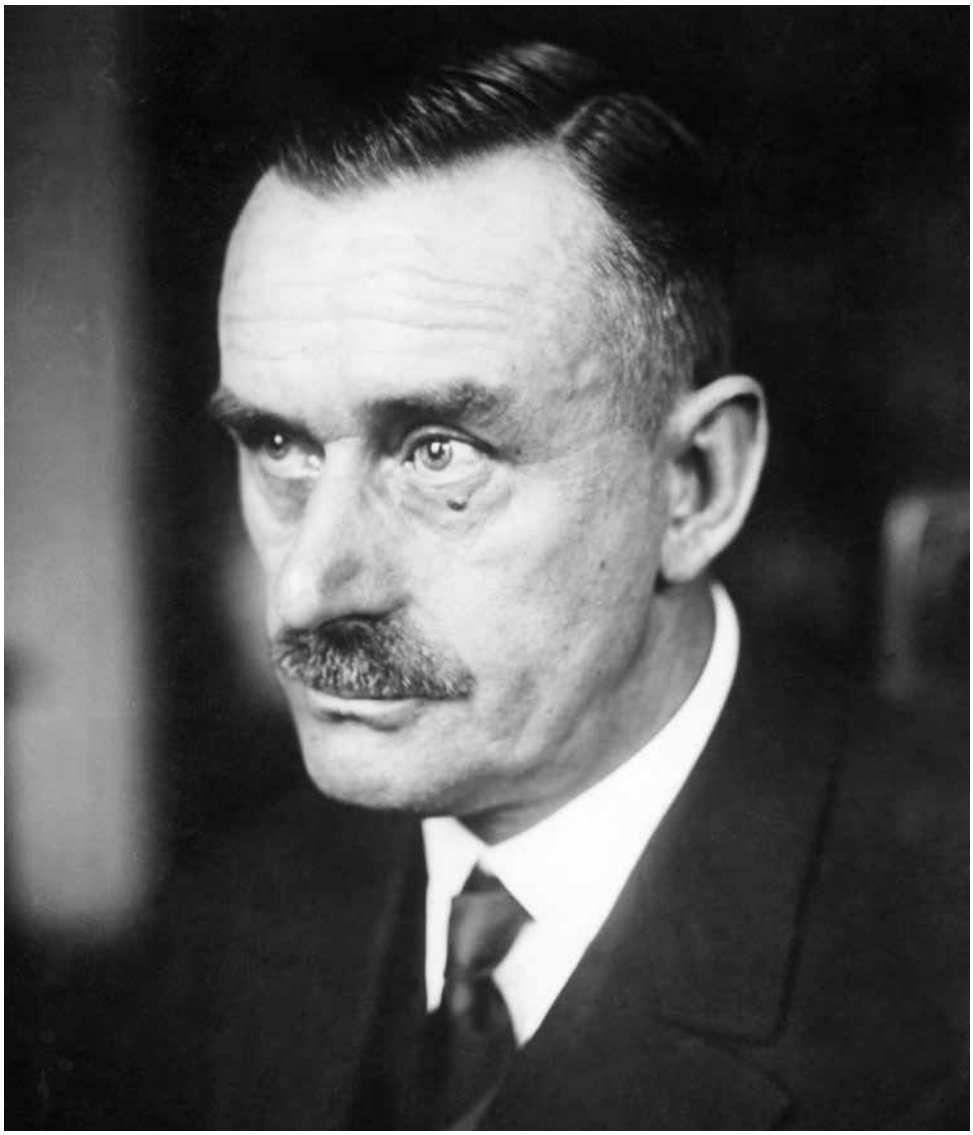


Credit: AKG 1-M126-B1930-1 (akg-images)

