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modern military history

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introduction

matthew hughes and william j. philpott

For too long military history has sat uncomfortably on the margins of mainstream academic study. Its subject matter – all too readily dismissed as the antiquarian study of regimental details and tactical minutiae – has been seen as both technically abstruse and morally suspect, with its supposedly central focus on weapons and the killing that they facilitate. As recently as 1989, the introduction to one influential edition noted condescendingly of one of its contributors: 'The first essay… is by a military historian. However, [his] concerns are not those of the traditional military historian; battles, campaigns and generalship are replaced here by a broad introduction to current debates among historians about the nature of "total war" and its effects on social change.'[1] The implication of this prejudice is that the study of war is more academically legitimate if it deals with the people at war, rather than the conduct of war. This long-established intellectual snobbery contrasts with the enduring popularity of military history – whether it is accounts of battles and wars, or the lives of great commanders – that pervades the popular media.

Military historians have therefore fought a long battle for recognition of their sub-discipline, and of the centrality of war in all its myriad dimensions to human existence and endeavour. Definitions of the genre are problematic.[2] Arguably, 'true' military history should focus predominantly on the working of armies and the conduct of wars in the narrow sense of strategy, manoeuvres and battles – what some would call 'warfare' or 'warfighting'. However, broadly defined, military history can encompass all that goes on in wartime (and during low-level conflicts or insurgencies), whether it be the doings of soldiers or the actions of civilians, and indeed might also encompass the preparations that precede wars, and the peacemaking and demobilization which follow. In short, there is very little in modern human history which has not been determined or touched by war – and in the last 3,421 years only 268 of them

have been free of war.[3] Taking this wide-ranging definition, the study of armies and of war has as much claim to recognition as the historical study of governments and international relations, workers and trade unions, gender and class, or industry and finance. It is this holistic approach that the editors and authors of this volume have adopted, looking at war both in its strictly military dimensions and in its broader socio-cultural context.

Despite the potential range of the sub-discipline, the study of war and armed forces was until fairly recently marginalized by the historical profession and was typically taught in military academies and staff colleges. This was partly the fault of military historians who traditionally preferred to focus narrowly on events on the battlefield. The writers and teachers of the subject were usually professional practitioners, and its students fighting soldiers. As Edward Coffman noted in surveying the development of military history in the United States, this professional focus, with its militaristic connotations, hindered its progress into the peaceful groves of academe: 'Professors who were likely to be antimilitary anyway tended to be suspicious of soldiers who looked for practical answers to direct professional questions in the study of history.'[4] Moreover, many of the influential writers of military history in the late-nineteenth and early- to mid-twentieth centuries – such as Basil Liddell Hart, G. F. R. Henderson, J. F. C. Fuller and S. L. A. Marshall – were serving or former soldiers. Academics in this period failed to fill the huge gap that was emerging between the military histories written by professionals and those written by non-academic civilians.[5] Paradoxically, the non-military, non-academic authors frequently made the most prescient points about war and its wider context. Thus, the Polish banker, Ivan (or Jan) S. Bloch, in his *The War of the Future in its Technical, Economic and Political Aspects* (1898–1900)[6] argued that any future war would be long and inconclusive, largely because of the tactical stalemate produced by modern weaponry; the British pacifist, Norman Angell, observed in *The Great Illusion* (1910) that any European war would be disastrous financially, socially and politically for any country involved.

At the turn of the twentieth century, in Germany, despite its well-established tradition of historical scholarship, Hans Delbrück, arguably the founder of the modern academic study of military history, was himself marginalized in his professional career and restricted in his influence by the all pervading sway exercised by the Great General Staff over military scholarship.[7] In Great Britain, a few lonely academic posts held the line for the study of military affairs at university level: the Chichele Professorship of the History of War at Oxford University, founded in 1909, and the chair of naval history held by Sir John Laughton at King's College London in the early decades of the twentieth century, being two notable establishments in an otherwise barren academic landscape.[8] In the United States, before the Second World War, military history made little impact beyond the armed forces themselves, although the establishment of the American Military History Foundation in

1933 by a group of army officers sowed the first seed for a post-1945 expansion of the subject.[9]

It took the conjunction of a century dominated by conflict – two world wars and a lengthy Cold War confrontation, myriad civil wars and wars of decolonization – and the expansion of higher education following the Second World War, for the study of military history to make the cross-over from the professional to the scholarly milieu. In part, this was because the personal experience of military service in the world wars gave scholars a practical insight into the nature of war and the workings of the military as an organization. One has only to read the works of, say, Marcus Cunliffe – a British wartime officer and then academic – to see how post-war scholars could effectively blend an understanding of military history into wider studies (in Cunliffe's case, of the United States).[10] Importantly, official sponsorship of the subject, through the many 'official histories' of the twentieth century's conflicts commissioned by governments and armed forces, increased vastly the number of practising military historians, and at the same time inspired the first debates on the nature and value of military history.[11] In the United States, university history departments began offering courses in military history from the late 1940s and early 1950s – boosted by the need in the USA for ROTC university officer cadets to have some military history education – although the percentage (7.5) was small.[12]

In the USA and elsewhere, this post-war shift was not a smooth transition, took time, and is far from complete. Thus, until the 1960s at least, 'it might be noted how many history courses, and how many history books, used peace treaties as their opening paragraphs and wars as their full stops'.[13] The experience of the 1960s exacerbated the hostility in US universities towards military history, a subject that was seen by the mobilized academic Left to be too close to US militarism and the war in Vietnam (and also to counterinsurgency campaigns supported by America in which there were human rights abuses). The big growth in history sub-fields such as social, ethnic and labour history in the hiring boom in the USA in the 1960s and 1970s largely passed by military history, still viewed by many academics as stale and elitist. While some 26 USA universities currently offer graduate programmes in military history,[14] it is noteworthy that in the US younger historians in different fields of history have replaced retiring military history academics, or in some cases the latter have not been replaced at all.

