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EESTI SÕJAAJALOO AASTARAAMAT

## **VISIONS OF WAR**

EXPERIENCE, IMAGINATION AND  
PREDICTIONS OF WAR IN THE PAST  
AND THE PRESENT

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and Predictions of War in the Past and the Present

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On cover: An anti-war poster using the analogy of Vietnam to argue against  
South-Africa’s intervention in Namibia. Courtesy ECC Archives, University  
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## PREFACE

# The Study of War

Martin van Creveld

Starting with Thucydides during the last decades of the fifth century B.C and reaching all the way to the present, there have been many excellent military historians. Their contribution to our understanding of war is immense and growing still. Yet history and theory are not the same. History focuses on the specific, the non-repeatable, and the ephemeral. Its objective is to record what events took place, understand why they took place, and, perhaps where they may be leading. Theory, on which more later, seeks to understand patterns and, if possible, use them to draw generalisations that will be valid for more than one time and one place. It both describes and, at times, prescribes the nature of the subject matter; what its causes and purpose are; into what parts it should be divided; how it relates to all sorts of other things; and how to cope with it and manage it.

In almost every field of human thought and action, good philosophers abound. They examined their subjects, be they ethics, aesthetics, logic, or the existence of God; dissected them into their component parts; and re-assembled them, often in new and surprising ways that helped their readers gain understanding. Not seldom, they masticated them half to death. Yet in two and a half millennia there have only been two really important military theoreticians. All the rest, including some who were famous in their own time, have been more or less forgotten.

Names such as Frontinus (ca. 40–103 A.D), Vegetius (first half of the fifth century A.D), the Emperor Maurice (539–602), Antoine-Henry Jomini (1779–1869), Basil Liddell Hart (1895–1970), and many others matter, if at all, only to specialists in the field. The same is only slightly less true of those who did their work in the post-1945 period. That even applies to Niccoló Machiavelli's *Arte de la guerra* (1521), which gave its title to a whole bevvv of other volumes in several languages. Yet now he

is remembered almost exclusively because of his political thought rather than for anything he said about war and armies.

The reasons why these and so many other theorists were forgotten are close at hand. War is a practical business above all. In this respect it has much in common with playing an instrument or conducting an orchestra. Those who wage war, do so in order to gain victory, not to come up with all sorts of abstract insights. In themselves, not even the best theories can save us from the enemy's sharp sword. This fact made most theorists, who were hoping to proffer practical advice to practically-minded commanders, focus on how to organise for war, wage war, fight in a war, and so on.

As they did so, however, they often overlooked the fact that war is forever changing and will continue to change. Many, including some of the greatest, were unable to rise above their own times and places. This made them go into the kind of detail that has long become irrelevant. Others, by seeking to be as up to date as they could, all but guaranteed that they would be out of date sooner rather than later. Never has the problem been more acute than during the last few decades. As change proceeded at a tumultuous pace, repeatedly it seemed to render everything that came before irrelevant.

To this rule there have only been two exceptions. The first was the Chinese commander and sage Sun Tzu (ca. 544–496 B.C); the second, the Prussian soldier-philosopher Carl von Clausewitz (1780–1831). Over the centuries since they first entered the military stage both have had their exits and their entries. At times they were read, or were supposed to be read, by everybody with an interest in the subject. At others they were dismissed as too old, too limited, too philosophical, or all of these. Clausewitz in particular has been more often quoted than read, let alone studied, understood, and digested. Yet that does not change the fact that both authors stand head and shoulders above the rest. In one form or another they will endure as long as war itself does. If those who claim that the latter is in terminal decline are right, perhaps longer.

That is not to say that either volume is without problems—especially *On War* which, at the time of its author's death, was mostly a mass of confused and confusing papers. First, neither Sun Tzu nor Clausewitz has anything to say about either the causes of war or the purposes for which

it is fought. In the case of Sun Tzu, that is because he opens by saying that war is “a matter of vital importance of the state, the province of life or death, the road to survival or ruin. [Therefore] it is mandatory that it be thoroughly studied.” From there, while not blaming it on anybody or anything, he proceeds straight to its preparation and conduct.