Thomas Mann, circa 1930

ACQUISITION OF INNOVATIONS IN A TIME OF RAPID CHANGE: SOME OBSERVATIONS

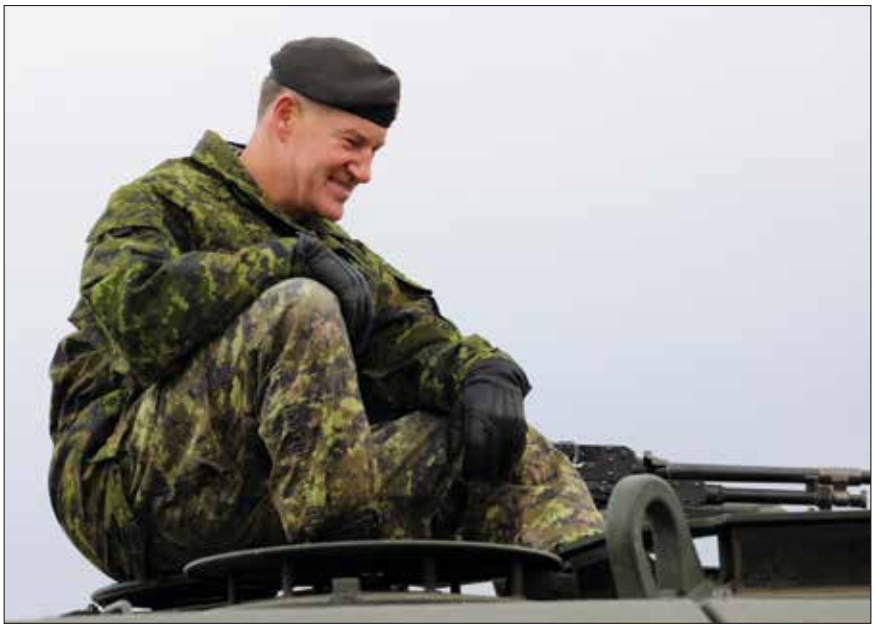
Robert Jay Glickman

Introduction

This brief opinion piece will list a number of the major characteristics of the age of rapid change in which we live, discuss some of the ways in which these realities affect recruitment, deference to authority, and training, and make a suggestion with respect to the acquisition of innovations that can increase the military's institutional and operational effectiveness.

A Look at Reality Today

In 1924, Thomas Mann's *The Magic Mountain* was published and became one of the most thought-provoking books of the 20th Century. The following quote was among the many unforgettable assertions that bejewel that book: "A man lives not only his personal life, as an individual, but also, consciously or unconsciously, the life of his epoch and his contemporaries."[1]



Credit: DND photo WT2012-0177-003 by Corporal Tina Gilles

General Walter Natynczyk

With this in mind, we may ask about the characteristics of life in our time. Once we do, we will see that we are well aware of some of the major ones that affect us all. What may not be as clear is how these features are connected, and what bearing they have on the military. This is the subject of the present article—a brief examination whose fundamental aim is to stimulate thought and, perhaps, debate.

Novelty

A ceaseless rush of novelty is a fact of life today. We are relentlessly besieged by new products, new concepts, new fashions, new turns of phrase—so much new all the time, that the effort to keep current with the world around us raises tension and takes our breath away. Just to learn the latest 'lingo;' just to keep in touch with advances in science, business, and the arts; just to stay abreast of changes in style and satisfy the needs that marketers have created in us; just to keep up with the news—news that is always 'breaking'—all of this is a daily marathon that we run. So much to see, so much to learn, so much to do. So much, so fast!

Speed

Today, we are all exposed to an extremely high degree of velocity. We try to make life easier in as many ways as we can. We do so, for example, by using the speed-dial feature on our telephone instead of inputting each number separately, by signing up for hi-speed Internet service, by picking up some fast food at McDonald's, by subscribing to *Netflix* in order to see a movie *instantly*.

Speed is constantly with us. Merchants incessantly 'machine-gun' their ads to us on the radio, TV, telephone, and Internet. Family, friends, and 'spammers' persistently ring us, text us, e-mail, and 'tweet' us. The world is full of movement, an endless pulse of sight and sound—and it beckons us to absorb its penetrating rhythm and move in concert with it. As the commercial says, "Life doesn't wait. Why should you?" If you want twice as much of that product, "Call in the next two minutes." If you want to play the game, you have "A Minute to Win It." And if you object to someone's opinion, you can use your Twitter account to 'talk back' quickly. In his insightful book *Consumed*—a detailed discussion of marketing and its effects on society—Benjamin Barber states that "Speed [meaning velocity] is a drug like any other that must be taken in ever higher doses just to maintain its hold over the psyche."[2]

Miniaturization

Miniaturization also characterizes life today. We have observed a trend toward downsizing for several decades already. In the corporate world, not only have the organizational structure and the number of employees been reduced, but there has also been a contraction of corporate names into diminutive acronymic clusters: The Hudson's Bay Company has morphed into HBC; Kentucky Fried Chicken into KFC; Dun and Bradstreet into D&B.