Struggling to escape its antiquarian, establishment connotations, military history adopted disparate forms and labels such as war and society, history of warfare, war studies and peace studies. These labels demonstrated the subject's broader appeal but they also meant something: whether the programme concentrated more on war in its wider context or war-fighting on the battlefield; whether the department was taking a sociological or historical approach to the subject; whether the focus was on understanding wars or ending them; even whether a department had a supposed Left or Right bias. Overall, the result

has been very positive. 'Military history' is now a broad church: it includes cutting-edge 'military' analyses of tactics, operations and strategy alongside so-called 'new' military history that approaches war through the prisms of discourse analysis, culture, gender, race and memory. While there is antipathy between the 'traditional' and 'new' approaches that hampers full convergence, the generic term 'war and society' has been coined to indicate this shift of focus away from armies and combat to include societies and conflict.[15] By broadening its base and improving its methodologies, military history was at last able to take its legitimate place alongside the other humanities and social science disciplines in departments of history, politics, international relations and sociology. Indeed, a mark of progress was the decision by the annual conference of the American Historical Association to make conflict the theme of its 2004 conference.

While the numbers of dedicated military history departments are small, particular, high-profile units have done much to broaden the appeal of the subject. In Britain, for instance, the first tentative steps to legitimize the study of military history were taken as long ago as the 1960s with the establishment of the first university department dedicated to the study of military affairs in their many dimensions: the Department of War Studies at King's College London. This department's significance and influence, nationally and internationally, over the following 40 years cannot be underestimated: one of this book's editors teaches there, the other gained his doctorate from the department, and a number of the contributors have connections with the department. The impact of market forces on higher education should increase undergraduate military history provision as some less elite establishments look to draw in students by offering niche degrees.

The spread of military history has been accompanied by a publishing boom in the field. A number of monograph series devoted to the subject exist: Palgrave/Macmillan's 'Studies in Military and Strategic History'; Frank Cass's 'Military History and Policy' series; the Greenwood/Praeger series, 'Contributions in Military Studies'; Kansas University Press's 'Modern War Studies' series; Indiana University's 'Twentieth Century Battles' series; University of Oklahoma's 'Campaigns and Commanders' series; and the Texas A&M University Press 'Military History' series. There are also useful textbook series such as Fontana's 1980s 'War and Society' volumes and Routledge's ongoing 'Warfare and History' series. To this must be added the many studies of war, armed forces and wartime themes produced by the wider academic and commercial press. The growing number of specialist journals provides forums for airing new research and debating key issues. To the US-based *The Journal of Military History* which has been published continuously since 1937[16] (also the British-based *Journal of the Society for Army Historical Research*, founded in 1921), must be added more recent journals such as *The Journal of Strategic Studies* (GB, 1978), *War and Society* (Australia, 1983), *Military History Quarterly* (USA, 1988) and *War in History* (GB, 1994), as well as the in-house journals

and bulletins published by the armed forces themselves. In Germany, there is *Militärgeschichtliche Zeitschrift* ('military history journal', formerly called *Militärgeschichtliche Mitteilungen*, 'military history notices'), and in France *Revue historique des armées* (previously *Revue historique de l'armée*), *Revue internationale d'histoire militaire*, *Guerres mondiales et conflits contemporains* (formerly *Revue d'histoire de la deuxième guerre mondiale*) and a new journal entitled *La France en guerre 39–45*. Germany also has two Federal Universities of the Armed Forces, one in Hamburg and one in Munich.

While few would now question the legitimacy of military history, broadly defined, as an appropriate field for scholarly enquiry, there remains a certain lingering insecurity within the military history profession, perhaps a consequence of the genre's long struggle for recognition. Thus, in 1997, John Lynn could write: 'military history has always been regarded as politically and morally questionable, but now military history also suffers because it represents the opposite of the dominant, and increasingly intolerant, trends in historical studies'.[17] He identified three new menaces to military history: the inexorable rise of political correctness (as 'dead white male' history par excellence, military history was an obvious target for criticism); the all-pervading influence of theory in history departments; and, finally, the trivialization of historical themes. The response Lynn proffered was 'if you can't beat them join them', and the exploration of the gender, race and cultural dimensions of armed forces and war has certainly been a rising trend over the last decade.[18]

Moreover, since the end of the Cold War and the terrorist attacks of 9/11 (and, more recently, those in Spain and Britain), there has been a boom in military and security studies that has benefited military historians, especially those whose expertise has a policy-relevant dimension. Far from war becoming a thing of the past, other forms of conflict – 'war on terror', counterinsurgency, 'operations short of war' – have emerged, or remerged, in an unstable and conflict-riven world, and the study of war more generally has rapidly expanded with them. Undergraduate and postgraduate courses in war studies, military history and conflict, and related fields have sprung up in recent years, attesting to the centrality of war as a subject for legitimate enquiry, and the enduring interest in the subject at the highest level. Military historians are no longer mere investigators of long-dead wars, but strategic analysts, policy advisers and theorists. Consequently, the discipline is thriving and central to contemporary world affairs. It would seem that military history is now, if not entirely unassailable, secure amongst the increasingly diverse sub-specialisms that characterize the historical profession in the early twenty-first century.

As the study of war has flourished, so it has developed its own historiography.[19] Only recently, however, have scholars turned their attention to analysing the nature of military history itself, and the practices of the sub-discipline.[20] This guide does not purport to break new ground either in the evaluation of the nature of the discipline, or the development of new lines of thought in the

field. Rather it presents itself as a 'state of the art' introduction to key areas and themes of military history. Its authors endeavour to outline important issues and approaches, to summarize significant debates – past and ongoing – and to identify trends and issues which deserve further study. As well as three chapters which examine warfare at the sharp end, in its three dimensions – land, sea and air – two chapters look at particular aspects of warfare more generally: non-European warfare, and counterinsurgency warfare, the latter currently in vogue in a period of post-imperial and low-intensity conflicts. A separate chapter examines empire and war through the prism of Britain's former 'white' dominions (notably Australia). Four of the main themes in the historiography of war are addressed in separate chapters: the 'war and society' genre which emerged as a strong sub-field in the 1960s and 1970s; the interaction of warfare with science and technology, which is closely linked with wider debates on the role of technology in historical development; the ongoing debate about the nature of Revolutions in Military Affairs, their interrelationship and differences; and the rise of the so-called 'new military history' from the 1980s onwards, to a position where it has become one of the dominant paradigms in the sub-discipline. Two chapters look at two key phenomena in military history in different ages: firstly the interaction between warfare and the rise of the state in the early modern period; secondly, the phenomenon of total war from the late eighteenth to the late twentieth century. Rounding off the survey, the final chapter looks at the development of military thought in the modern world. Each chapter is intended as a concise and accessible introduction to its subject, supported by notes and a brief bibliography outlining further reading. Inevitably, the compartmentalization of topics is never entirely possible, and readers will find a certain degree of overlap between the coverage of the individual chapters. However, they will find in this guide a thorough introductory survey of the main themes of military history; they will understand how the discipline has developed over the years; and they will be able to identify areas for further study or their own original research.

