



# Teaching tactics as armies integrate

A comparative case study of United States Marine Corps schools and the Norwegian Military Academy

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## Abstract

The tactical level is academically not well developed and there is a paucity of literature on the former. Yet it has become more important in the recent years mainly due to shrinking defence budgets and the increasing number of multinational joint operations. This incites nations to integrate more closely and armies find themselves cooperating at ever lower unit-levels. Such integration necessitates a similar understanding of tactics to remain effective. Officers first formally encounter tactics during their training at military academies. This thesis examines how junior officers are educated in tactics at the Norwegian Military Academy and two comparable United States Marine Corps schools. Based on established military theory, indicators for effective tactical education are formulated and applied to the teaching in these schools. The thesis uncovers that the schools' theoretical approach to tactical education is essentially identical, but its practical implementation differs.

## Acknowledgements

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**This dissertation is the sole work of the author, and has not been accepted in any previous application for a degree; all quotations and sources of information have been acknowledged.**

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## List of Abbreviations

CSC	Command & Staff College (USMC)
CHOD	Chief of Defence
EWS	Expeditionary Warfare School (USMC)
FDLO'04	Norwegian Army Doctrine 2004
FFOD'00	Norwegian Joint Operational Doctrine 2000
FFOD'07	Norwegian Joint Operational Doctrine 2007
FFOD'14	Norwegian Joint Operational Doctrine 2014
FMFM	Fleet Marine Forces Manual (USMC)
MCDP	Marine Corps Doctrinal Publication
MW	Manoeuvre Warfare
NATO	North Atlantic Treaty Organisation
NMA	Norwegian Military Academy
PME	Professional Military Education
TBS	The Basic School (USMC)
USMC	United States Marine Corps

## 1. Introduction

The role of national tactical doctrines and practise is understudied. While there is a vast literature on strategy and so-called 'operational art', little has been published on tactical art and specifically how it is taught. Those who teach tactics regularly at military academies do not seem to have the incentive or time to identify and articulate scientifically how they accomplish effective tactical education. Findings worth disseminating to improve international cooperation might therefore be overlooked.

Perhaps tactical art is unimportant, therefore so little attention paid to it in academic writing and scholarship? The opposite, however, is true; I will argue, as multinational joint operations<sup>1</sup> are at ever lower levels in the chain of command; from the typical battalion-level contribution to company-level and lower as cost factors force Western armies to integrate faster and more profoundly. Moreover, contemporary battle is not confined to the battle-space but has effects far beyond it due to digital media. The potential strategic effects from a single engagement are as many as the legion stakeholders in the internet age. The infamous 'strategic corporal' is a symbol of just this: action at the tactical level can have strategic effects.<sup>2</sup> Western militaries' technological advantage is also being reduced, often due to cyber-espionage.<sup>3</sup> This prompted former US General Perkins to focus on cognitive aspects in the US Army's next doctrine: 'It's hard to steal training and leadership, you can't

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<sup>1</sup> An operation carried out by forces of two or more nations, in which elements of at least two services participate (NATO Standardization Office (2017), p.76).

<sup>2</sup> Krulak (1999b)

<sup>3</sup> Farley (2018)



hack into it and it won't fit on a thumb drive'.<sup>4</sup> All this makes tactics and its education the more important.

We should therefore devote attention to tactics and to the question of whether it is taught in similar ways across national cultures. This thesis is a small contribution in that direction.

When battalions and even companies are multi-national it is of the utmost importance that these act in the same way because decisions about action and action itself have to be swift and coordinated. It is therefore pertinent to ask whether there are national variations in the teaching of tactical art and how such differences can be overcome. Also, it makes sense to ask whether one military academy can learn from another; i.e. who has the 'best practise' in this field? In the age of military integration, armies must share tactical doctrine and learn to fight the same way to be able to fight at all. Ideally, they should all share the same tactical doctrine and practise the same tactical art.

In strategy there are national traditions, much studied under the rubric of 'strategic culture'.<sup>5</sup> As stated, there is scant academic literature on tactics, to be elaborated on below. We therefore do not know much about national variations in tactical art. It seems reasonable to assume that there will be little national variation in tactical art because tactics is really about 'how to do it' in similar war-fighting situations, hence, we should not expect national differences in how tactics is developed and applied. Unlike strategy where national political interests influence directly, at the tactical level the battle is 'the same' to every army. If I am right about this, there is little problem in integrating armies, even at low levels,

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<sup>4</sup> Kimmons (2016)

<sup>5</sup> Snyder (1977, 1990); Britz (2016)

because they can be assumed to have been taught and to have practised the same tactical art. Yet this hopeful hypothesis must be examined and tested — perhaps there are national traditions in tactics, as there are in strategic culture?

This thesis will investigate to what extent tactical art is common to two armies of NATO, the United States Marine Corps (USMC) and the Norwegian Army by examining and comparing their junior officer education. The Norwegians serve under US command in many international operations and the USMC is earmarked for the defence of Norway, now as throughout the Cold War. As we shall see in section 1.3, contemporary Russian revisionism has also made USMC presence in Norway more important and these armies can therefore be assumed to not only cooperate, but also have to train and perhaps fight together. The practical utility of comparing their teaching and practise of tactics is therefore obvious. This comparison is also important as a likely ‘first’ comparative study of tactics in NATO schools.<sup>6</sup> Naturally I cannot generalise from a case study of only two schools, but I will at least be able to see if education in tactics is largely the same in both cases, and this will provide an indication of whether my hypothesis is correct, *viz.* whether tactics is ‘unproblematic’ from a national and cultural perspective, therefore making military integration easy, even at the lowest levels.

### 1.1. The research question and analytical framework

As we shall elaborate on below, tactical art is in essence a mind-set, a particular way of thinking about problem-solving, *i.e.* winning battles. Officers first formally encounter tactics

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<sup>6</sup> The scope of this thesis does not allow me to include two other armies that I plan to examine in a later and more comprehensive study, the British and the French armies.

at military schools and it is therefore pertinent to examine this at the Norwegian Military Academy (NMA) and USMC counterparts. After all, both schools explicitly state that they teach their officers *how* to think and not *what* to think.<sup>7</sup> The main aim of this thesis is thus to investigate military educational methods for teaching tactics to uncover practices that would ameliorate cooperation. An auxiliary aim is to contribute to developing the literature on tactics in the military and scholarly profession. The research question is as follows:

*Is tactics similar across armies? Are there transferable lessons between schools so USMC and Norwegian officers can think more alike, and thus fight more effectively together?*

The research design for this thesis consists of a qualitative study complemented by interviews with military practitioners in the schools that make the case study. As doctrines usually only describe a desired mode of operation, research is complemented by semi-structured interviews with practitioners that give evidence of actual practice. Additionally, e-mail correspondence with the authors of doctrines further clarifies the intended meaning of specific publications. Due to the lack of published material and to the classified nature of military education, a study trip was conducted to gain insight into educational methods. During the first week of May 2018 I visited the USMC University in Quantico, VA where I was introduced to the educational methods of The Basic School and (TBS) the Expeditionary Warfare School (EWS), the USMC's basic and intermediate officer courses in tactics. As a tactics instructor at the NMA I have first-hand knowledge of the thinking and practice there.

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<sup>7</sup> Krigsskolen (2017), p.44; Expeditionary Warfare School (2018b)

## 1.2. Literature review

Compared to strategy the field of tactics is understudied. There is scant literature of a scholarly kind. Friedman accurately sums this up in the first lines of *On Tactics*:

*There has never been a true tactical theorist. Although giants of strategic theory touched on tactics, their focus was always on strategy. Tactics in general has been viewed as too technical a subject for theory, and the mechanistic movement of troops and materiel as too scientific to catch the theorist's eye.*<sup>8</sup>

Finding literature on the education of tactics is therefore challenging, especially within the timeframe of this thesis. There is no dedicated database on tactics and conducting field research seems to be the only viable option. The study trip to the USMC indicated that their methods for teaching tactics follow an evolutionary approach with yearly incremental improvements. The result is high quality education, but the teachers do not really know why this is so.

Presented below are the measures taken to find any prior relevant research. In sum, almost no relevant literature was identified; yet this does not exclude the possibility of its existence, most likely as classified internal officer-exchange reports. Therefore some arguments might not be as well informed and conclusions more tentative than I would prefer.

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<sup>8</sup> Friedman (2017), p.1

Existing literature comparing military education is outdated and does not go into detail on tactics specifically. A list of identified works, most found with the assistance of personnel at King's College's Maughan Library, is presented in Appendix 1.

Moreover, few journals address tactics and none examine national differences regarding education of the latter. A comprehensive list of reviewed journals and search methods is presented in Appendix 2. Journals covering military affairs from a strategic perspective are numerous, yet few of them address the tactical dimension. The reason for this is most likely because it is a difficult field to research, the target audience is rather small, and few professionals actually write and publish within the field. Most would argue that it is an eminently practical field and therefore does not lend itself to academic study. The problem with such a 'common-sensical' approach is that it becomes reliant on anecdotal evidence from various battles. However, given the importance of tactics, we cannot rely on anecdotes when teaching in this field.

Norwegian military databases display few relevant results. The Norwegian Defence College publishes all unclassified theses from 2007 and has (only) one such document in the category 'tactics'.<sup>9</sup> The NMA also publishes unclassified theses from 2007 but yields no results for 'tactics'.<sup>10</sup> However, some pre-2007 theses in the academy's library catalogue do cover tactics.<sup>11</sup> These stem from when the NMA offered an intermediate course before staff-

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<sup>9</sup> Forsvarets Høyskole (n.d.)

<sup>10</sup> Krigsskolen (n.d.)

<sup>11</sup> Krigsskolen (n.d.)

college. Yet, despite a higher level of reflection concerning tactics, none of these documents addresses how tactics is understood and taught among Western armies.

Existing US theses are not particularly relevant either. The Marine Corps University displays a list of theses from its School of Advanced Warfare,<sup>12</sup> whilst those from US Army and USMC Command and Staff College are stored at the Defence Technical Information Center.<sup>13</sup> The archaic search engine at the latter location makes it particularly challenging to find relevant documents. Still, searches at either location yield no relevant results for teaching tactics.

There is thus little research to build on concerning different armies' tactical art.

### 1.3. Armies compared

This thesis compares the USMC to the Norwegian Army because they are close and regular allies. The US and Norway are founding members of NATO, have a long history of being part of coalitions and a common interest in the North Atlantic and the Arctic, given the importance of the strategic Russian bases on Kola.<sup>14</sup> This is evidenced by the recent common effort to reinstate a NATO command for the North Atlantic.<sup>15</sup> Their navies share interoperable platforms<sup>16</sup> and their air forces are composed of F-35 fighters and P-8 maritime patrol aircrafts.<sup>17</sup> However virtually no military materiel is the same across both

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<sup>12</sup> USMC Library (n.d.)

<sup>13</sup> USMC Library (n.d.); DTIC (n.d.)

<sup>14</sup> Olsen (2017)

<sup>15</sup> Johnsen (2017)

<sup>16</sup> Lockheed Martin (2017b, 2017a)

<sup>17</sup> Lockheed Martin (2017c)

nation's armies, and regular exercises are necessary to uphold an acceptable level of interoperability.

USMC and Norwegian Army cooperation is likely to increase. The USMC has a rotational presence and prepositioned materiel in Norway. In 2018, the USMC doubled its presence to 700 marines.<sup>18</sup> The establishment of greater force levels and participation in a standing multinational joint force are strong indicators of how important the US is to Norway and particularly vice-versa. Despite the fact that the US already partakes in regular NATO exercises in the Arctic and undergo cold weather training in Norway, the recent increases in cooperation will undoubtedly imply more training at the tactical level. Also, in recent years, USMC companies have been subordinated to Norwegian battalions.<sup>19</sup> We thus have a situation where Norwegians may also command Americans. This underscores the importance of a common understanding of tactics.

#### 1.4. Sources

The thesis bases itself on the analysis of military doctrines, teaching plans, manuals and interviews with practitioners at TBS and EWS. Sources are primarily written in English or Norwegian. Most are of a military character so formulations and expressions have identifiable counterparts in English military vocabulary. Norwegian translations should therefore be within academic standards.

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<sup>18</sup> Forsvarsdepartementet (2018)

<sup>19</sup> Merrimarahajara (2016); Precht (2016)

Military doctrines of smaller states are often similar to those of larger ones. Since smaller nations cannot match the research and development budgets of the US, more often than not it is possible to identify strong similarities in structure and content in their doctrines because they partially adopt them from the US.<sup>20</sup> This is particularly true after the emergence of the manoeuvre warfare concept in the 80s that spurred a 'doctrinal renaissance' among NATO allies.<sup>21</sup> Thus, the 2004 Norwegian Army doctrine bears close resemblance to the 2001 US Army FM 3-90.<sup>22</sup> Moreover, Bjerga argues that small state doctrines are 'utilised for the purpose of promoting political, legal and ethical messages to the military, to a domestic audience, and to international allies' to the detriment of operational effectiveness.<sup>23</sup> Norwegian doctrine can thus be expected to be theoretically similar to those of larger states, but in practice be sub-optimal for the Norwegian Army and its challenges.

