# *Introduction: Revolution in Military Epistemology*[1]

**Philippe Beaulieu-B. and Philippe Dufort**[2]

## Introduction

A wide consensus of policy-makers, defense professionals and academics is raising doubt about the effectiveness and even the relevance of military intervention in the 21st century. In most recent cases — Syria, Iraq, Libya, and Afghanistan — military interventions led to worse outcomes than the previous status quo. These failures undermined the legitimacy of the military as both an institution and a profession. The continuing necessity of action gauged on efficacy in trials by fire provided fertile soil for an unexpected development. An increasing number of defense professionals realized, tour after tour, that technological capabilities would not be enough to tackle the challenges of contemporary conflicts. No matter the advancement, these could not alone replace conceptual capabilities. Dusting off the conceptual arsenal in doctrine inherited from the Cold War proved insufficient. Several defense professionals realized, often too late, that doctrine led them to wage wars that no longer existed on the ground. As

remedy, several defense professionals suggested that the military would not only have to change what to think, but also how to think. ***Most importantly, they came to realize that what to think and how to think are integral parts of the making and unmaking of contemporary conflicts.*** Most reached this conclusion by conducting personal reflections during and after deployments and by learning new methodologies mostly in the form of design thinking.[3] In so doing, these defense professionals launched what we call a reflexive turn in military affairs and strategic studies (hereafter reflexive turn).

This special issue is a double primer. The first primer is the first collective publication on this reflexive turn. The second primer takes the form of letting reflexive military practitioners speak for themselves about this turn. This special issue results from a workshop funded by the Canadian Department of National Defence's Defence Engagement Program held at the Canadian Forces College in October 2016. This workshop gathered participants from among the most applauded military practitioners from three continents to share their experiences with reflexive concepts for understanding or intervening in contemporary conflicts. We proceeded by asking fifteen of them to build on their presentations, feedback and creative tension within the group. We asked them to substitute the academic writing tradition for a more autobiographical form. We also asked them to first and foremost support claims on their personal experiences before finding reinforcement in secondary literature. In so doing, this special issue is an unprecedented collection of primary sources from among the most respected reflexive military commanders, planners, developers and educators without academic or journalistic interference. These articles are a testimony of the richness of this reflexive turn as it was and is currently experienced in five different countries and numerous organizations.

The primary objective of this special issue is to give justice to this turn by inviting defence professionals to address its promises, limits and dangers. This turn is already having a deep impact on individuals, organizations and the conduct of contemporary

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[3] Military design thinking means the capability to understand a current conflict environment from a holistic perspective, to imagine a desired post-conflict environment and to realize it with counter-intuitive military and non-military means. In short, military design thinking is an umbrella term for a more or less consistent assemblage of reflexive approaches including complexity theory (e.g. John Holland, Yaneer Bar-Yam, Robert Axelrod), systems thinking (Peter Checkland, Fritjof Capra, Humberto Maturana) and postmodern social theory (e.g. Michel Foucault, Gilles Deleuze & Felix Guattari, Jacques Ranciere) to name a few.

conflicts. Further institutionalization may not only change the nature of military education, but also the nature of the military as an institution and a profession. These phenomena become even more important as the reflexive turn may well become a dominant paradigm in military affairs. At the fringe in the late 1990s, the reflexive turn is becoming more mainstream within several schools of thought around the world. The US Army and Special Operations Forces provided evidence of this in 2015. The former made design thinking mandatory for planning officers, and the latter, for general staffers (J1-9). [4] Despite this, reflexive military practitioners rarely have the organizational incentives in terms of allocated time or approval to share their perspectives. This may explain, in part, the lack of comprehensive literature on this contemporary reflexive turn. For these reasons, this first special issue is, we believe, a pertinent and timely contribution enhanced by the simultaneous release of a web platform called *The Archipelago of Design: Researching Reflexive Military Practices*.[5] This web platform complements this special issue by providing an oversight of this reflexive turn, presentation videos and supplementary publications.

The secondary objective of this special issue is to lay the groundwork for a research program aimed at understanding past and current reflexive military practitioners to understand its implications and inform better practices. We are convinced that not only the wider defence community have much to learn from reflexive military practitioners, but also most professionals and scholars. Professionals will find inspiration in several examples of critical and creative means leveraged to address the complexity of contemporary conflicts in organizational structures. Scholars, especially those sharing reflexive approaches, may find inspiration in this special issue to reconcile with the test of practice. As they will see, many contributors such as Paul Mitchell reached a dead end with critical approaches by deconstructing the very ground necessary for action.[6] Many, like Mitchell, found a way out with design thinking. These

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[4] The US Army's most recent doctrine version is "Army Design Methodology" (ADM). As for US Special Operations Forces, 'Design thinking for the SOF enterprise' fulfills the same function as a doctrine.
United States Army, "ATP 5-0.1 Army Design Methodology," Headquarters, Department of the Army. Washington D.C. . 2015.; US Special Operations command, 'White Paper: Design Thinking for the SOF Enterprise,' Headquarters, SOCOM. Tampa, 2016.

[5] The Archipelago of Design is available at: http://www.militaryepistemology.com

[6] Paul Mitchell, "Stumbling into Design: Radical Action Experiments in Professional Military Education at Canadian Forces College," *Journal of Military and Strategic* Studies 17, no. 4 (2017).

are a few among many possibilities to learn from reflexive military practitioners. To maximise this potential, the conclusion of this special issue points toward a research program exploring three interconnected directions. These directions seek to uncover the logics of translation, narrative and power relations involved in current and past reflexive military movements.

