



Professional Knowledge through Wargames and Exercises

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ABSTRACT

In professional military education (PME), wargames and field-training exercises are among the pedagogical tools used to teach students to be professional officers. It is generally accepted that wargames are important sources of insight – even if, as Peter Perla (2012, p. 157) points out, they are “not real.” Notwithstanding the truism that there exists a gap between the game and reality, the wargame is a tool designed to provide the learner something to aid them in the real world. There are discussions in the literature concerning which aspects of the experience and practice of gameplaying are relevant to the player’s understanding of the aspect of reality their game is about; here, Perla’s discussion of the categorization of wargaming analysis is useful (2012, pp. 231–239), as is the report *Wargame Pathologies* (Weuve et al., 2004). While, with a few exceptions, the literature on wargaming does not engage with the fundamental epistemological questions of wargaming, there is a tendency to demarcate the relevance of wargaming for professional competence to specific aspects or domains of knowledge. In this article I argue that wargaming and field-training exercises in PME shape the future officer’s understanding and professional practices in much more profound ways than commonly assumed. Starting from Wittgenstein’s philosophy of language and his discussions of what learning means and how meaning arises, I will show that, as far as learning to become an officer is concerned, wargames and exercises are intrinsically educative: learning inevitably takes place, and this learning shapes, in fundamental ways, how the officer understands and responds to situations they might face as a professional practitioner. The article proceeds in three steps. First, the theoretical basis for the argument, a Wittgensteinian view of learning and of professional knowledge, is presented; second, the nature of wargames and exercises, and their nature as sources for knowledge, are discussed; and in the final section, the implications for our understanding of wargames and exercises in professional military education of the preceding two sections are suggested.

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On 22 July, 2011, when Anders Behring Breivik set off a bomb in the Government quarter in Oslo and proceeded to the island of Utøya to massacre 69 young people and injure many others, a colleague at the Military Academy was on duty as commander for a platoon in the King's Guard, a battalion-sized unit consisting primarily of conscripted soldiers. A few minutes after the bomb had detonated in downtown Oslo, the alarm sounded in Huseby camp, where the King's Guard live and train. The camp is located some seven kilometres from the Royal Palace. As part of training, the alarm goes off frequently, even when the platoon commander is not aware that an exercise is to start. On that day, however, the platoon commander suspected the day to be different. After having received the order to take his troops down to the castle area, he asked if it were an exercise – to which he received the terse answer “No.” The platoon commander then had to plan the short trip from the camp to the palace, considering, in the process, the worst possible and the most likely scenarios he might be about to face. The worst possible scenario, he thought, was an attack like the terrorist attack in Mumbai in 2008, where ten heavily armed men launched a series of attacks throughout the city killing at least 174 (D'Souza, n.d.). The most likely scenario, he assumed, was that this was a single attack. Regardless, he decided that to minimize the risk of losing the whole platoon in a single attack en route to the Castle, they would use several small vehicles and take different paths there.

In professional military education (PME), wargames and field-training exercises are among the pedagogical tools used to teach a student how to be a professional officer. Wargames are important sources of knowledge. “This is not a game! This is training for war!” the Prussian Chief of General Staff von Müffling famously exclaimed on seeing the demonstration of a wargame (Perla, 2012, p. 37). The platoon commander in the King's Guard knew what to do when the alarm sounded, and probably in no small part thanks to the exercises and wargames he had taken part in.

Nevertheless, there exists a “fundamental gap” between games and reality (Nakamura, 2016), as the commander's question to his superior indicates. Being a simulation or an approximation of what is real, a game can be accepted or dismissed as a source for learning based on criteria corresponding to “reality.” Mitchard (2018, p. 100) describes four different types of validity to be considered in simulations such as wargames: predictive validity, psychological validity, structural validity, and process validity. While the validity of what may be inferred does not equate to reality, and notwithstanding von Müffling's enthusiasm, wargames are, as Perla (2012, p. 157) states, “not real,” as a tool for learning they can provide something that might aid the learner in the real world.

The wargaming literature discusses which aspects of the experience and practice of gameplaying are relevant to the player's understanding of the real world as it is intentionally and reproduced in any specific game.¹ In the following I will argue that wargaming and field-training exercises in PME shape the future officer's understanding and professional practices in much more profound ways than commonly assumed. Starting from Wittgenstein's philosophy of language and his discussions on what learning means and how it arises, I will show that, as far as learning to become an officer is concerned, wargames and exercises are intrinsically educative. Learning inevitably takes place – and this learning shapes, in fundamental ways, the ways in which officers understand and respond to the situations they face as professional practitioners.

