other Western interests -- will continue to arise. For instance, opposition to Washington's military presence in the Middle East and its support of Israel will continue to represent a source of potential unrest. Nevertheless, the chances of mounting a strategically decisive challenge against the US and its allies, in the Middle East or elsewhere, will remain low in the near-term. And the prospects for systemic (i.e. global) war are unlikely.

Over the longer run however, Western and more specifically -- US dominance of the international system is likely to grow more tenuous, as forces of globalization continue to diffuse knowledge, technological innovation and ultimately -- power -- abroad. Indeed, while it is likely that the US

⁹ In the future, states in the Middle East and Africa may be especially vulnerable to demographically induced instabilities. Both regions are experiencing rapid urban growth. And in future both are expected to exhibit a significant "youth cohort" (i.e. percentage of population between 14-25 years of age) -- a segment of the population which generally demands greater opportunities for employment and access to resources than others.

¹⁰ As cited in Vaclav Smil, *Global Catastrophes and Trends: The Next Fifty Years*, (Cambridge: MIT Press; 2008), p. 97.

¹¹ *Ibid.*, p. 107.

¹² Detailed examination of the implications of aging on the international system can be found in Peter G. Peterson, "Grey Dawn: The Global Aging Crisis"; *Foreign Affairs*, January/February 1999, 42-55.

will still retain a prominent position in global affairs by mid-century and perhaps even beyond, trends indicate a gradual increase in the power and influence of other regions and countries in the decades ahead.

The result will be the emergence of an increasingly multi-polar world.¹³ Such a system may well feature a number of key state (and non-state) players forging tight alliances with or against one another to balance power and maintain security. Alternatively, it may take the form of loose alliance configurations – with players constantly shifting loyalties depending on the issues at stake.¹⁴ Yet in either event, key state players will likely include the US, China, Russia, India and Brazil.

The consequences of multi-polarity are likely to be substantial. An increase in the number of major players may work to complicate prospects for cooperation, generating institutional gridlock and entrenched positions on key global issues. It may also heighten uncertainty during crises and increase prospects for miscalculation and armed conflict between states. In fact, the move toward multi-polarity may even generate incentives for preventative war -- as declining powers move to strike those destined to overtake them in a bid to retain their own power and eliminate the dangers which may accompany the rise of a more powerful rival.

Certainly, such tendencies could be tempered by the influence of globalization and the possible deepening linkages it continues to create between players. Indeed, a world of ever-growing interdependence may work as a potential deterrent against extreme action. Yet such interconnectedness could also work to make any armed conflict that did emerge even more damaging – ensuring in effect that its consequences are felt more widely and profoundly than would be the case otherwise. Put simply while globalization could well work to reduce somewhat the prospects of war, it could also magnify its effects should it occur.

The extent to which any of these dynamics materialize remains to be seen. What can be said however is that in such world, Western influence – while still significant – is likely to be less pervasive than it at present -- as knowledge, technology and the forces of innovation shift to new regions and states increasingly intent on asserting their own interests and agendas on the world stage.

Resource and Environmental Scarcities

Scarcities of both renewable and non-renewable resources will magnify problems. In light of forces such as climate change, population growth and rampant urbanization, many developing countries will see significant degradation and depletion of cropland, forests, and fresh water supplies – a situation likely to increase poverty, famine and disease. Once again, national governments will come under pressure, and prospects for societal instability will grow.

¹³ For the classic statement predicting the impending shift from uni-polarity to multi-polarity, see Kenneth Waltz, “The Emerging Structure of International Politics,” *International Security*, Vol 18, No. 2 (Fall 1993). See also Kenneth Waltz, “Structural Realism after the Cold War,” *International Security*, Vol. 25, No. 1 (Summer 2000).

¹⁴ Some analysts dispute whether such a system would even equate with past cases of multi-polarity. In fact, Richard Haas suggests that the future international system may best be described as “non-polar” – a condition in which power will be exceedingly diffuse and the influence of nation-states will decline as that on non-state actors increases. See Richard N. Haas, “The Age of Non-Polarity: What Will Follow U.S. Dominance?” *Foreign Affairs*, (May-June 2008).

