Wargaming and The Cycle of Research and Learning

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ABSTRACT

Some thirty years ago, I coined the concept of the *Cycle of Research*, which described how wargaming, exercises and analysis, coupled with real-world operations and history, have worked together in concert to help the national-security community to understand better political-military reality and its past and future evolutions. When first proposed, I had in mind the uses of Wargaming in the analytical context, or what the community of professional wargamers most often calls research wargaming. Over the years, however, I began to recognize how much the same integration of tools and techniques can—and should—influence education and training for national-security professionals, both uniform and civilian: In essence, a Cycle of Learning. In this paper I explore these ideas more fully. I hope these musings can be of some help and inspiration for future researchers to probe deeper into the application of all our tools in the critically important task of educating future leaders. That task can be made more successful by using wargaming to help structure a framework for PME that integrates the inspiration, instruction, and application of the key knowledge and habits of mind—the mental muscle memory—required to operate effectively in the real world and to demonstrate those characteristics in the game, whatever form that may take.

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INTRODUCTION: WARGAMING AND THE CYCLE OF RESEARCH AND LEARNING

Some 30 years ago, I coined the concept of the Cycle of Research, which described how wargaming, exercises, and analysis, coupled with real-world operations and history, have worked together in concert to help the national security community understand the present political-military reality and its past and future evolutions. When first proposed, I had in mind the uses of wargaming in the analytical context – what the community of professional wargamers most often calls "research wargaming." Over the years, however, I began to recognize how much the same integration of tools and techniques can – and should – influence education and training for national security professionals, both uniformed and civilian: in essence, a Cycle of Learning to go with the Cycle of Research. Today, wargaming and the Cycle of Research and the Cycle of Learning are no less important than they were 30 years ago. In fact, with the rapid development of new technologies and a series of new (and in some cases quasi-new) geopolitical conflicts and frictions, using wargames to analyze and "game" military scenarios and to educate and train national security professionals is more important than ever. Doing so requires not only that militaries turn to wargames as part of their training regimens, but also that we keep attending to the questions that have arguably always accompanied wargames: What can wargames do? What can't they do? What are the optimal ways to construct and play a wargame?

This special issue of the *Scandinavian Journal of Military Studies* is dedicated to questions such as these and, moreover, is part of a general resurgence in the interest in wargaming as an educational and operational tool – a resurgence that, I suspect, will only become more pronounced in the coming years for reasons that, hopefully, will become clear to the reader.

Referring to my more than 30 years of experience with wargames, the guest editor of the issue, Associate Professor Carsten Rønnfeldt of the Norwegian Defence University College, asked me to write this introduction. He also gave me free rein over how I might do it. Perhaps he regrets that choice now: instead of introducing each of the special issue's articles, as is perhaps the conventional way of writing an introduction, I decided to use my allotted word count to explore both the *broader* history of wargaming and *my* history with wargaming, hoping that the combination of the two will provide both a general introduction to the topic of wargaming and a useful background to the featured articles. I hope these musings can be of some help and inspiration for future researchers to probe deeper into the application of all our tools in the critically important task of educating future leaders.

THE CYCLE OF RESEARCH

Since at least 1824 when Lieutenant von Reisswitz presented his *Kriegsspiel* to General von Müffling, chief-of-staff to the Prussian army, wargaming has been an important tool for militaries around the world. It has been used for purposes of education and training and for exploring ideas, developing concepts, and evaluating alternative courses of action (COAs). Other than actual military operations, militaries the world over also use field and at-sea exercises, operations or systems analysis, historical study, and modeling and simulation, to explore and assess the strengths and limitations of strategies, concepts of operations, and tactical and technical capabilities. Too often the specialists in the different tools seem to view their functions as overlapping, independent or even competing – particularly in the case of wargaming compared to modeling and simulation (M&S) – for attention, influence, and especially funding. Too often, professional pride and jealousy occasion a failure to appreciate the subtle but important differences among the tools, and their complementary nature, getting in the way of their productive use.