We have seen a similar trend in communications. In the realm of computer hardware, huge mainframes have been successively replaced by desktops, laptops, iPads, and iPhones. And imagine: those 100 gigabytes of data that have been generated over several months can now be stored in a miniscule memory stick.

'Small' has also affected radio, television, and Internet transmission where broadcasters have added two new strategies: *narrow*casting to specific audience groups and *ego*casting to the individual.

'Small' is also a dynamic area of interest in science, where fields such as genomics and nanotechnology[3] are daily becoming more and more attractive to the research community.

And we have witnessed a concomitant compression of military assemblages: large armies have been supplanted in battle first by compact fighting units, then by tight bodies of special operations, and now, among our fiercest enemies, by individual suicide bombers and IEDs—each of which, progressively, has had the advantage of giving more 'bang for the buck.'

As seen in the worlds of business, communication, science, and the military, miniaturization has forcefully intruded into the lives of us all.

Competition

Competition is the order of the day. It is everywhere. Many television programs illustrate the point. All of them expose an individual or a group to assessment by one or more judges. The judges' task is to appraise each competitor in turn

until a winner is chosen. At each step in the evaluation process, the flaws of each competitor are revealed to a national or international audience—an audience which, in certain cases, participates in the voting. The losers are many. The disappointments are great.

It seems as though we are being inspected, scrutinized, examined, and assessed all the time. Someone is always checking us out to see if we meet their criteria. Those who search for employment know the feelings that competition can generate. Lots of contenders. Judges at every step. Very few jobs. Lots of regrets.

And in the military, competition is present as well. Competition within the ranks. Competition *within* and *between* the services and branches. Competition between the military sector and civilian society for the nation's scarce resources.

Effects upon the Military

What are the effects of all this upon the military? For instance, how can recruiters identify today's 'Colin Powells-to-be,' whose uniform will give them "a sense of belonging," make them feel "distinctive" . . . see themselves as "a member of a brotherhood," and crave the "discipline, the structure, the camaraderie"[4] that are the essence of the military experience? How will the '*me-me*,' novelty-seeking, talk-back teens, who let it all hang out be converted into spit-and-polish, "Yes, Sir" team players in a "compliant collective"?[5]