I will proceed in three steps. First, I will present the theoretical basis for the argument, which is a Wittgensteinian view of learning and of professional knowledge; second, I will discuss the nature of wargames and exercises and their nature as sources for knowledge; in the final section, I will discuss the implications of the preceding two sections for our understanding of wargames and exercises in professional military education.

Most of the literature on wargaming concerns wargaming practices and the practical applications of wargaming in training or military planning. While some scholars have engaged with the topic in more theoretical terms (see, for example, Love, 2018; Rubel, 2006; Weuve et al., 2004), the theoretical underpinnings and implications of wargaming are areas that deserve more attention. This article should be seen as a contribution to the theoretical exploration of this area.

1 See, for example, Perla's (2012, pp. 231–239) constructive discussion of the various kinds of wargaming analysis, and the report *Wargame Pathologies* (Weuve et al., 2004).

Scholarly literature on the profession recognizes different forms of knowledge; scientific knowledge and practical skills are two. Wargaming and the exercise are arenas for testing and developing both practical skills and theoretical knowledge. However, wargames and exercises can also provide a form of knowledge beyond what can be articulated – a form of knowledge arising through the bodily experience of the situation. This form of knowledge relates specifically to a mode of professional practice in which the practitioner is tasked with solving certain kinds of challenges on behalf of the state; for the military officer, that task is to protect the country from outside threat.

The platoon commander in the King's Guard faced a situation fraught with uncertainty. He had to make a number of decisions – but his basis for making these decisions was not laid out through analysis. He knew he had to move his troops to the palace area and to protect the back gate. But he knew very little about the precise nature of the threat; while many other cities outside Norway had experienced similar attacks, this was the first to occur in Oslo. These attacks, including the Mumbai terrorist attack, provided models for the platoon commander addressing the situation he now faced.² The commander likely recalled other attacks, too. Similarly, in determining what was required to move his troops to the palace area, the commander would have drawn on exercises, the reading of doctrine, discussions with colleagues, and so on. It was uncertain what kind of “attack” was underway; what “protecting the palace” entailed was not a clearly framed problem in the face of this uncertainty – and therefore not a problem that could be understood in theoretical terms. But the commander could draw, consciously and unconsciously, on an unspecified body of similar situations to inform his understanding. Whether these situations were derived from history books, exercises, wargames, news bulletins, conversations with a friend, or any other source, and the different roles they might played in determining how this precise situation was understood, cannot be clearly delineated.

In an attempt to understand the failures of the Vietnam War, D. A. Schön, a much-cited scholar in the literature on the professions, investigated what was required from professional practitioners. He identified a crucial disjuncture between the ordered, lucid and strictly rational body of knowledge one encounters in the university, on the one hand, and the disorganized, muddled and confusing reality we encounter in the world of everyday life. For Schön (1987, p. 4), “the problems of real-world practice do not present themselves to practitioners as well-formed structures. Indeed, they tend not to present themselves as problems at all but as messy, indeterminate situations.” Human actors in a game can create such “indeterminate situations” that require more than skill, and more than theoretical knowledge. While this additional dimension to professional knowledge or professional competence has been analysed in different ways, it is often referred to in the literature as “tacit knowledge” (see, for example, Horvath and Sternberg, 1999). This concept is adopted from the Austro-Hungarian thinker Karl Polanyi, on whom Schön builds, and echoes the concept of *phronesis* (see, for example, Kinsella et al., 2012), as outlined in Aristotle's philosophy of knowledge. It is the ability of professional practitioners to know what to do in a specific situation – in short, a form of knowledge exercised in professional judgement, and which cannot be reduced to neither propositional knowledge nor to a matter of skill.