> We cannot continue to make wise decisions in face of the increasingly complex world we must navigate if we rely on only one of our tools – or even on all of them but in isolated "cylinders of excellence." Instead, we need to apply all our tools – operations research, systems analysis, and wargaming – to address those aspects of our problems for which they are best suited. Then we need to integrate and interpret their results to paint a more complete picture of both the problems and their potential solutions. (Perla, 2016)
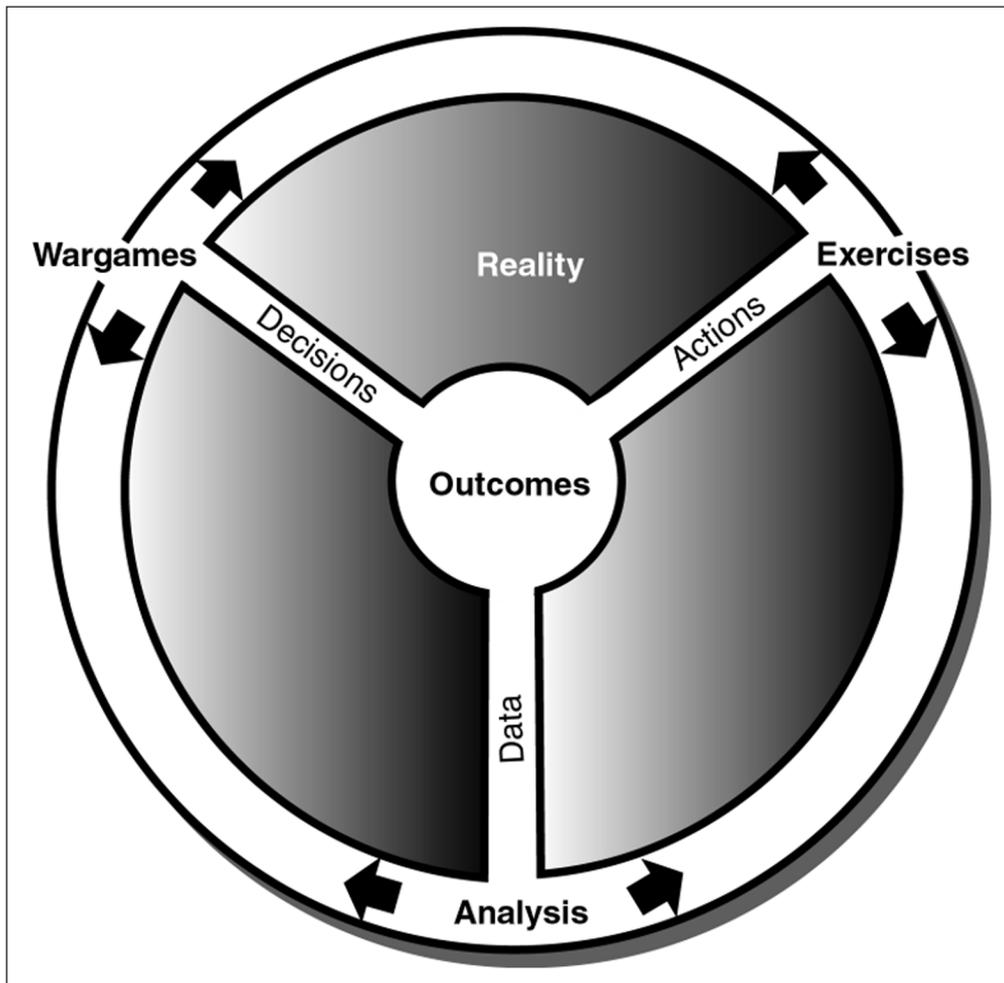
Today's international community must gain a better and more balanced understanding of the potential problems and opportunities of future conflict and conflict resolution. We can do this most coherently by integrating the information we can extract from the proper application of all our tools. In order to perform such integration, it is important to understand how wargames differ from other forms of analysis such as M&S and operations research/systems analysis (ORSA), and to explore the inter-relationships and the complementary nature of the processes. I discuss this in greater detail in my essay *Riding the Cycle of Research* (Perla, 2016). I'll hit on several of the main points below.

WARGAMES AND ANALYSIS

Over the years, I have tried to refine my definition of a wargame. With the help of colleagues in the community, I have come to my current definition:

> A wargame is a model involving people making decisions in a synthetic environment of competition or conflict, in which they see the effects of their decisions on that environment and then get to react to those changes.

The keywords in this definition are "people" and "decisions." A wargame is an experiment in human interaction. Without human players, there may be a model, but there is no game. A true wargame is best used to investigate the decision processes of its players, what they believe that leads to those decisions, and how those processes interact; it is not well suited to the calculation of outcomes of physical events – such calculations, when they occur, are inputs to the game, not outputs.