The case of Clausewitz is different. Famously, *On War* defines war as the continuation of politics by other means. What the objective of the politics might be is irrelevant. Orders are orders; the author never doubted that, once they have been issued, commanders and soldiers would swing into action. Clausewitz was a member of the Prussian Reform Movement of 1807–1813 whose goal was to close the gap between government and people. He was well aware of the role popular morale could play. But this awareness did not make its way into *On War*. Describing war as an instrument, the latter allowed little or no room for asking “why.” That question it explicitly leaves to “the philosophers.”

Second, neither Sun Tzu nor Clausewitz have much to say about the relationship between economics and war. Sun Tzu at any rate notes how enormously expensive waging war is. Clausewitz does not even do that; had he been asked why, no doubt he would have answered that economics, while undoubtedly very important, do not form part of war proper. Strictly speaking, he may well have been right. Still, so important are economics, “the dismal science,” to the conduct of war that leaving them out can only be called a grave shortcoming.

Third, both writers tend to take the point of view of those who launch and wage war at the top; the politician, the commander in chief, and his principal subordinates. The examples they use reflect that fact. So does their readership; one does not expect every Tom, Dick and Harry—nowadays, every Mary too—to concern him or herself with theory. *The Art of War*, like similar Chinese treatises, was never meant for publication. Instead it was kept secret in the archives where only a few people had access to it. Indeed it is probably no accident that the earliest known text was found in a royal grave dating from the second century B.C. *On War*, on its part, was initially sold by subscription among Prussian officers.

Proceeding from the top to the bottom as they do, both books probably make war, especially war as understood and experienced by the com-

mon soldier and by society at large, appear more rational and more subject to control than it really is. The problem is particularly acute with Sun Tzu. Like his rough contemporary Confucius, Sun Tzu tends to focus on the elite. He sees ordinary people as mere human material to be moulded, shaped and directed towards this or that objective. When he says that, on the battlefield, everything looks like confusion, he omits to add that, to countless combatants of all times and places, it *is* nothing but confusion. The possibility that combatants (and non-combatants) may have their own ideas and that these ideas may influence the conduct of war at all levels does not even occur to him.

Nor do the two theorists have much to say about the most important methods for coping with these problems, i.e. training, organisation, and leadership. In respect to organisation some of what they do say is badly dated; such as Clausewitz's reflections about the optimal number of army corps and the best way to coordinate infantry, cavalry and artillery. Yet it is only factors such as training, organisation, and leadership that turn a mere mob into an army and enable it to function.

Fourth, both Sun Tzu and Clausewitz come close to ignoring the implements with which war is fought, i.e. the field broadly known as military technology. Sun Tzu only has a few words to say about it. Clausewitz on his part does mention it, but only to add that it relates to war as the art of the swordsmith relates to fencing. Both authors knew very well that wars were fought with swords, spears, bows, muskets, cannon, and whatever. Both must also have understood that these and other weapons, as well as technology in general, play a cardinal role in shaping the way every war is waged and fought. Equally obvious, though, they did not see technology as a fundamental factor deserving profound consideration. This fact is surprising. Certainly the subject deserves some reflection and discussion at greater length.

Fifth, neither Sun Tzu nor Clausewitz has much to say about logistics and intelligence. Logistics, however, are the building blocks of war; without which no armed force can exist, let alone operate. To paraphrase the World War II British Field Marshal Sir Archibald Wavell (1883–1950), the combinations of strategy are, in the end, simple enough for any amateur to grasp. It is by looking after the logistics, defined as the practical



art of moving armies and keeping them supplied, that the professional proves himself. Looking at a globe, an armchair strategist may not find it too hard to decide where he or she wants to deploy one's carriers. But taking charge of loading a 90,000-ton vessel with all the tens of thousands of different items it must take aboard before leaving port certainly *is* hard.

As to intelligence, both authors, each in their own way, only refer to certain aspects of it. Sun Tzu focuses on the various kinds of spies a commander may use to obtain intelligence. However, he has almost nothing to say on the way it is or should be interpreted. Clausewitz discusses the nature of military intelligence and the role it plays in war. However, he has barely a word to say about the way it is obtained. Their discourses are valuable, but they stand in urgent need of being expanded and updated.