Developing nations in Sub-Saharan Africa, the Middle East and South Asia will be especially hard hit -- with societies in each region facing crucial deficits in renewable resources (i.e. cropland, timber and fresh water).

Water scarcity promises to pose an especially acute concern. A conservative estimate for the year 2050 places at least 60 countries, with nearly half the world's population, into the water-scarce and water stress categories.¹⁵ About 20 countries in the Near East and North Africa will be especially vulnerable -- with current projections indicating that water supplies could be depleted entirely by 2100 if per capita consumption and excessive use are not controlled. In fact, the capacity to control access to this resource in these and other areas (e.g. Central Asia, South Asia, Latin America), may not only come to represent a key source of power -- but a basis for future conflict.

Developed countries will be less directly vulnerable to such challenges - particularly in the case of renewable resources. Yet they will by no means be immune. Some developed nations may see significant shifts in economic and commercial activity -- as climate change increases the attraction of some regions (e.g. Canada's Arctic) while decreasing the utility of others. And concerns over security may well follow.

Beyond this, environmental decline in the developing world may generate indirect impacts, either in the form of increased regional conflict and refugee migration from ecologically stressed regions, or in growing demands for humanitarian aid and development assistance. Resource rich nations such as Canada may become especially attractive destinations for ecological migrants, either as a permanent home or as a stepping stone from which to gain entry into the United States. And demands for Canadian participation in Peace Support Operations (PSOs) as well as calls on Ottawa for increases in foreign aid budgets are likely to grow. At the same time, rising sensitivity to the fragility of ecosystems will generate growing pressure to constrain Western military deployments and activities within regions at risk.

Shortfalls in non-renewable resources may prove even more consequential. For instance, as global demand for energy increases in years to come, issues of control and access of oil and gas resources may pose a growing source of tension between developed and developing nations, as well as within the developing world itself. Admittedly, demand may be somewhat tempered by the development of alternative energy sources. And commercial opportunities for resource rich countries such as Canada may increase as a result. Yet the ability to fully satisfy growing requirements currently appears unlikely -- particularly as developing nations industrialize. Accordingly, Middle Eastern oil, and other sources of supply in West Asia, Russia, the Gulf of Guinea and North Africa may not only breed growing state interaction, but ultimately, new dangers for turmoil and ultimately armed conflict.¹⁶

Competition for minerals and metals may also generate strife. As oil and natural gas supplies come under growing stress, nuclear power will loom ever-larger as a viable alternative to meet energy needs. And, demand for certain minerals, such as uranium and thorium will increase as a result. Yet, perceived environmental impacts associated with additional exploration may well limit the capacity for supply to meet demand, thus acting as a cost driver and a source of tension.

¹⁵ As cited in Vaclav Smil, *Global Catastrophes and Trends: The Next Fifty Years*, (Cambridge: MIT Press; 2008), p. 199.

¹⁶ For a detailed study of such possibilities, see Michael T. Klare, *Resource Wars: The New Landscape of Global Conflict* (New York: Metropolitan Books, 2001)

Opposition from environmentalists and even eco-terrorists intent on preventing increased uranium exploitation may breed security threats.

The need for certain metals may generate similar dynamics. Coltan and cassiterite -- used in the production of tantalum¹⁷ and tin, are increasingly essential for future advances in communication and information technology.¹⁸ In fact, profits from both have already been credited with sustaining warring factions in African civil wars. And denial of access to these metals in future could lead to increased competition and subsequently heightened tensions within and among states.

Endemic Disease and Pandemic

While trends indicate ongoing and marked improvements in medicine and in public health, the threat of disease will doubtless continue to represent an issue of considerable concern in many parts of the world. The impacts of disease have been especially prominent in recent decades -- a fact perhaps attributable the arrival of HIV-AIDS as a major force, as well as the ever increasing globalization of transportation systems and the increasing mobility of people throughout the world.

To be sure, developing nations will remain the most vulnerable. In the face of steady, largely unchecked and rapid urban growth, grossly inadequate health care systems and shortfalls in funding, infrastructure, and education, this is hardly surprising. Consequently, it is likely that tuberculosis, malaria, hepatitis and HIV-AIDS will continue to plague many developing countries in the decades ahead -- often with destabilizing results.