These theoretical perspectives have much potential for characterizing the kind of competence that may arise from wargaming. As we will see below, the contribution that wargames make to a military professional's knowledge is commonly seen as something other than propositional or scientific knowledge. However, as pointed out by Harald Grimen (2008), one of the pioneers in research on the professions in Scandinavia, the relation between theoretical knowledge and professional practice is complex. As far as any characterization of professional competence in professional practice is concerned, no clear distinction between various kinds of knowledge can be maintained. Therefore, this discussion will take a different approach, starting from how language is learned. Faced with a problem (or in Schön's words an “indeterminate situation”), a professional practitioner needs language to determine what to do. He or she “chooses and names the things he will notice” and “through complementary acts of naming and framing ... selects things for attention and organizes them” (Schön, 1987, p. 4). Sensemaking is a linguistic process. To understand what learning through wargames and exercises means, we must therefore understand what learning a language means.

² The information about the commander's evaluation of the situation stems from personal conversations and presentations he has given at the Norwegian Military Academy.

In the later work *Philosophical Investigations*, Wittgenstein investigates how language is learnt, how it functions, and, particularly, how meaning is created through language. A key concept for Wittgenstein is the concept of the game. As will become clear, however, the link between Wittgenstein's discussion of games and the present discussion of wargames and exercises is not simply associative. When students in professional military education play wargames and take part in exercises, a different game is going on; Wittgenstein calls this "the language game." A notably influential definition of "game" was formulated by Bernard Suits; to play a game, he says, is

to engage in activity directed toward bringing about a specific state of affairs, using only means permitted by specific rules, where the means permitted by the rules are more limited in scope than they would be in the absence of the rules, and where the sole reason for accepting such limitation is to make possible such activity. (Suits, 1967, p. 148)

Wittgenstein observes that the notion of the game cannot be summarized in a definition as precisely as this. Games can arise spontaneously between people, and do not have to have rules set at the outset, nor must they have a goal or a specific outcome (Wittgenstein, 1967, para. 66).³ Think of the traffic sign that warns that children are playing. Children can suddenly start chasing each other without any specific cues that a game of chasing has started, or they can start kicking a rock back and forth seemingly mindlessly. Some dry twigs on the ground can spur a game of fencing or a game of elaborate village life.

To Wittgenstein, such activities and practices, all of which can be seen as games, suggest two important things. First, the meaning of the concept "game" cannot be definitively defined in a way that clearly demarcates games and gaming practices from all other practices (para. 69). Second, Wittgenstein observes that these fuzzy or indeterminable borders to the concept of "game" show that our concepts are constituted through *similarities* – what he calls "family resemblances" (para. 67) – and that the meaning of a word is constituted not through definitions, core meanings or essences, but rather in its use in language (para. 43). Members of a family do not have one specific trait which characterizes everyone. One family member resembles another in his or her gait; a second family member may have eyebrows that link him or her to other family members. So it is with words, too, Wittgenstein argues. When we call something a "game," the precise meaning of that term arises from the interplay between the particular situation and the family resemblance to other instances where the term has been employed. Language use and, importantly, language learning, therefore, are a form of game (para. 7), where one makes up the rules as one goes along (para. 83).⁴ Learning to understand and use concepts happens in a language game played by a community of language users.

For Wittgenstein, furthermore, meaning does not exist as a core in words and phrases. Nor is it contained in a definition. Meaning arises in the situation in which language is used. The instance of use is unique, and the meaning in that instance is determined through family resemblances with other instances where the word has been used.

To return to the story in the introduction, while definitions from textbooks might have played a part in determining the meaning of the words "attack" or "terrorist attack" for the platoon commander on that day, this meaning was not determined by any precise definition. For Wittgenstein, the meaning of any word is certified by the situation in which it is used, in actual language use, and produced through family resemblances. Thus, the commander's knowledge of various kinds of terrorist attacks, perhaps criminal activity, tactical thinking about attacks, and so on, all played a role in shaping the understanding of the particular situation on 22 July, 2011.

This article concerns training for military professional practice. Theodore Schatzki (1996) has explored the relevance of Wittgenstein's philosophy of language for different areas of social practice. His distinction between a wider language community and what he calls "dispersed practices" and other distinct communities, which notably concern professional communities, and their "integrative practices" (pp. 98–99), is particularly important. What something *means*

³ References are to the paragraph numbering Wittgenstein uses in *Philosophical Investigations*, not to the page in this edition.