The interviews conducted during the study trip give evidence of actual practice at the USMC. The format of the interviews was semi-structured to let the interviewees themselves tell their story. General background information and purpose of the interview was, however, sent out beforehand in the formal requests-for-visit to ensure that relevant data was gathered. Ethical approval was communicated verbally during the interview or in writing afterwards in accordance with King's Research Ethics Office. The interviews were conducted without audio-recording to allow the interviewees to speak more freely. The author took notes that were transcribed no later than a few days after each interview. A list of interviews

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<sup>20</sup> Bjerga and Haaland (2010), p.506

<sup>21</sup> Shamir, 2018, p.43

<sup>22</sup> Sæveraas (2007), p.145

<sup>23</sup> Bjerga and Haaland (2010)



can be found in Appendix 3. The interviewees were core members of the respective school's faculty and were enthusiastic about showing how they interpreted doctrine into training, giving insight into actual practice.

The interviewees were not selected by the author but chosen by their respective schools based on availability and the questions submitted beforehand. The requests-for-visit were sent through official channels, via the respective nations' Departments of Defence and Foreign Affairs, and it is thus reasonable to assume that the schools made their best qualified people available for interview. This is supported by the positions the interviewees held at the various schools: at EWS, these were the Director of Curriculum and his most senior instructor, and at TBS, the Warfighting Director and his two most senior instructors. The civilian equivalent to both director positions is head of faculty. Additionally, the author's current position as instructor in tactics at the Norwegian Military Academy gives him a degree of professional competence in conducting the interviews. As peers, familiar with the same literature and facing similar educational challenges, it is easy to discuss the thematic as colleagues. In sum, it is reasonable to assume that even if the interviews covered few instructors and lasted only a short time, they were conducted with the most relevant personnel and did thus produce relevant data.

The thesis also draws on literature central in military theory and therefore present in doctrines. This includes works from antiquity translated during the Enlightenment and Clausewitz' *On War*. Greek and Roman works from antiquity provide valuable insight into

the foundation of Western military thought.<sup>24</sup> Due to their precarious situation between East and West, Edward Luttwak argues that the Byzantines made strenuous effort to make the best use of their limited resources, thus advancing military thinking on tactics.<sup>25</sup> Furthermore, interpretational errors of Clausewitz have been mitigated by consulting multiple English translations. The Howard and Paret version, considered to be the standard translation in the English-speaking world, is known to diverge from the original in its quest to anglicise and improve the readability of the text.<sup>26</sup>

### 1.5. Structure

The thesis is divided into two major parts. The first introduces the research question and examines the foundations of tactics and of the current 'Western way of war', manoeuvre warfare, concluding with a set of indicators for effective tactical education. The second part is comprised of case studies on USMC and NMA junior officer schools where these indicators are sought after.

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<sup>24</sup> Heuser (2010), pp.3–11

<sup>25</sup> Luttwak (2011), pp.57–58

<sup>26</sup> Strachan (2007), p.ix; Honig (2007)

## 2. Tactical art

This section will first delineate a definition of tactics to serve as a point of reference in the subsequent case studies, and thereafter provide contextual background about the manoeuvre warfare concept used by most Western armies. Both sections will conclude with a set of specific indicators for effective tactical education summed up at the end of the chapter.

### 2.1. Defining tactics

*La théorie est le pied droit et l'expérience le pied gauche,  
il faut avoir les deux pieds pour marcher.<sup>27</sup>*

Georg Friedrich von Tempelhof

This section will argue that tactics is the art and science of winning battles and engagements, in which the use of guile is favoured over force; drawing on the ancient Greek's identification of force and guile.

Guile is more common, useful and preferred in tactics than in strategy. According to Lawrence Freedman, force vs. guile is the most powerful dichotomy in all strategic thought.<sup>28</sup> Since strategy and tactics are historically intertwined, this dichotomy is arguably also valid for tactics and figures prominently in Martin van Creveld's entry on tactics in the *Encyclopaedia Britannica*.<sup>29</sup> Force vs. guile is most famously developed as themes by Homer

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<sup>27</sup> Tempelhof (1794), p.176

<sup>28</sup> Freedman (2013), p.42

<sup>29</sup> van Creveld (2017)

in his epic poems *The Iliad* and *The Odyssey* in the personifications of Achilles and Odysseus.<sup>30</sup> The former, representing Βία (Biê), meaning force, seeks victory in the physical domain through direct methods, whilst the latter, representing Μῆτις (Mêtis), meaning skill and practical wisdom, pursues victory in the mental domain through indirect methods.<sup>31</sup> Since Troy was not destroyed by force but rather by guile in the form of Odysseus' Trojan Horse, Homer may have suggested that force will ultimately fall short and give way to a world in which success in combat is achieved primarily through guile.<sup>32</sup> In warfare, where the stakes are often either life or death, fighting in a way that enables victory with the minimal expenditure of own forces is surely preferred: why risk a battle in which only force-numbers have precedence when a cunning plan can tip the balance? Even though Western society might naturally deplore winning by cunning or subterfuge, exemplified by the pursuit of the 'fair game' in football, it still holds in high regard those military leaders who succeeded through guile; after all, 'war has no traffic with rules.'<sup>33</sup> Indeed, history provides many famous examples of guile, including how Napoleon feigned weakness to lure and defeat the larger Russian and Austrian armies into battle at Austerlitz, how Rommel was a cunning 'Desert Fox' in an honourable 'war without hate',<sup>34</sup> or the established Russian military deception concept 'maskirovka'.<sup>35</sup>

Military manuals and doctrine have also continuously emphasized guile in the form of cunning plans or stratagems: from the most ancient documents on war from China, to the

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<sup>30</sup> Dunkle (1987)

<sup>31</sup> *Ibid.*; Freedman (2013), p.43

<sup>32</sup> Dunkle (1987), p.18

<sup>33</sup> The Infantry Journal, Inc. (1939), p.1

<sup>34</sup> Bierman and Smith (2004)

<sup>35</sup> Beaumont (1982)

Greek, Roman and Byzantine field manuals that served as the foundation for contemporary military thought when they were rediscovered during the Enlightenment (notably by Machiavelli).<sup>36</sup> Notable references to guile in these works are displayed in Appendix 4. These publications give evidence of a desire to preserve valuable tactical experiences and disseminate it to future military commanders. Apart from the technical arrangements of units, substantial energy is devoted to communicating what was probably hard learned lessons from wars. The descriptions of creative and cunning plans highlight the artistic quality of tactics learned through practice. They also indicate that it is possible to learn certain aspects of tactics through the study of past experiences and by familiarising oneself with what is actually possible to accomplish. The mere fact of being aware of the characteristics of past encounters will help an inexperienced commander detect the signs of an ambush or give him combat-proven ideas that can turn the tide of a battle in his favour. This is what psychologist Daniel Kahneman calls ‘priming’ which will be further investigated in section 2.3 along with other cognitive aspects and their influence on tactics.<sup>37</sup>

With the Enlightenment’s growing confidence in empirical science and the application of reason, leading to the study of war conducted in the same spirit, military manuals became rather associated with universal principles and checklists of consideration than cunning or guile.<sup>38</sup> This was also a practical consequence of the sheer size of the then standing armies and served to formally distinguish strategy from tactics – a distinction not made in the literature of antiquity and early modern period.<sup>39</sup> With the establishment of levels of war by

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<sup>36</sup> Heuser (2010), pp.89–97; Freedman (2013), pp.42–53

<sup>37</sup> Kahneman (2012), p.52

<sup>38</sup> Freedman (2013), pp.72–75

<sup>39</sup> Heuser (2010), p.4

Jacques-Antoine-Hippolyte de Guibert in *General Essay on Tactics*,<sup>40</sup> military literature focused more on whole armies and their utility in reaching political goals. This was clearly so in Clausewitz' *On War*. According to van Creveld, Clausewitz 'belittles the effect of maneuver, surprise and stratagems' for the strategic level,<sup>41</sup> yet, still considers surprise and cunning the way to gain superiority in tactics.<sup>42</sup> Contemporary manuals also emphasise guile<sup>43</sup> and in our time international humanitarian law outlines specific rules for 'ruses of war'.<sup>44</sup> We should therefore expect a strong focus on guile in tactics and in education on tactics.

Tactics is an art and a science where a scientific approach is used to shape tactical judgement based on personal or historical experience and the art is the application of this judgement to tactical problems. As military historian Robert Doughty points out, 'establishing the nature of war has been a pastime of professional soldiers for centuries.'<sup>45</sup> There is arguably a dichotomy between those that approach war as a technical activity with relatively fixed laws and those that believe that handling friction and human will in war requires intuitive skill. Another perspective on the matter is represented by Prussian military writer Georg Heinrich von Berenhorst who in 1798 observed that most cultures had mainly passed on lessons learnt empirically from experiences of previous wars and battles, rather than trying to rise above such empiricism and attempt to approach warfare from the

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<sup>40</sup> Guibert (1772), p.28

<sup>41</sup> van Creveld, (2015), p.60

<sup>42</sup> *Idem* p.198

<sup>43</sup> USMC (1997b), p.52

<sup>44</sup> International Committee of the Red Cross (n.d.)

<sup>45</sup> Doughty (1977)

perspective of theoretical approaches.<sup>46</sup> Beatrice Heuser provides the most thorough analysis of the evolution of the dichotomy art vs. science in an essay to a former teacher.<sup>47</sup> She argues that depending on the historic period and their military education, professionals have favoured *either* art or science. She also points out that ‘the current usage of both terms in English is the exact opposite of its original use’, which makes the search for historical references precarious for anyone oblivious of this: “art” came to mean something done with instinct, intuition and talent (even genius), not by rote, reflection, or reasoning.’<sup>48</sup>

Greek and Roman writings from antiquity display a similar dichotomy, albeit one that converges. The Greek military commander and philosopher Arrian of Nicomedia named his treatise on military tactics Τέχνη τακτική (*Technê Taktike*),<sup>49</sup> whereas Byzantine Emperor Leo VI ‘The Wise’ explicitly defines tactics as ἐπιστήμη (*Epistêmê*).<sup>50</sup> According to the Stanford Encyclopaedia of Philosophy, *Technê* is most often translated as ‘skill or craft’ (art), whilst *Epistêmê* is rather ‘scientific knowledge’.<sup>51</sup> They also refer to Aristotle’s writings as the best source for analysis of these ‘virtues of thought’ and provide a comprehensive study of his interpretations across his most significant works. They argue that despite Aristotle’s position on the ‘certain’<sup>52</sup> and ‘eternal’<sup>53</sup> nature of science, he affirmed that the two virtues in reality converge: science and art aspire to ‘universal judgment’.<sup>54</sup> In other words, the commander

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<sup>46</sup> Berenhorst (1798) cited in Heuser (2016), p.186

<sup>47</sup> Heuser (2016)

<sup>48</sup> *Idem* p.188; Clausewitz (2008), p.272

<sup>49</sup> Flavius (1664)

<sup>50</sup> Dennis (2010), pp.12–13

<sup>51</sup> Parry (2014)

<sup>52</sup> *Ibid.*

<sup>53</sup> Aristot. Nic. Eth. 1139b.20

<sup>54</sup> Parry (2014); Aristot. Met. 1.981a-b

who is experienced but incapable of turning this into judgment does not possess *knowledge*; just like Fredrich II's mules who had seen 10 campaigns but were still incapable of tactics.<sup>55</sup> Conversely, the commander who can analyse his experiences possesses knowledge.<sup>56</sup> The many authors of the Enlightenment who translated and built upon the military manuals of antiquity were unlikely to have benefitted from such an exhaustive analysis of Greek expressions. The French military theoretician Paul-Gédéon Joly de Maizeroy, credited for introducing the term *strategy* into the Western vernacular languages,<sup>57</sup> translated Emperor Leo VI's *Taktika* and defined tactics as an art *and* a science: 'La tactique est la science des mouvements qui se font à la guerre, [...]; c'est l'art de ranger les troupes'.<sup>58</sup> If we admit that this and other translations may have inappropriately used some of each historical period's contemporary assumptions about the relation between art and science, it is not difficult to understand the continuing dichotomy we still witness today. It is therefore simpler to settle on tactics being both art and science, but with the common aspiration of universal judgement derived from experience. This is what Doughty, and others such as Clausewitz,<sup>59</sup> Moltke the Elder,<sup>60</sup> Pershing,<sup>61</sup> and Fuller<sup>62</sup> concluded with: The science element lies in the *systematic* approach to studying tactics allowing the military leader to hone his judgement; the art lies in the subsequent *use* of this judgement to successfully employ troops in war where every situation is unique. We should therefore expect education on tactics to include concrete measures for shaping this judgement through a scientific approach, and methods

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<sup>55</sup> Frederic II (1789), pp.76–77

<sup>56</sup> Parry, (2014); Aristot. Met. 1.981a-b

<sup>57</sup> Heuser (2016), p.184

<sup>58</sup> Maizeroy (1771), p.1

<sup>59</sup> Clausewitz (1989), p.149

<sup>60</sup> Moltke (1993), p.124

<sup>61</sup> Pershing (1931), p.393

<sup>62</sup> Fuller (1926), p.21



for training the art of applying this judgement, notably in students with no prior military experience.