Sixth, neither has anything to say about war at sea. Possibly this fact reflects the fact that, at the times they wrote, neither China nor Prussia were maritime powers. Or else it is based on the way warfare used to be organised until World War II; a period when armies and navies were managed by separate offices or ministries. Yet war at sea, while probably not as old as war on land, has now been practiced for at least three millennia. Ancient Chinese and Egyptian reliefs show it. Starting with the Battle of Aegospotami in 405 BC, which led directly to the Athenian surrender to Sparta, and ending with the great battles in the Pacific in 1944–1945, on occasion it has been as decisive as any of its land-bound equivalents. But for their command of the sea, the British in 1982 would never have been able to reach, let alone recover, the Falkland Islands.

Other forms of war that, for obvious reasons, neither Sun Tzu nor Clausewitz addresses are air war, space war and cyberwar. And yet, and if only because budgets are going down, as of the opening years of the twenty-first century, no call is heard more often than the one for “jointness.” Thus a volume that does address these subjects, linking them both to ground warfare and to each other, is urgently needed.

Seventh, and again for obvious reasons, both authors have nothing to say about what, since 1945, has become by far the most important form of “war.” This refers to nuclear war which, though it has not yet taken place, casts a giant shadow over everything else. Whether space war, cyberwarfare, and a host of other kinds of war constantly being dreamt up by

defence officials, officers, and academics around the world are really as revolutionary as they claim to be is moot. What is not, or at any rate ought not to be moot, is that nuclear weapons caused the greatest revolution in military history, and perhaps not only military history, ever seen. Works that, whether because they were written earlier or through the authors' own fault pass over that fact, do so at their peril.

Eighth, neither has much to say about the law of war. In the case of Sun Tzu that may be because such a thing barely existed, or so scholars who have studied the matter claim; in that of Clausewitz, because he dismisses it in a sentence or two. He justifies himself by saying that the law in question hardly diminishes the elementary violence of war. As we shall see, the claim is understandable and, in some ways, quite correct. As we shall also see, this does not mean that law does not play a role in shaping war, as it does any other social phenomenon and can simply be ignored. Some would even say that, since 1945 or so, its importance has been growing – to the point that, in some cases, it threatens (or promises, depending on one's point of view) to choke war to death.

Ninth, neither is much interested in war between asymmetric belligerents. In this context the word “asymmetric” has two different meanings. First, it may mean war between communities, or organisations, each of which forms part of a different civilisation. In the case of Sun Tzu, this lack of interest rests on the fact that he lived, commanded and wrote (if he did) during the so-called Period of the Warring States (ca. 453–221 B.C). His career unfolded against the background of constant warfare among very similar polities in what the Chinese themselves used to call “all under heaven” (*Ti'an*). He may also have been too contemptuous of the “barbarians” to devote a special chapter to them. Clausewitz's focus on intra-civilizational war is brought out by his insistence that European armies were growing more and more alike so that quantity was becoming more important than quality. At the time he wrote, the military gap between Europe and the rest of the world was increasing day by day; and in any case Prussia was not a colonial power.

However, “asymmetric” may also have another meaning. It may refer to a situation where, instead of armies confronting one another, advancing against each other, fighting each other, etc., the belligerents on both

sides are of completely different kinds. Irregulars, broadly known as freedom fighters (partisans), insurgents, rebels, guerrillas, bandits, and, last but not least, terrorists, may face armies that are, initially at least, much stronger than them. Armies may face irregulars who, initially at least, are much weaker than them. Clausewitz in *On War* at any rate pays some attention to this problem. Sun Tzu does not.

None of the above should be construed as attacks on Sun Tzu or on Clausewitz. To seek to equal, let alone replace, their respective tomes would be presumptuous. The objective of this volume, standing as it does on the shoulders of these and other giants, sometimes even repeating what they said, is much more modest. It will try to reach beyond their limitations, both those that are self-imposed and those originating in the times and places in which they did their work; expand on themes which, for one reason or another, they neglected or left untouched; and bring their works up to date wherever doing so seems possible and worthwhile. All this, in the hope of coming up with a framework that will be as systematic, as comprehensive, and, yes, as elegant as possible.