This special issue will be of interest to defence professionals, public officers, and scholars looking for alternative approaches to make a difference in contemporary conflicts. Accordingly, this introduction attempts to reach these three audiences by connecting conceptual references across them. The following section attempts to do so by positioning the reflexive turn in opposition to rationalism. We then expose how the popularization of this turn developed akin to an assemblage, that is, by consolidating intrinsic intuitions with extrinsic sources of knowledge and vice-versa.[7] Last but not least, we offer a summary of the four task forces composing this special issue: efficacy, education, institutional politics and notes from the field.

**From Military Rationalism to Military Reflexivity**

> "Indeed, some of the solutions advocated by professional experts were seen as having created problems as bad as or worse than those they had been designed to solve."

Donald Schön[8]

The tragedy of contemporary military interventions often leading to worse outcomes than the status quo before is not isolated to the military profession. Already in the late 1970s, philosopher Donald Schön observed this tragedy for most professions. There is no better example than the Vietnam War to reveal the limits of professions according to Schön. While the military "professionally conceived and managed the war," the outcome was a disaster.[9] For Schön, the problem lies on how most professions come to know their objects of concern, such as the body for physicians, structures for

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[7] For more details on assemblages, see: Manuel Delanda, *Assemblage Theory* (Edinburgh: Edinburgh University Press, 2016).

[8] Donald Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1983), p. 10.

[9] Ibid., p. 4.

civil engineers or the enemy for soldiers. In other words, the problem lies on the epistemology of professions.[10]

Most professions derived epistemology from applied scientific method understood by Schön as "technical rationalism". Contributors of this special issue rely on several analogous terms to technical rationalism. For instance, Francis Clermont and Aaron Jackson use "positivism," Ben Zweibelson, "functionalism" and Christopher Paparone, "objectivism" or "rationalist approaches."[11] Notwithstanding nuances among these terms, they share commonalities. They all assume that reality as a whole — including social reality — is not different from the natural realm. Reality can be reduced to several objective causal mechanisms or general principles which are independent from the perception of professionals. Once mastered with a robust formation, principles may be leveraged for developing knowledge in order to resolve any problem observed. Knowledge, such as knowledge of the enemy, is just waiting to be discovered with the help of these general principles. This knowledge becomes valid if understood as accurately representing this independent reality.[12] As a result, professionals assuming a single independent reality often converge to one-size-fit-all rather than tailor made solutions for particular issues. After all, if there is only one independent reality, particular issues become means to observe general principles found across them. Otherwise, particular issues are irrelevant from this perspective.

In the military profession, the tradition conveyed by Antoine-Henri de Jomini expresses this epistemology.[13] It is no coincidence that Jomini wrote in France in the same historical period as Auguste Comte, the founder of positivism in the early 19th

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[10] Ibid., p. 32.

[11] Francis Clermont, "Design: an Ethical and Moral Project, Conscious Intention for the Cybernetician" *Journal of Military and Strategic Studies* 17, no. 4 (2017); Aaron Jackon, "A Tale of Two Designs: Developing the Australian Defence Force's Latest Iteration of its Joint Operations Planning Doctrine" *Journal of Military and Strategic Studies* 17, no. 4 (2017); Ben Zweibelson, "Blending Postmodernism with Military Design Methodologies: Heresy, Subversion, and other Myths of Organizational Change," *Journal of Military and Strategic Studies* 17, no. 4 (2017); Christopher Paparone, "Critical Military Epistemology: Designing Reflexivity into Military Curricula," *Journal of Military and Strategic Studies* 17, no. 4 (2017).

[12] René Descartes is among the pioneer supporting this mind-world dualism in modern philosophy. For a more contemporary perspective, see Karl Popper, *The Logic of Scientific Discovery* (New York: Routledge, 1992). In International Relations, see Gary King et al., *Designing Social Inquiry: Scientific Inference in Qualitative Research* (Princeton: Princeton University Press, 1994).

[13] Henri De Jomini, *Précis de l'art de la guerre* (Paris : Éditions Champ libre, 1977).

century.[14] While Jomini still conceived war to be an art, he sought to uncover the general laws of warfare for developing and training armed forces. Perhaps in part due to the fact that Jomini was the sole military theorist found on WestPoint reading lists before the American civil war, this scientific tradition remains among the most influential in US armed forces and allied forces nowadays.[15] Planning processes employed by US and NATO armed forces follow this tradition such as with the Military Decision-Making Process (MDMP) or the Operational Planning Process (OPP), its Canadian equivalent. These processes constrain officers to follow a model to be applied, step by step, to any issue as diverse as an operation to refurbish a museum to an operation for stabilizing Northern Iraq.

There is no doubt that this top-down linear logic from a model to particular applications proved effective for resolving from simple to complicated issues. As Ben Zweibelson points out in this special issue, empires prospered by embracing this approach.[16] This approach enabled what Schön and his colleague Chris Argyris called single-loop learning.[17] Single-loop learning means improving effectiveness by correcting mistakes when facing similar issues without questioning assumptions underlying these issues. As they put it:

> Single-loop learning is like a thermostat that learns when it is too hot or too cold and turns the heat on or off. The thermostat can perform this task because it can receive information (the temperature of the room) and take corrective action.[18]

In so doing, the thermostat does not question underlying assumptions such as the objective of sustaining a certain way of life based, in part, on comfort. Indeed, this form of direct learning facilitated the organizational cohesion required for large scale military deployment around the globe.