Tactics concern battles and engagements. To further define tactics it is necessary to delimit it from strategy. Emperor Leo VI's *Taktika* provides the oldest distinction: 'Battle is defined as a partial war that occurs frequently in the course of the entire war.'<sup>63</sup> Clausewitz defined strategy as 'the use of engagements for the object of the war' and tactics as 'the use of armed forces in the engagement'.<sup>64</sup> According to Graham's translation, Clausewitz also distinguishes between engagements (*Treffen*) that are unexpected encounters with the enemy, and battles (*Schlacht*) that are rather deliberate ones.<sup>65</sup> It is therefore possible to establish a hierarchy in which battles and engagements are at the bottom, being more temporally and locally limited than wars and often marked by unpremeditated actions. At the same time they are part of a 'whole' in that they have to fulfil the 'object the war' to be worth the effort. Thus, it is in the battle or engagement that the quality of the commander's judgement of the situation and his subsequent decisions on the employment of his forces for the object of war are ultimately put to the test. Tactical education therefore not only needs to shape the judgement necessary to win an engagement, but also make this victory significant for the strategic level.

In sum, indicators of effective tactical education include: fostering guile, shaping judgement through a scientific approach, and training the application of this judgement, especially in

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<sup>63</sup> Dennis (2010), p.385

<sup>64</sup> Clausewitz (1989), pp.128-132

<sup>65</sup> Clausewitz (2013), p.330

view of strategic objectives. Before contemplating what consequences this poses for the education of tactics, it is necessary to understand the current ‘Western way of war.’

## 2.2. Manoeuvre warfare

*Manoeuvre is the expression of the art of war.*<sup>66</sup>

General Sir Rupert Smith

Manoeuvre warfare (MW) is an American concept conceived in the 1970s by civilian scholars and military practitioners.<sup>67</sup> In essence, it is a mindset that seeks to defeat the enemy’s will to fight, as opposed to destroying his means.<sup>68</sup> However, the concept remains contested due to its controversial foundation on interpretations of military history and psychology and to the polarisation of the defence debate it induced and is still associated with.<sup>69</sup> Nevertheless, MW is the way of war presently adhered to by both the USMC and the Norwegian Army, therefore shaping their education in tactics, particularly in the cognitive domain.

MW developed as a reaction to US bureaucratisation of war.<sup>70</sup> Its conception coincided with the publication of US Army doctrines after the Vietnam war designed to deal with perceived Warsaw Pact superiority in conventional forces in Europe.<sup>71</sup> The first doctrine, 1976 *Active Defense*,<sup>72</sup> was severely criticized by civilian scholars and subsequently reworked into 1982’s

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<sup>66</sup> Smith (2018)

<sup>67</sup> Damian (2008)

<sup>68</sup> Grazier (2014)

<sup>69</sup> Huntington (1984); Kelly *et al.* (2009); Owen (2012)

<sup>70</sup> Lind (1984), pp.98–100

<sup>71</sup> Sæveraas (2007).

<sup>72</sup> DePuy (1976)

*AirLand Battle*.<sup>73</sup> William Lind and Edward Luttwak, part of the 'defence community' established during the Cold War,<sup>74</sup> reproached the Army's defensive posture and fixation on material war, illustrated notably by the preoccupation with body-counts in Vietnam.<sup>75</sup> This argument is also apparent in Lind's MW 'canon' of literature that he regularly references.<sup>76</sup> Here, practically all entries highlight the perils of viewing soldiers as 'mere machines'<sup>77</sup> or cadets as 'factory products'.<sup>78</sup> Further, Martin van Creveld's book *Fighting Power*, comparing German and US Army performance in WW2, is particularly poignant.<sup>79</sup> He states that the German army possessed higher 'fighting power' than the US,<sup>80</sup> an expression he borrows from German interwar doctrine's *Kampfkraft*<sup>81</sup> and defines as 'the sum total of mental qualities that make armies fight.'<sup>82</sup> He argues that America, 'the home of Taylorism',<sup>83</sup> had lower *Kampfkraft* because it chose to regard war 'not so much as a struggle between opposing troops, but rather as one whose outcome would be decided largely by machines.'<sup>84</sup> This is at the core of what Lind *et al.* named 'attrition warfare' and subsequently sought to change with MW.<sup>85</sup>

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<sup>73</sup> Starry and Wass de Czege (1982)

<sup>74</sup> van Creveld (1990), p.74; Sheffield (2010), p.E-19

<sup>75</sup> Lind (1977); Luttwak (1979); Wilson *et al.*(1981); Wyly (1993), p.249; Sæveraas (2007); Shamir (2018), p.43

<sup>76</sup> Lind (2004); Grazier and Lind (2015); Lind (2018)

<sup>77</sup> Boyen (n.d.) cited in White (1989), p.77

<sup>78</sup> Muth (2011), p.185

<sup>79</sup> van Creveld (1982)

<sup>80</sup> *Idem* p.163

<sup>81</sup> *Idem* p.29 from *Heeresdruckvorschrift 300:Part 1* (Condell, 2012, p.18)

<sup>82</sup> van Creveld (1982), p.3

<sup>83</sup> *Idem* p.38

<sup>84</sup> *Idem* p.167

<sup>85</sup> Lind (1977); Boyd (1976b); Luttwak (1979)

MW developed from two main sources: former US Air Force Colonel John Boyd's presentation *Patterns of Conflict* and German *Bewegungskrieg* (manoeuvre/movement warfare).<sup>86</sup> John Boyd, a former fighter-pilot turned instructor and co-designer of the highly successful F-16,<sup>87</sup> influenced many people, including Lind, with his eccentric personality and convincing argumentation in *Patterns of Conflict*.<sup>88</sup> Here, Boyd lists numerous historical battles where an inferior force defeated a superior one and seeks to uncover the reason for their success. He argues that 'all conflict is composed of repeated, time-competitive'<sup>89</sup> OODA-cycles (Observe-Orient-Decide-Act) and that the army with superior 'insight, initiative, adaptability and harmony' will successfully perform these cycles faster than the opponent.<sup>90</sup> When the opponent's actions become delayed they are increasingly irrelevant, and as 'he desperately seeks convergence, he gets ever increasing divergence.'<sup>91</sup> Eventually, the opponent realises he can do nothing that works, which usually leads him either to panic or defeat, often while still physically largely intact.<sup>92</sup> Fighting in a faster manner than your enemy can therefore provoke his mental collapse and this is the central idea that Lind *et al.* based MW upon. However, before examining this, a comment on Boyd's research is necessary.

Boyd's research is 'quasi-scientific'.<sup>93</sup> In *Destruction and Creation*, Boyd introduces his decision-making model and states that humans comprehend and cope with their

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<sup>86</sup> Lind (1984), p.90

<sup>87</sup> Bjorkman (2014)

<sup>88</sup> Clark et al. (1984), p.20; Sæveraas (2007), pp.36-41.

<sup>89</sup> Lind (2013)

<sup>90</sup> Boyd (1976b)

<sup>91</sup> Lind (2013)

<sup>92</sup> *Ibid.*

<sup>93</sup> Sæveraas (2007), p.38

environment through the creation and destruction of mental patterns on which they base their decisions.<sup>94</sup> However, his supporting argumentation attempts to fuse together Gödel's ontological proof, Heisenberg's uncertainty principle, entropy and the second law of thermodynamics(!)<sup>95</sup> – ‘utterly unreasonable,’ according to military historian Niklas Zetterling.<sup>96</sup> Modern psychological research, which we will examine in the next section, has nevertheless shown that Boyd’s concept of mental patterns is actually quite valid. However, Boyd’s ‘mental gymnastics’ reveal the logical fallacies of his theories when he is not present *in situ* to assert his arguments, casting doubt over MW’s foundation.<sup>97</sup> The other central issue with MW concerns a limited interpretation of Soviet Deep Battle,<sup>98</sup> Israeli performance during the Yom Kippur war, but especially of *Blitzkrieg*.

The desire to emulate *Blitzkrieg* is central to MW proponents. In *Patterns of Conflict*, the space Boyd devotes to *Blitzkrieg* equals that devoted to all his other examples combined.<sup>99</sup> Furthermore, Lind has himself stated that he is particularly interested in German military history.<sup>100</sup> Together with USMC officers at Quantico, Lind disseminated Boyd’s thinking and endeavoured to develop a practical application of the MW concept.<sup>101</sup> Michael Wyly, head of tactics at the USMC Amphibious Warfare School, was dissatisfied with the methodological focus of the military<sup>102</sup> and sought to restore what was ‘good about tactics’.<sup>103</sup> *Blitzkrieg* is

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<sup>94</sup> Boyd (1976a), p.1

<sup>95</sup> *Ibid.*

<sup>96</sup> Zetterling (2004), pp.306–307

<sup>97</sup> *Ibid.*

<sup>98</sup> Simpkin (1994)

<sup>99</sup> Boyd (1976b); Osinga (2007), p.197

<sup>100</sup> Damian (2008), p.29

<sup>101</sup> *Idem* p.35

<sup>102</sup> Wyly (1993), p.248

<sup>103</sup> *Idem* p.265

the popular name for WW2 German *Bewegungskrieg*, literally meaning manoeuvre warfare,<sup>104</sup> and Wyly admits this was but 'a fitting name' for their emerging concept.<sup>105</sup> Indeed, many other German military expressions are found in MW: *Auftragstaktik* became Mission Command, *Schwerpunkt* became main effort, etc.<sup>106</sup> However, adopting another army's doctrine 'is not something you put on like a coat.'<sup>107</sup>

*Bewegungskrieg* is a product of Prussian society and its strategic challenges and may therefore be unfit for contemporary Western armies. Military historian Robert Citino argues that this way of war evolved since the 1600s<sup>108</sup> to cope with Prussia's 'unfortunate tight spot' in the heart of Europe<sup>109</sup> and keep its wars 'kurz und wies' (short and lively).<sup>110</sup> This generated 'an army with an extremely high level of battlefield aggression, an officer corps that tended to launch attacks no matter what the odds, and a flexible system of command that left a great deal of initiative [...] in the hands of lower-ranking commanders.'<sup>111</sup> This independence, Citino argues, is a product of Prussia's distinct social contract between the King and Junker-nobility and not applicable to contemporary Western armies.<sup>112</sup> 'Soldiers in the US are citizens, with the same rights and privileges as the officer, and [the officer] will never have the right to use [the soldiers] independently in the manner of a Prussian [commander].'<sup>113</sup> Given these differences, what then is the feasibility of MW in Western

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<sup>104</sup> Fanning (1997); Citino (2005), p.311

<sup>105</sup> Wyly (1993), p.265

<sup>106</sup> Damian (2008), p.80

<sup>107</sup> Citino (2005), p.xiv

<sup>108</sup> *Idem* p.33

<sup>109</sup> *Idem* p.xii

<sup>110</sup> *Idem* p.150

<sup>111</sup> *Idem* p.xiv

<sup>112</sup> *Idem* p.308

<sup>113</sup> *Idem* p.311

democratic societies? The answer is likely found in the challenging balance between having a cost-effective and financially predictable peace-time army that is still ruthless and lethal when used in unpredictable combat. After all, many wars have begun with the replacement of underperforming 'peace-time' officers.<sup>114</sup>

MW is a mindset that emphasises speed, empowers the individual soldier and concentrates on the belligerent's cognitive domain.<sup>115</sup> Despite its questionable foundations repeatedly criticised for unoriginality<sup>116</sup> and misuse of history,<sup>117</sup> MW marked a return to a Clausewitzian view on war where friction and chance reduce the effectiveness of detailed planning.<sup>118</sup> The focus is on speed to 'out-cycle' the opponent's decision-making process provoking his mental collapse. This means giving more independence to junior officers who often possess better situational awareness to make decisions based on intent rather than on explicit orders – so-called Mission Command – whilst at the same time highlighting the level of risk they are allowed to assume on behalf of their superior. Training for MW therefore to a large extent focuses on the cognitive abilities of military leaders not only to make cunning and timely decisions to defeat their enemy but also to act in the absence of orders without unnecessary sacrifice of soldiers. Army education unfortunately tends towards detailed planning to appear cost-effective and justify budgets with concrete forecasting of unit training levels. The consequence is a focus on the 'methodical battle: a set piece, closely orchestrated, slow moving battle, tightly controlled from a highly centralized command',

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<sup>114</sup> *E.g.* Ricks (2013)

<sup>115</sup> Gray *et al.* (2015); Grazier (n.d.)