⁴ My seemingly erratic juxtaposition of sections from very different parts of *Philosophical Investigations* is not without the justification of precedent: Wittgenstein's own method is to leave discussions without commentary and return again to them suddenly at later points, exploring the same concepts from various perspectives and without a clear analytical thread running through a stringent argument.

is determined through the practices in these domains of social life. For example, what it means to respond to a threat in a military community is determined not through objective, dispassionate, rigorous analysis, but through the sum of (similar) practices of responding to threats in the (language) community. The sense of “responding to threat” is shaped through the history of responses to threats and the professional community’s experience of them. Since meaning is determined by similarities (“family resemblances”), the archive of responses to threats is not limited to any specific domain such as the domain of “the real.” Resemblances inevitably extend to wargaming experiences, too.

Furthermore, in Schatzki’s analysis, certain words, events, and actions take on special meanings in professional communities. A professional community will have its own history of practices – what he calls “integrative practices.” Being constitutive of the knowledge concerning the world, practices (language practices included) are thus also responses to the events in the world. A simple illustration of this might be that “to greet someone” means something quite different in a military setting and a family setting. Holen (2020) has shown, too, that the meaning of “security” in military parlance and military planning practices is quite different than understood in discourse in the academic field of security studies. I have shown elsewhere how political ambitions for a military operation are shaped through the integrative practices of a military community (Enstad, 2020). Wargames are, therefore, not just a separate, isolated domain for exploring ideas, training decision-making, developing tactics, etc., but inevitably part of the range of games in the wider, Wittgensteinian sense that we play to make sense of the world.

WARGAMES AND FIELD-TRAINING EXERCISES AS SOURCES OF KNOWLEDGE

Wargames and field-training exercises are taken very seriously as sources of knowledge. As Mason (2018) has shown, wargaming has been both a popular pastime and a key element in military education, planning, and strategizing since ancient times. The story, touched on above, of how the Kriegsspiel came to be an integral part of training in the modern military clearly illustrates how wargames appeal to our intuition about its value. Baron von Reisswitz, a civilian war counsellor to the Prussian court at Breslau, had been invited to demonstrate a war game to King Friedrich Wilhelm III and the chief of the general staff, von Müffling. The latter was initially less than convinced about the potential of a game, but he agreed to play along. As the game progressed, he became increasingly enthusiastic, before finally exclaiming “This is not a game! This is training for war! I must recommend it to the whole army” (Perla, 2012, pp. 35–37).

Von Müffling’s exclamation that wargaming is not a game amounts, simply, to saying that it is not merely some mindless pastime. Wargaming clearly fits the definition of a game, however. For Suits (1967, p. 148), as we have seen, to play a game is to “engage in activity directed toward bringing about a specific state of affairs” with specified rules, where what is allowed by those rules is deliberately “limited in scope,” and where we accept this limitation because it makes the activity of play possible in the first place.

Chess is easily recognizable as a game in this sense. The specific rules are clear; the specific state of affairs one is meant to bring about through following them is the capture of the other player’s king. Chess has been considered an early wargame, and other boardgames and other social games have been categorized as wargames (see, for example, Peterson, 2016, p. 5). The rules of such games are very strictly defined and often quite simple. The rules of professional wargames can be simple, too, albeit they are often adaptable. The first aspect of the nature of wargames, relevant to this discussion, is that it is a rule-based activity, that these rules are particular to the game, and that the players must accept these rules for the game to be possible.

The above definition of games covers such activities as solitaire and roulette. A definition of wargames must be narrower. Perla’s (2012, p. 157) definition of wargaming is the most frequently cited; for him a wargame is “a warfare model or simulation whose operation does not involve the activities of actual military forces, and whose sequence of events affects and is, in turn, affected by the decisions made by players representing the opposing sides.” The distinguishing criteria are the presence of human actors and the absence of actual military forces in a warfare model or simulation.

This definition excludes field training exercises. This is necessary for Perla’s focus on the particular activities he discusses. As with many definitions, however, the boundaries set by the definition are somewhat arbitrary. For example: one may question the inclusion of simulations

and exclusion of actual military forces, since computer simulations of warfare often simulate the physics and behaviours of actual military forces as closely as possible, and the purpose of such verisimilitude is that the gameplay is experienced as if actual forces were involved.