In addition, I like to define "wargaming" as:

> An applied discipline encompassing the creation, use, synthesis and analysis of wargames to conduct research, explore concepts, develop and test hypotheses, and dynamically communicate insights to inform, educate, and train individuals and organizations.

Analysis in my context is essentially operations research (OR). As defined by two of its founding fathers in the United States, Phil Morse and George Kimball, OR is "a scientific method of providing [decision makers] with a quantitative basis for decisions" (Morse & Kimball, 1946).

Here, the key words are "scientific" and "quantitative." Because the field of analysis has grown so large and diverse (including under its aegis systems analysis, operations analysis, and even at times engineering and policy assessment), many other definitions have been proposed. In a textbook written for use at the U.S. Naval Academy, Daniel Wagner and his co-authors proposed this "more thorough modern definition":

> Operations analysis is the application of scientific knowledge toward the solution of problems which occur in operational activities (in their real environment). Its special technique is to invent a strategy of control by measuring, comparing, and predicting possible behavior through a scientific model of a situation or activity. (Wagner, Mylander & Sanders, 1999)

Two broadly distinguishable approaches came into existence to advise different kinds of decision makers who must address decisions that require them to think about an unknown – and sometimes unknowable – future. Those decision makers may be "operators," in the process of carrying out real actions against real enemies (or preparing for that real possibility); or they may be government bureaucrats concerned more about how to allocate funds in the next budget – whether to buy systems and forces for future operations or to balance support for current operations with investments in future technology.

Operations research typically relies on real data from actual operations to identify alternatives and recommend changes in tactics (and perhaps in technology) that should help to improve the performance of those operations. Systems analysis, on the other hand, was created during the McNamara era in the U.S. Department of Defense to serve as a lingua franca using precise terminology of costs and benefits (and later supplemented by mathematical models) to build a shared paradigm for mustering and evaluating evidence, and to facilitate the formation of a consensus on issues not subject to the harsh tests and dictates of real-world performance data.

Wargaming is not analysis in the same sense as operations research (OR) and systems analysis (SA). Unlike OR and SA it is not so much about the reductionist disassembling of problems into their component and quantitative parts. Instead, it is about the holistic integration of problems and the human beings who have to confront and act to overcome them. Wargames are not, themselves, predictive, but they can be used to help *wargamers* predict – not to tell the future with certainty, or even measurable probability, but rather by showing us the range of possibilities. In a presentation given at the Connections Conference in Baltimore several years ago, Professor Robert "Barney" Rubel of the Naval War College described this idea in terms of wargaming as being "indicative" – of the potentials inherent in situations and of the hidden relationships that a game, especially a series of related games – can help us discern.

Here is where most of the classic forms of modeling and simulation fall down. They cannot forecast outcomes that are not already embedded in the underlying mathematical constructs of the model or simulation. At best, such techniques pick apart and illuminate outcomes that are consequences of what we already know well enough to embed in the models. They do not, in fact, generate new knowledge, even though they can reveal the sometimes complicated, overlooked, and surprising consequences of old knowledge.

Wargaming is a far better tool for going beyond old knowledge and exploring unforeseen consequences. This power of gaming to illuminate dark corners of future possibilities makes it especially important in light of the concept of the *Black Swan*. Popularized by Nassim Nicholas Taleb in his book of 2007 named for the phenomenon, a Black Swan is an event with three defining characteristics: It is unpredictable; it has massive impact on the course of events; after the fact, we can convince ourselves that we could have foreseen it if only we had been more astute. Black Swans became connected to the infamous concept of "unknown unknowns" described by the former U.S. Secretary of Defense Donald Rumsfeld (and, by the way, expressed first in my own work in 1990!). Wargames can be an effective tool for exploring Black Swans and other such off-axis paths toward the future because what is possible in a wargame when

played most productively goes beyond what is possible in a closed model. In a wargame, one or more working human brains are engaged in conflict with others, and those brains generate a wealth of ideas that go beyond those created by modelers working in more static environments.

Wargames frequently help us identify where and how we can make improvements to what we plan or do, and one of the most important of those improvements lies in learning how to adapt to change. We can see this highlighted in the use of wargaming by the United States Naval War College during the interwar period of the 1920s and 1930s. An important – if not perhaps the most important – outcome of that long series of games was that the students and future leaders of the wartime Navy learned adaptive techniques.