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[14] Auguste Comte, *Cours de philosophie positiviste (*Paris: Éditions Anthropos, 1969).

[15] John Whiteclay Chambers and Fred Anderson, *The Oxford Companion to American Military History* (Oxford: Oxford University Press, 1999).

[16] Zweibelson, "Blending Postmodernism with Military Design Methodologies."

[17] Chris Argyris and Donald Schön, *Organizational Learning: A Theory of Action Perspective* (Reading: Addison-Wesley, 1978).

[18] Ibid., p. 3.

**Figure 1: Single to triple loop learning**
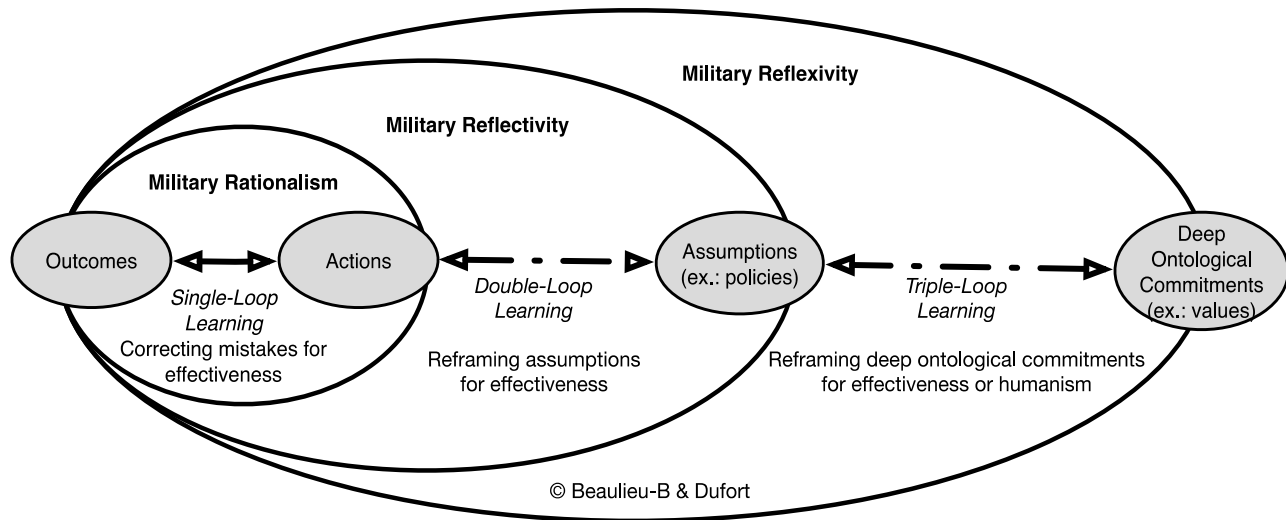


These rationalist informed approaches proved to still be effective in the classroom, in war games and exercises in the 21st century. In vivo, however, contemporary conflicts — or what some called hybrid forms of warfare — provided severe resistance to this rationalist ideal.[19] In response, an increasing number of defense professionals including all contributors of this special issue have argued that the challenges of contemporary conflicts demand radically new thinking at odds with rationalism. They, like Schön, took a pragmatic turn.[20] As well, a few, like Ofra Graicer, Ben Zweibelson, and Christopher Paparone, took a radical pragmatic turn by finding inspiration in postmodern social theory.[21] Without this turn, these defence professionals thought, armed forces would fight in a world that no longer exists. They would become irrelevant as general laws of warfare observed in the 19th century can be obsolete nearly two centuries later.

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[19] Frank Hoffman, *Conflict in the 21st Century: The Rise of Hybrid Wars* (Arlington: Potomac Institute for Policy Studies, 2007).

[20] In the preface of *Educating the Reflective Practitioner*, Schön explains how his PhD thesis on John Dewey's *Theory of Inquiry — a* founding father of pragmatism — lay the ground for his exploration of architectural design later. Donald Schön, *Educating the Reflective Practitioner* (San Francisco: Jossey-Bass, 1987), p. xi.

[21] Ofra Graicer, "Self Disruption: Seizing the High Ground of Systemic Operational Design (SOD)," *Journal of Military and Strategic Studies* 17, no. 4 (2017); Zweibelson, "Blending Postmodernism with Military Design Methodologies"; Paparone, "Critical Military Epistemology."

Following pragmatism, there is no such thing as a timeless independent reality on which professionals may validate the knowledge they use and generate.[22] Rather, pragmatism assumes that agents decide together, implicitly or explicitly, whether military knowledge and practices are relevant or not in a certain context. As these decisions are based on individuals in a specific time and space, they will tend to evolve. Pragmatism is not "anything goes" following the often-distorted aphorism of Paul Feyerabend.[23] Pragmatism is rather "anything might go" in a specific time and space. Therefore, what is relevant now was irrelevant before. What is relevant now will likely be irrelevant in a more or less distant future. What is relevant here will likely be irrelevant there, if not carefully adapted.