notes

1. C. Emsley, A. Marwick and W. Simpson (eds), *War Peace and Social Change in Twentieth Century Europe* (Milton Keynes, 1989), p. 3.
2. For the opinions of a number of leading practitioners on the nature of military history, see the chapter 'What is Military History?' in J. Gardiner (ed.), *What is History Today?* (Basingstoke, 1998).
3. Will and Ariel Durant cited in Donald Kagan, *On the Origins of War* (London, 1997), p. 4.
4. E. M. Coffman, 'The Course of Military History in the United States since World War II', *Journal of Military History* 61/4 (1997): 761–75, 762.

5. See Michael Howard, 'Disciplinary Views of War' in John Whiteclay Chambers II (ed.), *The Oxford Companion to American Military History* (Oxford and New York, 1999), p. 224.
6. The last volume appeared in English as *Is War Impossible?*
7. See A. Bucholz, *Hans Delbrück and the German Military Establishment* (Iowa City, 1984).
8. A. D. Lambert, *The Foundations of Naval History: Sir John Laughton, the Historical Profession and the Royal Navy* (London, 1998).
9. Coffman, 'Course of Military History', 761–3.
10. Notably, Marcus Cunliffe, *Soldiers and Civilians: The Martial Spirit in America, 1775–1865* (London, 1968). See also Brian Holden Reid, 'Cunliffe, Marcus Faulkner (1922–1990)' in H. C. G. Matthew and Brian Harrison (eds), *Oxford Dictionary of National Biography* (Oxford, 2004).
11. Coffman, 'Course of Military History', 73–5. See also M. Blumenson, 'Can Official History be Honest History?', *Military Affairs* 26/4 (1962): 153–61; M. Howard, *The Causes of Wars* (London, 1983), p. 210. Controversies continue over specific official histories. See for example D. French, 'Sir James Edmonds and the Official History: France and Belgium' in B. J. Bond (ed.), *The First World War and British Military History* (Oxford, 1991) and A. Green, *Writing the Great War: Sir James Edmonds and the Official Histories, 1914–1948* (London, 2003).
12. Coffman, 'Course of Military History', 765.
13. Emsley et al. (eds), *War Peace and Social Change*, p. 4.
14. See the Society for Military History graduate programme website at <http://www.smh-hq.org/gradguide/geolist.html>.
15. See Peter Karsten, 'The "New" American Military History: A Map of the Territory, Explored and Unexplored', *American Quarterly* 36/3 (1984): 389–418, 389.
16. First called *The Journal of the American Military History Foundation*, it became *The Journal of the American Military Institute* in 1939; in 1941, the title was changed to *Military Affairs*; in 1989, it became *The Journal of Military History*.
17. J. M. Lynn, 'The Embattled Future of Academic Military History', *Journal of Military History* 61/4 (1997): 777–89, 782.
18. Ibid.
19. See for example Bond (ed.), *The First World War.*
20. See for example J. Black, *Rethinking Military History* (London, 2004) and the special issue entitled 'The History of War as Part of General History', *Journal of Military History* 57/5 (1993): 145–63.

1
military revolutions and military history

laurent henninger

For some 50 years, military historians have been debating the issue of whether there was or was not a 'military revolution' in western and central Europe in the early modern period, and what was the nature of this supposed revolution. It all began in 1955 when Michael Roberts, in an inaugural lecture at Queen's University Belfast, first presented the idea of a military revolution, referring to the way Dutch military leaders dealt with new weaponry and tactics during their fight against the Spaniards at the end of the sixteenth century. Consciously or not, Roberts was thus transposing the economical concept of 'industrial revolution' to the field of military history. In 1976, Geoffrey Parker published an article on the same topic, criticizing Roberts' assertions and, instead of Roberts' emphasis on infantry drill and use of individual firearms, he focused on the transformations resulting from new *trace italienne* fortifications. In 1988, Parker developed this argument further when he published his seminal book on the topic, *The Military Revolution: Military Innovations and the Rise of the West, 1500–1800*. Soon after, Jeremy Black in turn critiqued Parker in his volume *A Military Revolution? Military Change and European Society, 1550–1800* (1991). The debate continued throughout the 1990s without ever being truly resolved or brought to any definitive – or even semi-definitive – conclusion, although an important step toward an agreed synthesis was made in 1995 when Clifford Rogers published his edited volume *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe*. This collection included Michael Roberts' original 1955 article, Parker's 1976 article, an article by Jeremy Black that was a digest of his book, and several other chapters written by other prominent writers on this subject (notably John Guilmartin, John Lynn, David Parrott and Clifford Rogers himself). The debate

revolved around three main issues: was there a revolution in military affairs in the early modern period? Assuming that the answer to this was affirmative, this raised two other questions: what constituted the military revolution and when did it happen?

