

The psychosocial devastation of cannons during the Hundred Years' War

Maxwell Thomas Wilson

mtw2149

Professor Michael Stanislawski

Second Reader: Professor Neslihan Şenocak

Senior Thesis

Spring 2023

Table of Contents

Acknowledgements

Introduction

Establish main question of thesis

Chapter I: *Literature Review*

Explain current academic research on the subject

Chapter II: *Before the Hundred Years' War*

Outline pre-war battle culture, with particular emphasis on importance of sieges

Chapter III: *Quality of life during sieges before and after the Hundred Years' War*

Quality of life during sieges at beginning and end of war, impact of cannons on siege length

Chapter IV: *Tales from the field*

How these changes impacted troops directly, along with presentation of evidence that this occurred

Conclusion

Summarize main points and argument

Acknowledgements

This thesis would not have been possible without the support of Professor Michael Stanislawski and Professor Neslihan Şenocak. Their advice and guidance were critical in helping open my mind to new avenues of research.

I would also like to thank Professor Adam Kosto, whose class on the laws of medieval warfare cemented my desire to study the Middle Ages, as well as Professors Ciaran O'Neill and Susan Flavin, whose early guidance in the thesis writing process proved invaluable.

I am immensely grateful to the entire Columbia University Department of History for providing me with the opportunity to explore the question posed in this thesis.

Dedicated to Stephen Kline, Ermanno Morelli, Zhanna Buzharsky, Joanne Stein, Thomas Goeller and Kurt Metz, the teachers to whom I owe so much.

Introduction

It has been demonstrated time and time again throughout human history that advancements in weaponry have the potential to dramatically shake a given social paradigm to its core, from *Homo erectus*' development of the ability to throw two million years ago enabling more effective hunting¹ to twentieth-century unmanned drone strikes prompting public controversy.² And there is no better example of this than what unfolded within the balkanized landscape of late medieval Europe during the Hundred Years' War between England and France: the advent of high-power artillery. Clifford J. Rogers, a medieval military historian whose groundbreaking work will be explored further in the literature review of this thesis, identifies an "artillery revolution"³ which occurred during the fifteenth century. This revolution saw high-power cannonry, capable of inflicting more damage than any weaponry before it, fundamentally shift the way warfare was conducted - more frequent battle and quicker ends to sieges are just a couple of major changes Rogers points out.⁴

¹ N. T. Roach, Venkadesan, M., Rainbow, M. J., & Lieberman, D. E. (2013). Elastic energy storage in the shoulder and the evolution of high-speed throwing in homo. *Nature*, 498(7455), 483–486.

² Pew Research Center. (2020, May 30). *Public continues to back U.S. drone attacks*. Pew Research Center - U.S. Politics & Policy. Retrieved April 5, 2023

³ Clifford J. Rogers. "The Military Revolutions of the Hundred Years War." Essay. In *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe*, edited by Clifford J. Rogers, 55–93. London: Routledge, 1995, p. 64.

⁴ Ibid, p. 56.

The argument has therefore already been introduced within the historical community that this new artillery profoundly impacted war and politics in medieval Europe. An issue which hasn't been explored, however, is the question of how the introduction of these new cannons directly impacted the soldiers fighting alongside and against them. Anytime there is a major technological advancement within a given paradigm (military or otherwise), it stands to reason that the social environment associated with this paradigm will also be perturbed in some manner. The question, therefore, is not whether or not these new cannons changed warfare from the perspective of contemporary men-at-arms. Instead, it involves identifying what this perspective shift would have looked like - what was the exact nature of this change, how did it come about, and how did it affect these troops on an individual level?

Low-ranking soldiers, or at least those who fought on the ground during the war, are of particular interest precisely because of their individual unimportance and collective criticality, and because it is tremendously difficult to study them. Written sources must by their very nature be created by a literate sect of the population. For most of human history, including the Middle Ages, this would have meant sources were written by educated bureaucrats, nobles, trained scribes, the religious elite, or some other class with a high social ranking. One can easily imagine how each of these groups would have had clear biases and ulterior motives when writing a chronicle or historical record. A literate person might be a scribe, paid by an aristocrat to record events in such a way as to make their patron look good. They could be a bureaucrat, whose expertise lay entirely in recording mundane data. Or perhaps a member of the religious clergy, writing with the furtherance of certain spiritual or political goals in mind. Any one of these scenarios certainly presents useful information to historians, but their collective bias in favor of the literate, and therefore elite, sections of the population means that much is left unsaid. It is

exceptionally difficult to imagine why any of these groups, for the most part, would have any interest in what an unassuming illiterate soldier's experiences or feelings were.