Credit: Defenseimagery.mil 110831-N-TT977-168 by MC1 Chad J. McNeeley

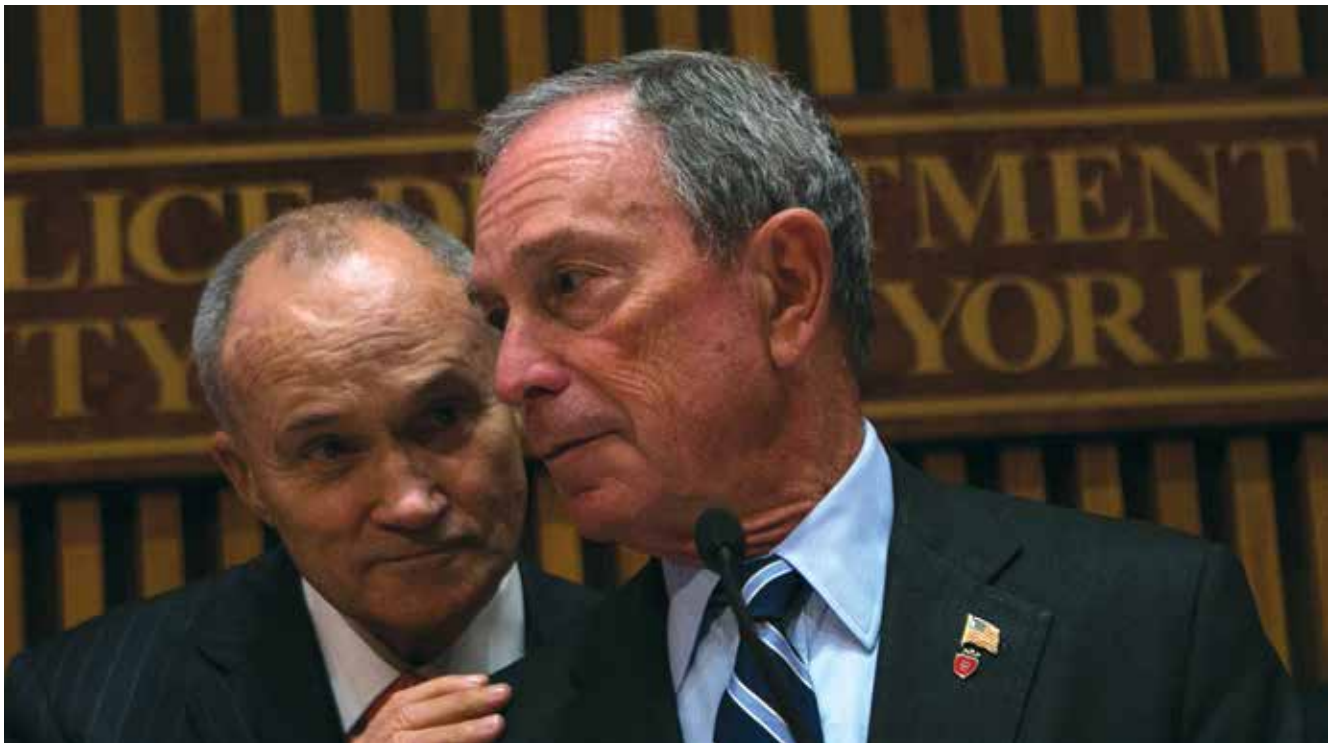
General David Petraeus

In view of questions such as this, excellence in recruitment is paramount. As General Walter Natynczyk reminded us: "We need to ensure we have the right people, with the right experience, doing the right tasks."[6] Once a careful selection is made, the issue of training must be thoroughly considered. According to Major-General [now Lieutenant-General – Ed.] J. M. M. Hainse (then) of Canada's Army Training Authority, "…excellence in training is the greatest single factor in the achievement of operational excellence."[7] If General Hainse is right in saying that "…training must be command driven—leaders must understand training and use it to develop competent, cohesive, confident and disciplined organizations,"[8] how will those leaders successfully train enough personnel to operate the new systems that are acquired—and do so in a cost-effective manner?

As we know, in a time of irregular, asymmetric, and netcentric warfare, requirements can change very rapidly. This imposes distinctive challenges upon leaders, trainers, and trainees. While commercial 'off-the-shelf' aids, such as simulation technologies, interactive training programs, and performance measurement tools might suffice in some instances, it is often necessary to create special instruments to fill gaps where shortfalls in training are encountered. As a result, great pressure is placed upon all personnel involved in the training effort. What will have to be done to keep this reality uppermost in the minds of the leaders? Obviously, the leaders themselves must undergo training as well—the kind of training that is appropriate for their station, responsibilities, and capacity to meet the challenges of innovation, especially in times of political, economic, and social change.[9]

How will the military sensibly, efficiently, and cost-effectively modernize its forces in spite of the onslaught of purchasing schemes by policy makers and civilian lobbyists who sometimes craft unwanted, irrelevant, and expensive proposals? What position should it take in the debate with respect to which fighter aircraft should be purchased to protect Canada's security, and, in the process, support the nation's aerospace industry, yet not endanger the nation's financial well-being?[10] How will it minimize disruptive inter-service competition for shrinking financial support? Finally, how will it avoid fraud, waste, and abuse within the services,[11] and prevent unscrupulous contractors from saddling the nation with continual cost-overruns?

As a corollary to this, we might ask, in a world characterized by rapid change, to what extent will the pace of innovation be influenced by factors such as tradition and standard operating procedures? We recall, for example, the frustrations experienced by Lieutenant Colonel Timothy O'Neill,[12] founder of West Point's engineering-psychology program, whose Dual-Tex camouflage system "…was shelved by military brass, who refused to believe something so artificial-looking could work."[13] That was back in 1976. But as we know, similar responses to innovation have taken place throughout military history.



Credit: Reuters RTX12R2Y by EricThayer

New York City Mayor Michael Bloomberg (right).

One of the questions related to this issue is: to what degree will the age of members of the military affect their *interest in* and *acceptance of* innovations? Who will specialists in *diffusion of innovations* theory[14] cite as the early adopters of new ideas, devices, and procedures? And who will they show to be the laggards? In other words, will age be the principal influence on the military's acceptance of innovations? Will tradition, convention, and deference to authority be the key determinants? Or will the acceptance of innovations be determined mainly by an awareness of current trends, and a knowledge of current needs?

What effect will technological change in civilian life have upon the military? For example, how easy will it be to expand its *present* internets and intranets with secure social networking systems like Yammer?[15] And to what extent will such systems help to overcome some of the barriers to innovation raised by the military's command structure?