Most of the protagonists in this debate seem at least to agree on one point: in the early modern period, Europe experienced a series of radical changes in the techniques and technologies of war. The origins of this can be traced back to the late Middle Ages and the slow renaissance of infantry formations – from the thirteenth century onward – in various parts of western and central Europe.[1] Having previously been overshadowed by heavy cavalry, infantry became more important on the field of battle. This was part of a wider historical change: namely, the social and political struggles that erupted across Europe at this time as the Continent moved from the Middle Ages into the early modern period. Put simply, the classical feudal system, socially and militarily based on mounted nobility, was losing its pre-eminence. Urban bourgeoisies and rural peasantries were challenging the feudal system and, in the process, looked for ways to gain military power. As a result, commoners' militias developed fighting methods as well as weaponry that could counter the formidable frontal shock power of the mounted knights. At first strictly defensive, these innovations were based on mass tactics that emphasized discipline, collective action[2] and new 'mental software'[3] that were radically different from the chivalric ethos of the mounted knight, which was primarily based on qualitative principles such as individual prowess and courage. The new tactics utilized weapons that, although sometimes very different at first sight, had in common the battlefield purpose of denying mounted knights the possibility of engaging in their preferred combat method of close-quarter fighting. The aim was to put knights at a distance from their enemy. Amongst these military innovators can be listed: Flemish militiamen armed with primitive lances and protected behind edged poles, English long-bowmen, Italian cross-bowmen, Swiss pikemen and Bohemian Hussites with their arquebuses.[4] As these infantry formations became increasingly powerful and successfully challenged the dominance of mounted knights on European battlefields, they laid the foundations of a forthcoming military revolution that was military, social and political in nature. On the way, the tactical posture of the new infantry units often shifted from defence to offence, most obviously in the case of the Swiss, who, in the second half of the fifteenth century, regularly beat the powerful armies of the dukes of Burgundy and, on several occasions, badly mauled those of the French kings. In the fifteenth century, the gradual quantitative and qualitative power of infantry over cavalry coincided with a technological innovation: the man-portable individual firearm, namely the arquebus. At first, these primitive weapons possessed just about every possible flaw: they were expensive, took a long time to reload, could not operate in wet weather, were unreliable and not safe for their bearer to fire, and their performance – in terms of power, range and rate of fire – was lower, or at best equal, to that of

mechanical missile weapons such as long-bows or crossbows which, at this time, had reached their optimum capacity. The question then arises: why did the arquebus eventually replace mechanical missile weapons? It seems that the answer lies in a very simple fact: while long-bows required five years' hard daily training for an archer to become militarily efficient, the arquebus could be used effectively after only a few weeks' practice. Provided enough money was available, it became possible to field infantrymen in quantities never encountered before. This phenomenon contributed to the continuous trend of growth in the size of armies, as well as to the systematic tactical bias of seeking decision on the battlefield through mass and a purely quantitative conception of power – in this case, firepower – as opposed to manoeuvre. Furthermore, this trend would also have consequences for the very nature of battlefield courage. Human nervous and cognitive systems could no longer cope with the speed of fire-weapons projectiles. This was partially true when one considers the already existing arrows and crossbow bolts, but humans would henceforth be overwhelmed by a radical quantitative leap. As Hegel would have said, after reaching a certain critical mass, a quantitative jump was leading the way to a qualitative one. Heroic courage, visible since the dawn of time, would rapidly become archaic and give way to stoical courage, more passive and fatalistic than that of the mounted knight, and more suited for modern combat.[5] While this would not become fully apparent until the invention of automatic weapons and quick-firing artillery in the second half of the nineteenth century, this development began with the advent of primitive gunpowder weapons at the start of the early modern period. Since the question of courage – and its corollary, fear – is at the very root of military tactics, this fact alone could be considered a major turning point in the history of warfare, if not the main one.

The rise of the power of infantry accentuated the socio-political problem embedded in this Military Revolution: the uncertain consequences of the arming of social groups not originally intended to participate in the ruling system. Some European states would deal with this problem through the generalization of parliamentarian political systems (mainly England and the Low Countries), others with the building or reinforcement of the centralized monarchical and bureaucratic state (mainly France and Spain). Recognizing that change was inevitable, from the end of the fifteenth century, the wealthy and mighty attempted to control the rise of infantry as the dominant force on the battlefield. The process had begun as revolutionary, and emanated from social groups fighting for themselves, but it would be appropriated by others, and would finally develop as a state-controlled and sponsored process. Ordinary people could no longer afford fire-weapons, nor could they manage the complex organization and training of new combined-arms infantry in which firearms were deployed alongside edged weapons such as pikes and halberds, the tactical system that was to become increasingly standard on the battlefield during the sixteenth century. Following the ideas of Michel

Foucault, one could also notice that firearms proved formidable tools of social control, not only of the people facing them, but also of the soldiers manning them:

> If there is a politics-war series that passes through strategy, there is an army-politics series that passes through tactics. It is strategy that makes it possible to understand warfare as a way of conducting politics between States; it is tactics that makes it possible to understand the army as a principle for maintaining the absence of warfare in civil society. The classical age saw the birth of the great political and military strategy by which nations confronted each other's economic and demographic resources; but also saw the birth of meticulous military and political tactics by which the control of bodies and individual forces was exercised within States.[6]

Alongside the renaissance of the infantry, one of the main features of the early modern military revolution was the development and spread of artillery. In Western civilization, if the infantry has always emanated from the lower and middle social classes (and the cavalry from the aristocracy), the states created and developed artillery. Simultaneously, during this period, states were trying – and often succeeding – in reducing alternative forms of socio-political powers, mainly the feudal aristocracy and the urban councils. Artillery became one of the main tools of this process of control. Its enormous cost could only be sustained by centralized power that later improved its capacity still further by developing increasingly efficient fiscal bureaucracies. In addition, cannons were of primary importance for bringing down the thin, high walls of feudal castles. The medieval aristocracy could not resist such a politico-military challenge, particularly in a situation where its socio-economic power was already badly mauled by a growing bourgeoisie. Tactically, artillery was at first used as a siege weapon, and its battlefield deployment proved to be problematic. These difficulties began to be overcome in the second half of the fifteenth century when engineers (notably in France) developed several technological improvements: new metallurgic processes enabled the forging of more resilient and cheaper tubes; new gunpowder increased range and striking power; and, last but not least, the tubes were mounted on wheeled gun-carriages and metallic pivots were forged on their sides, enabling easier movement and aiming of the gun. With the capabilities of field guns thus greatly enhanced, tacticians began to manoeuvre artillery on the battlefield. Along with individual fire-weapons, the battlefield use of artillery accelerated the increase in firepower that would transform forever the face of battle.