In a famous letter to the President of the Naval War College after the war, Admiral Chester Nimitz stated: "The enemy of our games was always – Japan – and the courses were so thorough that after the start of WWII – nothing that happened in the Pacific was strange or unexpected." (Nimitz, 1965). During an earlier address given to the NWC student body on 10 Oct 1960, Nimitz highlighted the central role the NWC wargames had played in that preparation (Nimitz, 1960):

> The war with Japan had been reenacted in the game rooms here by so many people and in so many different ways that nothing that happened during the war was a surprise – absolutely nothing except the Kamikaze tactics towards the end of the war; we had not visualized those.

What was really important about those NWC wargames was not that they gamed out all the various actions that the Japanese would ultimately take during the war. What was really important was the planning – particularly the logistics planning – which the students had been required to do as part of their course work to prepare for the games (Nimitz, 1965). In addition, those officers who would ultimately lead the U.S. Navy during that conflict had had to adapt to changes in how the Japanese systems modeled in the games worked, in the tactics the different players used, and in the relative effectiveness of weapons as represented by changing model inputs. But by changing assumptions from game to game and year to year, the students had been forced to learn how to discover crucial facts and adapt to them, not only to specific events, but also in general terms.

Another of Professor Rubel's examples from the interwar period was the development of the U.S. Navy's carrier doctrine and capability. The wargames at Newport showed Admiral Reeves, War College president at the time, the importance of putting large numbers of aircraft over the enemy fleet in short periods of time. But the operational doctrine used by the Navy's experimental carrier, USS *Langley*, limited her to operating only about a dozen aircraft at a time. Reeves passed the game's insights to Admiral Moffet, chief of Naval Aviation, and Moffet arranged for Reeves to take command of Langley. Very quickly, Reeves and his team developed the combination of arresting gear and crash barrier, which allowed *Langley* to operate more than 50 aircraft at a time. Thus, one of the crucial steps toward developing the carrier techniques that helped win the war in the Pacific can trace its lineage to Naval War College gaming. By communicating the results of those games effectively to the key decision makers, the games and Reeves's experiments helped Moffet shape the future.

The history of wargaming is full of examples like those above. Wargames create the opportunity for analysts, operators, and decision makers to have synthetic experience of rare events so that they may become more open to considering them in their thinking, operating, and planning. But just as reality limits our view of possibilities by our limited real experiences, a single wargame can also produce a "cognitive lock" on the specific events of that game. Participants may become just as vulnerable to overestimating the likelihood of the occurrence of game (or game-like) events in the real world, because of the immediacy of the gaming experience.

This danger argues for a broader and more formal application of wargaming to decision making, one that operates in full partnership with modeling and simulation as part of the analyst's and educator's toolkit. It is only by incorporating wargaming as an equal partner with operations research and systems analysis, exercise experience, and historical study that we can exploit to the fullest the capabilities of all of those resources in our quest to learn, adapt, and avoid the pitfalls of a complex and uncertain future.

Real wargaming is about neither the unverifiable quantification of computer models of future warfare nor the insubstantial pontification of subject-matter experts prognosticating about an unpredictable future. Real wargaming is about the conflict of human wills confronting each other in a dynamic decision-making environment. There is a place for technology in supporting that clash of wills, but electrons are not always the most useful technology to apply. We wargamers have understood this from the earliest days of chess and Go, of the von Reisswitz *Kriegsspiel,* and the Naval War College's interwar gaming program.

The instrumentality is not the game.

The game takes place in the minds of the players. Human players, intensely seeking ways to out-think and outplay the guys across the table or in the other room. It is that human dynamic – and the competition, conversation, and contemplation it creates – which is our most powerful and promising source of education, inspiration and innovation. These sorts of games – what I call learning games – are all about change. Changing knowledge, changing thinking, changing intuition. Changing players, designers, analysts, and sponsors.

LEARNING GAMES CHANGE PEOPLE

The essence of games is found in their basic nature. They are about people making decisions in the context of competition or conflict, usually with other people. All the while plagued by uncertainty and complexity. Just like real life.

Like real life, wargames can help us learn important things about uncertainty.