<sup>116</sup> Owen (2008)

<sup>117</sup> Hughes (1986)

<sup>118</sup> Gray *et al.* (2015); Grazier (n.d.)

which is rather an abstraction from actual war since it downplays the influence of friction and chance.<sup>119</sup> According to Wyly, training and education must be towards 'real war' where the opponents' friction should be augmented, and the opportunities offered by chance seized and exploited. For him, MW is 'a fast-paced battle, loosely controlled and decentralized, highly responsive to a changing situation' requiring substantial focus on cognitive abilities.<sup>120</sup> Wyly also highlights the perils of training wrongly: '[...] when your troops cross the line of departure, [...] the battle is joined. What's going to happen is what's going to happen. God help us! We hope we taught them right.'<sup>121</sup>

The controversies over MW led to a renaming of the concept. In 1994, The British army deemed the term misleading and introduced 'the Manoeuvrist Approach' to focus on the cognitive domain rather than the opposition to 'attrition'.<sup>122</sup> NATO's Joint Doctrine also endorses this concept.<sup>123</sup>

MW places high requirements on tactical education. Beyond familiarising himself with military techniques, the junior officer needs to reach a level of proficiency within the school years so that he can make quick decisions independently, occasionally even contradicting stated orders, to seize fleeting moments in battle and promptly exploit them, subsequently causing enemy confusion. Thus, indicators of effective tactical education include

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<sup>119</sup> Wyly (1993), p.248

<sup>120</sup> *Ibid.*

<sup>121</sup> Chase (2007)

<sup>122</sup> Kiszely (1998), p.37

<sup>123</sup> NATO Standardization Office (2016), pp.2-7.



independent, quick *and* valid decision-making. We shall now see which implications these have for tactical education.

### 2.3. Implications for tactical education

Based on the previous sections' analysis regarding tactics and manoeuvre warfare it is possible to discern certain educational requirements for teaching junior officers: technical skill and practical wisdom, as well as intuitive decision-making, both acquired through repetition.

Tactics should be approached from two perspectives, art and science, aspiring to form 'universal judgment' on warfare. In his article *Wider Officer Competence*, Carsten Rønnfeldt of the NMA analyses these concepts and links them to strategy based on Aristotle's *Nicomachean Ethics*.<sup>124</sup> He utilises Aristotle's *Technê* and *Epistêmê* (examined in section 2.1) which converge in their pursuit of 'universal judgement', in addition to *Phronesis*, meaning practical wisdom. The latter relates to 'knowing what is the right thing to do to achieve a common good in situations when there are several, often conflicting, objectives.'<sup>125</sup> Since *Epistêmê* by definition relates to certain and eternal knowledge, *Technê* is more applicable to tactics since, as Clausewitz reminds us, 'war is an act of human intercourse' in which we can only hope to uncover mere general laws.<sup>126</sup> *Technê* thus describes how to employ units in an engagement and *Phronesis* is knowing in which way these units can achieve victory and subsequently political ends. *Technê* is initially acquired by reproducing actions described in

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<sup>124</sup> Rønnfeldt (2017)

<sup>125</sup> *Ibid.*

<sup>126</sup> Clausewitz (1989), pp.148–150

field manuals that after many repetitions develop into skill and *Phronesis* is acquired through the development of critical thought and the subsequent reflection on numerous tactical case-studies.<sup>127</sup>

Tactics is about decision-making; taking into account manoeuvre warfare, it is about speedy and creative decision-making, often under uncertain conditions and potentially contradicting higher command's orders. Creativity and speed are made possible by relying on intuitive rather than analytical decision-making, illustrated by psychologist Kahneman's 'fast thinking' system 1 and 'slow thinking' system 2, to be discussed below.<sup>128</sup> Up to 90% of military decision-making is intuitive.<sup>129</sup> This is what Napoleon and Clausewitz called *coup d'oeil*, the Germans *Fingerspitzengefühl*, the Japanese *ishin denshin*, and in English often referred to as 'gut feeling'.<sup>130</sup> A greater emphasis on intuitive training has repeatedly been advocated by officers from the US Army<sup>131</sup>, the USMC<sup>132</sup>, the British Army,<sup>133</sup> the Norwegian Army,<sup>134</sup> the Australian Army,<sup>135</sup> the US Navy<sup>136</sup> and scholars.<sup>137</sup>

Intuitive decision-making requires a 'high-validity' environment. It is possible to distinguish two contemporary approaches to intuition represented by the psychologists Daniel

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<sup>127</sup> Rønnfeldt (2017), p.14

<sup>128</sup> Kahneman (2012)

<sup>129</sup> Van Riper and Hoffman (1998), p.9

<sup>130</sup> Løvland, (2000), p.3

<sup>131</sup> Picart (1991); Reinwald (2000)

<sup>132</sup> Krulak (1999a); Schmitt (1998); Van Riper and Hoffman (1998)

<sup>133</sup> Rogers (1994)

<sup>134</sup> Bull and Cramer (1999); Hanssen (1999); Løvland and Hanssen (2000)

<sup>135</sup> Young (2016)

<sup>136</sup> Cohn *et al.*(2013)

<sup>137</sup> Gudmundsson (2018)

Kahneman, advocate of heuristics and biases, and Gary Klein, proponent of naturalistic decision-making.<sup>138</sup> These two approaches can be understood as opposites since the first claims that 'intuitive judgment is commonly found to be flawed', whilst the other pursues the 'reliance on expert intuition in decision making', i.e. that intuition is useful.<sup>139</sup> Boyd's 'patterns' resemble Klein's model. In their only joint journal article, Klein and Kahneman explain that their approaches are both valid, but in different circumstances and professions.<sup>140</sup> Two conditions are necessary for intuitive decision-making to develop: first, the environment must provide adequately valid cues to the nature of the situation, so called 'high-validity' environments. Second, people must have an opportunity to learn the relevant cues, i.e. repetition.<sup>141</sup>

Engagements at the tactical level qualify as a 'high-validity' environment. According to Kahneman and Klein, these environments are characterised by 'stable relationships between objectively identifiable cues and subsequent events, or between cues and the outcomes of possible actions.'<sup>142</sup> Although wars may be unique, different engagements have an overwhelming number of similarities among them. Just as hunters from different continents and cultures would independently stalk prey in a similar manner, armies discern the objectively identifiable cues of an engagement in complementary ways. Clausewitz supports this because, unlike strategy, 'the field of tactics [...] is virtually limited to material factors.'<sup>143</sup> Both armies considered in this thesis, but also all Western armies, estimate engagements

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<sup>138</sup> Kahneman and Klein (2009), p.515

<sup>139</sup> *Ibid.*

<sup>140</sup> Kahneman (2012), p.239

<sup>141</sup> Kahneman and Klein (2009), p.520

<sup>142</sup> *Idem* p.524

<sup>143</sup> Clausewitz (1989), p.147

through a finite set of characteristics called METT-TC: mission, enemy, terrain, troops available, time and civilian considerations; put more bluntly: terrain and people.<sup>144</sup>

Despite its great variety, terrain offers identifiable cues that characterise it as a 'high-validity' environment. Indeed, when composing his theory on decision-making, Klein observed how firefighters could foresee how a fire would develop based on cues in the environment, and intuitively make life-saving decisions.<sup>145</sup> Although the locations of the fires were different, the firefighters could recognise analogous cues. Similarly, military leaders can appreciate a piece of terrain and recognise its characteristics, such as observation positions, fields of fire, cover, and concealment, revealing preferred ways of employing troops within it. According to Clausewitz, terrain is neutral, but the side that can best appreciate it will have an advantage in the engagement.<sup>146</sup> Although the opponent in Klein's case study, fire, arguably has no free will, it is nonetheless possible to apply a similar logic to humans.

Within the limitations of an engagement, human behaviour is sufficiently predictable to qualify as being part of a 'high-validity' environment. Contrary to common belief, contemporary psychologists have demonstrated that humans are much less rational than they assume. Klein and Kahneman, in addition to Steven Pinker<sup>147</sup> and Jonathan Haidt<sup>148</sup>, identify two selves within the human mind, one rational, analytical, controlled and slow

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<sup>144</sup> USMC (n.d.), p.9; Hærens Våpenskole (2010), pp.22–23

<sup>145</sup> Klein (2001), pp.7–24

<sup>146</sup> Clausewitz (1989), p.109

<sup>147</sup> Pinker (1997)

<sup>148</sup> Haidt (2006)

thinking mind, and another less rational; emotional, intuitive, automatic and fast thinking. They claim that what is often perceived as deliberate action is rather an intuitive response that has been rationalised in hindsight by the analytical self. Haidt illustrates this by stating that the mind is like a rider on an elephant. The rider represents the 'conscious verbal reasoning, the stuff you are aware of, the stuff that uses logic [and] everything else is the elephant, it's the automatic processes, it's the 99% of the things going on in your mind that you are not aware of represents.'<sup>149</sup> The rider might believe he is in control, but he is in fact relatively powerless compared to the larger elephant. In the case of the engagement, an opponent will unconsciously utilise his surroundings in an intuitive manner and it is thus possible to predict much of his behaviour through cultural familiarisation. This is the experience of a multitude of historical examples where, simply speaking, 'the enemy acted according to plan', or as illustrated by Patton's exclamation in the famous 1970 movie when he realised how Rommel would act at El-Alamein: 'Rommel, you magnificent bastard, I read your book!'.<sup>150</sup> Patton understood Rommel's thinking through becoming familiar with his reflections set forth in his writing.

In addition, due to the physical nature of combat, commanders are prone to revert to the 'automatic mind' when fatigued. Kahneman argues that engaging your analytical mind requires effort and that humans are predisposed for the 'easy' way through cognitive ease.<sup>151</sup> However, should the opponent be aware of his own cognitive biases, the case for 'high validity' is weakened. Seasoned fighters are usually difficult to defeat because they no

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<sup>149</sup> Woods and Haidt (2015); Haidt (2006), p.4

<sup>150</sup> Schaffner (1970)

<sup>151</sup> Kahneman (2012), pp.59–70

longer adhere to assumptions made about the enemy and act unpredictively; they opt for guile rather than force. Since graduating cadets are far from being experienced officers, military academies should therefore emphasise obtaining this awareness so they can avoid being fooled by their own intuition. This does not mean an abandonment of intuitive decision making, as that would mean sacrificing speed, but rather developing methods for the intuitive decision to fit the actual realities of a specific engagement. To use Kahneman's expressions: adjust the fast solution offered by system 1 with the help of the rational system 2 to produce a quick decision relevant to the present situation. The second requirement for intuitive decision-making is the opportunity to learn the relevant cues. The army offers numerous methods that give these opportunities, however the key to gaining good intuition lies in much repetition of these methods.

Exposure to and repetition of tactical problem-solving is vital to building practical wisdom and good intuitive decision-making skills. Short of actual combat experience, peace-time field exercises are the main arena for accomplishing this. However, these are hardly frequent enough to enable the development of a wide enough experience base (Boyd's 'patterns') required for intuitive decision-making within the time constraints of military academies. It is therefore necessary to supplement this with less resource-demanding training that allows for repetition. The usual methods utilised by military academies include: historical case-studies, map exercises, tactical decision games, sand table exercises, war-gaming, tactical exercises without troops, and staff rides.<sup>152</sup>

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<sup>152</sup> Swift (1922)

Notable professionals have emphasised specific methods as key to teaching tactics. Clausewitz saw intuition as one of the qualities of the military genius<sup>153</sup> and wrote extensive historical battle analyses.<sup>154</sup> This has led historian Jon Sumida to argue that *On War* promotes intuition by advocating for ‘a novel form of historical case study that takes full account of the complex, difficult, and contingent nature of decision-making.’<sup>155</sup> Moltke the Elder and his general staff presented tactical problems to their subordinates to use to further their tactical skills.<sup>156</sup> The French subsequently replicated these after their defeat to namely Moltke.<sup>157</sup> Many publications adopt a format based on series of ‘dreams’ to illustrate military thought-process and judgement. Here too Moltke’s General staff members were innovators,<sup>158</sup> later imitated by British officers following the Boer War<sup>159</sup> and WW1.<sup>160</sup> There also exist contemporary versions on mechanized warfare,<sup>161</sup> logistics,<sup>162</sup> and counter-insurgency.<sup>163</sup> Also Rommel transcribed his tactical flair into useful decision-games<sup>164</sup> and George Marshall sought to share WW1 experiences before his army would face the Axis.<sup>165</sup> These methods point to the necessity of avoiding textbook solutions and rather find ways to simulate ‘the chameleonic’ nature of war.<sup>166</sup>

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<sup>153</sup> Clausewitz (1989), p.102; Howard (1983), p.27

<sup>154</sup> Clausewitz (1992)

<sup>155</sup> Sumida (2008, p.182

<sup>156</sup> Gizycki (1887); Moltke (1894); Vernois (1894)

<sup>157</sup> (Mumme (1894); Moltke (1895); Audibert (1911)

<sup>158</sup> Meckel (1888); *Eine Wintertagswirklichkeit* (1888)

<sup>159</sup> Swinton (1904)

<sup>160</sup> Mitchell (1922)

<sup>161</sup> McDonough (1993)

<sup>162</sup> Scott *et al.* (2001)

<sup>163</sup> Burgoyne *et al.* (2009)

<sup>164</sup> Rommel (1935)

<sup>165</sup> The Infantry Journal, Inc. (1939)

<sup>166</sup> Clausewitz (1989), p.89

The majority of the repetitions should include a human opponent. Using another student or a member of faculty to play the opponent increases teaching quality and is a major motivating factor for involved parties. 'Playing' against a human enemy allows room for creativity, uncertainty, unpredictability, etc. in contrast to a simulated opponent. In this way, a more realistic rendering of both chance and friction in war is possible. In addition, the mere fact that the opposition is being played by a colleague triggers competitive spirit and in turn emphasises the cunning side of both players. The outcome of these engagements is evidently of some interest; however, it is the processes that led to the different outcomes that is of the greatest value.