The other great feature of the military revolution, and the one that fuelled most of the debates among historians during the 1990s, was the radical transformation of the Western fortification system. Unable to resist artillery bombardment, high and (relatively) thin medieval-era fortress walls gave way to a new type of fortification called 'artillery fortresses' (or *trace italienne*,

since the early designers were Italian engineers). These new fortifications were 'characterised by thick sunken walls and a snowflake-shaped plan that enabled the defenders to sweep every foot of the walls with enfilading cannon fire'. As Clifford Rogers writes, 'money, time, and methodical siegework, rather than battlefield victories, became the foundation of military success'.[7] Once Italian engineers had laid the theoretical and practical basis of the new system in the sixteenth century, other countries followed suit, principally France and the Low Countries, led, in the seventeenth century, by two prominent figures: Sébastien Le Prestre de Vauban and Menno van Coehoorn. Italian architects initially led the way in this type of engineering in the fifteenth and sixteenth centuries, aided by the political fact that dozens of Italian city-states were constantly at war with each other in this period. After the demise of Italian engineers, excellence in the art of fortress-building (and storming) went to the French and the Dutch. Geostrategical necessities compelled this change, in particular the will to defend, benchmark and sanctify the limits of the 'Square Field' (*le pré carré*) of the French absolutist monarchy, and the Dutch defensive war against Spanish imperialism. Even more than artillery, only states could afford the cost of these fortifications. In turn, the new fortification systems became one of the main direct and indirect tools working towards an increase in the power and centralization of modern states.

In this period, there was also a transformation in cavalry. The chivalry associated with the mounted knights of the Middle Ages evolved into 'heavy cavalry', a functional role without the social, economical, political, ideological or even aesthetical background of knightly warfare. Cavalry only retained the very specialized tactical roles of shock and breakthrough manoeuvres on the battlefield. Alongside heavy cavalry, the need arose for light cavalry for reconnaissance and screening purposes as well as for waging 'little war' (the term then in use for guerrilla and raiding operations). Since such a tactical tradition did not exist in Western civilization, light cavalry formations had to be imported from the 'Orients': southern Spain, eastern and south-eastern Europe. Initially, mercenaries from these regions fulfilled the part of light cavalry; eventually, locally recruited light cavalry units became an integral and customary part of Western armies. While light cavalry recruitment became purely Western, such units long retained 'oriental' features in their armaments and accoutrements, not to mention their tactical traditions of 'swarming', 'deep raid' and 'harassment' which Western commanders and theoreticians had difficulties conceptualizing and practising, and which were unusual in the 'Western way of war'.[8]

Changes in the size of armies as well as in their armament led to transformations in the theory and art of war. With the increasing complexity of battlefields and theatres of operations, the need arose for professional hierarchies and cadres able to manage the combined-arms combat of large forces equipped with 'high-tech' weaponry. Such an intellectual process would prove difficult to manage since empiricism had more or less been the rule

in the West for centuries, and since the only theoretical apparatus available was that of Ancient (Greek and Roman) authors who proved of limited value when it came to theorizing the use and effect of fire-weapons, but who were nonetheless increasingly relied upon throughout the early modern period to provide theoretical guidance.[9] In the long run, some theoreticians would emerge who criticized the emphasis put on Ancient military writers and tried to develop new theories of war,[10] but the bias toward purely quantitative answers – such as mass[11] and destruction – and the mythical 'decisive battle' on a single point would endure until the 1920s and 1930s, when Soviet military theoreticians finally created new concepts more appropriate to modern warfare, most notably the concept of 'operational art' (that would find itself re-appropriated by the US military establishment in the 1980s). This constituted the first true theoretical attempt of the historical 'unblocking' of an aporia – a logical dead-end – that would hamper Western military thought and praxis for so many centuries.[12]

There was also a revolution in war at sea after *c.*1500. At first, nautical knowledge and technologies underwent major changes during the fifteenth century. The 'revolution of Atlantic shipbuilding', as some maritime historians name it, saw the 'round ship' with Nordic rigging impose its hegemony on sea warfare. It was only in the Mediterranean that the long, thin and oared galley with Latin rigging would continue to survive until the eighteenth century. These 'Northern' ships were more resilient, had much better sea-holding qualities as well as longer range, and had a bigger and more fragmented surface of sail which made them more mobile and manoeuvrable, therefore permitting them to sail close-hauled (in other words, to sail into the wind). Such qualities would prove essential for ocean crossings, augmented by improvements in knowledge of astronomy and cartography. From now on, navigation was freed from the restriction of staying in sight of the shore and from coastal 'leaps' from mooring to mooring. From a purely military perspective, these ships could now carry artillery in their lower decks (the 'broadside') since the guns had been lightened and the structures of the hulls strengthened to sustain more recoil and absorb more incoming gunfire. Naval artillery would from now on possess formidable firepower, and such weapon-systems would remain the most powerful armament available until the middle of the twentieth century, when a single plane carrying a nuclear bomb would supersede the firepower of a battleship. One gets a good idea of the weight of naval firepower when one considers that, during the important land battle of Rocroi in 1643, the two opposing French and Spanish/Imperialists armies fielded a total of 47 field guns. This was, at that time, the number of guns carried by a single ship-of-the-line. The English made one of the main improvements for naval artillery in the sixteenth century when they mounted guns on new four-wheel carriages (with small wheels) radically different from their terrestrial counterparts (two large wheels). This made for a more stable platform and more rapid reloading. These technological improvements increased the integration of the guns with the

ship's hull, transforming it into a true weapon-system per se, in the modern sense of the term, and a truly maritime one; warships would now be highly mobile artillery platforms as opposed to infantry carriers designed for ship-to-ship boarding fights. Since the dawn of naval warfare, this latter type of fight had actually been more a land-battle transplanted to the surface of the sea than a true sea-battle.