Moreover, this pragmatic turn also reversed the relationship between defence professionals and reality. Instead of mirroring an independent reality, pragmatism assumes that professionals contribute in enacting a specific version of reality by producing knowledge about it. In return, professionals implicitly disqualify alternative versions. For instance, military designers conducting framing and re-framing exercises seek to compensate for this phenomenon.[24] While framing, designers decide which versions of reality are most relevant for a specific issue. While re-framing, they may bring in another version that was not as relevant or present earlier. Therefore, whether the knowledge professionals use or generate is valid becomes less important than what this knowledge can make professionals think and do. In short, if planning doctrine corresponds to rationalism, that is, a general model to be applied to specific issues to change an independent reality (top-down), design corresponds to pragmatism, that is, generating a particular and ephemeral understanding to change a reality (bottom-up). These different approaches to knowledge may explain why combining design and

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[22] Beyond Dewey, Richard Rorty's neopragmatism shares many commonalities with design thinking. For instance, Zvi Lanir, a pioneer in developing military design thinking in Israel with Shimon Naveh and Dovik Tamari found inspiration in Rorty's neopragmatism. Zvi Lanir and Gadi Sneh, "A New Agenda for Praxis," 2000 (unpublished paper). See Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton: Princeton University Press, 1979).

[23] Paul Feyerabend, *Against Method: Outline of an Anarchistic Theory of Knowledge* (London: Verso, 1979).

[24] See US Army, "Army Design Methodology," 2015, for an example in doctrine. For framing and reframing, see Erving Goffman, *Frame Analysis: An Essay on the Organization of Experience* (Cambridge: Harvard University Press, 1974).

planning is at best an "awkward tango" as Zweibelson put it in a previous issue of this journal, or at worst, incommensurable.[25]

As pragmatic defense professionals refused models providing an impression of certainty in contemporary conflicts, they required an alternative. Otherwise, there would be no traction for action, that is, no foundation enabling the judgement necessary to make decisions. In military design thinking terms, "paralysis by analysis" would be likely without an alternative to rationalism. Schön's reflecting-in-action and reflection-on-action or reflectivity provided this alternative for many defence professionals as echoed in several doctrinal publications from 2008 onwards.[26] Reflective practice means to continuously taking a step back and thinking about the ongoing action while doing it and after to continuously master a practice towards excellence, especially in volatile conditions. In contrast to rationalism, this involves double-loop learning. Double-loop learning involves questioning the underlying assumptions of actions. In other words, double-loop learning does not take place when defence professionals rush to correct the action in itself. Rather, double-loop learning occurs when they excavate deeper roots of an issue such as by questioning the underlying framing, policies or norms. Reflectivity, therefore, incites defence professionals to think at the meta-level about actions, their implications and their potential consequences. This allows them to question what makes an issue a problem (i.e. problem-setting), rather than directly attempting to correct it (i.e. problem-solving).

Although most defense professionals found inspiration in Schön to depart from rationalism, we found that they were not only reflective, they were implicitly reflexive as well. While some use reflective and reflexive interchangeably, reflexivity draws more on the sociology of Pierre Bourdieu.[27] In Bourdieu's words, reflexivity means to

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[25] Ben Zweibelson, "An Awkward Tango: Pairing Traditional Military Planning to Design and Why It Currently Fails to Work," *Journal of Military and Strategic Studies* 16, no. 1 (2015): pp. 11-41. For a robust debunking of incommensurability, see Colin Wight, "Incommensurability and Cross-Paradigm Communication in International Relations Theory: "What's the Frequency Kenneth?"" *Millenium* 25, no.2. (1996): pp. 291 – 319.

[26] Schön, *The Reflective Practitioner,* p. 54. For an early example in doctrine, see: US Army, "*Commander's Appreciation and Campaign Design," TRADOC Pamphlet 525-5-500* (Washington D.C.: Headquarters, Department of the Army, 2008).

[27] See Pierre Bourdieu and Loïc Wacquant, *An Invitation to Reflexive Sociology* (Chicago: University of Chicago Press, 1992); Pierre Bourdieu, *In Other Words: Essays toward a Reflexive Sociology* (Cambridge: Polity Press, 1990).; In International Relations, see Inanna Hamati-Ataya, "Reflectivity, Reflexivity,

"objectivize the objectivizing point of view" of the observer, that is, the perspective of defence professionals for our concerns.[28] Reflexivity includes reflectivity and takes it deeper. Reflexivity does so by bringing to awareness all potential aspects of the self, the organization, profession and society as a whole that may or may not make possible the specific perspective of defense professionals. As Patrick T. Jackson observed, for reflexive practitioners, "knowledge of social arrangements begins not with the world, but with the self."[29] For instance, reflexivity may lead some defense professionals to begin with the self such as Grant Martin in this special issue.[30] For Martin, this meant questioning the underlying bureaucratic logic leading defence organizations to embrace new concepts in order to consolidate specific interests rather than improving military practice. Indeed, reflexive military practitioners care about military efficacy, but they move beyond it towards what some like Graicer, Clermont and Zweibelson call a radical humanism.[31] They seek to emancipate individuals from structures limiting or arming their potential.[32] By moving beyond efficacy, reflexive military practitioners conduct what some called triple-loop learning.[33] Triple-loop learning means bringing to awareness how deep ontological commitments such as principles, identities or values are part of an issue. They may find ways to address these issues by changing these deep commitments.

**An Extrinsic and Intrinsic Reflexive turn**

> "If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory

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Reflexivism: IRs "Reflexive Turn"—and Beyond," *European Journal of International Relations* 19, no.4 (2013): pp. 669-694.

[28] Bourdieu, *An Invitation to Reflexive Sociology,* 1992, p .69.

[29] Patrick Jackson, *The Conduct of Inquiry in International Relations: Philosophy of Science and Its Implications for the Study of World Politics* (New York: Routledge, 2011), p. 159.