- They can help us learn what we really know, not simply what we may think we know.
- They can help us learn what we don't know, when we are surprised or we discover we require knowledge to act in a situation confronting us.
- They can help us learn what we don't know that we know, especially when that "we" refers to a group of diverse individuals with different knowledge bases and experiences, as in a military unit.
- They can help us learn what we don't know we don't know, when confronted with a problem or situation we had never thought about before.

Over the years after I first proposed these four "whats," my thinking led me back to an even older point, one that I have heard attributed to Abraham Lincoln in the dark days of the Civil War. "It ain't what you don't know that will get you; it's what you know that ain't so." Wargames, as life, will highlight these delusions when your opponent takes advantage of your mistaken beliefs. As Nobel laureate Thomas Schelling famously quipped, there is one thing that you cannot do, no matter how educated and smart you are, and that's to make a list of every idea that never occurred to you. Or even one such idea.

As a simple – and in some ways silly – personal example, I have been a player of tactical wargames virtually all my adult life. I never felt that I was a very good player; when playing a live opponent, I frequently found myself at a loss for what to do. Then during a CNA project several years ago, I was leading a team to help a USMC colonel adapt wargaming to teaching young Marine Corps intelligence officers to experience that what they had learned of the process for intelligence preparation of the battle space (IPB) could be useful to a tactical commander. The learning experts on my team adapted the real-life process to the situation embodied in a tactical computer game. When I saw this, I suddenly realized that my failure as a tactical gamer stemmed from my laziness in doing that sort of IPB for the games I played. I had never considered that this intelligence process would actually help me play better.

One of my favorite professional books is *The Logic of Failure*, written by the German psychologist Dietrich Dörner (1997). I could build an entire presentation about this wonderful, insightful book alone. But let me focus on only a couple of his main points. At heart, Dörner argues convincingly that human reason, largely adapted to the relatively simple – if dangerous – world of our earliest ancestors, needs help dealing with the enormous complexity and uncertainties of our 21st century environment. Humans don't handle such complex and uncertain situations well, especially when under time pressures and when things are changing dynamically. Games create opportunities for learners to think and reflect about such situations – with guidance from other players, observers, and analysts. In Dörner's view, games help teach learners how to adapt "common sense" to complex situations. How to see shapes in time, to react appropriately

in dynamic environments. The more opportunity you have to learn just how you normally think in such an environment, and how you need to evolve the ways you think to deal with it, the better and faster your decision making can become.

WARGAMES AND PROFESSIONAL MILITARY EDUCATION

Military environments, especially combat environments, qualify in all of Dörner's criteria for stressing human decision-making to the utmost. Complex, uncertain, constantly changing. For these reasons, wargaming is critical to helping military professionals learn their profession, and has been doing so for centuries. Indeed, we are only three years away from the 200th anniversary of one of the seminal moments in professional wargaming, the von Reisswitz *Kriegsspiel* of 1824.

The idea of using wargames as part of professional military education may have begun with chess, which seems to have originated in India in the 6th century. Even earlier was the Chinese game of Go, which was probably played as part of strategic education by nobles and generals as far back as 4000 years ago. Today's modern wargaming applications in professional military education, or PME, may best be described as originating with the Prussian Army's use of the von Reisswitz *Kriegsspiel* starting in 1824. For a translation of von Reisswitz's original rules, see Leeson (1983).

The Reisswitz *Kriegsspiel*

I like to describe the trigger event in terms derived from a report by one of the very participants in the event, a man responsible in many ways for a rebirth of interest in the Kriegsspiel in the 1980s. Imagine the scene. The Chief of Staff on the Prussian Army, Generalfeldmarschall Friedrich Karl Ferdinand Freiherr von Müffling, was "invited" by the King to "take the briefing" by a young artillery lieutenant, Georg Heinrich Rudolf Johann von Reisswitz, son of a prominent war Councilor. More importantly, for our story, he was friendly with the crown princes Wilhelm and Frederick Wilhelm, both of whom would later become king. Royal patronage being what it was, the General – probably reluctantly – arrived in the briefing room and was perhaps surprised to see tables laid with topographical maps – a relatively new technology – and with several metal blocks, dividers, and other paraphernalia.

As described by General Dannhuer, Reisswitz's friend and accomplice in the briefing, the scene unfolded as follows.

> On our arrival we found the General surrounded by the General Staff officers.

> "Gentlemen," the General announced, "Herr von Reisswitz is going to show us something new."

> Reisswitz was not abashed by the somewhat lukewarm introduction. He calmly set out his Kriegsspiel map.