## INTRODUCTION

# Envisioning Future Wars

Alon Posner and Kaarel Piirimäe

The popular maxim holds that generals (and, by extension, their armies) always plan for the previous war.<sup>1</sup> The wide-ranging chapters of this volume show the limits of this truism. There is much more to thinking about future war: it is a dynamic and on-going process, influenced by a myriad of political, military, social, economic and cultural shifts. The imagining of future war is an important factor and often a causal element in historical processes, whether or not it is immediately followed by war. The study of the thinking about and the planning for wars in the past not only opens a window on wider societal conceptions and preoccupations at the time, but is also a basis for thinking about (and hopefully implementing) military changes in peacetime.

This introductory paper begins by briefly surveying the history of military thought, focusing on the introduction of change as an immutable element in the character of war – from the Clausewitzian emphasis on the social and the political to the later emphasis on technology. The idea of the transformation of war's nature was the basis of all modern era efforts of imagining and preparing for future war. In other words, throughout the history of warfare, generals had done well preparing for the last war and learning the eternal laws of their profession, but now this was seen as a handicap rather than an advantage. Next the introduction will examine the theoretical foundations of thinking about future war and its impor-

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<sup>1</sup> The origins of the proverb are not clear, but it probably originates from the early 20th century. When Churchill quoted it in 1948, referring to the French defeat in 1940, he said it was “an old joke”. Winston S. Churchill, *The Gathering Storm: The Second World War*, vol. 1 (Boston: Houghton Mifflin, 1985), 426. As we shall see, in earlier times, preparing for the last war was the right thing to do, because not much changed in-between wars.

tance to theories of military change and innovation, and continues by reviewing the historiography on war planning in the past.

With their *raison d'être* being preparing for war, militaries must make decisions and implement them in peacetime with regard to a possible future conflict, which is shrouded with inevitable uncertainty and may take place with little warning. Such thinking and planning is necessary and inescapable. Anticipation, the forecasting of possible changes in the future battlefield, is a key mode of military change and innovation (the other mode being adaptation, a flexible response to these changes).<sup>2</sup> In this context, researchers have been keen to understand what drives such changes when they occur, especially in peacetime. However, military change is elusive, as it can be grasped at several different levels, ranging from actual operations to theoretical considerations.<sup>3</sup>

Several theorists and practitioners have noted that military anticipation often tends to fail, and claimed that such problems are inherent to the military planning endeavour, the main obstacle being the impossibility of foreseeing the developments of deadly struggle with an adapting adversary. Carl von Clausewitz referred to the phenomenon as the “fog of war,” but one should add that anticipating future war through the “fog of peace” may be even more difficult. However, there may yet be a possibility to “fail better,” or at least to fail in a way that is not catastrophic. Planning for the next war and attempting to work through its possible developments are necessary, in any event. US President Dwight Eisenhower phrased this paradox in 1957, “plans are useless, but planning is everything”.<sup>4</sup>

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<sup>2</sup> Dima Adamsky and Kjell Inge Bjerga, *Contemporary Military Innovation: Between Anticipation and Adaption* (New York, NY: Routledge, 2012).

<sup>3</sup> Adam Grissom, “The Future of Military Innovation Studies,” *The Journal of Strategic Studies* 29:5 (2006): 905–934; Theo Farrell and Terry Terriff, “The Sources of Military Change: Culture, Politics, Technology,” – *The Sources of Military Change: Culture, Politics, Technology*, ed. Theo Farrell and Terry Terriff (London: Lynne Rienner Publishers, 2002), 3–20.

<sup>4</sup> General Services Administration, N.A.R.S.O.F.R., and United States Government Printing Office, *Public Papers of the Presidents of the United States*, Dwight D. Eisenhower, 1957: Containing the Public Messages, Speeches, and Statements of the President, January 1 to December 31, 1957 (U.S. Government Printing Office, 1999), 818. See also Michael Howard, “Military Science in an Age of Peace,” *The RUSI Journal* 119:1 (1974): 3–11; Richard Danzig, *Driving in the Dark: Ten Propositions about Prediction and National Security* (Washington D.C.: Center for a New American Security, 2011); Meir Finkel and Moshe Tlamim, *On Flexibility: Recovery*

However, future war is relevant not only to the study of military change and innovation. Researchers have shown that thinking, preparing and planning for a future war has major impact on peacetime institutions from interstate relations to national politics and various aspects of the economy and society. This approach shows that even planning for a war that never took place could be historically significant, either for its social costs, as is demonstrated in this volume by the case of the US Army exposing its soldiers to high levels of atomic radiation (the chapter by Robert Jacobs), political effects, as in the case of the total defence doctrine in Yugoslavia (the article by Blaž Torkar), or for long-term institutional effects, as shown in the example of the developments in NATO from the 1970s to the 1980s (particularly the chapter by Benedict von Bremen).