[30] Grant Martin, "Of Garbage Cans and Paradox: Reflexively Reviewing Design, Mission Command, and the Gray Zone,"*Journal of Military and Strategic* Studies 17, no. 4 (2017).

[31] Clermont, "*Design: an Ethical and Moral Project Conscious Intention for the Cybernetician"*; Zweibelson, "Blending Postmodernism with Military Design Methodologies."

[32] Gibson Burrell and Gareth Morgan, *Sociological Paradigms and Organisational Analysis* (London: Heinemann, 1979), p.32.

[33]Paul Tosey et al., "The Origins and Conceptualizations of 'Triple-loop' Learning: A Critical Review," *Management Learning* 43, no. 3 (2011): pp. 291-307.

gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle."

Sun Tzu[34]

Defence professionals relied on both extrinsic and intrinsic sources of knowledge to feed this reflexive turn, one often contributing in informing, refining and consolidating the other.[35] Extrinsic knowledge refers to knowledge brought from external fields to the military, but with the minimal common denominator required for making sense to defence professionals. Extrinsic sources ranged from a wide and unrelated variety of disciplines already embracing reflexive approaches such as in Biology (e.g. Ludwig Bertalanffy), Architecture (e.g. Bernard Tschumi), Management (e.g. Karl Weick), Communication (e.g. Klaus Krippendorff), and Philosophy (e.g. Jean-Francois Lyotard) to name a few. These can be all found in the references of reflexive military practitioners contributing to this special issue. While some defence professionals found inspiration in TE Lawrence's *Seven Pillars of Wisdom*, John Boyd's OODA Loop or Soviet Operational Art in military literature, most took the reflexive turn intrinsically.[36] That is, they developed these approaches in the midst of military practices by continuous intuitive learning. This intrinsic reflexive turn resulted from attempting to overcome repeated obstacles or as a means of adaptation in long-lasting conflicts such as in Colombia according to BG (ret.) Fernando Puentes Torres and Col. (ret.) Alberto Mora Ruiz or in Israel according to Ofra Graicer, in this special issue.[37]

Crises undermining the legitimacy of the military institution and profession provoked the organizational indulgence required for this turn to happen, especially in cultures at odd with reflexivity such as in the United States or Israel. For US armed

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[34] Sun Tzu, *The Art of War* (New York: Oxford University Press. 1971).

[35] De Landa, "*Assemblage Theory.*"

[36] Mikhail Tukhachevsky and Aleksandr A. Svechin, the pioneers of Russian operational art, are among most inspiring authors for early military design thinking. See also Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (London: Taylor & Francis, 1997).

[37] Fernando Puentes Torres, "The Continuous Judicial and the Judiciary Wars in Colombia: Critical Dimensions of Insurgent Political Warfare," *Journal of Military and Strategic Studies* 17, no. 4 (2017); Jesús Alberto Ruiz Mora, "Learning through our mistakes: the legacy of Marxism in Colombian counter-insurgency strategy," *Journal of Military and Strategic Studies* 17, no. 4 (2017); Graicer, "Self Disruption."

forces in general, insurgencies in Iraq and Afghanistan in 2004 followed by the rise of the Islamic State in 2013 onwards provided the perfect storm for officers to take an intrinsic reflexive turn. They consolidated it with external sources, education and doctrine. For Israel, the transition from conventional to asymmetric conflicts during the the first Lebanon war (1982-1985) and the first intifada (1987-1993) fed an intrinsic reflexive turn consolidated, extrinsically, by the Operational Theory Research Institute (OTRI) between 1995 and 2005.[38] Nevertheless, it is impossible to precisely measure the degree to which this reflexive turn fed on extrinsic or intrinsic sources developed in the midst of complex contemporary conflicts. The former was, is, and will be most likely in symbiosis with the latter and vice-versa.

Early results in exercises, operations and strategy confirmed the promises of a reflexive turn. In the classroom, we observed together with Robert Lummack and Paul Mitchell in this special issue that several student officers questioned tactical oriented assumptions.[39] Reflexive approaches such as design and system thinking brought awareness to holistic understandings of issues. This deeper understanding could be observed from chief warrant officers up to generals as Lummack supports with evidences in this special issue. Reflexive methods also allowed student officers to tap into a creativity that most never thought having before. In military exercises such as Unified Quest or Robin Sage in the United States, teams using reflexive methods provided the most counter-intuitive ideas.[40] For instance, some recalled student officers developing a course of action without using force, infuriating higher ranked officials during Unified Quest in 2005. They provided the richest understanding and the most effective solution by manipulating the logic of enemy logistics.

In operations, early results came from Israel Defense Forces (IDF) in 2002 and 2005. Senior officers developed operational concepts challenging conventional understanding of time and space. During Operation Defensive Shield in 2002, they re-interpreted the battle space by reversing everyday habits. Opening doors, moving along roads and sidewalks were now forbidden. Instead, soldiers would pierce holes on

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[38] Graicer, "Self Disruption."

[39] Robert Lummack, "Don't forget about Boxer: Teaching Systems Thinking, Complexity and Design to NCMs," *Journal of Military and Strategic* Studies 17, no. 4 (2017); Paul Mitchell, "Stumbling into Design."