> With some surprise the General said, "You mean we are to play for an hour on a map! Very well. Show us a division with the troops."

> "May I ask Your Excellency," replied Reisswitz, "to provide us with general and special ideas for a manoeuvre, and choose two officers to be the commanders for both sides. Also it is important that we only give each commander in the special idea the information he would have in reality."

> The General seemed rather astonished at the whole thing, but began to write out the necessary idea.

> We were allocated as troop leaders to both sides, and the game began. One can honestly say that the old gentleman, so cool towards the idea at the beginning, became more and more interested as the game went on, until at the end he exclaimed, "This is not a game! This is training for war! I must recommend it to the whole army." (Dannhauer, 1874)

The General was true to his word (Müffling, 1824). It is worth quoting here from the circular Müffling sent to army following his introduction to Reisssitz's *Kriegsspiel*:

There have already been a number of previous attempts to represent warfare in such a way as to provide both instruction and entertainment. These attempts have been given the name "Kriegsspiel." They have usually presented many kinds of difficulties in the execution, and they have always left a large gap between the serious business of warfare and the more frivolous demands of a game.

It is noticeable that up till now it has only been non-military personnel who have occupied themselves with the wargame invention, and the resulting incomplete ideas of warfare, and its incomplete imitations have never seriously been able to claim the attention of trained officers.

At last, after years of trial, insight, and perseverance, an officer has pursued the topic begun by his father, the Reigerungsrat von Reisswitz, and has so much extended it that warfare can actually be represented in a simple and lively way.

Anyone who understands those things which bear on leadership in battle is able to take part immediately in the game as a commander of a large or small unit, even if he has had no previous knowledge of the game or has never seen it before.

The execution of good plans on realistic terrain, and the ability which the game offers of presenting a multiplicity of situations, makes it continually instructive.

I will gladly, by all means in my power, assist in seeing the number of available copies augmented.

If the 1st Lieutenant von Reisswitz has already found reward for his efforts through the approval of princes of the Royal Household, the Army War Ministry and high ranking officers who have come to know of his efforts, the further distribution and knowledge of the game will earn him the thanks of the whole army.

Here indeed are the key perceptions that still today underlie the necessary characteristics of wargames for professional military education:

- The game must be "simple and lively."
- The game must enable a professional to take part immediately, even if they have "no previous knowledge of the game or has never seen it before."
- The game must illustrate "good plans on realistic terrain."
- The game must present "a multiplicity of situations."
- If such a game, or game system, is made available to help instruct professional soldiers, it will "earn the thanks of the whole army."

These perceptions and characteristics came to be recognized and implemented repeatedly – with more or less success – over the ensuing decades and centuries. Particularly for me with my background in naval analyses, I was deeply impressed by the use of wargaming by the United States Naval War College (USNWC) between WWI and WWII, as described earlier. But it is even more helpful to return to the origins of the NWC's use of gaming, as initiated and practiced by William McCarty Little, Captain, USN.

McCarty Little and the U.S. Naval War College

The Naval War College began to use wargaming as part of its teaching curriculum in the early 1900s under the inspiration and direction of Lieutenant, later Captain, William McCarty Little, USN. I have already written and spoken much about McCarty Little; here I would like to elaborate on his work and its relevance for PME – and allow him to speak largely for himself.

McCarty Little's perception of the similarities and differences of war and games deeply influenced his work at Newport. A critical element in the play of the War College games – and one that distinguished them from other contemporary map maneuvers and tactical rides as used by the United States Army and others – was what Little himself described as "the existence of the enemy, a live, vigorous enemy in the next room waiting feverishly to take advantage of any of our mistakes, ever ready to puncture any visionary scheme, to haul us down to earth." (McCarty Little, 1912).

Little recognized that this opportunity to pit one intellect and will against another was an essential element in the education of a naval officer. Indeed, some of the War College's staff came to see the wargames as even more valuable than fleet maneuvers (Spector, 1977).

McCarty Little worked hard helping the Naval War College manage the period of transition in naval affairs during the early 1900s. He was instrumental in persuading the navy to adopt the "military planning process," then known as the "applicatory system." This system

> was a method of teaching based on the idea that military principles were learned best by application. It consisted of three parts: the estimate of the situation, the writing of orders, and the evaluation through gaming or maneuver board exercises. Its purpose was to permit officers in command situations to exercise intelligent options for the resolution of problems rather than to be slavishly bound to a method conceived at a higher level. (Nicolosi, 1984)

McCarty Little argued that "it is the war game [sic] that had led to the adoption of the system," and that it was "the game [that] sought the method and not the method that sought the game." (McCarty Little, 1912).