Combined with the improvement of navigation and the extended range of the ships, these changes proved decisive not only for European expansion overseas but also for the creation of specifically naval tactics and, more especially, naval strategy. That constituted a radical shift in the whole history of strategy and not only in the history of Western strategy. The elaboration of a naval strategy involved a brand new *Weltanschauung* and, for the first time, strategy could become not only world-wide, but also global – that is, more than ever closely and directly related to other domains such as finance, commerce, law, politics, diplomacy, science, astronomy, technology and industry. In addition, naval power implied a resolute understanding of the fact that, on the oceans even more than on land, the strategic principles of permanence and endurance were of primary importance. This highlighted the vital importance of logistics and had an operational consequence too: victory in one naval battle could not win wars and even less the mastery of the sea; the decisiveness of a battle was even more impossible to obtain on sea than on land. Such a process would necessitate an intellectual 'quantum leap' or 'qualitative leap' (as continental philosophers would say) then only made by the English in the sixteenth century. Elizabethan England saw the emergence of a philosophical thought of might and power, which led to a very concrete result: the mathematical projection of reality which meant the geometrization of space[13] and therefore the projection of might.[14] Even though Mercator, the inventor of modern cartographical projection, was not English but Flemish,[15] he was strongly influenced by his personal friend, the English magician and astrologist John Dee.[16] The issue of space and power had already begun to be explored by philosophers such as Carl Schmidt in Germany, and Philippe Forget and Gilles Polycarpe in France, all of whom opened up intellectual avenues that would warrant further research.[17]

Navies thus became very 'high-tech' arms and one of the main drivers of scientific and technological progress. Moreover, they necessitated the creation of, for the time, gigantic industrial and logistical systems intended to build and then support navies. Thus, for historians, the naval shipyards such as the Venice arsenal were the matrix of modern industrial complexes, and therefore of the nineteenth-century industrial revolution. Marcus Rediker goes even further, arguing that the maritime society was the crucible for the rise of capitalism and of an international working class; for him, the workers' oppression and day-to-day conditions in nineteenth-century factories and mines are rooted in early modern era ships.[18] Also, the same logistical need for numerous naval bases reinforced in turn the intellectual and commercial need

for a primitive sort of 'network-centric' strategic thought – already highlighted by the geometrization of space – long before the US army coined the term at the start of the twenty-first century. Until late in the eighteenth century, British imperialism avoided control of vast areas of landmass – as opposed to the French and, especially, the Spanish – in favour of control of sea networks, whether strictly maritime ones (sea-lanes) or islands, ports and towns. In support of this strategy, Britain only needed a few (relatively) tiny colonies. For instance, the will of North American colonists to expand to the west was strongly opposed in London and the rebels were thus compelled to seek their formal and political independence in order to do so. Since the beginning of Western expansion, England/Britain had understood that modern imperialism was network-oriented, and not land-oriented. Indeed, one can go further and argue that imperialisms such as in Spain were more archaic in that they were more 'agrarian' (i.e., with a tropism towards gaining mere acres and square-miles as the roots of power). Since the sixteenth century, England had sought for intensive trade with the Spanish (and Portuguese) territories of the Americas, but had to sneak its way in, through force, piracy or smuggling, sometimes on a very large scale. In 1713, after the Peace of Utrecht that ended the War of Spanish Succession with a British victory over Spain and France, London chose to reinforce its strategic network rather than gain vast territories. Leaving the mundane inner management of the Spanish American colonies to Madrid, London preferred to secure the de facto quasi-monopoly of trade with these colonies. By this means, the power and glory of Spanish might was put to a definite end.

As the above descriptive analysis of the early modern 'military revolution' suggests, such a macro-historical phenomenon can be considered from many different perspectives and, therefore, opens up even more interpretations. This is the origin of the current debate on military revolutions, as Rogers' edited collection of 1995 proves. But many of these controversies were, in the end, not really focused on the military revolution proper but rather on its definition. At times, it has become more of a linguistic debate about terminology issues. One of these controversies revolves around the use of the word 'revolution'. Since the set of events debated above spans a period of more than three centuries, that very word seems inappropriate. A revolution is generally defined as a blunt and sudden event, lasting no more than a few years. If it lasts for a longer period of time, historians tend to consider it be something else – generally a civil war, which is slightly different. Moreover, most examples of 'revolution' refer to political history – such as the English, the French or the Russian revolutions. Besides its astronomical meaning ('the revolution of a planet around the sun', which was its primary use in the early modern period), it seems that this word should be reserved for strictly political events. But, according to the astronomical metaphor, in a revolution the planet goes back to its point of departure, a result that is anathema to revolutionaries. It would seem that the word 'revolution' has been used improperly, contrary to

its original – cyclical – meaning, but the seventeenth and eighteenth centuries saw a gradual change in the sense of the word and a shift to the political field. From the 'end of a cycle', it became 'the end of an era', without any possibility of coming back. On the way, it also absorbed the meaning of 'brutal change' and, later, 'radical' and 'complete' change. But even until late in the eighteenth century, it was still more or less synonymous to coup d'état; even sometimes what is today considered as its antonym: reform. While it appears that the word 'revolution' might not be the best term to characterize the phenomenon we are talking about, the notions of 'radical and complete change' and of 'irreversibility' should be retained since they are still very appropriate to the subject of military change. Some authors argue that a 'revolution' that lasts several centuries should rather be called an 'evolution', but this is a poor descriptor for the military change of the early modern period as it implies notions of continuity, slowness, progressiveness and, above all, no time limit. As previously mentioned, an interesting synthesis came with Rogers' edited book of 1995, *The Military Revolution Debate*, which proposes the use of the concept of 'mutation', based on the works of two biologists: Niles Eldredge and Stephen Jay Gould.[19] These neo-Darwinian evolutionists had noticed that the theory of evolution as depicted by Darwin was far too gradualist and that evolution was more the product of a multitude of small transformations accumulated during millions of years that, at times, reached a critical point and/or mass where, often under external pressures, life was compelled to change radically and very quickly (on a biological scale). Rogers proposed to consider that this could be a very appropriate metaphor for a historical phenomenon such as the military revolution; hence the term 'mutation'.