In addition, theorists of international affairs, especially neo-classical realists, have focused on state perceptions regarding future war. Military balance, whether real or perceived, is the cornerstone of such theories. In line with this point of view to this point of view, international behaviour can be determined from a balance between “offensive” or “defensive” weaponry and doctrine, as well as from beliefs regarding the costs of war and the relative chances of success between the contesting sides.<sup>5</sup> Therefore, according to this school of thought at least, thinking about future war is always at the heart of international relations.

## The changing nature of future war

As with other social phenomena, war can be studied by how it changes through time: does it have a permanent nature, or does it change through history? Questions regarding war’s enduring character, even its permanence as a social phenomenon, are a perennial feature of strategic studies field. However, military thinkers from antiquity to the pre-modern world,

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*from technological and doctrinal surprise on the battlefield* (Stanford, Calif.: Stanford University Press, 2011).

<sup>5</sup> Stephen Van Evera, “Offense, Defense, and the Causes of War,” *International Security* 22: 4 (1998): 5–43; Keir A. Lieber, *War and the Engineers: The primacy of politics over technology* (Ithaca: Cornell University Press, 2005).

indeed the major classics of military theory, claimed that the essential nature of war, derived either from basic human attributes or from immutable laws of strategy and tactics, is unchangeable.

Ancient works regarding strategy, such as Sun Tzu's *Art of War*, didn't even need to highlight the immutability of war: this was a given. "Stratagems" (innovative tactics, weapons, etc.) could be decisive in a particular battle, but were nevertheless thought to have limited influence over war in general.<sup>6</sup> However, Iain A. MacInnes' contribution to this volume shows that beliefs about the static nature of war did not preclude thinking and planning for the next conflict, based on a sophisticated reading of local terrain and relative strengths of the warring sides.

The supposedly unchanging character of war was arguably as much a cultural artefact as is nowadays the belief in the possibility of rapid change. War did change substantially throughout ancient and medieval history, but there is limited evidence of a sustained intellectual effort to diagnose and direct such future changes, rather than to remark on past changes.

In retrospect, one of the last huzzahs of an unchanging image of war was "*The reign of George VI, 1900–1925*," which was published anonymously (by Samuel Madden) in 1763. The future George is described rampaging in the monarchical Europe of 1918 at the head of his dragoons, while his battles are quite similar in technology and organisation to the battles of the mid-18<sup>th</sup> century. I. F. Clarke remarked that the book "appeared during the closing phase of an ancient way of life, on the eve of momentous developments" in technology and social organisation. Madden's book draws our eyes to the perils of extrapolating a linear trend in history, a failing that has been very common in thinking about future war.<sup>7</sup>

A generation later, commenting on the era of Napoleonic Wars, Carl von Clausewitz created what amounts to a systematic model to describe change and continuity in the character of war. When describing changes

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<sup>6</sup> Beatrice Heuser, *The Evolution of Strategy: Thinking war from antiquity to the present* (New York: Cambridge University Press, 2010), 39–40.