McCarty Little saw the indispensable value for officers in developing what he called mental muscle memory. He argued that the object of wargaming "is to afford a practice field for the acquirement of skill and experience in the conduct or direction of war, and an experimental and trial ground for the testing of strategic and tactical plans." In his important 1912 article he wrote the key tenets of his ideas:

> If we want to spur up action, and the real necessity is not available, we must create an artificial one. … [W]hat the jousting field was to the knight [practice], the war game is to the modern strategist. Now, we must not overlook the fact that the game is a convention just as is the chart or printed page, or indeed language itself; and if we wish to use either, we must learn to think in it. The war game is a cinematographic diagram; and it is as important to us to be able to read it, as to read a chart or a book.

> The principle of the concentration of the fleet, now generally accepted in our navy, was the direct result of a strategic game here at the College in the summer of 1903. But this view, which required but the time of one game thoroughly to capture the entire conference, took many a weary month before by mere argument it could convince all of those of our naval authorities who had not the privilege or opportunity of "seeing with their eyes."

> If we want to excite an interest in war on the chart, we must give opportunity to have it played, and opportunity for at least a reasonable number of people to become sufficiently expert to play games worthy of exciting interest. Fancy what it would be, if a yearly war game could be made to excite the same service interest as the West Point-Annapolis football match!"

> In time of peace, the natural thought of the civilian is to a peace navy – there being no war to conduct, there is no compelling necessity for a war conductor, and, in absence of a compelling necessity the Department was organized without that element!

> As in our history, war seems to have been the only thing that has had the requisite power to compel [the provision for war directing co-ordination], and as we cannot have actual war in time of peace, why not have recourse to artificial war?

Finally, he articulated his key argument about mental muscle memory:

> Success in any art may be regarded as the product of three factors:

> a – the right thing,

> b – rightly applied,

> c – in time.

> If either of these factors is zero, the result will be zero. The right thing rightly applied too late, the right thing misapplied, and the wrong thing, whether applied or not – neither of these combinations promises success.

> When from a study of the experience of past wars, and of that of artificial wars checked up by suitable trials in the fleet, we shall have discovered what is the 'RIGHT

THING'; when, by the practice of artificial war, we have so familiarized ourselves with the various theaters of war, the situations and their appropriate solutions that we can see the 'RIGHT THING,' 'RIGHTLY APPLIED'; and finally when, by persistent practice of artificial war, we shall have so trained our appropriate mental muscles (the mental processes), that the proper line of reasoning has become the line of least resistance, so that we shall think right even if we have no time to think at all – instinctively, actually quicker than thought – thus enabling us to do the 'RIGHT THING,' 'RIGHTLY APPLIED, 'IN TIME,' then, and only then, shall we fully realize the true meaning of the saying that 'the best school of war is war!'" (McCarty Little, 1912)

Francis McHugh, one of McCarty Little's true descendants in his dedication to both gaming and the Naval War College, summarizes McCarty Littles role in Newport gaming:

> The inclusion of Little's lectures in the college curriculum represented the first official recognition of wargaming in the United States, and very likely its first official recognition by any nation's navy. The scheduling of such a series of lectures at a time when the majority of naval officers had little patience with theoretical pursuits, and when the very existence of the college was in doubt, required an unusual amount of courage and foresight on the part of the then relatively unknown president of the College, Captain Alfred T. Mahan, U.S. Navy. (McHugh, 1964)

Except for one short period, McCarty Little remained at the College until his death in 1915. Throughout his War College career, he concentrated on wargaming. "His knowledge, experience, and enthusiasm made possible the orderly development of gaming at the college; his continuous service and prestige insured such development. He seems to have been the world's first professional war gamer" (McHugh, 1964).

McCarty Little's philosophy of focused, repeated wargaming remained the heart of the Naval War College's program of professional education after WWI. Indeed – as described earlier here, and as it has become more widely known in the past 20 years – wargaming framed and drove the U.S. Navy's officer education in Newport during those crucial interwar years. The War College emphasized the teaching of decision-making, not of which decisions should be made. The goal of their education was to provide officers an adaptable process they could employ in a range of circumstances and, just as importantly, to teach them confidence in their own decision-making abilities.