Not all scholars exclude military exercises, however. Caffrey Jr. (2000, p. 34) argues that “the deciding factor is the presence or absence of a thinking opponent. Hence, a Red Flag exercise with its aggressor force is a wargame, while a mobility exercise is not.” Field training exercises do not have specific rules like the rules of chess, aiming, rather, to mimic a real-world setting, and thus a setting ungoverned by gaming rules, as closely as possible. Field-training exercises do have several specific rules; the real world does not. The most conspicuous one is, of course, the rule that one should not kill the enemy in a literal sense. Furthermore, military units have designated areas for their field-training exercises, and the troops often come to know these areas like the backs of their hands – albeit that, for the sake of the exercise, they must plan and play as if it were an unknown area or even a foreign region unlike the topography they know, all according to the scenario set for the exercise. Finally, field training exercises may have umpires, like many table wargames, who decide on the outcomes of actions. The umpire’s decisions rest on rules. Like other games, therefore, the field-training exercise relies on make-believe and playacting governed by a set of rules. The field-training exercise does not work unless the players accept the premise to play as if it were real, which is a precondition that Suits’s definition brings out. It is not a game unless one agrees to play by the rules. My argument in this article concerns wargames in the broader sense of Caffrey Jr.

Peterson (2016, p. 3) emphasizes the role of the human players. Wargames, he says, are “an intellectual battle which approximates the experience of command in times of war, where players control game elements that represent forces in combat.” The value of wargames, he continues, is that they “provide us with a unique insight into the way we prosecute war, one of the most complicated and unpredictable of human endeavours, and thus the way we struggle to manage reality.”

What these definitions emphasize is that wargames are valuable for our understanding of warfare by the dynamic created by human actors during gameplay. The human players, as intellectual competitors, create a situation or a series of events which, in terms of the dynamics that shape the outcome, resemble the unpredictable and unique nature of war. By extension, therefore, the players can learn something about the nature of war from wargaming. The question then arises: how does this way of learning relate to conventional learning through academic studies?

In professional military education (PME), students learn to wage war. PME consists of theoretical studies and practical training; professional practice requires both theoretical knowledge and practical skills. Being a professional practitioner such as a surgeon requires scientific knowledge (pathology and physiology, say) and a set of skills (say, the ability to remove an inflamed appendix). Medical training involves periods of supervised practice in clinics or hospitals. These are real-life situations. But one cannot stage real wars for educational purposes. The military historian Michael Howard (1983, p. 194) famously compared the military officer’s task to that of a professional swimmer who had to “spend his life practicing on dry land for an Olympic championship on which the fortunes of his entire nation depended”. There is no soft transition from training to professional practice or from exercises to the real situation. Wargames and field training exercises in PME are intended to fill the role of practice periods.

At the Norwegian Military Academy, longer practice periods or elements of practice in theoretical modules are seen as arenas for testing and trying out theoretical knowledge in situations that resemble, to varying degrees, situations that the cadets may encounter in real life. Planning processes, for example, are practiced with computer simulators and in field training exercises, and the complex interaction between various actors in a peace-making operation is explored through wargames (see Rønnfeldt, Helgesen, and Reutz in this volume). Theoretical knowledge is both the starting point for the design of wargames and exercises and a framework for identifying lessons from practice. While the elements of practice in education contribute to developing skills, the theoretical framing of practice elements and General von Müffling’s enthusiastic reaction to Reisswitz’s wargame indicate that these practices contribute something to professional knowledge beyond the potential of practical skills and theoretical studies, and this something, too, is an integral part of the officer’s professional knowledge. Wargames can, in other words, prepare the budding officer for the trials of war in ways that theory cannot.

Defining the “something” contributed to knowledge through wargaming is a question of epistemology – the branch of philosophy enquiring into the nature of knowledge and the question of how knowledge is gained. Rubel (2006) explicitly investigates aspects of the epistemology of wargames. Starting from the key aspect of wargaming outlined above, that “war gaming is the examination of conflict in an artificial environment” (p. 109), he argues that

gamers gain new knowledge about the phenomena the game represents. The purpose of a game is immaterial to this central epistemological element. Moreover, the gaining of knowledge is inherent and unavoidable, whatever a game’s object. The real question is whether such knowledge is valid and useful. ... Valid knowledge is that which has sufficient practical correspondence to our environment to be useful for problem solving. (Rubel, 2006, pp. 109–110)

Rubel (2006, p. 126) goes on to discuss various problems related to the epistemology of wargaming, concluding that what is missing from the wargaming community “is a universal set of standards, an accepted body of knowledge, such as established academic disciplines possess”; the standard for knowledge gained from wargames, he argues, should be the same as in the hard sciences.