Meanwhile, generous health spending and medical advances will ensure that developed states will continue to achieve inroads against many diseases and for the most part will be well insulated from their effects. Yet uneasiness over disease is on the rise even here -- a fact underscored by past outbreaks of SARS, Avian Bird Flu and more recently by outbreaks of Swine Flu.

Beyond this, the onset of a future global pandemic -- perhaps taking the form of a particularly virulent strain of influenza -- cannot be ruled out. In fact, probabilistic assessments based on the record of such outbreaks in the past indicate that the occurrence of such an event over the next fifty years approaches a virtual certainty. And while judgments as to its potential severity vary, ongoing trends such as increasing urbanization, and the globalization of commerce and travel suggest to some that such an occurrence could be far more pernicious and costly than any similar event experienced in the past -- increasing dramatically the difficulties of imposing quarantines on host populations¹⁹

¹⁷ Tantalum is used as a key ingredient in the production of SIM cards. See Tantalum -- Raw Materials and Processing, <http://www.tanb.org/tantalum1.html>

¹⁸ Tin is required for miniaturization, and tantalum for its ability to hold high voltages at elevated temperatures.

¹⁹ On this point, see Vaclav Smil, *Global Catastrophes and Trends: The Next Fifty Years*. (Cambridge: MIT Press; 2008), p. 47.

Weak and Failed States

The presence of failed and failing states throughout the international system persists. An arc of frail and failing states already runs unbroken west from North Korea through Central Asia, the Middle East and Angola.²⁰

Such states generally have tenuous links to the benefits of globalization. They are also characterized by incomplete control over their national territories, an inability to provide basic services, a lack of legitimacy in the eyes of their populations, high levels of criminal violence and widespread corruption.²¹

Particularly in the developing world, problems of state failure will persist, and in certain regions may increase (e.g. Africa, Middle East, South Asia) as widespread corruption and concerns such as infectious disease (e.g., HIV-AIDS, tuberculosis, SARS), resource scarcity, famine and economic stagnation tax societies and strain already limited state resources.²²

The inability, or unwillingness, of such regimes to govern their societies will continue pose a range of security threats. Generally prone to lawlessness, anarchy and rebellion, such states are prime candidates for humanitarian disaster and the many destabilizing forces that accompany it (e.g. epidemics, uncontrollable refugee flows). They may offer safe havens and bases of support for trans-national organized crime, arms dealers and terrorist groups. And, their precarious existence can render both their militaries and the armaments they possess vulnerable to takeover and appropriation by rogue elements in government or by private organizations. To the extent that such states occupy key strategic locations (e.g. Pakistan in the war on terror), or possess crucial resources (e.g. oil, advanced weaponry) the dangers they pose, both regionally and globally, will be heightened.

Growing Significance of Non-State Actors.

To be sure, states of varying types²³ continue to represent the chief players in the international system. And their importance in various aspects of international life – most notably as the chief guarantors of security to their citizens -- will continue. That said, a range of forces are working to complicate – and in some areas confound -- the power and influence of the state – both at home and abroad.

Globalization, the rapid spread of science and technology, resource scarcities and even natural disasters are working to increasingly limit and at times overwhelm the authority and control

²⁰ *Future Security Environment, (FSE)*, North Atlantic Treaty Organization, Draft 1.3 - Symposium FSE - 04 Apr. 2006; available at: <http://www.act.nato.int/events/documents/06fsesymp/futureenvironment.pdf>

²¹ Banning N. Garrett and Dennis M. Sherman, *Why Non-Globalized States Pose a Threat*, The Board of Regents of the University of Wisconsin System, 2006; available at: <http://www.bus.wisc.edu/update/winter03/globalization.asp>

²² Instances of failed and failing states are numerous and span a number of regions. Current examples include the Palestinian Authority, Afghanistan, (Middle East), Columbia, Venezuela (Latin America), Cote d'Ivoire, Liberia, (Africa), Pakistan, Sri Lanka, (South Asia) and Turkmenistan, Uzbekistan, (Central Asia).