<sup>7</sup> Anonymous (Samuel Madden), *The Reign of George VI, 1900–1925; a forecast written in the year 1763* (London: Rivingtons, 1899); I.F. Clarke, *Voices Prophesying War, 1763–1984* (London: Oxford University Press, 1966), 5–6.



in warfare, Clausewitz pointed out that weapons and military techniques were constantly changing, and that a practical art of war would be historically contingent. Each historical epoch (from the Ancients to the Revolutionary and Napoleonic wars) has had its own type of war, dependent on socio-political conditions. Indeed, his work is suffused with the impact of mass conscription and the unleashing of mass public passion on the field of battle. At the same time, Clausewitz also sought to define the “universal element” derived from the nature of war.<sup>8</sup>

Clausewitz’s “trinity” (continually re-interpreted), influenced by this novel development, suggested that the future nature of war would be shaped by the interplay of societal involvement, political purpose and military capabilities. It was not only a tool to describe the present, but also a means of understanding the future: “this way of looking at it will show us how wars must vary with the nature of their motives and of the situations which gives rise to them”. Such an understanding is “the first, the supreme and the most far-reaching act of judgement” of a commander.<sup>9</sup>

A second key insight of Clausewitz lies in the relationship of tactics and strategy. Clausewitz pointed out that “a change in the nature of tactics will automatically react on strategy,” and so the conduct of war at the highest level will be impacted by technical or tactical innovation.<sup>10</sup> For all the importance of understanding the nature of future warfare, Clausewitz’s ideas also make it clear why it is such a formidable task: shifts in each part of the trinity are interlinked and change war in turn from tactics to strategy. Exercising Clausewitz’s “supreme act of judgement” becomes even more difficult as technology and society are changing rapidly.

Notably, Clausewitz did not attempt to predict the changes likely in future war. The only clear future war scenario mentioned in the peroration to *On War* is a coalition war against France, if it were to renew its hegemonic ambitions. The scenario is mostly used to stress Clausewitz’s points on the importance of concentration of forces and strategic focus,

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<sup>8</sup> Carl von Clausewitz (trans. Peter Paret and Michael Howard), *On War* (Princeton: Princeton University Press, 1989), book 8, chap. 6B, 586–591; Azar Gat, *A History of Military Thought: From the Enlightenment to the Cold War* (Oxford: Oxford University Press, 2001), 191.

<sup>9</sup> Clausewitz, *On War*, book 1, chap. 1, 5, 88.

<sup>10</sup> *Ibid.*, book 4, chap. 2, 226.

rather than as a realistic effort to anticipate future war. As it is meant for the short term, it hardly diverges from the realities of the late Napoleonic warfare.<sup>11</sup>

The Napoleonic Wars were conducted largely with hardware available from the late 18<sup>th</sup> century, and technological change became a key factor in military affairs only around the middle of the 19<sup>th</sup> century. From that point onwards, military professionals, experts and contemporary researchers looking at military innovation have focused on new technologies, showing that the interplay between technological change and military planning is far from straightforward. Important current or expected changes must be identified and assimilated into weapon systems, tactics and plans, all with the correct timing and in competition with a rival.<sup>12</sup>

However, the Israeli military thinker Azar Gat has claimed that it was not only technological change as such that shifted military thought. Rather, it was the influx of scientific ideas and of political philosophy into the military realm, from Newtonian physics onward. If so, it is not only technologies and other material realities that change, but also modes of thinking about such realities.<sup>13</sup>

Arguments that the very nature of war was shifting gained currency in the middle of the 19<sup>th</sup> Century. Armies grew larger, their means of transportation, logistics and communications more efficient. Firepower developed rapidly. According to Martin van Creveld, the early 1930s were a watershed. When Carl von Clausewitz completed his seminal *On War* in the 1920s, the impact of new armaments still seemed minute in comparison to political and social factors that had changed the face of war in Clausewitz's own life time.<sup>14</sup> Writing in 1837, the French general and military thinker Antoine-Henri Jomini already noted the growing importance of technology, and a few decades later, just before the Franco-Prus-

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<sup>11</sup> *Ibid.*, book 8, chap. 9, 632–636.

<sup>12</sup> For example, Dima Adamsky, *The Culture of Military Innovation: The impact of cultural factors on the revolution in military affairs in Russia, the US, and Israel* (Stanford, Calif.: Stanford University Press, 2010); *Military innovation in the interwar period*, ed. Williamson R. Murray and Allan R. Millett (Cambridge: Cambridge University Press, 1998).

<sup>13</sup> Gat, *A History of Military Thought*; Martin van Creveld, *Technology and War: From 2000 B.C. to the present* (New York, etc.: Free Press, 1991) argues the same.