The belief that utility is the standard for knowledge we term “pragmatism”; the understanding shared across the hard sciences that the validity of knowledge is an index of its capacity to represent reality we term “scientific realism.” There are two problems with this epistemology. The problem with the pragmatist view of knowledge is that one can only know whether something counts as knowledge – that is, whether what one thinks one knows is useful – *after the fact*. For a military it is too late to evaluate usefulness after the war is over.

The problem with scientific realism is what is frequently referred to in the literature on wargaming as a “black swan.” The black swan is a nod to the well-known problem in the philosophy of science called the problem of induction, first described by David Hume in *A Treatise of Human Nature* (1739–40), but today perhaps mostly associated with Karl Popper and his *The Logic of Scientific Discovery* (2002). The problem of induction is that generalizations based on a limited number of observations – “all swans are white,” for example, based on observations of swans in Europe – can logically never be said to be valid for all particular instances of that class. There are black swans in Australia. While the problem of induction is not as acute in physics, it is generally recognised as a fundamental problem in preparation for war. One cannot use the history of war to predict future wars.

There are broadly two responses to this challenge. One is to recommend that one take special care. Thus handbooks, doctrines, and guides about wargaming urge that one pay special attention to the design of the game, in the gameplay, and in the analysis of the game, to ensure, as far as possible, that one gets it right. In short, we should employ our knowledge about war, the way it is waged, and the factors that influence it, to design it well, and then play the game and evaluate it against the same body of knowledge (see, for example, *U.S. Army War College*, 2015). The other response is to argue that wargaming produces a different kind of knowledge, a form of knowledge not generalizable as theoretical knowledge. Perla (2012, pp. 157–158) argues that wargaming does not produce theoretical knowledge. Wargaming “is not a technique for producing a rigorous, quantitative or logical dissection of a problem or for defining precise measures of effectiveness by which to compare alternative solutions,” he claims; rather, its “forte is the exploration, of the role and potential effects of human decisions.” For Perla (2012, pp. 231–232), there are two areas of useful analysis of wargames. One is the analysis of the design; the other the analysis of the gameplay. The former must consider such aspects as the realism of the scenario; the latter primarily concerns the inquiry into human decision-making, the analysis “most likely to be fruitful.”

What wargaming contributes to knowledge, according to this view, concerns the player’s more instinctive understanding of the phenomenon of war, and this resulting understanding cannot be articulated as theoretical knowledge. One will find various names and characterizations of the realm of gaming in the literature. Chris Weuve and his colleagues (2004), for example, adopt the term “magic circle” from Huizinga’s classic sociological study of the role of play in culture:

Within this magic circle, “the game’s rules create a special set of meanings for the players of a game,” which “guide the play of the game.” The magic circle helps the players adopt the lusory attitude required to enter into the play of the game, in which “a group of players accepts the limitations of the rules.” (Weuve et al., 2004, p. 7)

Perla and McGrady coin the term “synthetic experience” and look to literary studies and an idea of an in-between state between fiction and reality (*l’entre deux*) to characterize the gaming world:

Between the literal representation of words on the page and the reader’s reaction to them, there is a place that does not exist in the real world but that has real effects on the reader’s mind. In literary theory this is called the *l’entre deux*, the “between place”. It is in this in-between world, where narrative is real and everyday reality has retreated into the deep background, that the reader engages in what we all learned about in high school, the suspension of disbelief. (Perla and McGrady, 2011, p. 115)

They argue that gaming, and thus wargaming, has a much deeper impact than literature due to the bodily participation through action, engagement with a specific milieu (what they call *kinesthetic cues*), and social interaction (Perla and McGrady, 2011, pp. 117–121). Importantly, for them, wargaming is “a powerful tool for affecting how people think, feel, and behave.” More, wargaming has a distinct purpose, they state, and we can distinguish what is valuable from what is not in games of different kinds (Perla and McGrady, 2011, pp. 125–128).

To put these characterizations of the value of wargaming in the knowledge categories found, for example, in Kinsella et al. (2012), we may argue that there is some consensus that wargaming builds the professional practitioner’s ability to make judgements in complex situations. Nevertheless, it seems clear that there is a tendency in the literature on wargaming to try to delineate the regions of relevance. Wargaming, in this view, contributes something to the officer’s broader competence beyond the educative capacity of book study or the lecture. The valid insights to be gained are restricted, however, to the realm of something other than propositional knowledge.