This thesis will aim to work around these intrinsic limitations, and construct a plausible picture of how the impacts of this fifteenth-century weapon upgrade would have manifested themselves at the time. These effects could include (but are certainly not limited to) mental, emotional, medical, or social disturbances. Although research will include examinations of higher ranking ground troops, the main subject of interest are the low level men-at-arms who fought during the war, whose experiences would have gone largely ignored and unrecorded.

First and foremost, this thesis will aim to provide a summarization of the existing literature on this subject. Naturally, analysis of the emotional and social state of troops during this particular period is a rarity (although this does not mean that it cannot be found). Expanding the scope of this research, however, would enable insight to be obtained from other examples of new technology precipitating significant social changes during the Middle Ages, providing a precedent for how people might have reacted to the shifts central to this paper. Additionally, analysis of social history and how past historians have broached this subject would not only establish that there is a need in the historical literature for 'bottom-up' perspectives, but might provide insight as to how these perspectives can be obtained while working around the limitations of medieval sources.

The next step will be to construct an accurate picture of battle culture during the late Middle Ages. Analysis will aim to identify what tactics were valued (and why), and what was considered to be the contemporary cutting edge of strategy. The ultimate goal of this exploration is to establish what an average soldier at the beginning of the fifteenth century might have reasonably expected to experience while serving during a period of conflict. By establishing

what was considered normal for warfare prior to the fifteenth century, it will be much easier to understand how ultra-powerful cannons disturbed this ecosystem.

The new cannons and artillery of the fifteenth century did not just prove to be slightly more peppery versions of the weapons that came before them. These tools possessed the power to knock down castle walls which had been previously indestructible.⁵ This meant that siegecraft, a critical aspect of medieval warfare which will be explored in the aforementioned section on battle culture, would have had to change quickly and dramatically. Indeed, sieges are probably the best tool with which to explore the question of this thesis, precisely because of how large a part of medieval culture they were, and how severely their nature would have morphed as a result of new artillery. By examining quality of life during sieges of the first half of the war (and earlier), and weighing these findings against what quality of life would have been like while participating in a siege at the end of the war, one can reasonably speculate as to how this shift would have affected soldiers, and how these soldiers would have reacted to it.

In addition to well-informed extrapolation and speculation, a critical aspect of this thesis will be the examination of primary sources from during and after the war for evidence that this new wartime norm affected troops directly. This might take effect in a few different ways. One could be psychological in nature. It is a tricky task to assign modern-day medical conditions of any kind to figures from the past, but provided that enough evidence can be accrued to reasonably suggest that mental illnesses of the past were not entirely dissimilar to those of the present, it might be possible to connect the changes in warfare brought about by cannons to measurable increases in PTSD and other traumatic illnesses. Another way this shift could be examined in the historical record is an analysis of social interaction between soldiers. In other

⁵ Rogers. "The Military Revolutions of the Hundred Years War." Essay. In *The Military Revolution Debate*, edited by Rogers, 55–93. London: Routledge, 1995, p. 66.

words, did the shifting battle paradigm trigger stress or resentment among soldiers, and is this recorded in primary sources? Both of these avenues of approach - in particular the former - would undoubtedly benefit from examining literature outside of the traditional historiographical scope. Anthropological and scientific studies in particular hold great promise as a way to speculate on emotional reactions to change, and the psychological ramifications of a shifting wartime landscape.

A final point that should be noted is that this thesis aims to examine the immediate impacts of the introduction of these cannons on soldiers, not their long-term effects in the decades and centuries following the war. In other words, the focus of this study is the microcosm of the Hundred Years' War, and even more specifically the period of intense change prompted by advanced artillery during the early fifteenth century. Although time periods and sources from before and after this moment in history will also be examined, it is the experiences of soldiers who fought during this period which are of central concern.

Chapter I

Literature Review

Existing secondary literature specifically describing advances in cannonry during the Hundred Years' War and their impacts on the psychology of low-ranking soldiers is scarce, to put it mildly. However, there is a significant quantity of literature dealing with the individual elements constituting this central question, which provide an excellent foundation not only for reaching a conclusion, but for proving that this is indeed a topic worth researching. To adequately review this subject, one must start by examining the little research that has been done on this specific topic, as well as the broader arguments in historical works which allow conclusions to be drawn - specifically, that developments in cannonry did indeed have a decisive impact on medieval warfare. This point in particular is critical because arguing that new cannons prompted psychological shifts requires proof that they brought about sufficient change. A surprising field of study with great carryover into this topic is the history of the crossbow, which not only provides valuable information about medieval battle culture, but which also adds to a much wider historical pattern indicating that these sorts of mental reactions to new technologies were common throughout the past.