<sup>14</sup> Creveld, *Technology and War*, 167.

sian War of 1870–1871, another French officer, Ardant du Picq, acknowledged: “The art of war is subjected to many modifications by industrial and scientific progress”. Both thinkers, it should be noted, were mostly interested in the unchanging elements in warfare, Jomini in the eternal laws of strategy and the operational art, and du Picq in human nature – the “heart of man”.<sup>15</sup>

Ardant du Picq went unnoticed in his lifetime, but in the early 20<sup>th</sup> century he became an authority for the school of thought arguing that on the battlefield, moral factors ultimately trumped all others, including technology, which was quite a twisting of du Picq’s original ideas. At the same time, some non-military writers, for example the Jewish-Polish banker Jan (Ivan) Bloch, cautioned that the new realities of modern war would make war economically and socially so destructive as to be “unthinkable”.<sup>16</sup> Despite these warnings, the First World War became a textbook example of generals “planning for the previous war,” staking their war plans, and national resources, on the idea of a quick victory by offensive strategies and tactics.<sup>17</sup>

In the latter half of the 19<sup>th</sup> century, navies changed even more extensively than armies, as new technology was proven decisive, then obsolescent, in the span of a few years – this is demonstrated by Michael Clemmesen in his contribution to this volume. Clemmesen also shows that during the four years of the First World War naval warfare changed less dramatically than land warfare, the development of submarines being somewhat an exception, and officer corps on either side of the conflict were well prepared to develop and adapt to the emerging technologies. What proved the problematic element in predictions was not the battlefield effect of new weapons but the extent of the potential escalation toward total war, as well as the officers’ promises of decisive and rapid victory.

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<sup>15</sup> Gat, *A History of Military Thought*, 115, 297.

<sup>16</sup> Heuser, *The Evolution of Strategy*, 171–176.

<sup>17</sup> Jack Snyder, “Civil-Military Relations and the Cult of the Offensive, 1914 and 1984,” *Military Strategy and the Origins of the First World War: An international security reader*, ed. Steven E. Miller (Princeton: Princeton University Press, 1985), 108–109; Stephen Van Evera, “The Cult of the Offensive and the Origins of the First World War,” *ibid.*, 58–107.

For several years before the First World War, officers and civilians had debated extensively over the effects of the new technology: would it favour defence or offense, and would it make war shorter or more prolonged. The basic elements of current debates regarding future war originate from the very same period.

Since the industrial revolution, adaptation and innovation have become key indicators for the effectiveness of military organisations, as militaries have been required to perceive and shape future warfare as its technological underpinnings change in time. Both military theorists and historians of the early modern European history have described the interplay of social organisation and technology as a series of “revolutions in military affairs” (RMA). The very term is debatable, but it highlights the risks possible in attempting to prepare for a possible war during a time of peace.<sup>18</sup>

The clearest and the most extreme example so far of military technological change was the prospect of nuclear war. The very possibility of nuclear war forced militaries to adapt to an unknown reality, while at the same time casting doubt on their own expertise (as no one can be said to be an expert on nuclear war). Indeed, as the relevance and influence of nuclear weapons has remained a subject of debate to this day, new scientific and managerial techniques were nevertheless invented and adopted, in order to manage the uncertainty of future nuclear conflict.<sup>19</sup> Robert Jacobs’ chapter describes the US Army’s frantic efforts to prepare for battlefield nuclear use and to define its own role in a future nuclear war. At the same time, and this seems to corroborate the “generals preparing for previous war” hypothesis, in their operational and tactical thinking Army commanders merely extended their experience of World War Two tactics to a battlefield that now included nuclear weapons. “Nuclear weapons were simply bigger bombs,” Jacobs writes, tracing the limits of the imagination of the officers in charge of preparing for World War Three.

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<sup>18</sup> *The Dynamics of Military Revolution, 1300–2050*, ed. MacGregor Knox and Williamson Murray (Cambridge: Cambridge University Press, 2001), 1–14.

<sup>19</sup> Fred M. Kaplan, *The Wizards of Armageddon* (Stanford, Calif.: Stanford University Press, 1991); Andrew J. Bacevich, *The Pentomic Era. The US Army between Korea and Vietnam* (Washington, D.C.: National Defense University, 1986).