In the 1990s, at the same time that scholars such as Rogers were working on the early modern period, another 'military revolution debate' was going on, this time among the American military establishment to determine if such a 'revolutionary' process should be initiated in the US armed forces. Attempting to learn lessons from the 1991 Gulf War, American soldiers, politicians, technicians and 'military intellectuals' attempted to conceptualize and drive forward major technological, tactical and operational changes within the different armed services. However, even after they published reams of material and held numerous conferences, there was still no clear conclusion. It was only at the very end of the 1990s that some papers and books were at last published in that field, trying – sometimes quite smartly and successfully – to establish connections with the 'early modern' debate. It seemed that modern strategists were beginning to understand that some broad historical perspective might be useful when dealing with such complex and fragile concepts.[20] But this debate mainly used two slightly different terms: the 'military-technical revolution' (MTR) and the 'revolution in military affairs' (RMA). Both of these concepts were never intended to be as 'broad' as the 'military revolution' proper, but rather strictly technological and tactical; both were also more or less inspired by Soviet military theoretical writings of the 1920s and 1930s (on the role of

the American Civil War in the birth of industrialized warfare) and of the 1980s (on the use of electronics and 'smart' weapons). While the linguistic debate about terminology is very useful and must certainly continue, it would be a shame if it blocked research and debate on the historical phenomenon of the military revolution – or whatever it is called – particularly when it resulted in hair-splitting, as happened at times with the MTR/RMA debate.

Furthermore, such concepts appear in their turn quite fragile, mainly because they put too much emphasis on technology, when all the previous 'military revolutions' (or mutations) teach us that weapons and technology do not, in themselves, mean anything. Examples abound of technological inventions that were never – or very seldom – used. Every culture, every civilization, and every power does not automatically think according to the same principles, objectives, representations and prerequisites as modern Western states. More importantly, technological inventions become successful only when they 'meet' a large social or political demand with which they combine to become a socio-technical fact, as has been the case with plebeian infantries combining with arquebuses. Standing alone, arquebuses and guns certainly would not have been more than mere fireworks or courtly weapons for parade or guards units. Such complex combinations of social, political and economic factors alongside technological discoveries must therefore always be considered whenever a 'military revolution' is at stake. And today's 'RMA' – if there is one – is no exception. This myopia toward technology has led some authors to see a 'military revolution' whenever a major new weapon makes its first appearance. This misses the point that we must understand technological change in the light of its historical context, whether it is the early modern or contemporary age. Just as one 'decisive battle' is a mere fantasy, a single technological breakthrough does not produce a military revolution. Therefore, one can be tempted to state that all the protagonists of that historical debate – Black, Lynn, Parker, Parrott, Rogers et al. – have been right, each in his own respect. A military revolution is, therefore, best understood as a complex combination of many new technological breakthroughs, themselves combined with tactical, strategic, sociological, cultural, political, economical and even anthropological issues. Thus, the early modern military revolution is not one event, nor one moment – or period – of history, however large, but an open-ended system that the West adopted some five centuries ago. And this system is what philosophers and philosophers of history call modernity: a global phenomenon that encompasses all aspects of civilization, from family structures to art, economy, finance and politics. In this respect, the military revolution debate is nothing more than the military side of the debate that philosophers of history are having on the emergence and growth of modernity.

From this perspective, it might be possible to say that we still are in the same 'modernity process' that began at the end of the Middle Ages and saw a major turning point in the history of human civilization with radical shifts

in economy (the rise of capitalism), politics (the rise of the modern state), sociology (the demise of feudal nobility and the rise of the bourgeoisie), religion (the Reformation), arts and sciences, and even geography (with the progressive colonization by the West of the rest of the world). This is not to say that today's world is the same now as 400 years ago, because within a system there will be much change and evolution, but the paradigms that rule the world began to be defined in the early modern era.

This is also partly true in the military field. Western military history of the last five centuries can be read as the development and evolution of technical, tactical and strategic paradigms that were established and developed from the fifteenth century onward. Within this broad framework, the other great military changes that happened since the end of the eighteenth century can be regarded as accelerations of the same process. For instance, while it is common to consider the French Revolutionary and Napoleonic Wars as one of the major turning points in the history of warfare, no great technological shift occurred during these conflicts and the armies continued to fight with eighteenth-century weapons. In terms of the size of armies, the wars surrounding the French Revolution simply carried on long-standing, pre-existing global trends, while the French mobilization of men and resources at the end of the war of Spanish Succession in 1712 was greater than that of 1793. The violence of combat under Napoleon was certainly no greater either, and the cruelty directed towards civilian populations during strategic campaigns carried on right through the eighteenth century. This was especially the case in eastern Europe and the colonies, although it also applied in theatres of war such as Scotland in 1745 where British-led troops massacred and suppressed Highlanders after the battle of Culloden. Even before Culloden, similar outrages occurred when the armies of Louis XIV (1638–1715) had ravaged the Palatinate and his navy had bombarded the cities of Genoa and Algiers. Even the irruption of politicized masses on the battlefields associated with the French Revolution was not a complete novelty: a very similar phenomenon had already been observed during the English Civil War of the mid seventeenth century. Finally, concerning the art of war, even Napoleon's 'genius' can be considered as the acme and point of excellence of eighteenth-century warfare.

The overemphasis on the military aspects of the French Revolution might, in some measure, be a side-effect of an ideological prejudice and bias – notably but not exclusively in the Anglo-Saxon world – of considering everything emerging from the Revolution as necessarily obscure, brutal, savage and, most of all, cataclysmic. This was evident among Tories at the time and, it could be argued, is still evident today in the unconscious mental grid embedded in many historians who transfer the momentous (or cataclysmic) political and social changes wrought by the events of 1789 to the military field, seeing a military revolution where one did not exist. A more balanced view is that the wars surrounding the French Revolution were part of a process of both continuity and change in terms of military developments, with much more

emphasis on continuity stretching back into the early modern period than revolutionary change associated with the French Revolution.