Reality today—characterized by ceaseless novelty, ever escalating speed, ubiquitous miniaturization, omnipresent competition, stress on youth and freedom of choice—puts the military under tensions greater than any experienced in the past, and increases the scope of situational awareness that it must develop in order to insure its effectiveness. But let us be clear: the type of situational awareness referred to here is much broader and deeper than the kind that General David Petraeus spoke of in his 2007 discussion with the *Nassau Weekly*.[16] What is meant by situational awareness in the present article is not an awareness that lets you "…just stare at a location and really gain a knowledge … that is so substantial that you can then pull the trigger and take out a bad guy."[17]

No. The situational awareness meant here is a knowledge far beyond that of specific targets in countries where we carry on combat operations. In point of fact, answers to the questions that the military is asking, or needs to ask in order to improve its level of excellence, not only depend upon a knowledge of actualities abroad, but also hinge upon a broadly inclusive analysis of our own culture in the past, and an intimate familiarity with current realities in the civilian world—the complex, dynamic, and interrelated world of business, science, education, demographics, politics, and so forth.

Chris Hedges is right when he says: "Those who suffer from historical amnesia . . . and have nothing to learn from the past, remain children. They live in an illusion . . ."[18] But the same can be said of those who are ignorant of the realities of the present. And this is what must be emphasized here. To be successful, every organization, including the military, must cultivate an eagerness to know as much as possible about the world that has produced it, and in which it currently exists.

This type of intelligence is not covert, but open. It is similar to the kind that is usually gathered by our embassies in foreign countries, when the issue is not to hunt out terrorist cells or discover other types of belligerencies, but to gain a knowledge of as many aspects of the country as possible, so that effective policies and practices toward it can be established here at home.

Back in 2002, stressing the fact that "…large, complex institutions generally find it difficult to deal with experimental ideas and revolutionary concepts," Professor Martin Rudner[19] suggested that the Defence Intelligence arm of the Canadian Forces could "…provide a singular focal point for a coordinated, integrated, and synchronized effort to explore and exploit the attributes of information technology for future CF capabilities development requirements."[20]

Few would argue with Rudner on this point. However, in addition to serving as a focal point for a knowledge about the potential value of information technology, Defence Intelligence could also act as "…a focal point for a coordinated, integrated, and synchronized effort to explore and exploit the attributes" of *open intelligence* from sources that could increase the military's institutional and operational effectiveness.

Let it be plain. Gathering open-source intelligence here at home is not only an issue of 'keeping tabs on the bad guys' whose activities might adversely affect the military's successful execution of its assigned tasks, but also of 'learning from the good guys.' One of the ways to do this is to create watch lists for innovations of potential usefulness to the Forces. Many such innovations are described in wellsprings of information, such as patent databases, grants to academic and business organizations, and the media.

Conclusion

A recent edition of *The Economist* magazine indicated that, in an effort to solve serious problems of city governments, the mayor of New York, through his Bloomberg Philanthropies, set up "Innovation Delivery Teams" which were designed to offer solutions to specific challenges faced by local governments. Among those challenges were tight budgets, lack of risk capital, overstretched personnel, and long wait times for city services. Once needs and problems were identified, solutions were sought by the "Innovation Delivery Teams." The idea was so successful that, content with the value of this initiative, Mayor Bloomberg arranged for similar teams to be organized in Chicago, Atlanta, New Orleans, Memphis, and Louisville.[21]

What is suggested in this opinion piece is not to seek out solutions to known problems by setting up "Innovation *Delivery* Teams" in the military. Rather, since we are entering a future that promises a multiplicity of unexpected needs and challenges, the Department might consider the creation of "Innovation *Discovery* Teams." Their assignment would be to search open-source databases, such as those mentioned above, for innovations which, once acquired, might prove of clear and lasting value to the Forces.

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NOTES

1 Thomas Mann (1875-1955) was a German novelist, short story writer, social critic, philanthropist, and essayist who was awarded the Nobel Prize for literature in 1929. In the 1930s, he attacked the concepts of National Socialism and the practices of its supporters. After Hitler came to power, Mann took refuge in the United States. *The Magic Mountain* (Berlin: Fischer, 1924) was first translated into English by Helen Tracy Lowe-Porter and published by Knopf (New York, 1928).