It is the thought processes behind decisions, as opposed to their outcome, that contribute to better intuition and practical wisdom. By focusing on the reasoning behind a decision rather than the outcome it is possible to uncover the thinking process of the student. Through discussion, students also become aware of these processes and can identify occasions where their intuition trumped their reasoning; as Kahneman states, it is difficult to see one's own biases, but much easier for others to detect them.<sup>167</sup> A focus on repetition is also likely to punish the inexperienced student with repeated failure but the repercussions this can have on motivation and self-confidence can be mitigated through the creation of safe-to-fail environments.<sup>168</sup> Also, as psychologists Baumeister *et al.* point out in their article *Bad Is Stronger Than Good*, failing is an effective cognitive tool for remembering events.<sup>169</sup>

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<sup>167</sup> Kahneman (2012), p.417

<sup>168</sup> Development, Concepts and Doctrine Centre (2017), p.24

<sup>169</sup> Baumeister *et al.*(2001)



In sum, the indicators of effective tactical education uncovered in this chapter are: fostering guile, shaping tactical judgement through a scientific approach, and training the application of this judgement in view of strategic objectives, as well as independent, quick *and* valid decision-making. The means for implementing these include training intuitive decision-making with bias awareness and developing critical thinking through repetition of war-game-like methods where reasoning and not outcome is central. We shall now see if these indicators are present in the USMC and NMA.

### 3. Case Study: United States Marine Corps

#### 3.1. Context

The USMC is organisationally under the Department of the Navy and is regarded as the smallest branch among the US Armed Forces, receiving a fraction of the budget compared to the other branches.<sup>170</sup> The USMC prides itself on its reputation for being ‘the world’s most feared and trusted force’ and of its focus on cultivating the cognitive domain in warfare to compensate for financial limitations.<sup>171</sup> In 1989, General Gray officially endorsed MW as the USMC’s warfighting philosophy in Fleet Marine Force Manual no.1 (FMFM-1), known today as Marine Corps Doctrinal Publication no.1 Warfighting (MCDP-1).<sup>172</sup>

#### 3.2. Tactics

The USMC’s definition of tactics encompasses both ‘art and science’ and focuses on breaking the will of the enemy. It was first formulated in FMFM-1 and based mainly on the thinking of Sun Tzu, Clausewitz and John Boyd, with input and advice also from William Lind.<sup>173</sup> The original definition of tactics remains intact in MCDP-1,<sup>174</sup> but is most explicitly presented in a linked publication,<sup>175</sup> MCDP 1-3 Tactics:

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<sup>170</sup> Office of the Under Secretary of Defense (Comptroller)(2018)

<sup>171</sup> Szoldra (2016)

<sup>172</sup> Bassford (n.d.); Krulak (1997)

<sup>173</sup> Gray *et al.* (2015); MAGTF Instructional Group (2018)

<sup>174</sup> USMC (1997a), p.30

<sup>175</sup> Bassford (1998)

*[...] the art and science of winning engagements and battles. It includes the use of firepower and maneuver, the integration of different arms and the immediate exploitation of success to defeat the enemy.*<sup>176</sup>

MCDP-1's author, John Schmitt, specifies that the definition's starting point was the glossary of the recently published Department of Defense's Joint Publication 1.<sup>177</sup> He states that this was 'a pretty conventional definition, [...] consistent with Clausewitz'.<sup>178</sup> However, he points out that 'the thought of tactics as the art and science of winning battles and engagements was a favourite construction of Lind.'<sup>179</sup>

In familiar USMC pragmatism, the definition overcomes the 'art vs. science' dichotomy by invoking both concepts. It states that science 'includes those activities directly subject to the laws of ballistics, mechanics, and like disciplines' and art 'is the intuitive ability to grasp the essence of a unique military situation and the creative ability to devise a practical solution.'<sup>180</sup> MCDP 1-3 also notes that science is antecedent to art because 'without mastery of basic warfighting skills, artistry and creativity in their application are impossible.'<sup>181</sup> This converges with the previous chapter's arguments about tactics.

The definition designates 'defeat' as the ambition of effect on the enemy implying a focus on his 'will to fight'. Military syntax is precise and glossaries ensure army-wide consensus; MCDP 1-0 defines defeat as: 'To disrupt or nullify the enemy commander's plan and

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<sup>176</sup> USMC (1997b), p.3, (1991), p.3

<sup>177</sup> Joint Chiefs of Staff (1989), p.363

<sup>178</sup> Schmitt (2018)

<sup>179</sup> *Ibid.*

<sup>180</sup> USMC (1997a), p.18

<sup>181</sup> USMC (1991), pp.4–12

overcome his will to fight, thus making him unwilling or unable to pursue his adopted course of action and yield to the friendly commander's will.<sup>182</sup> This supports MW's focus on the cognitive domain.

### 3.3. Manoeuvre Warfare

The USMC's approach to MW emphasises initiative, speed, intuitive decision-making and harmonisation of forces to defeat the enemy's will to fight. MCPD-1 defines MW as:

*[...] a warfighting philosophy that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions which create a turbulent and rapidly deteriorating situation with which the enemy cannot cope.<sup>183</sup>*

The ultimate goal is panic and paralysis and 'an enemy who has lost the ability to resist.'<sup>184</sup>

MW is central to the USMC. Its adoption followed the US Army's and was not fully implemented until General Gray became Commandant and endorsed it. Prior to this there was resistance in the Corps, which pushed MW proponents to distil the concept's core ideas and convince 'non-believers.'<sup>185</sup> Lind was directly consulted during the time of FMFM-1's writing.<sup>186</sup> He had just formulated his MW theory into the 1985 *Maneuver Warfare Handbook*<sup>187</sup> and his contributions and clear formulations made the arguments and

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<sup>182</sup> USMC (2017), p.C-3

<sup>183</sup> USMC (1997a), p.73

<sup>184</sup> *Ibid.*

<sup>185</sup> Damian (2008)

<sup>186</sup> Grazier (n.d.); Gray *et al.*(2015)

<sup>187</sup> Lind (1985)

explanations in 1989's FMFM-1 stronger.<sup>188</sup> The doctrine is laid out as a progressive argument that culminates on MW in the last chapter. In its peer publication, MCDP 1-3, the final chapter is devoted to 'Making it happen' and presents concrete educational methods for teaching manoeuvre warfare.

The USMC's philosophy of command is called mission tactics and bases itself on individual initiative according to commander's intent to enable decentralisation and tempo in operations.<sup>189</sup> For low levels, it emphasises intuitive decision-making to generate the necessary speed required MW.<sup>190</sup> Furthermore, decisions should be based on the actual situation and surroundings rather than what military procedure dictates, distinguished in MCDP-1 as 'awareness and habit'.<sup>191</sup> Lastly, to mitigate problems with cohesion and unity of effort in decentralisation, the doctrine calls for 'implicit communication' and 'harmonious initiative'.<sup>192</sup> This is to be accomplished through familiarity and trust which in turn are based on shared philosophy and shared experience, in sum thinking in the same way. The use of 'harmony' is likely taken directly from Boyd's *Patterns of Conflict* and refers to the level at which all the individuals of an army possess the same knowledge and act in the same manner.<sup>193</sup>

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<sup>188</sup> Grazier (n.d.); Gray *et al.* (2015)

<sup>189</sup> USMC and Schmitt (1989), pp.68–77; USMC (1997a), pp.78–86

<sup>190</sup> *Ibid.*

<sup>191</sup> *Ibid.*

<sup>192</sup> *Ibid.*

<sup>193</sup> Boyd (1976b)

Since Lind *et al.* introduced MW to the USMC it is not surprising that its doctrinal application is in line with the previous chapter’s findings. What is more interesting is to see how this is reflected in the education of junior officers.

### 3.4. Officer education system

USMC officer education is composed of several schools that comprise the professional military education continuum (PME) (Figure 1).

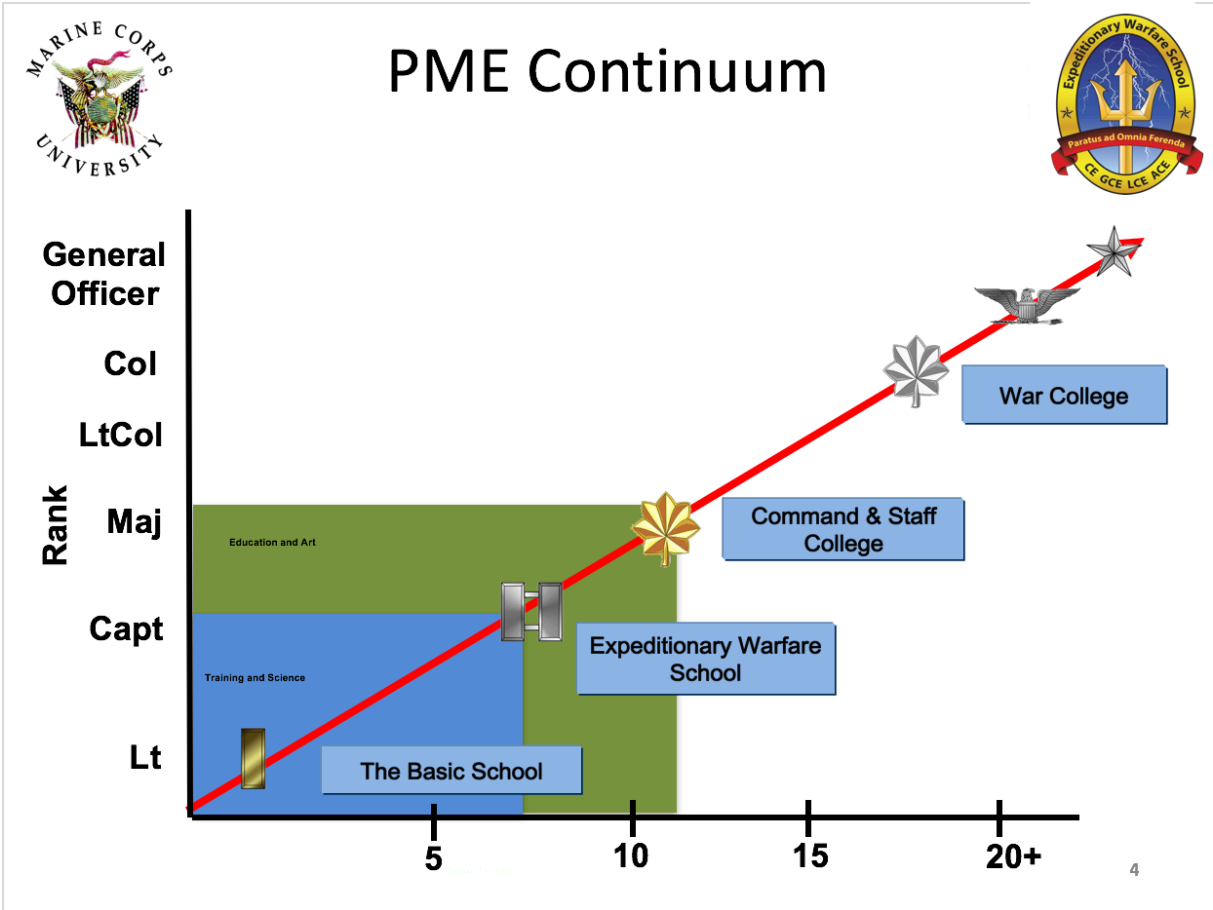


Figure 1 – USMC Professional Military Education Continuum (Expeditionary Warfare School, 2018a)

The entry point for officers in the USMC is through Officer Candidate School where there is also a formal requirement of having a college degree.<sup>194</sup> The course lasts for 6-10 weeks and the school's main purpose is to screen and evaluate potential Marine Corps Officers. The next level of education at The Basic School (TBS) starts immediately following graduation. It is unique to the USMC's education model that every officer regardless of career field, aviation or lawyer for instance, must pass the course at TBS. During this 28 week-long course, students are taught the basics of being an 'Officer of Marines' and the warfighting skills required of a rifle platoon commander. This reflects the reputation of strong cohesion in the USMC in which 'every Marine is, first and foremost, a rifleman; all other conditions are secondary.'<sup>195</sup> It is also the materialisation of Boyd's 'harmony' mentioned in the above section.

After TBS officers further specialise in their respective career fields and eventually start their first assignment, usually as platoon commander. Once they reach Captain they are expected to enrol into the intermediate level school, Expeditionary Warfare School (EWS). The subsequent educational level is Command & Staff College (CSC) for field-grade/senior officers. As stated, this thesis limits itself to examining junior officer tactical education consisting of TBS and EWS.

### 3.5. Teaching tactics

Many of the indicators of effective tactical education are observable at USMC schools. The USMC has a clear understanding of the 'art and science' of tactics. As indicated in the blue

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<sup>194</sup> USMC (n.d.)

<sup>195</sup> Attributed to Gen. Gray

box on Figure 1, this first level concerns itself with 'Training and Science' and is a direct reference to the FMFM-1/MCDP-1's definition of tactics. The green box denotes the period from 5 to 10 years of service in which officers attend EWS followed by CSC and involves 'Education and Art.'