[40] Grant Martin, "Deniers of the "Truth:" Why an Agnostic Approach to Warfare is Key," *Military Review,* January-February, 2015.

apartments walls and move from block to block until they gained military control of an area.[41] Reflexive approaches also contributed to the Israeli disengagement of Gaza, praised by some as the most effective operation in Israeli history.[42] Israeli BG Gershon Hacohen relied on reflexive approaches to re-imagine the concept of space. Hacohen was in an ideal position to empathize with Jewish settlers by sharing the same conviction supporting Gaza and the West Bank into a single Israeli State.[43] From this position, he developed a narrative duplicating Gaza into two spaces, the physical one and the spiritual one. While this narrative portrayed divergence as normal over physically disengaging Gaza, it enabled preserving unity within and between IDF personnel and settlers in the spiritual space. As a reflexive military practitioner, Hacohen constantly compromised with Jewish settlers as the context of the disengagement unfolded. Taken together, these reflexive approaches contributed in completing the disengagement of Gaza without casualties.

At the strategic level, Colombian intelligence officers developed innovative strategic concepts and doctrines by integrating reflexive practices mirroring their Marxist rivals as shared by Ruiz Mora in this special issue.[44] The ontological shifts needed to replicate "all the forms of struggles" used in the prolonged popular war brought some officers to suggest new concepts deeply rooted in this rich social theory and a more flexible doctrine capable of dealing with complex political warfare as shared by Gen. (ret.) Ospina Ovalle and judiciary matters as shared by BG (ret.) Puentes Torres.[45] US Special Operations Forces Command (SOCOM) is also building on reflexive approaches at the strategic level since 2007. Two years earlier, SOCOM hired William "Joe" Miller as the Director of Strategy, Plans and Policy (J5-6).[46] It did not take long for Miller to realize that the J5-6 was not doing state-of-the-art strategy. Miller and his team

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[41] Eyal Weizman, *Hollow Land: Israel's Architecture of Occupation* (New York: Verso, 2007); Eyal Weizman, "Walking through Walls: Soldiers as Architects in the Israeli-Palestinian Conflict," *Radical Philosophy*, no. 136 (2006): pp. 8-22.

[42] Shimon Naveh, "Operational Art and the IDF: a Critical Study of a Command Culture," *Center for Strategic & Budgetary assessment*, (Washington D.C.: Director of Net assessment, Office of the Secretary of Defense, 2007).

[43] Gershon Hacohen and Assaf Hazani, "Designing the Space and Designing the Battle in the Disengagement," *Maarachot*, no. 432 (2010): pp.24-34 (Hebrew).

[44] Ruiz Mora, "Learning through our mistakes."

[45] Carlos Ospina Ovalle, "Notes from the Colombian battlefield," *Journal of Military and Strategic Studies* 17, no. 4 (2017); Puentes Torres, "The Continuous Judicial."

[46] Beaulieu-B.'s personal interview with William 'Joe' Miller in Tampa, Florida on March 14th, 2016.

changed course by adapting design thinking at the strategic level. They developed "strategic appreciation" giga maps for reaching the richest holistic picture of global contemporary conflicts possible. In so doing, they were in an ideal position to judge to what extent future strategic directions may or may not contribute to the very issues SOCOM sought to tackle. Miller's initiative inspired US Cyber Command and US Strategic Command to develop a design thinking informed strategy as well. Steve Pettit and David Toczek share more on Strategic Command in this special issue.[47] These are a few examples among many revealing the promises of reflexive approaches in the military profession. These promises are laying the ground for the institutionalization of reflexive approaches in senior officer curriculum (equivalent of graduate courses) and in doctrinal development in the US, but also increasingly around the world.

Sun Tzu's quote at the beginning of this section reveals that reflexive military practitioners are not a phenomenon unique to the 21st century. Rather, they may potentially emerge from the shadows when the right historical conditions are met. Or, researchers subjecting military classics to close readings may find reflexive traces as developed by Philippe Dufort's recovery of Clausewitz's reflexive legacy in this special issue.[48] Elsewhere, Zweibelson observed a converging path across several disciplines from mathematics to philosophy toward design thinking specific to the 20th century.[49] We would offer that attempts aiming for the institutionalization of reflexive military approaches are, perhaps, what distinguishes this on-going turn. Large-scale institutionalization via mass education and doctrine provides the legitimacy and resources to sustain and further develop this turn. Yet, this very large-scale institutionalization bore some constraints often undermining the very features of reflexivity as many contributors to this special issue testify. In addition, in cases where institutional constraints would preserve a fertile ground for reflexivity, limits would inevitably arise. After all, institutionalization could only set into motion an extrinsic reflexive turn that would lack substance if not combined with an intrinsic turn in the

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[47] Steve Pettit and David Toczek, "Like Hugging Grandma: Introducing Design into a Military Organization,"*Journal of Military and Strategic Studies* 17, no. 4 (2017).

[48] Philippe Dufort, "Carl von Clausewitz and the Invention of the Conservative Nation-State: Retrieving Instrumental Reflexivity in the Strategic Tradition," *Journal of Military and Strategic Studies* 17, no. 4 (2017).

[49] Ben Zweibelson, "The Military Design Movement: Drifting Towards Embracing Uncertainty and Transformation in Complex Environments," *Over the Horizon*, January 20, 2017. https://overthehorizonmdos.com/2017/01/20/the-military-design-movement-drifting-towards-embracing-uncertainty-and-transformation-in-complex-environments/ (Consulted on March 10th, 2017)

long run. This institutionalization would nonetheless serve other specific interests than military excellence as Martin shows in this special issue.[50]

**Four Task Forces, 15 Practitioners, One Reflexive Military Movement**

For this special issue, we invited 15 reflexive military practitioners to reflect on four issues shared by supporters of this reflexive turn. These issues revolve around efficacy, education, institutional politics and intuitive reflexive practices. These issues arose from creative tensions observed in the group gathered in Toronto in October 2016. Echoing the very same reflexive turn, we sought to exploit these tensions in order to provoke further learning.