2 Benjamin R. Barber, *Consumed: How Markets Corrupt Children, Infantilize Adults, and Swallow Citizens Whole* (New York: W. W. Norton, 2008), p. 98. In this book, Barber, a renowned U.S. author who has advised political leaders in the United States and abroad, portrays a global economy that no longer aims to manufacture goods, but primarily to manufacture needs.

3 Nanotechnology is used for many purposes, among them to decrease the visibility of potential military targets through the design of specially made fabrics which decrease visibility by bending light around objects. As explained by Bruce Barcott in "Invisible, Inc.," these fabrics, called metamaterials, "…interact with light to produce what's known as a negative index of refraction." in *The Atlantic* 308 (July/August 2011): p. 84.

4 Colin Powell, *My American Journey* (New York: Random House, 1995), pp. 26, 28.

5 Chris Hedges, *The Empire of Illusion: The End of Literacy and the Triumph of Spectacle* (Toronto: Vintage Canada, 2010), p. 138.

6 Walter Natynczyk, "The Canadian Forces in 2010 and 2011—Looking Back and Looking Forward," in *The Canadian Military Journal* Vol. 11, No. 2 (2011), at http://www.journal.forces.gc.ca/vo11/no2/index-eng.asp, accessed 28 September 2012.

7 J. M. M. Hainse, *Training for Land Operations* (Ottawa: National Defence B-GL-300-008/FP-001, 2010): p. v.

8 *Ibid*., p. iii.

9 The nature of the dynamic relationships at play between these factors can be examined by application of the Neo-Institutional Framework, a tool effectively used especially in political science. It facilitates an understanding of the causes and consequences of policy evolution, helps to identify complex elements of the decision-making process, and identifies where and how influential power sources exert their weight on policy change over time.

10 A valuable discussion of this subject is presented by David S. McDonough in "Canada and the F-35 Procurement: An Assessment," in *SITREP: The Journal of the Royal Canadian Military Institute* Vol. 71, No. 3 (2011): pp. 10-11, 16.

11 "U.S. Military Looks to Better Control Costs with Business Analytics, Better BI," in *Smarter Technology* (2010), Dennis McCafferty refers to solutions to these problems that the American Department of Defense is attempting to eliminate, in part, with the help of companies like ACL Services of Vancouver, B.C. at http://www.smartertechnology.com/c/a/ Smarter-Strategies/US-Military-Looks-to-Better-Control-Costs-with-Business-Analytics-Better-BI, accessed 28 October 2012.

12 In "Dual Texture – U.S. Army Digital Camouflage," Guy Cramer describes O'Neill (U.S. Army, Retired) as "the father of digital camouflage," at http://www.uniteddynamics.com/dual-tex/, accessed 15 November 2012. Dual-Tex is a computer-designed pixilation system used to create macro and micro patterns for camouflage. In the 1990s, O'Neill was instrumental in designing CADPAT (Canadian Disruptive Pattern), which was officially adopted as the standard Canadian Army camouflage pattern in 1997.

13 Barcott, p. 82.

14 This theory was first presented by Everett Rogers, a communication scholar, sociologist, and teacher, in *Diffusion of Innovations* (New York: The Free Press, 1962). The theory proposes that, in any group, responses to a given idea, product, or system tend to divide up in the following way: 2.5 percent of the group's population are innovators, 13.5 percent become early adopters, 34 percent form the early majority, 34 percent are members of the late majority, and 16 percent are laggards who resist adopting the innovation for the longest time.

15 Yammer is a secure internal social networking system that was launched in September 2008. It allows members of companies and organizations to connect with each other; share ideas, links, files, and updates; collaborate on projects; and get feedback on their work. According to Shelley Risk, Director of Public Relations of Yammer Inc., the Canadian Forces started a network in September 2009, but as of this writing, it was still inactive.

16 *The Nassau Weekly* is a newspaper published by students at Princeton University.

17 General David Petraeus, "The Reconcilables: An annotated interview with Gen. Petraeus," in *The Nassau Weekly*, 4 March 2010, at http://nassauweekly.com/articles/1071, accessed 3 October 2012.

18 Hedges, p. 98.

19 Martin Rudner of the Canadian Centre of Intelligence and Security Studies is Distinguished Research Professor Emeritus at the Norman Paterson School of International Affairs at Carleton University.

20 Martin Rudner, "The Future of Canada's Defence Intelligence," in *International Journal of Intelligence and Counter Intelligence*, Vol. 15.4 (2002): p. 542.

21 "Hizzoner's other cities," in *The Economist*, 16 July 2011, p. 34.