As described in John Lillard's 2016 analysis of the interwar War College games, *Playing War*, those officers who taught, played the games, and learned during those years transformed the U.S. Navy's tactics, strategy, and technology. During the 1920s and 1930s they succeeded in using the War College experience as "research laboratory for every detail of naval warfare." Most importantly, they infected the entire fleet with these new ideas through a process Lillard describes as "cyclic osmosis." Important and promising officers such as Chester Nimitz and Raymond Spruance took their war college experience with them when they returned to the fleet. Once there, they saw the way the fleet really worked and how the ideas they had developed in Newport worked or could be applied in the real world. Many such officers then cycled back to the war college to become instructors in their turn, bringing with them the latest developments from the fleet and learning new ideas – as well as teaching them. And so the cycle continued, with the most important ideas permeating the key elements of the fleet that would go to war in 1941.

A WAY AHEAD?

So. What can we learn from all the history of wargaming, of which I have barely scratched the surface here? As regards professional military education, I would suggest that the framework espoused by William McCarty Little – and especially as practiced at the NWC during the 1920s and 30s – should become the model. Not only for wargaming itself, but also for the use of wargaming to structure the framework for PME. To integrate the inspiration, instruction, and application of the key knowledge and habits of mind – the mental muscle memory – required to operate effectively in the real world and to demonstrate those characteristics in the game, whatever form that may take.

Allow me to tell another personal story. Back at one of the early Connections-UK Conferences, I had a brief conversation with the well-known British wargamer Charles Vasey. He commented that "you wargamers" – apparently meaning us professional wargamers – needed some pithy statements to capture the attention of military and political leaders. He then asked me an odd question: had I ever seen The Muppet Movie? He described a scene in which Kermit the Frog, marionette star of the movie, was standing nervously in a bar full of rough characters. One of these characters approached Kermit and introduced himself. "My name is Spike. I eat frogs." Talk about a pithy statement guaranteed to get the attention of his listener!

So Charles continued with some suggested statements for wargamers. I was so impressed I wrote them down on the back of my business card. And promptly lost it! When I asked Charles what he had said, we couldn't recall the exact words. But over the intervening years, I believe I have recaptured the main points.

- Wargames entertain; they stir the imagination.
- Wargames engage; they stimulate the intellect
- Wargames enlighten; they strengthen the intuition.

In these ways, wargames create synthetic experience – especially of Dörner's process of identifying shapes in time – and hence McCarty Little's (1912) mental muscle memory. By giving military and political decision makers a range of such experiences, as Matt Caffrey is wont to say, wargames save lives.

If we in NATO and the West are to identify the Black Swans lurking in the ever more dangerous and uncertain future – in time to avoid them or even profit from them – we need to sharpen, deepen, and expand our use of wargames in conjunction with OR, SA, exercises, history and real-world experience to educate and enlighten our current and future leaders.

I would like to end this introduction with the words I used in my kickoff talk for the King's College London Wargaming Network nearly three years ago. We of the current generation of wargamers need to pass on the torch to the next generation of wargamers. We old guys are nearing the end of our combat effectiveness. Before we retire from the field, we need to encourage more younger students to study wargaming, as Professor Phil Sabin had done at King's before he retired a couple of years ago. The Wargaming community and the security establishment it serves need to create more programs that incorporate wargaming in PME as well as programs designed specifically for professional education about wargaming, for both the military and civilian members of the community.

And finally, senior leaders need to lead. Specifically, they can embrace my concluding three Ps:

- Permit their military and civilian staff members to play wargames.
- Promote the talented players and creators of the games into positions that can leverage their demonstrated talents.
- Play in more games themselves.

We need leaders to play in more games, to experience for themselves the insights they themselves teach and learn during the games; to take those insights to heart as they exercise their own mental muscles to detect and respond to the evolving shapes in time of our future security challenges. And, finally, we need to keep the intellectual and experiential channels open for further exploration of what wargames can and should do in times of great uncertainty and rapid change. This special issue of the *Scandinavian Journal of Military Studies* responds to the latter imperative by dedicating a number of essays to the issue of wargaming, both in Norway and beyond. To quote Charles Vasey one last time, it is my hope that the reader will find them both entertaining, engaging, and enlightening.

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