The first section of this special issue is on criteria of validity for products resulting form military design thinking and other reflexive approaches. How can military practitioners judge whether they are going in a good direction while relying on non-rationalist approaches? As we presented above, products resulting from reflexive military approaches cannot be consistent if validated with check listed quantitative measures such as enemy casualties or seized territory mirroring progress in a timeless independent reality. Yet, refusing criteria of validity grounded on an independent reality often lay the ground for confusion when defence professionals rely on these approaches in the classroom, in exercises or prior to operational planning. Most simply do not know whether they are going in a good direction or not. Others portray the reflexive turn as relativistic or as "anything goes" either to dismiss it or to justify any products out of it. In other words, can there be a design thinking or reflexive efficacy? Our hunch pointed toward a middle ground between measurable criteria of validity and relativism to judge the products of reflexive military approaches.

A first task force composed of Ofra Graicer, Alex Ryan and Francis Clermont develop further this middle ground by suggesting concrete ways to judge the outputs and outcomes resulting from reflexive military approaches. They weave professional experiences with extrinsic materials from several disciplines to generate insights. Graicer opens this special issue by leveraging nearly two decades of experience

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[50] Martin, "Of Garbage Cans and Paradox."

exploring reflexive military approaches with IDF senior officers.[51] Graicer's article is not only a unique testimony of the legacy of SOD in the IDF from 1995 to this day, but also a primer developing two concepts in military design thinking. The former is self-disruption and the latter, degrees of freedom. For Graicer, reflexive military approaches can be validated if they result in never letting assumptions sediment in the consciousness of senior officers. They must always critique their own assumptions without the input of an external agent. Senior officers reach what Graicer calls a new degree of freedom if they further open the realm of possibilities. Senior officers achieve this new degree if they can think about something that was unthinkable before. In other words, intellectual emancipation is efficacy, and efficacy is validity.

Graicer's concepts provided inspiration to several participants during and after the workshop. Alex Ryan provides a written testimony of this by offering a new reading of his design thinking experiences in public policy by building on Graicer's concepts.[52] Ryan engages Graicer's concepts by showing connections in scientific literature and by initiating a discussion on ethics. Ryan's article will be better read as the civilian twin of his blog post reflecting on his experiences in introducing design thinking in the US Army.[53] Francis Clermont closes this task force by moving from degrees of freedom to integrating design ethics as part of the validation process.[54] Therefore, efficacy must be measured based on the rightness of intents and outcomes from a shared perspective including communities affected. This first task force revives the question of design ethics pioneered by Timothy Challans and Christopher Paparone elsewhere.[55] These neglected aspects promise to become highly relevant as armed forces are more and more teaching and implementing design thinking around the world. This first task force

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[51] Graicer, "Self Disruption."

[52] Alex Ryan, "Design in Civvies: The Promise of Creating Degrees of Freedom in Government," *Journal of Military and Strategic Studies* 17, no. 4 (2017).

[53] Alex Ryan, "A Personal Reflection on Introducing Design to the U.S. Army," *Medium: The Overlap, 2016* https://medium.com/the-overlap/a-personal-reflection-on-introducing-design-to-the-u-s-army-3f8bd76adcb2#.xhax76luo (Consulted on March 2nd, 2016).

[54] Clermont, "Design: an Ethical and Moral Project."

[55] Timothy Challans, *Awakening Warrior : Revolution in the Ethics of Warfare (*Albany: State University of New York, 2007); Timothy Challans, "Tipping Sacred Cows: Moral Potential Through Operational Art," *Military Review* Sept-October (2009), pp. 19-28; Christopher Paparone, "Design and the Prospect of a Design Ethic," *Small Wars Journal* [Online]. 2011 http://smallwarsjournal.com/jrnl/art/design-and-the-prospects-of-a-design-ethic (Consulted on March 10th, 2017)

provides stepping-stones that may become corner stones to validate the outputs of reflexive military approaches.

The second task force brings these concerns to education. As with efficacy, there is no measurable or definitive criteria for educating reflexive military practitioners. Several defence professionals tasked with teaching design thinking or other reflexive approaches often ran into dead ends in the midst of course development as a result. We took this confusion as an opportunity to summon Dr. Paul Mitchell, Robert Lummack and Col. (ret.) Christopher Paparone to engage issues over the content and target audiences of a reflexive military education. Our hunch, building on tensions within the group, is that the education of reflexive military practitioners must be consistent with reflexive approaches. Course development must, therefore, always leave space for exploration in the form of trial and error and adaptation from one iteration to the next following feedback.

Mentoring is better than lecturing, divergence via several syndicates is better than convergence, and self-learning is better than following a rigid program, as readers will find in this task force. Mitchell excelled in developing this iterative approach in introducing design thinking into senior officers' curriculum at the Canadian Forces College as he shares in this special issue.[56] Lummack follows-on by sharing his learning journey in adapting design and system thinking exercises for chief warrant officers from one experience to the next.[57] Paparone closes by what he judges to be an ideal agenda for educating reflexive military practitioners based on critical military epistemology.[58] Although all contributors agree that this education must always be dynamic rather than definitive, they do not agree over the target audience. For instance, Lummack stresses that this education is of high value for the military profession from the lowest to the highest ranks in the 21st century while Graicer believes it is pertinent for generals. These three compelling testimonies will, we are sure, provide inspiration for defence professionals with the mandate of teaching design thinking and other reflexive approaches such as the sociology of knowledge.