²³ While the second half of the 20th century can be credited with the emergence of a number of democratic states within the international system, a continuation of this trend remains unclear. Indeed, some have noted signs that the system is currently witnessing a move to new -- decidedly authoritarian -- forms of governance -- most notably in Russia and China. Even here however, assertions that such developments will continue into mid-century would be premature.

which individual nation states are capable of exercising over their environments and the citizens who comprise them. They have generated growing scrutiny of state practice and the legitimacy and authority of governments. And, they have also helped to create -- as well as empower -- other types of political players. Most notably, a rise in the prominence of non-state actors is ever-more evident.

Such actors include non-governmental organizations (NGOs) engaged in monitoring government performance and policy advocacy, multinational corporations seeking greater profit, and humanitarian organizations engaged in the provision of humanitarian aid and assistance to societies in need. They also include organized crime syndicates engaged in trafficking of armaments and dangerous substances, as well as armed irregulars, insurgents, warlords and transnational terrorist groups intent on undertaking violent action to overturn the status quo.

The latter possibilities are particularly unsettling. The terror bombings of the World Trade Centre and the Pentagon on 11 September 2001 by al-Qaeda operatives dramatically demonstrates the potential capability of relatively small organizations to conduct operations that can inflict heavy destruction on modern societies. Ongoing globalization and technological change, exacerbated by the proliferation of readily accessible and relatively cheap technology is substantially increasing the ability of such groups to organize, function and to infiltrate target societies. It also heightens their access to a range of means that enable them to conduct devastating attacks (e.g. high explosives, weapons of mass destruction, etc.).²⁴

Yet whatever their nature or purpose, such forms of political organization and empowerment will likely grow more numerous and influential in the years ahead – adding further complexity to the international system and its management. The result will be the emergence of both challenges to security (i.e. transnational terrorism and organized crime)²⁵ as well as potentially new opportunities to enhance it (e.g. by offering possibilities for increased collaboration among actors with a wide range of skill sets).

Prominence of Distributional and Identity-Based Conflict

Both identity and distributional issues (i.e. the growing divide between the “have’s” and the “have-not’s”) are and will likely remain key drivers of inter and intra-state tension and conflict.

Yet conflicts in which the former tends to predominate are likely to be especially prominent. Indeed, conflicts grounded in issues of identity, ethnicity, culture and belief are already numerous.²⁶ In addition to the ongoing and global confrontation between Western secularism and radical Islam, the past decade has witnessed a range of identity-driven clashes such as the Serb hostilities against Kosovar Albanians (i.e. Kosovo), Muslim-Hindu clashes in South Asia (e.g. Kashmir), Hutu-Tutsi strife in Africa (e.g. Rwanda, the Congo) and Christian-Muslim confrontations in Russia (i.e. Chechnya), Western China (e.g. Xinjiang), and Central Asia (e.g. Uzbekistan).

²⁴ For an insightful discussion of the possibilities, see Thomas Homer-Dixon, “The Rise of Complex Terrorism,” *Foreign Policy*, January-February, 2002, 52-62.

²⁵ For a particularly ominous view of such developments, see Phil Williams, *From the New Middle Ages to a New Dark Age: The Decline of the State and U.S. Strategy*. (Washington D.C. U.S. Army War College, Strategic Studies Institute; June 2008). Available at <http://www.StrategicStudiesInstitute.army.mil/>

²⁶ For an insightful, although highly controversial, examination of this phenomenon, see Samuel P. Huntington, *The Clash of Civilizations and the Remaking of the World Order* (New York: Simon and Schuster, 1997).

The prospect of mass migrations from developing regions to the developed world -- either due to future instabilities within the regions of origin (e.g. humanitarian disaster, economic and political turmoil) or to the specific needs of receiving nations (e.g. to address issues of population decline) -- could work to activate similar dynamics in the decades ahead. So too could environmental issues -- particularly if the impacts associated with climate change and the depletion of renewable resources reach a tipping point.

Certainly past clashes have tended to be persistent and highly destructive. In fact, recent experience suggests that parties driven by ethno-nationalist, religious and/or quasi-religious beliefs and causes may undertake and prosecute conflict with a degree of purpose and intensity that confounds material-based and generally Western notions of rational action.²⁷ One result is a tendency on the part of such groups to ignore generally accepted international norms governing the use of force in pursuit of their goals (e.g. ethnic cleansing). Yet another is a degree of immunity their actions appear to have to the standard Western strategies of deterrence (i.e. how does one effectively respond to suicide bombings?).