Every interviewee's first statement on tactical education was that they taught 'good judgement', a confirmation of the previous chapter's conclusion on tactics.<sup>196</sup> According to the syllabus and observations made during the study trip to Quantico, USMC education of tactics to junior officers is based on repetition, developing critical thinking by discussing the reasoning behind decisions, and war-gaming/field-exercises with human opponents.

TBS and EWS emphasise repetition to expose students to multiple scenarios, thereby training decision-making and expanding the junior officer's reference/knowledge base. TBS's teaching deliberately follows a progressive set of methods so that their students are familiarised with course material in five different ways: first a student handout with reading list, followed by a lecture and quiz, tactical decision game, sand table exercise and field exercise.<sup>197</sup> EWS follows a similar structure albeit with more variation, particularly within the two Marine Air-Ground Task Force Operations courses.<sup>198</sup>

The USMC schools explicitly state that developing critical thinking is key and that they do so through questioning the reasoning behind decisions. MCDP-1 states 'that the military

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<sup>196</sup> Director of Warfighting (2018); Director of Curriculum Development (2018)

<sup>197</sup> The Basic School (2018), p.13

<sup>198</sup> Expeditionary Warfare School (2018a, 2018b)



profession is a thinking profession'<sup>199</sup> and multiple USMC commanders have reiterated that cultivating one's critical thinking vital for PME.<sup>200</sup> Reading three books per year from the Commandants reading list is mandatory.<sup>201</sup> TBS and EWS course descriptions also specify the necessity for critical thinking and point out that the preferred method for attaining it is through Socratic questioning.<sup>202</sup> In addition, the teachings of Kahneman analysed in section 2.3 are incorporated into instructor training and subsequently used when questioning students about their decisions to see if they are aware of their biases.<sup>203</sup> CSC even defines critical thinking as 'a process by which the thinker improves the quality of his or her thinking by skilfully taking charge of the structures inherent in thinking and imposing intellectual standards on them', implying that developing critical thinking involves a raised awareness of one's mental selves and adjusting how Kahneman's system 1 and 2 interact.<sup>204</sup>

Most instruction at TBS and EWS incorporates a form of war-gaming with human opponents to emulate war as a battle of wills marked by passion, enmity and chance.<sup>205</sup> These range from simple tactical decision games reminiscent of Moltke's and Rommel's mentioned in section 2.3, sand-table exercises, double-blind *Kriegsspiel*,<sup>206</sup> to full two-sided field exercises.<sup>207</sup> The best publication on tactical decision games, *Mastering Tactics*, is also from

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<sup>199</sup> USMC (1997a), p.57

<sup>200</sup> Gray *et al.* (2015)

<sup>201</sup> Amos (2012)

<sup>202</sup> Expeditionary Warfare School (2018a), p.3; USMCU (n.d.)

<sup>203</sup> Director of Curriculum Development (2018)

<sup>204</sup> Command and Staff College (n.d.)

<sup>205</sup> Clausewitz (1989), p.89

<sup>206</sup> Sabin (2014), p.109

<sup>207</sup> Expeditionary Warfare School (2018b)

the USMC, written by FMFM-1's author.<sup>208</sup> This repertoire of methods enables even minor lessons to be illustrated in a realistic manner that contributes to decision-making.

USMC schools also include contemporary research on decision-making processes. At TBS, all instructors are introduced to Kahneman's systems. Through this knowledge they become aware of their students' decision-making processes and can use their observations to raise awareness of student's decisions through Socratic questioning.<sup>209</sup> At EWS, faculty members are also made familiar with Kahneman's teachings, but in greater detail.<sup>210</sup> One of the first lessons is explicitly about cognitive processes and their influence on decisions.<sup>211</sup> In this manner, both teachers and students can observe and assist each other in pointing out biased as well as good decision-making.

Lastly, EWS fosters creativity and the use of guile in their students. Most officers attending EWS have several years of experience in the operational units of the USMC. As noted by the proponents of manoeuvre warfare in section 2.2, during peacetime this large organisation risks emphasising predictability to the detriment of innovation. Therefore, one of the first events EWS students participate at consists in breaking down existing norms on warfare. During Leadership Decision-Making Events, usually in the form of land navigation courses, students are made aware of their own self-imposed limitations by juxtaposing their assumptions of fairness in a race with the possibility of using guile to gain victory. Instructors would hand out maps of a navigation course days before the event. 'Rule-abiding' students,

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<sup>208</sup> [Schmitt \(1994\)](#); [Gudmundsson \(2015\)](#)

<sup>209</sup> Director of Warfighting (2018)

<sup>210</sup> Director of Curriculum Development (2018)

<sup>211</sup> Swanson (n.d.)

affected by the rigidity of military hierarchy, usually diligently wait until race day and complete the course within familiar rules for land navigation. Others opt for another approach: Prior to the race, cunning students reconnoitre the route and even sabotage signs and control points to throw their fellow students off course. On race day they have even used mountain bikes whilst the rest run on foot. The consequence of these popular events is a reinvigoration of creativity that is subsequently applied in class to create cunning plans that thus avoids predictable thinking.<sup>212</sup>

In sum, almost every indicator of effective tactical education is observed in practice at USMC schools. As we shall see in chapter 5, what is lacking is a comprehensive link between tactical success and strategic objectives.

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<sup>212</sup> Director of Curriculum Development (2018)

## 4. Case Study: Norwegian Army

### 4.1. Context

The Norwegian army has a patchwork of native and imported ideas as principles of warfare making tactical education challenging to harmonise due to subjective interpretation.

Norway's peripheral position in Europe and small size of its armed forces, thus limited capacity for research and innovation, has led to a tradition of officer exchange as compensation.<sup>213</sup> These internationally educated officers are often rewarded with high positions and therefore greatly influence national doctrine. It is possible to discern three main historical influences that have shaped the present character of Norwegian military education: German from the 1850s and early 1900s, British during and after WW2, and American from the 1970s.<sup>214</sup>

Mission Command in a form reminiscent of German *Auftragstaktik* existed in Norwegian doctrine from 1909.<sup>215</sup> According to Major Torgersen, observations on the technical innovations in smokeless gunpowder, repeating rifles and breech-loading artillery in the German army and the consequences these had on military command triggered adjustments in the Norwegian Army.<sup>216</sup>

British army influence marks Norwegian military education. During WW2, the Norwegian army existed in exile with its government in the UK. Assisted by the British army, it

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<sup>213</sup> Torgersen (2017), p.39

<sup>214</sup> Ermland and Molland (1999); Torgersen (2017), pp.36–38; Børresen and Rein (2018)

<sup>215</sup> Torgersen (2017), pp.69–72

<sup>216</sup> *Idem* p.54

continued to train to support the resistance and future liberation of Norway.<sup>217</sup> From 1942, officers attended the relocated NMA in Kensington Palace Gardens.<sup>218</sup> Norwegian officers even led British soldiers during Operation Overlord.<sup>219</sup> One of these, Sverre Bratland, would give frequent lectures at the NMA, strongly advocating the British style of command and training.<sup>220</sup> Norwegian Operational Doctrine also switched from US MW to the British 'Manoeuvrist Approach' in 2007 whereas Army Doctrine has not.<sup>221</sup>

US doctrinal changes are imitated in Norway. Since the major reforms following the Vietnam war, and especially in view of the success of the Gulf War, Norwegian officers returning from US schools imported influential aspects of American military thinking, notably MW which was formally introduced in 1995.<sup>222</sup> Similar trends are visible with the adoption of Network Based Defence and Effect Based Operations.<sup>223</sup>

The adoption of MW in the Norwegian army coincided with its transition from one based on territorial mobilisation and being predominantly defensive to one based on a professional and expeditionary style force which is predominantly offensive.<sup>224</sup> Prior to the transition in 2000, MW was used as an argument supporting professionalisation by amongst other former CHOD General Diesen and former Inspector of the Army General Mood.<sup>225</sup> To

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<sup>217</sup> Ersland and Molland (1999); Børresen and Rein (2018)

<sup>218</sup> Berg (2000)

<sup>219</sup> 'Bertel Kjempet i Britisk Uniform' (2004)

<sup>220</sup> 'Major-General Sverre Bratland' (2002)

<sup>221</sup> Forsvarets Stabsskole (2007), p.56

<sup>222</sup> Forsvarets overkommando (1995); Sæveraas (2007), p.88

<sup>223</sup> Forsvarets Stabsskole (2007), pp.53–56; Bjerga and Haaland (2010), pp.526–528

<sup>224</sup> Slensvik and Ydstebø (2016), p.299

<sup>225</sup> Diesen (1997); Mood (1997); Henriksen (2007); Ommedal (2011); Bjerga and Haaland (2010), pp.512–513

explicitly state how the Norwegian Armed Forces should be used in the post-Cold war security environment,<sup>226</sup> the first joint doctrine was written in 2000 and endorsed MW.<sup>227</sup> This also signifies that the Cold War was not formally over until then for Norwegian Armed Forces.<sup>228</sup>

Consequently, this myriad of influences has engendered many interpretations of military concepts, inhibiting their unified and cohesive application in the army. Whilst the NMA has diligently held itself updated on doctrinal changes and educated accordingly, here too, as we shall see in the next chapter, the interpretation is rather subjective.<sup>229</sup>

## 4.2. Tactics

The NMA's definition of tactics is more precise than the Norwegian Joint Doctrine's and encompasses both art and science, understood in the same manner as the USMC's does.

The only Norwegian doctrinal-level publication to give a definition to tactics is 2014 *Forsvarets Fellesoperative Doktrine* (FFOD), the current Joint Operational Doctrine. In its glossary, tactics is defined as the 'use of military forces to solve given missions',<sup>230</sup> reminiscent of a dictionary interpretation of the concept and general enough to be valid for all military branches on a joint level. The army's equivalent publication, *Forsvarets Doktrine for Landoperasjoner* (FDLO) (Doctrine for Land Operations), lacks a clear definition of tactics

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<sup>226</sup> Slensvik and Ydstebø (2016), pp.298–300

<sup>227</sup> Forsvarets Stabsskole *et al.* (2000), p.11

<sup>228</sup> Sæveraas (2007), p.145

<sup>229</sup> Bjerga and Haaland (2010), p.516

<sup>230</sup> Forsvarets Stabsskole *et al.* (2014), p.233

and leaves training and education according to doctrine left to subjective interpretation, which in turn does not contribute to cohesion. Compared to FFOD'14, the army's doctrine does not explicitly state what meaning it gives to tactics. Rather, its meaning seems implied as the doctrine regularly refers to the 'tactical use of land power' and uses 'tactics' as an adjective on multiple occasions.<sup>231</sup> In the section on combined effects, FDLO'04 states that 'there ought to be a high degree of tactical creativity and flexibility where unilateral and stereotypical approaches should be avoided.'<sup>232</sup> The emphasis on creativity, which one would classify as an 'art', is repeated in the section on education where 'the objective is to train the officer to be creative in thought and innovative in action.'<sup>233</sup> Furthermore, the juxtaposition of 'art and science of war' is used exclusively in the introductory section which lays the theoretical foundations on the nature of war.<sup>234</sup> This lack of depth in the elaboration of certain concepts is unfortunate and probably unintentional since this is after all the first, and to date, only publication outlining a warfighting philosophy for the Norwegian Army. These insufficient definitions have been addressed by instructors at NMA.

The NMA defines tactics as 'the art and science of using military means to win engagements.'<sup>235</sup> In a 2016 internal memo, instructors in the Section for Tactics and Leadership proposed their own definition for tactics.<sup>236</sup> They wanted to promote a better understanding of their subject than the existing definition in the 2014 joint doctrine, which,

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<sup>231</sup> Forsvarets Stabsskole *et al.* (2004), p.15)

<sup>232</sup> *Idem* p.33

<sup>233</sup> *Idem* p.169

<sup>234</sup> *Idem* p.18

<sup>235</sup> Thobiassen (2016)

<sup>236</sup> *Ibid.*

according to them, is too shallow and ambiguous.<sup>237</sup> In addition, these instructors wanted to improve cooperation between the NMA and the Army Weapon School, in charge of expertise and development for all arms.<sup>238</sup> Their main issue was that the Weapon School's understanding of officer education in tactics seemed limited to technique and battle drills, and centred teachings around the military planning process, something the USMC would classify as 'science'. The instructors argued that this was insufficient since it did not address the creative problem-solving aspect of combat. A dialogue with the Weapon School was initiated but petered out due to organisational restructuring in 2017.<sup>239</sup> However, the definition they proposed is still being used as the basis for how tactics is understood and taught at the academy.

According to the internal memo, the NMA's definition takes inspiration from NATO, USMC, US Army and British Army doctrines, though the final result is short of identical to the USMC's. The author justifies this by highlighting the simplicity of the formulation and its ongoing usage, as well as the reasoned approach the USMC has in translating it into training and education expressed its doctrines.<sup>240</sup> This means that the views on education, at least on paper, are similar to those of the USMC.

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<sup>237</sup> Thobiassen (2018)

<sup>238</sup> Forsvaret (2014)

<sup>239</sup> Thobiassen (2018)

<sup>240</sup> *Ibid.*



### 4.3. Manoeuvre warfare

The Norwegian Army's approach to MW emphasises initiative, speed, and intuitive decision-making to defeat the enemy's will, but suffers from detrimental discrepancies across doctrines.