What Wittgenstein’s insights into the nature of language show, however, is that as far as making sense of the world around us is concerned, a clear distinction cannot be made between generalized knowledge and other forms of knowledge. As Schön (1987) observed, confronting a situation as a professional practitioner involves “naming and framing.” Again, Wittgenstein points out that what a concept means in actual use is not determined by an essence of meaning, but, rather, arises through a web of family resemblances in the instance of use. Within this web, theoretical knowledge and experiences from wargaming and exercises coexist and contribute in complex ways. Experiences from wargaming, therefore, fundamentally shape the understanding of certain problems.

THE MEANING OF WARGAMES AND EXERCISES

Perla (2012, pp. 23, 171) has observed that “wargames can be very effective at building a consensus on the importance of key ideas or factors in the minds of participants,” and that “interpreting the insights derived from wargaming requires special care.” While these observations are true from many perspectives, the warning implicit here takes on an even more profound significance in light of Wittgenstein’s analysis of learning and language, and of Schatzki’s (1996) investigations of the meaning of practices in professional communities. If we recognize that, for the professional practitioner, wargaming is a single category of game among a range of games constitutive of the meanings of different practice, we realize that wargaming inevitably shapes judgements about the world. There is no neutral external point from which the insights derived from wargaming can be objectively assessed: the very practice of playing wargames contributes to the shaping of professional knowledge, and thus to shaping professional judgements of situations the officer might experience in the practice of their profession – and, of course, insights gained in the course of gaming.

I will suggest three implications for our thinking about wargames. First, this analysis in no way detracts from the value of wargaming. Quite the contrary: in its capacity to challenge accepted assumptions about established truths and established practices, the wargame is an important addition to games that contribute to the sum of professional knowledge or, in Schatzki’s (1996, p. 98) terminology, the integrative practices of the military. Just like our everyday understanding of what constitutes a game may develop through a discussion of, or engagement with, the question of what may count as a game in everyday life and everyday language, so the practices of wargaming will contribute to the understanding of what a conflict, or the range of possible responses to various scenarios, might be. The literature on wargaming recognizes this.

Second, and leading on from the first point, this insight should make us consider carefully the kinds of game played and the place these games occupy in professional training and professional practice as a whole. When knowledge is constituted through practice, and not through discrete scientific activity, the relative place of the game in the totality of professional practices affects the significance of the activity for professional knowledge. In simple terms, prioritizing a wargame over other things that contribute to the development of professional practices – studies, case analyses, after-action review, and so on – means giving the wargame a more prominent role in determining conceptions of what is construed as *right* in a given situation. This does not mean that games and exercises should be avoided as dangerous sources of false beliefs. Textbooks certainly get it wrong, too, and games and exercises can challenge theoretical perspectives and provide insights that cannot be conveyed in other ways. One cannot isolate a single learning objective such as training decision-making in a game or an exercise, however, thereby choosing not to draw other lessons. So it is therefore incumbent on the educator to consider how these activities contribute to the learner's understanding of the world. The simple advice is to play different games in the context of theoretical knowledge.

To illustrate this point, not in terms of gaming practices but in terms of another core practice in the military, we might turn here to planning procedures. In my research on capacity-building (Enstad, 2020), one of my interviewees from the capacity-building operation in Iraq from 2018 responded to my question about the most important competence for the mission by pointing to his extensive experience with the military decision-making process (MDMP). This, he said, allowed him to analyse and plan for any situation.

Whether the MDMP is useful in a capacity-building mission or not is not relevant here. What is interesting is the conviction arising, following experience with the MDMP, that it is also the proper response to the challenges of a capacity-building mission, even if the challenges are obviously very different from those faced in the high-intensity conflict for which the MDMP is primarily designed.

In the same vein, the practices developing from wargaming inevitably shape practices and judgements in other areas of professional practice. Wargames may “get it right” or “get it wrong,” as Curry (2020, p. 628) has pointed out, but when played for educational or training purposes, they inevitably contribute to the professional understanding of the right thing to do. Thus, while the literature on wargaming also voices warnings about potential pitfalls and dangers, Wittgenstein shows that the meaning of a concept is not shaped through analytic processes alone. Experience from the practice of wargames, or more precisely the meaning of a concept that arises in a wargaming or field-training-exercise situation, will echo as a family resemblance when the concept is used in professional practice.