Dangers may well persist, if not grow more ominous, as the impacts of globalization and technological development extend further. In fact, not only might such processes work to fuel identity based conflict itself but also the ability of some groups to pursue their goals through ever-more destructive means.

THREATS AND CHALLENGES --- FUTURE POSSIBILITIES

Already, impacts associated with a number of these trends are being felt throughout the international system. The dramatic terrorist bombings of 11 September 2001 (9/11), the wars in Afghanistan and Iraq, Hurricane Katrina, and the tragedy of Darfur all dramatically illustrate the potential dangers posed by rapid and uneven globalization, climate change, trans-national terrorism, energy requirements, identity-based international conflict, and asymmetric warfare. They also highlight the regional and global dangers posed by failed states and the vulnerability of open and highly urbanized societies to disruption.²⁸

The longer-term implications of these trends are less clear. While research indicates that such trends will continue to unfold, the intensity with which they do so can -- and doubtless will -- vary with the passage of time. And this, along with the consequences of their often complex interaction, could yield a wide range of outcomes. Depending on how they play out over the next 30-40 years, a range of alternative security futures is possible. These could include some variant of the status quo, to an even less secure, more violent world, to a less violent future marked by greater cooperation and more effective international governance.²⁹

It is also possible that some of the consequences which these forces are expected to produce in the decades ahead are nullified -- or even reversed -- by the onset of any number of significant,

²⁷ See Neil J. Kressel, *Mass Hate: The Global Rise of Genocide and Terrorism* (Boulder, CO: Westview Press, 2002), Bruce Hoffman, *Inside Terrorism* (Great Britain: Orion Publishing, 1998), and Hoffmann, "The Logic of Suicide Terrorism," *The Atlantic Monthly*, June 2003, 40, 42-47.

²⁸ In this regard, it can be argued that recent years have witnessed less an alteration in the types of trends and forces at play in the global arena than *in the degree and intensity* at which they are operating.

²⁹ Ongoing Army 2040 project work involves the construction and consideration of a number of "future worlds" and scenarios based on the trends elaborated above. Such work will be released in a future project publication.

sudden and/or largely unanticipated developments and events (commonly known as “shocks” and “wildcards”). The discovery of a low cost, renewable form of energy for instance, if capable of effective global distribution could well have revolutionary consequences for the international system as a whole and thus help to reduce the increasingly destabilizing impacts that would be associated with resource scarcities in the years ahead. Similarly, the onset of major war involving the use of nuclear weapons, or a global economic collapse could alter the geopolitical landscape so significantly that all informed opinion regarding the future character international system could well be rendered irrelevant.

Nevertheless, and notwithstanding such caveats, the above survey of trends *does* provide some sense of the character and breadth of the security issues and challenges that could inform the globe in coming decades and how they could materialize and persist.

In this regard, turmoil and instability will undoubtedly continue to arise. Much of this moreover, will occur primarily in the developing world and will likely be intra- as opposed to inter-state in character.³⁰ Conflict involving transnational actors and movements is also expected to remain prominent. Hence, civil wars, rebellion, insurgencies, and transnational extremism will represent especially common forms of such strife.

That said, the growing trend toward a more multi-polar international system suggests that the incidence of conflict between states (inter-state) may also increase in the decades ahead. The result may not only involve incidents of great power conflict (e.g. U.S.-PRC) but other types of inter-state strife as well (Russia-Ukraine, India-Pakistan).

Such conflicts *could* be predominantly symmetric in character and thus feature high-tempo conventional battle utilizing relatively complex technologies between national entities. In general however, asymmetric conflicts will likely to be the most prevalent.³¹ In this regard, challengers will be wide-ranging and could include not only states but a range of non-state actors including: media-savvy trans-national terrorist organizations and extremists intent on limiting Western influence and presence in their lands; warlords seeking to retain power and influence over local populations at any price, and trans-national criminal organizations ready, willing and able to buy, sell and trade everything from drugs to armaments for their own gain.