MW in Norwegian doctrine is similar to the USMC's. The 2014 Norwegian Joint Operational Doctrine (FFOD) states that 'land forces operate according to a manoeuvre-oriented approach and emphasise mission-based leadership in planning and execution of operations.'<sup>241</sup> It builds on the antecedent doctrine's still valid theoretical framework<sup>242</sup> where:

*Manoeuvre thinking is to understand the psychological aspect of combat.*

*Combat is a battle between wills, dominated by uncertainty, friction and chaos. By mastering these challenges better than the opponent, we can nonetheless turn them to our own advantage.*<sup>243</sup>

FFOD'07 differentiates between what it calls manoeuvre thinking and manoeuvre method but outlines as a whole an 'operational method' reminiscent of USMC MW. The goal is 'to influence the opponent's will to continue fighting' and 'emphasizes surprise, initiative, indirect approach, speed and mission command.'<sup>244</sup>

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<sup>241</sup> Forsvarets Stabsskole *et al.* (2014), p.101

<sup>242</sup> *Idem* p.8

<sup>243</sup> Forsvarets Stabsskole (2007), p.56

<sup>244</sup> *Idem* p.61

Norwegian Joint Doctrine confuses the meaning of MW. The former presence of manoeuvre-method/thinking/ability/theory/etc. in both FFOD'00 and FFOD'07 as well as in the army's FDLO'04 reveal imprecision in communicating MW comprehensibly. Their deliberate removal in the 2014 doctrine is according to its main author, Lieutenant Colonel Ydstedø, an attempt at reducing this confusion.<sup>245</sup> Still, it might also indicate a more widespread uncertainty within the army. The same officer also highlights existing misunderstandings and paradoxes regarding MW's Mission Command in a recent publication.<sup>246</sup>

Norwegian doctrine is therefore not clear with regards to how it interprets MW: joint level publications diverge from army-level ones and cause confusion at the tactical level. After all, as former manoeuvre proponent and ex-CHOD General Diesen states, it is quite absurd that a standing army of 30 main battle tanks and 40 infantry fighting vehicles aspires to a way of war successfully executed by those with many regiments of armoured vehicles.<sup>247</sup> Nonetheless, disregarding the doctrine's deficiencies, the Norwegian Army's approach to MW is similar, in doctrine, to the USMC's.

#### 4.4. Officer education system

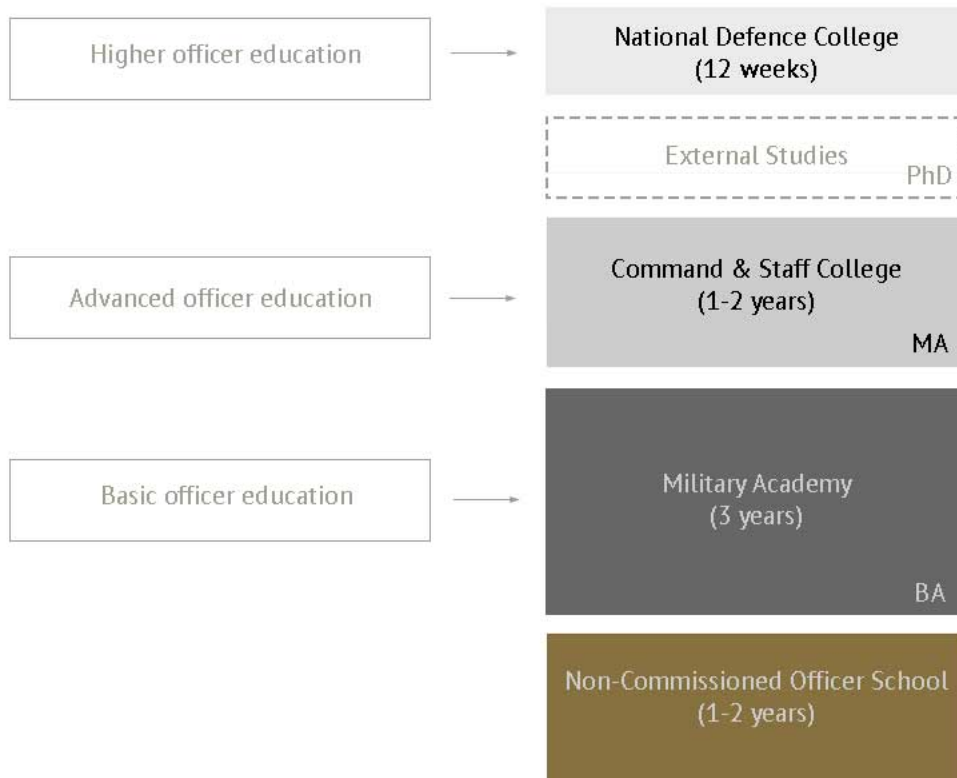
The Norwegian Army's officer education consists of three levels, basic, advanced and higher, in addition to the initial non-commissioned officer school (NCO) every officer was required to have until 2018 (Figure 2).

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<sup>245</sup> Ydstedø (2018)

<sup>246</sup> Ydstedø and Jeppsson (2018)

<sup>247</sup> Diesen (2018)



**Figure 2 - Norwegian officer education until 2018 (Forsvaret, 2015)**

General university admissions certification and NCO education were the only educational criteria for application until 2018.<sup>248</sup> Cadets receive their commission and an undergraduate degree after three years. The next level of education is the Command & Staff College which usually occurs after 10-15 years and after having served as company commander. There is no formal schooling between these levels apart from some officers selected for international captain-level courses such as USMC’s EWS or US Army’s Captain-Career-Courses.

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<sup>248</sup> Garang (2017), p.3

#### 4.5. Teaching tactics

Several indicators of effective tactical education are identifiable at the NMA. However, training decision-making and developing critical thinking through repetition is likely not sufficient enough to reach a desired level upon graduation.

Tactics is taught as a stand-alone subject in the context of three semester-long multidisciplinary courses called 'Command of Operations' starting with high intensity warfare, followed by national crisis management, ending with peace-keeping and counterinsurgency.<sup>249</sup> The teaching method is case-based where all the subjects of a course utilise historical events as a reference point of their lectures. Tactics as a subject is structured around a standard undergraduate teaching model incorporating readings, lectures and seminars. The objective is to learn '*how* to think, and not *what* to think'.<sup>250</sup> The actual military decision-making and planning process is taught in another subject called 'Method' but used extensively in the tactics classes as it forms the basic structure in *how* to think about tactical problems.<sup>251</sup> Lessons on tactics range from combined arms, MW, to counterinsurgency and peace support operations. Theory is then supported by practical application.

The practical arenas are composed of 7 field exercises and a month-long Platoon Commander's Course. In addition, depending on the teacher, classroom lessons may also include tactical decision games or some form of computer simulation. Each semester is

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<sup>249</sup> Krigsskolen (2017), pp.44–45

<sup>250</sup> *Ibid.*

<sup>251</sup> *Idem* pp.40-42

accentuated with a field exercise that serves as a practical arena for the type of tactics learned that period. Every student is required to successfully accomplish at least one assignment as platoon commander to pass the tactics course. In the month before graduation students attend a Platoon Commander's Course within their field of speciality. This course is organised by the Weapon Schools and varies greatly in content. For the manoeuvre arms it usually consists of repetitions of several short offenses or defences.

In sum, only some indicators of effective tactical education are observed in practice at NMA. Their approach to tactical education is sound, however their weighing of theory and practice is sub-optimal. Tactics becomes one of many subjects that competes for resources. Thus, there does not seem to be enough time for the many repetitions necessary to shape and train tactical judgement. Practice is mainly in the form of field exercises and less resource-demanding war-gaming-methods are hardly employed. A similar observation can be made regarding training intuitive decision-making and awareness of cognitive biases.

## 5. Converging teaching and practice

The USMC schools and the NMA have both identified the need to approach tactics from the scientific and artistic perspective to shape judgement and make decisions. They also converge in the understanding of MW in the requirement for speed and creativity to affect the enemy's will to fight. They differ, however, in the balance between teaching tactical skill and understanding the strategic-tactical link. The USMC, due to a predominantly Anglo-Saxon teaching method called Curriculum Studies (CS), provides its junior officers with a systematic flow of practical arenas. The NMA emphasises theory and favours bridging strategy and tactics to the detriment of practice.

### 5.1. Teaching methods

The USMC and NMA's teaching methods diverge markedly and reflect national trends of their respective countries. Norwegian schools adhere to didactics, rooted in German *Bildung*, whilst American ones follow CS, as most Anglo-Saxon countries do.<sup>252</sup> The main distinction is their weighing between *how* and *what* to teach: 'Didaktik' refers to the art of teaching - a set of principles that all schoolteachers should follow; and CS relates to the body of knowledge that schoolteachers can communicate through their teaching.<sup>253</sup> Although professor of pedagogy David Hamilton states that this polarisation is a mere simplification of the expressions, the choice between emphasising teacher or content has nonetheless marked how education is conducted.<sup>254</sup> According to Dr. Tero Autio, didactics is more 'sensitive to personal variance among teachers, allowing them more intellectual and

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<sup>252</sup> Riquarts and Hopmann (1995)

<sup>253</sup> Hamilton and Gudmundsdottir (1994), p.346

<sup>254</sup> Hamilton (1999), p.136

professional freedom to think and accomplish their tasks', whereas American colleagues 'seem more strictly controlled by the systemic needs of education administration and by the expertise of scholars and scientists'.<sup>255</sup>

Education in USMC schools enables a high level of similarity between graduating officers, what Boyd calls 'harmonisation', but takes little account for individual variations in both students and teachers. Every single activity has a detailed lesson plan that has been developed over multiple iterations of the same course with only minor adjustments made. At TBS, it is easier to adjust an existing lesson rather than attempt to implement a new one because the necessary justifications for doing so require significant effort: since the USMC is the only service in the US Defense requiring all of its officers, regardless of specialisation, to pass the infantry warfighting course at TBS, any major modifications or expansions need to be vetted by those in charge of USMC budgets.<sup>256</sup> Keeping abreast of current trends is therefore accomplished by altering existing courses. Furthermore, to uphold an adequate standard on lesson delivery, every new faculty member must undergo a rigid qualification test. This results in a hierarchy among instructors, from 'basic' to 'master', with internal competition of reaching these levels in time.<sup>257</sup> Teachers will thus conform to an existing norm of instructing, regardless of their individual pedagogical abilities. This ensures a standard quality of teaching but risks foregoing contributions from talented teachers. Yet positions at USMC schools are usually held only for three years. From an employer's perspective, focused on meeting deadlines, keeping budgets and providing consistent

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<sup>255</sup> Autio (2006), p.3

<sup>256</sup> Director of Warfighting (2018)

<sup>257</sup> The Basic School (2018)

education, predictability is arguably preferred even if it eschews occasional talent. In sum, the USMC's teaching system places the curriculum first and ensures that every graduating officer has been exposed to the same lessons and been taught them the same way to the detriment of the individual teacher's freedom of action.

The education of tactics at the NMA displays variations between graduating classes depending on the quality of the teacher, despite being guided by the same teaching aims. The subject tactics has explicit teaching aims stated in the annual course descriptions.<sup>258</sup> Constructing a lesson plan that fulfils these, as well as selecting the syllabus, is entirely up to the teacher.<sup>259</sup> As long as his plan stays within financial and time constraints, he enjoys great freedom in choosing how to convey his knowledge. This means that the teacher is free to adjust his lessons according to the level of his students and the circumstances surrounding his course. Furthermore, there is consensus that such workplace autonomy is a key factor contributing to employee motivation.<sup>260</sup> However, tactics as a subject relies on the regular rotation of officers to remain up-to-date and relevant. Similarly to the USMC schools, NMA tactics instructors are therefore usually employed for only three to four years. Despite enjoying freedom of action, the relatively short employment period severely limits the time available to gain competency in teaching and subsequently causes significant variations between classes.

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<sup>258</sup> Krigsskolen (2014)

<sup>259</sup> Krigsskolen (2016)

<sup>260</sup> Johnson (1986); Peters and Passanisi (2012); Müller *et al.* (2009)



Tactics is likely better taught with CS. The two teaching methods have different advantages: CS ensures a standard of teaching across multiple classes while didactics allows for adjustments depending on student and teacher qualities. However, given the fact that tactics is a subject reliant on current knowledge and therefore on a constant influx of officers with or without prior teaching experience, and that an army 'in harmony' is more effective, a CS model offers more predictability and reproducibility compared to the didactic method. In fact, the lower educational levels in the Norwegian Army, such as the NCO school and the basic training programme,<sup>261</sup> have already opted for CS. This shift seems to have happened out a necessity for 'harmonisation'. Adopting CS at the NMA would therefore not be unheard of and likely be beneficial.

## 5.2. USMC approach to building judgement and decision-making

The contrast between the USMC schools' systematic approach to shaping tactical judgement and training decision-making and the more theoretical methods used at NMA is pronounced.