There are profound ethical implications to wargaming. These implications arise from the rules which govern the games. Games, of course, have rules that limit what the actors can and cannot do (Suits, 1967). These limits not only concern the rulesets of the game, but the scenario, the objectives, the actor roles included, and all the other elements of the wargame. Conceiving of wargaming as a practice that concerns a different domain, a gaming world, thus the “real world” to be something else, allows us to justify ignoring aspects of military practice crucial in other settings. Certain aspects of this problem have been discussed elsewhere – see, for example, Curry's (2020) discussion of the impression left by computer simulations that communication with troops is easier than in reality, and that simulations do not give an accurate account of the degree to which explosions and enemy contact affect troops.

As in an actual war, a wargame will often have the objective of defeating an enemy. But it is often the case that a game scenario can limit factors affecting the mission to emphasize certain aspects of military operations, be they decision-making, logistics, or tactics. An actual war is more complex, and military units are expected to respond properly to this complexity, as the game designer Nakamura has shown (2016). Schatzki's (1996) Wittgenstein-inspired analysis of “integrative practices,” that is to say the specific meanings that arise in professional communities, show that wargaming experiences and practices are constitutive elements of what is considered proper and right professional practice. To the military professional, the meaning of “threat” is different to that understood in wider society. Wargame design must, then, include ethical considerations of the game's limits. What the professional practitioner

does in a game will, in profound ways, serve to determine what is right and proper professional practice. The military profession's integrative practices, in Schatzki's (1996) terminology, grow out of the history of practice in the community of professional practitioners. Thus, if practices develop out of too-restricted wargaming scenarios (scenarios that for the sake of simplicity do not factor in complex social dynamics in an operation, for example), professional practice will not yield responses adequate to complex settings.

In closing, it is necessary to emphasize that the arguments about learning from gaming practices are not restricted to games and exercises. All practices, including traditional educational practices such as reading, discussing, analysing, etc., contribute to the archive of family resemblances that shape professional practices and determine what professional practitioners understand to be right. While the arguments here are thus not only relevant for wargaming, the discussion is important for our understanding of the role of wargaming and exercises in education because it investigates the not-uncommon assumption in the literature that the learning outcomes of such activities can be clearly determined and demarcated. The fact that practices shape professional knowledge, and therefore judgements about professional practice, must make us consider the impact of gaming practices not just on the learning objectives set for the game, but for the totality of professional practices. While this argument in no way amounts to a warning against wargaming as such, it is a call to consider the range of games played in the profession and the place these games occupy in the shaping of the profession's practitioners. In particular, we must consider the potential ethical implications of bracketing out elements that may be paramount in a real-world setting for the sake of some limited learning objectives.

CONCLUSION

What does this conception of wargames contribute beyond all the *other* lessons already identified about wargaming? To echo general von Müffling: wargaming and exercises are not games; they are preparations for war. Although it will be useful in wargaming to focus training on such aspects as the ability to make decisions under pressure, to develop a commander's *coup d'oeuil* (that somewhat mysterious skill of Clausewitz's military genius), to explore tactical or strategic concepts, and so on, it is essential to recognize that these practices are not a separate domain where lessons may be learnt or disregarded. Rather, they are practices that shape the player's understanding of what constitutes proper professional practice. Perla's (2012, p. 157) claim that wargaming "is not a technique for producing a rigorous, quantitative or logical dissection of a problem or for defining precise measures of effectiveness by which to compare alternative solutions" is true as a statement about the potential value of wargaming as a source of data for empirical investigations. Participating in a wargame, however, affords experiences which inevitably shape one's notion of phenomena in the world. Experiences attained in wargames share family resemblance with real-world situations. They thus become part of the meaning of concepts an officer relies on for making sense of events and for the exercise of professional judgement. When these experiences are constituted within limitations imposed on a game for playability, the professional practices which develop out of them may be inadequate for the complexity faced when the alarm sounds. Whatever potential wargaming holds for the abstraction of (scientific) knowledge about war, experiences gained in wargames shape the participant's conceptions of war regardless. What it means to be a military professional develops through the complex interplay of all the professional practices in which a person engages. After hundreds of years, wargaming continues to be one of these practices.

COMPETING INTERESTS

The author has no competing interests to declare.

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