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[56] Mitchell, "Stumbling into Design."

[57] Lummack, "Don't forget about Boxer."

[58] Paparone, "Critical Military Epistemology."

Both validating the products of reflexive military approaches in headquarters and developing a reflexive military education are not taking place in an ivory tower. Both become irrelevant if defence organizations do not find interests in this reflexive turn in the first place. We summoned a third task force — composed of Ben Zweibelson, Steve Pettit & David Toczek, Aaron Jackson and LTC Grant Martin — to reveal the underlying organizational politics and diffusion strategies involved in sustaining a reflexive military turn at odds with military rationalism. While favorable conditions in the forms of either a facilitating culture or a crisis may catalyse a reflexive turn, this turn does not seem sustainable, and perhaps even possible, without indirect or direct support from change agents below and sponsorship from leadership. As the military profession values the chain of command, this generated a first tension in this task force over the informal rules of engagement in advancing reflexive approaches.

Several defence professionals often portray the design thinking movement as an "insurgency" sustained by "subversion". As these terms are generally used figuratively, Ben Zweibelson does not shy away from using them to describe how he attempted to promote reflexive approaches from design thinking to postmodern social theory in US armed forces.[59] For Zweibelson, the promises of the reflexive turn are too important to wait for organizational change as armed forces are becoming more and more irrelevant. Pettit and Toczek also highlight the need for design thinking, but they prefer leveraging opportunities openly to employ that thinking.[60] They also build on their experiences to explain why they do not consider insurgency or subversion as helpful terms to frame change attempts. Aaron Jackson brings practical experience to this debate as the lead author of the latest edition of the Australian Defence Force's joint planning process doctrine, which includes some aspects of design thinking.[61] For Jackson, back and forth negotiations and compromises enabled to include a partial reflexive turn while making it acceptable to the organization. Last but not least, Grant Martin provoked a second and last tension over the conditions of possibility of new military concepts.[62] For Martin, the proliferation of concepts in defence organizations, whether rationalist or reflexive, is the by-product of bureaucratic struggles over material resources.

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[59] Zweibelson, "Blending Postmodernism with Military Design Methodologies."
[60] Pettit and Toczek, "Like Hugging Grandma."
[61] Jackson, "A Tale of Two Designs."
[62] Martin, "Of Garbage Cans and Paradox."

Neither is the military reflexive turn restricted to design thinking nor to leading economies. A fourth task force composed of four Colombian senior officers provides evidence of this by sharing *notes from the field*. These notes are summaries of their perspectives on the evolution of the war over its last years. Col. (ret.) Jesus Alberto Ruiz Mora shares the learning journey of Colombian Armed Forces towards understanding the nature of the Colombian political war as a counter-insurgency mirroring insurgent approaches. Ruiz Mora argues that the divide between civil and military sectors proved counter-productive in contrast to an idiosyncratic Colombian whole of government approach. [63] BG (ret.) Fernando Puentes Torres follows by illustrating the peculiarities of their political war in one sector by showing how the war moved from the battlefield to courts and legislative chambers, leading to a transformation in the conventional understanding of war. [64] Gen. Ospina Ovalle reveals how Clausewitz's concept of center of gravity proved instrumental in reframing the war from tactical gains towards consolidating state legitimacy in order to face the challenges of political warfare. [65] Col. Rojas Guevara shares the learning journey behind developing the recent Damasco doctrine in collaboration with NATO, an exercise stressing the challenge of institutionalizing endogenous reflexive lessons in the face of pressures for homogenizing Western military doctrines. [66] Letting practitioners of complex conflicts talk in their own terms enables to highlight how they adapted intellectually to the challenges they faced and how they generated innovative concepts, practices and doctrines. War generates specific forms of knowledge that must be considered seriously. We are also interested in the use and effects of adapted concepts, mostly from the US, which may hinder local reflexive military traditions developed in the midst of half a century of war. The reader may find some insights on this process in the primary sources offered.

In conclusion, we seize this opportunity to sketch a tentative research program aimed at understanding reflexive military practitioners. This research program hopes to reveal the conditions of possibility, the potential and consequences of this reflexive turn in order to inform better practices in all professions including academia. We suggest

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[63] Ruiz Mora, "Learning through our mistakes."
[64] Puentes Torres, "The Continuous Judicial."
[65] Ospina Ovalle, "Notes from the Colombian battlefield."
[66] Pedro Javier Rojas Guevara, "Damascus: The Renewed Doctrine of the National Army of Colombia," *Journal of Military and Strategic Studies* 17, no. 4 (2017).

three axes covering reflexive military knowledge as translation, narrative, and power relations. The first direction is the sociology of military knowledge.[67] This direction seeks to bring to awareness how military practitioners produce and use reflexive forms of knowledge, and what this knowledge leads them to think and do in return. The second direction seeks to bring to awareness narratives of and involved in reflexive military practices, that is, the stories and plots used to give meaning to selves and others. The third direction seeks to recover the suppressed legacy of reflexive military practitioners in history. These are the three main (among several) possible directions in which both this special issue and web platform hope to contribute as stepping-stones for further research.

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[67] See also Paparone, "Critical Military Epistemology."