A far more significant turning point occurred with the industrial revolution of the nineteenth century. It saw the absolute pre-eminence of Western military power over the rest of the world, an unbalanced situation that was completely new in history. From the middle of the century, there began the great process of industrialization and mechanization of warfare that would lead to a clear continuum of change from the steam engine and the telegraph of the nineteenth century to the machine guns, tanks, aeroplanes and radios of the twentieth. The 'nuclear revolution' can be viewed as part of this evolution, since nuclear weapons were at first developed, used and considered as no more than 'much more powerful' explosives. When rulers came to realize that they were much more than that, the 'nuclear revolution' transformed diplomacy and international relations, not military affairs. But even all these changes can also be regarded as no more than a mere brutal and geometric acceleration of the modernity process in which the true 'Copernician revolutions' have seen the transformation of the anthropological nature of courage (and fear) and the overflowing of human cognition, the never-ending quest for material superiority, the 'network-oriented' nature of power, the demise of the millennium-old paradigm of the decisive battle on a single point, and the rise of absolute Western military superiority. If there is a 'Western way of war', we must certainly look for it here rather than in Ancient Greece, as Victor Davis Hanson suggests.[21] Moreover, as Geoffrey Parker and Mark Grimsley urge, we should start thoroughly to criticize what these two authors call the 'Western military narrative'. The military history of non-Western civilizations is still in need of more research – although the writings of Geoffrey Parker, Weston F. Cook Jr and Jeremy Black provide a very solid foundation.[22] The manner in which non-European populations perceived the arrival of Europeans and experienced their take-over deserves more study. Lastly, non-Western conceptions of conflict and violence also deserve to be studied, not least as what the West calls 'war' was not the same outside of Europe, while, conversely, what Europeans call 'violence', 'banditry', 'brigandage' or 'little war' non-Europeans called 'war'.

In terms of understanding the military revolution debate, military historians would be well advised to work with colleagues in other 'sub-specialties' – such as economic history, political history, social history, cultural history, history of representations and of ideas, and the history of technology – but they should establish regular links with other disciplines, such as philosophy, sociology, anthropology, ethnology and linguistics (maybe even neuropsychiatry and cognitive sciences). Such an approach could become an opportunity to revitalize the idea of the 'total history' envisaged by Fernand Braudel. Even if such a project is never realized, attempting to tackle such big issues will inject some *longue durée* perspectives into a discipline that badly needs it: military history.

further reading

The following list of books constitutes the key texts on the subject of the military revolution: Jeremy Black, *Rethinking Military History* (London, 2004); Jeremy Black, *A Military Revolution? Military Change and European Society, 1550–1800* (London, 1991); Alfred W. Crosby, *The Measure of Reality: Quantification and Western Society, 1250–1600* (Cambridge, 1997); Alfred W. Crosby, *Throwing Fire: Projectile Technology Through History* (Cambridge, 2002); Brian M. Downing, *The Military Revolution and Political Change: Origins of Democracy and Autocracy in Early Modern Europe* (Princeton NJ, 1992); Philippe Forget and Gilles Polycarpe, *Le Réseau et l'infini: Essai d'anthropologie philosophique et stratégique* (Paris, 1997); Azar Gat, *A History of Military Thought: From the Enlightenment to the Cold War* (Oxford, 2001); Colin S. Gray, *Strategy for Chaos: Revolutions in Military Affairs and The Evidence of History* (London, 2002); J. R. Hale, *War and Society in Renaissance Europe, 1450–1620* (London, 1985); Paul Kennedy, *The Rise and Fall of the Great Powers* (London, 1988); MacGregor Knox and Williamson Murray (eds), *The Dynamics of Military Revolution, 1300–2050* (Cambridge, 2001); John Lynn, *Giant of the Grand Siècle: The French Army, 1610–1715* (Cambridge, 1997); William McNeill, *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000* (Chicago, 1982); William McNeill, *Keeping Together in Time: Dance and Drill in Human History* (Cambridge MA, 1995); Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (London, 1997); Geoffrey Parker (ed.), *The Cambridge Illustrated History of Warfare* (Cambridge, 1995); Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500–1800* (Cambridge, 1996); Marcus Rediker, *Between the Devil and the Deep Blue Sea: Merchant Seamen, Pirates, and the Anglo-American Maritime World, 1700–1750* (Cambridge, 1987); Clifford J. Rogers (ed.), *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe* (Boulder CO, 1995); Merritt Roe Smith and Leo Marx (eds), *Does Technology Drive History? The Dilemma of Technological Determinism* (Cambridge MA, 1995); and Brett D. Steele and Tamera Dorland, *The Heirs of Archimedes: Science and the Art of War through the Age of Enlightenment* (Cambridge MA, 2005).

Readers should also consult the relevant entries in Thierry de Montbrial and Jean Klein (eds), *Dictionnaire de stratégie* (Paris, 2000) and the following articles: Andrew Latham, 'Warfare Transformed: A Braudelian Perspective on the Revolution in Military Affairs', *European Journal of International Relations* 8/2 (2002): 231–66; David Parrott, entry 'Military', subentries 'Armies: recruitment, organization and social composition', 'Battle tactics and campaign strategy', 'Early modern military theory', and 'Historiography', in Jonathan Dewald et al. (eds), *Europe 1450 to 1789 – Encyclopedia of the Early Modern World*, vol. 4 (New York, 2004), pp. 117–38; John Stone, 'Technology, Society, and the Infantry Revolution of the Fourteenth Century', *The Journal of Military History* 68/2 (April 2004): 361–80.

Finally, the following websites contain useful information on the military revolution debate: Mark Grimsley, 'The History of War in Global Perspective' with an answer by Geoffrey Parker, conference at the Mershon Center (University of Ohio State), 12–13 November 2004 at <http://people.cohums.ohio-state.edu/grimsley1/dialogue/mershon/global.htm> and Clifford J. Rogers, 'Revolution, Military' in *The Reader's Companion to Military History*, Houghton Mifflin, College Division, Online Studies at <http://college.hmco.com/history/readerscomp/mil/html/mh_000105_entries.htm>.

notes

1. See Kelly DeVries, *Infantry Warfare in the Early Fourteenth Century* (Woodbridge, 1996).