Students are exposed to a plethora of tactical problems at USMC schools. Since we earlier established that tactics aspires to shape judgement based on the analysis of tactical problems, there is a direct correlation between the number of problems one is exposed to and the quality of one's judgment. This naturally presupposes the ability to successfully analyse these problems. The practical arenas available at the NMA are the 7 field exercises, the occasional tactical decision game or simulation, and the Platoon Commander's Course just before graduation. In comparison, TBS approaches every single lesson through 5 distinct

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<sup>261</sup> Hærens Våpenskole (2015)

methods with emphasis on practical application. Since TBS is comprised of approximately 50 lessons, students can expect to be exposed to a tactical problem about 250 times. A similar approach is used at EWS.

Students become more aware of their cognitive decision-making process at USMC schools than at the NMA. TBS instructors are made aware of Kahneman's systems, and at EWS, the students also receive specific lessons on them. This provides faculty members and students with a framework and vocabulary utilised to discuss how decisions are made and learn how to avoid bias. In contrast, apart from the self-taught teachers and students, the NMA curriculum does not address cognitive processes comprehensively. The only course aspiring to shape a specific way of thinking is 'Method' where some references to Kahneman are included.

USMC schools provides students with many decision-making arenas. In conjunction with the focus on the repetition of tactical problems, students at TBS and EWS are repeatedly forced to make decisions, often under pressure. These decisions are vetted by instructors for their quality and expose possible biases in their judgment. Over many iterations, the student becomes aware of his thought-process and can adjust it to improve both quality and speed. Likewise, this awareness gives students the ability to detect what constitutes good and bad tactics in their surroundings, be it in their fellow students at school or with colleagues in operational units. The same cannot be said to exist at the NMA. The closest arena focusing on repetition is the Platoon Commander's Course just before graduation, and even here, there is nowhere near as much focus on decision-making as at the USMC schools.

The USMC's educational methods are well designed the successful shaping of tactical judgement. This systemised approach, a product of the CS-model, enables great similarity between school years and thus provides 'harmony' between officers, especially regarding *how* to think about tactics. It also lays the foundation for self-learning more robustly than at the NMA. By shaping judgement through repetition and critique, the schools ensure that their students will be able to independently recognise and understand good and bad tactics in their surroundings after graduation. However, due to the size of US armed forces and the arguably long command chain from junior officer to field-grade officers, the link between tactics and strategy is less marked at TBS and EWS, but more so at the NMA.

### 5.3. NMA emphasis on strategy-tactics link

The curriculum at TBS and EWS is geared towards warfighting. It is only at Command and Staff College that a 'war studies' course appears and strategic literature is studied. This contrasts with the NMA where, due to the Norwegian Army's small size and the lack of an intermediate level education, the link to strategy is emphasised from the beginning.

The NMA's approach to junior officer education is multi-disciplinary. Tactics as land power forms the core of the degree, but many 'context'-subjects help highlight the link to strategy. After admission, the first courses are 'The Officer and the State' followed by 'The Officer and the War' which connect military history and strategy to tactics.<sup>262</sup> The case-based method serves as a point of reference for all subjects, enabling the parallel teaching of tactics and strategy. All three semesters during which tactics is taught are also accentuated by field exercises. The theory acquired is then put into practice with all subjects represented. The rationale is that in today's volatile security situation where the spectrum of conflict ranges from conventional war to hybrid operations it is essential to understand strategic thinking to act tactically.

There is however a major drawback with the NMA's approach to tactics. With all the time allocated to the 'context' subjects, too little remains for shaping tactical judgement. Since this is developed through repetitive practical application, their scarce number may not be enough for most students to reach an adequate quality of tactical judgement. The same can be said for decision-making and raising awareness of cognitive bias.

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<sup>262</sup> Krigsskolen (2017)

#### 5.4. Theory-convergence but practice-divergence

As we have discovered, the USMC and the NMA converge in their theoretical framework regarding tactics. Both identify the same scientific and artistic qualities and their doctrines emphasise speed and decentralisation. The teaching methods are also identical despite different educational cultures. However, when it comes to balancing tactics and strategy, the schools diverge in their practical application.

The USMC pursues a consistent shaping of tactical judgement and establishment of critical thought, whilst the NMA appears too shallow in its approach. USMC junior officers graduate with markedly more experience in tactics than their Norwegian counterparts. More important, though, they have acquired a greater degree of judgement and critical thought concerning tactics, enabling future self-learning during time with their unit. Conversely, since there is no intermediate formal education for the 10-15 years before staff college, the NMA is obliged to cover this stretch to the detriment of the depth it can pursue in tactics. This justifies the increased focus on strategy with many 'context'-subjects that compete for attention with core subjects such as land power.<sup>263</sup> USMC instructors repeatedly stated that junior officers have enough 'coping with themselves' during TBS and few can recall the more advanced nuances, such as those regarding strategy, from the many lessons they endured.<sup>264</sup> The same situation is observable at the NMA where, instead of becoming confident decision-makers, cadets appear more unassertive and confused due to the many strategic considerations they must contemplate. This is highly detrimental because junior officers who

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<sup>263</sup> Hanssen (2016)

<sup>264</sup> Director of Warfighting (2018)

cannot properly utilise their own forces effectively are unlikely to advance strategic objectives, rather, they are more prone to cause negative strategic effects by their lack of practice. Concerning the USMC, the situation is neither entirely positive. With the increasing consequences of actions taken at the tactical level, the relatively long period without formal education on strategy may have detrimental effects.

USMC and Norwegian Army integration can be improved with analogous tactical education. Since the theoretical framework and educational methods are identical, calibrating the NMA's lessons plans and practical execution of teaching tactics could suffice in engendering the same results witnessed at USMC schools. This means adopting the CS-model in tactics to compensate for the regular rotation of instructors needed for keeping up-to-date, implementing the systematic use of practical arenas with a human opponent to enable a high repetition of tactical problems, and increasing the focus on discussing the reasoning behind decisions to highlight correct ways of analysing a problem and to expose cognitive bias. USMC should consider introducing 'war studies' and strategy earlier than at CSC-level.

## 6. Conclusion

As stated, effective tactical education is accomplished by fostering guile, shaping tactical judgement through a scientific approach and training the application of this judgement in view of strategic objectives, as well as independent, quick and valid decision-making. The means for implementing these include training intuitive decision-making with bias awareness and developing critical thinking through repetition of war-game-like methods where reasoning and not outcome is central.

The case studies uncovered that the USMC schools and the NMA have a near identical theoretical approach to teaching tactics, but it is in the practical execution that there are differences. The USMC focuses on warfighting whereas the NMA emphasizes the link between tactics and strategy.

USMC and Norwegian Army integration is likely to increase and the effectiveness of this integration can be improved with few adjustments to tactical education. For the NMA this means amongst other an emphasis on repetition to shape tactical judgement, and for the USMC a greater focus on the link to strategic objectives.

Since the literature comparing tactical education is scarce and military integration is likely to increase also between other states, future research could include similar case studies based on the same indicators for effective tactical education determined in this thesis.

## Appendices

### Appendix 1 - Existing literature comparing military education

Book	Source	Compared institutions	Period
<i>Military Schools</i>	<b>(Barnard, 1969)</b>	Academy-level: Austria, Bavaria, France, Great Britain, Holland, Italy, Prussia, Russia , Saxony, Sweden, Switzerland & the US	1862-1872
<i>The Training of Officers</i>	<b>(van Creveld, 1990)</b>	Staff School-level: France, Great Britain, Prussia, Russia & the US	1815-1990
<i>Forging the Sword: Selecting, Educating and Training Cadets and Junior Officers in the Modern World</i>	<b>(Converse, 1998)</b>	Academy-level: China, France, Germany, Great Britain, Italy, Israel, Japan, Mexico, Morocco, Philippines, Russia & the US	1790-1998
<i>Command Culture</i>	<b>(Muth, 2011)</b>	Academy and Staff School-level: Germany & the US	1901-1945



## Appendix 2 - Relevant military journals and magazines

Journal	Institution	Search method	Period reviewed
Parameters	US Army War College	Manual review of the table of contents	1971-2018
Military Review	US Army Command and General Staff College	“	2000-2018
Infantry Magazine	US Army Infantry School	“	2000-2018
Armor Magazine	US Army Armor Centre	“	2000-2018
Joint Forces Quarterly	US National Defense University	“	2000-2018
Marine Corps Gazette	USMC	Paywall except for articles on MW	N/A
Infinity Journal		Manual review of the table of contents	2010-2018
Journal of Military Operations		“	2012-2016
<b>Websites</b>			
Modern Warfare Institute	US Army Military Academy	Keyword search: ‘USMC, Norway, tactics, education, integration’	
Foreign Military Studies Office	US Army	“	
Strategic Studies Institute	US Army War College	“	
Long War Journal		“	
Small Wars Journal		“	
Strategy Bridge		“	
Institute for the Study of War		“	
Defence One		“	
War on the Rocks		“	

### **Appendix 3 – List of interviews**

USMC Expeditionary Warfare School's Director of Curriculum Development and senior instructor. (2018). Interview with Reidar Ursin and Philip Matlary. 30 April, Geiger Hall, Marine Corps Base Quantico, VA.

USMC The Basic School's Director of Warfighting and two senior instructors. (2018) Interview with Reidar Ursin and Philip Matlary. 2-3 May, Heywood Hall, Camp Barrett, Quantico, VA.

#### Appendix 4 - Literature on tactics from antiquity

Author	Date	Book Title	Origin	Source	Particular references to guile
<i>Unknown</i>	8-4 <sup>th</sup> century BCE	<i>Thirty-Six Stratagems</i>	Chinese	(Lévi, 2008)	The entire work is devoted to stratagems.
Sun Tzu	5 <sup>th</sup> century BCE	<i>The Art of War</i>	Chinese	(Sun Tzu, 1996)	Major parts of this work concerns guile.
Aeneas	4 <sup>th</sup> century BCE	<i>Siege Defense</i>	Greek	(Aeneas Tacticus, 2001)	§2; §15; §16; §18; §27; §28; §29; §39.
Asclepiodotus	1 <sup>st</sup> century BCE	<i>Outline of Tactics</i>	Greek	(Asclepiodotus, 2001)	Purely technical study of historical phalanxes.
Onasander	54 CE	<i>Strategikos (The General)</i>	Greek	(Onasander, 2001)	§10.5; §21; §23; §28; §32; §41.
Sextus Julius Frontinus	1 <sup>st</sup> century CE	<i>Strategemata</i>	Roman	(Frontinus et al., 1993)	This entire text is a collection of 500 stratagems/uses of guile. It is believed to have been an appendix to a work on strategy.
Aelian	2 <sup>nd</sup> century CE	<i>On Tactical Arrays of the Greeks</i>	Roman	(Aelianus and Matthew, 2012)	N/A. Few parts of this book have survived. (Same original source as Arrian)
Arrian	c.136 CE	<i>Techne Tactical</i>	Greek/Roman	(Kiechle, 1965)	N/A. Few parts of this book have survived.
Polyænus	2 <sup>nd</sup> century CE	<i>Stratagems in War</i>	Macedon	(Polyænus and Sheperd, 1793)	This entire book is a description of 833 Greek and Roman stratagems (although some are rather mythological).
Publius Flavius Vegetius Renuus	4 <sup>th</sup> century CE	<i>De re militari (Epitome of Military Science)</i>	Roman	(Vegetius Renuus and Milner, 2011)	III.7-9-10-18-19-20-21-26; IV.20-26-30.
Emperor Maurice	6 <sup>nd</sup> century CE	<i>Strategikon</i>	Byzantine	(Maurice and Dennis, 1984)	II.5; IV;VII §2.4-7-15; VIII §1.7-8-9-10-11-16-19-20-21-22-27-28 §2.4-5-6-28-29-31-38-48-49-56-76-77-87-94-95-99; IX; X.1-2-4; XI.
<i>Unknown</i>	6 <sup>nd</sup> century CE	<i>Treatise on Strategy</i>	Byzantine	(Dennis, 1985c)	§33; §37; §40;

Emperor Leo VI	895–908 CE	<i>Taktika (The Tactical Constitutions)</i>	Byzantine	(Dennis, 2010)	§4.51; §7,29; §12.3-4-5-58-106-107-108; §14.11--26-33-34-35-36-37-38-39-40-41-42-96-97-98; §15.5-8-9-20-22-41; §17.5-10-11-13-20-59-60; §18; §20.109-123-124-141-144-147-150-151-154-155-161-168-177-212
<i>Unknown</i>	10 <sup>th</sup> century CE	<i>Sylloge Tacticorum</i>	Byzantine	(Chatzelis and Harris, 2017)	§85; §87
Emperor Nikephoros II Phokas	965 CE	<i>Praecepta Militaria</i>	Byzantine	(McGeer, 2008)	N/A. Few parts of this book have survived.
<i>Unknown</i> (Leo Phokas?)	970 CE	<i>De velitatione bellica (On Skirmishing)</i>	Byzantine	(Dennis, 1985b)	§4; §8; §10; §11; §12; §13; §17; §19; §20
Nikephoros Ouranos	10 <sup>nd</sup> century CE	<i>Taktika</i>	Byzantine	(McGeer, 2008)	§63. Few parts of this book have survived.
<i>Unknown</i>	10 <sup>nd</sup> century CE	<i>Campaign Organization and Tactics</i>	Byzantine	(Dennis, 1985a)	§23; §25; §26.

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