Aggressors will tend to avoid direct engagement with regular forces and instead focus on exploiting societal vulnerabilities and disrupting the course of everyday life in an attempt to erode and eventually undermine the authority – and the will -- of state adversaries to fight. Far more so than in the past, conflict and its conduct will involve less emphasis on its physical and more on its moral and informational components. The perceptual, psychological and ideational will increasingly eclipse the physical as the chief battleground. And the human dimensions of conflict will be ever more salient – and significant.

In some cases however, conflict may be protracted in character -- with adversaries generally showing little regard for established laws of armed conflict or rules of engagement. In fact,

³⁰ For a good review of the empirical evidence, see Human Security Centre, *Human Security Brief: 2006*, pp. 1-17. (British Columbia: University of British Columbia, 2006). See also Sven Chojnacki, “Anything New or More of the Same? Wars and Military Interventions in the International System, 1946-2003,” *Global Society*, Vol. 20, No. 1, 2006, pp. 24-46.

³¹ As commonly defined, “view 2” conflict envisions nation states opposed by armed bodies that are not necessarily armed forces, directed by social entities that are not necessarily states, fought by people who are not necessarily soldiers. See, *Canada, Future Army Capabilities*, 2.

knowing full well the tendency among governments to be increasingly casualty-averse (particularly – although not exclusively, in the West), efforts to maximize civilian destruction, fear and discomfort will often represent a key aspect of their approach. And, civilian populations, key industrial and commercial facilities and/or symbols of state power will often represent prime targets for attack (e.g. financial institutions, power grids).

Assaults could involve weapons of mass destruction and perhaps even exotic weaponry – particularly as technology cascades throughout the international system. The use of outer space will work to increase possibilities for the extension of conflict to new dimensions. And the prospects for the use of chemical and biological agents by state and non-state actors will continue to generate fears. Yet old, tried and true methods – such as abduction and arson³² -- along with the adaptive use of low-cost, accessible off the shelf technologies (e.g. cell phones, the internet, purpose-built munitions, Improvised Explosive Devices, Rocket Propelled Grenades) – both for enabling plans of attack and for conducting them -- will be more likely. So too will be attacks aimed at disrupting critical information systems and key databases (e.g. information warfare).³³ Indeed, given the increasingly interconnected nature of the international system, threats of cyber-espionage and cyber-warfare, already concerns today, will likely grow even more prominent and pernicious. And the media will become an ever more prominent battleground among adversaries.

Meanwhile, problems of state failure, pervasive criminality and renewable and non-renewable resource scarcity, demographic pressures and natural disasters will continue to generate humanitarian crises and complex emergencies. Poverty, disease, civil strife and large population migrations could become increasingly common particularly, although not exclusively, in less developed regions (e.g. Africa, Central and South Asia). And, the challenges associated with restoring order and post-conflict stability to those nations and regions affected will similarly continue – if not increase. In short, demands for humanitarian action, stabilization and reconstruction will persist if not grow in the decades ahead.

Beyond this, turmoil will unfold in a world in which Western influence and presence abroad will be increasingly contested. And sensitivity to casualties, as well as rising expectations regarding their avoidance will likely be acute among general publics -- both in Western nations and elsewhere.

A FUTURE OF RAPID CHANGE AND COMPLEXITY

In some respects, many of the threats and challenges likely to mark the future security environment will resemble those present both today and in the past. Certainly, conflict will continue to arise from a variety of sources, many which have been active – to a greater or lesser degree -- for centuries. Disputes over territory and access to energy resources, growing disenchantment over the distribution of wealth and opportunity within and between societies, and aggressive assertions of nationalism and identity politics have all been causes of strife before -- both individually and in combination.

³² Notably, the U.S. State Department's annual survey on terrorism notes that "in 2006 most attacks were perpetrated by terrorists applying conventional methods that included using bombs and weapons such as small arms. See, Daniel L. Byman, "The Rise of Low-Tech Terrorism," *Washington Post*, 6 May, 2007, p. B03.

³³ An excellent collection of essays examining the various possibilities is offered in Robert J. Bunker, ed., *Non-State Threats and Future Wars* (Portland, OR: Frank Cass Publishers, 2002).

Equally clear is the fact that many security issues and challenges will arise less by design than as unintended by-products of other developments and events. Forces such as climate change, population growth, resource scarcity, environmental degradation and disease all lack a definable adversary. Yet the impacts they generate can clearly pose a range of security challenges (e.g. human misery, societal dislocation and collapse).

Beyond this, the types of conflict waged – as well as much in the fundamental nature of armed conflict itself - will undoubtedly exhibit many similarities with its past nature and conduct. Simply put, armed violence will still represent a clash of wills between antagonists, it will be marked by risk, friction, fog and will likely take many forms. As such, armed insurgencies, irregular warfare, conventional warfare and even conflict involving the use of nuclear weapons cannot be excluded as possibilities from the security environment in decades ahead. Nor, for that matter, can the need for humanitarian aid and intervention for purposes of stabilization and societal reconstruction in the face of the human and natural disasters which will doubtless continue to occur in the decades ahead.

What *is* unique however is the degree to which the trends operating in the emerging security environment are coalescing to ensure a future in which the threats and challenges that materialize can occur with a frequency, speed and degree of severity and impact never before seen.

In a future of ongoing and intensifying globalization and technological innovation, the world is likely to be far more complex and subject to rapid and unpredictable change. Interconnectedness and the often instantaneous flow of communication that it allows increasingly ensures that information, knowledge and ultimately – power -- is diffused to an ever larger number of exceedingly diverse players,³⁴ that such actors will have at their disposal more capacity to organize, plan and act than ever before, and that actions occurring in one sphere can increasingly have significant impacts in others.

Seemingly unrelated “things” moreover (e.g. objects, ideas, processes, organizations), will be able to combine in ways that will yield not only new situations, but capabilities, forms of social organization and governance never before encountered (i.e. “mash-ups” such as jet travel and fundamentalism, home mortgages and hedge funds, mixtures of governance such as China’s blending of authoritarian rule and capitalism, improvised explosive device’s combining explosives, cell phones and text messaging). And the sources of power and who has it will be increasingly hard to map or determine ahead of time.

In such a world, levels of uncertainty will be high, seemingly small events and actions will increasingly be capable of generating significant and unforeseen consequences (at times with considerable speed), and prospects for miscalculation and surprise will rise. Prediction will be difficult if not impossible, and the ability to effectively address security issues will be ever more challenging. In the face of growing interconnectedness and interdependence – problems will be multifaceted. Future threats and challenges are unlikely to be amenable to solution if treated in isolation from the broader context of which they are a part. And, to the extent that they are -- not only may problems linger but new dangers may materialize.

CONCLUSION:

³⁴ In this regard, it is interesting to note Joshua Ramo’s recent claim that “more than 90 percent of all non-governmental organizations” in the world have been created in the past ten years. See, Joshua Cooper Ramo, *The Age of the Unthinkable*, (New York: Little and Brown; 2009), p. 35.

Responses to future security threats and challenges must be based on an acknowledgment and understanding of this reality. Indeed, they must increasingly flow from an appreciation that world is becoming an ever-more complex and tightly coupled system.

This suggests the need to view problems in a larger, wider context, and to consider a variety of approaches to problem solving. It also suggests the need for security organizations, institutions and capabilities that are constructed to cope with the reality of rapid change and its consequences.

To some extent, movement toward such an approach is now underway. Calls within the Canadian and in various allied governments for more “comprehensive approaches” to security and defence issues are indicative of a growing realization of the need for more holistic, multidisciplinary and networked approaches to the emerging challenges we face. In a world of increasingly complex conflict, no single department or agency is likely to achieve true solutions to the problems that will arise. Rather, lasting solutions will require the effective coordination and cooperation of development, diplomacy and security resources to achieve desired ends.

Yet perhaps the most crucial component for ensuring an effective response to the challenges of tomorrow resides in the intellectual or conceptual realm. More specifically, it lies in the need to ensure that adaptability, resilience and flexibility are central guiding principles and components both for societies and for the conception, development, design and employment of those institutions and capabilities that constitute the security architectures of tomorrow. Only then can states and citizens effectively address the challenges as well as exploit the opportunities that will undoubtedly emerge in a world increasingly characterized by high uncertainty and rapid change. Hopefully, the ongoing work conducted within the Army 2040 project will make a useful contribution toward meeting these goals.