Finally, also worth exploring is literature outlining *nouvelle histoire*, a field of social history which has existed for decades dedicated to studying the past from the bottom of society

up. This highlights a dialogue in the historical community which emphasizes the importance of looking at the past from the perspective of the downtrodden. Ironically, *nouvelle histoire* is not actually very new anymore - it seems that this nickname came about when this type of research was on the cutting edge of historical study, and has stuck around even as this philosophy has become much more mainstream in the form of social and cultural history. For the purposes of this thesis, this term will still be used, as much of the early literature on this topic refers to it by this name.

Although explicit analysis of this thesis' topic is difficult to find, it does exist. One great example is in the secondary literature surrounding *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript M9*. For context, this fifteenth-century document is, as its title suggests, a chronicle of the latter half of the war written by two soldiers named Peter Basset and Christopher Hanson. It was published for the first time in 2022 by University of Southampton historians Anne Curry and Rémy Ambühl. At one point, the chronicle recounts the Earl of Salisbury negotiating the conclusion of the siege of Saint-Suzanne with rival knight Amboise de Loré.⁶ The besieged French army's soldiers were permitted to leave with their belongings (saving them some dignity) on two conditions: first, to take a year-long hiatus from fighting against the English, and second, to hand over all of their cannons.⁷ With these terms met, the Earl of Salisbury committed a particularly violent act: He tied cannonballs to the prisoners' legs and hanged them.⁸

The novelty of this document has naturally meant that historians have had little time to thoroughly analyze it. Nevertheless, alongside the text itself Curry and Ambühl published a few

⁶ Peter Basset, Christopher Hanson, William Worcester, Anne Curry, and Ambühl Rémy. "English Translation, Identifications and Commentary." Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 231–374. Cambridge: D. S. Brewer, 2022, p. 351.

⁷ Ibid, p. 351.

⁸ Ibid, p. 351.

ideas about what might have prompted the earl to commit such a venomous act against people he presumably did not know. The answer they ultimately land on as most likely is that there was some sort of personal vendetta between the earl and one of the cannoneers - perhaps one of his friends was killed during the siege by a cannonball.⁹ They do point out, however, that the text's writers do not seem particularly bothered by this event, in fact treating it as a fair and righteous act of retribution.¹⁰ Curry and Ambühl theorize that the reason for this could be a sense of poor sportsmanship, wherein the extreme effectiveness of cannons, and the insulation of those manning them from battle, led to a sense of resentment.¹¹ This explanation, though ultimately not accepted as most likely by Curry and Ambühl, makes more sense than the vendetta conclusion. As Clifford J. Rogers points out, Saint-Suzanne was among the first medieval sieges to end rapidly as a result of the introduction of advanced cannonry.¹² A smaller window of time would have meant fewer opportunities for the fortress' defenders to inflict damage on the English, and the relatively swift surrender of the French seems to indicate that this was not a particularly bitter fight. So while it's certainly possible that the Earl of Salisbury cultivated a particular resentment against Saint-Suzanne's cannoneers during this time, a more overarching disdain for artillerymen seems to be more plausible as an explanation for his wrathfulness.

This is by no means a perfect endorsement of the theory that new cannonry fostered resentment among the lower ranks, but it overlaps greatly. Perhaps the biggest issue with using this research is the central figure - the Earl of Salisbury - was a member of the nobility, not a ground soldier, and as such he isn't really qualified to act as a conduit for a study of new military

⁹ Curry, Anne, and Ambühl Rémy. "The Portrayal of War in the M9 Chronicle." Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 75–102. Cambridge: D. S. Brewer, 2022, p. 351.

¹⁰ Ibid, p. 89.

¹¹ Ibid, p. 89.

¹² Clifford J. Rogers. "The Military Revolutions of the Hundred Years War." Essay. In *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe*, edited by Clifford J. Rogers, 55–93. London: Routledge, 1995, p. 66.

history. Still, he participated in the war on the ground, and for this reason it is reasonable to assume that he was psychologically closer to the mindset of low-ranking troops than the royals commanding the war from the hearts of England and France.

The most indispensable piece of research regarding the question at hand is the establishment that newly developed fifteenth-century cannons actually did change warfare. Luckily, of all aspects of the subject of psychosocial effects of artillery, this is likely the most thoroughly covered, providing a wealth of information from which to build an argument. The aforementioned historian Clifford J. Rogers covers this topic in his identification of a fifteenth-century “artillery revolution,” in which advances in cannonry turned the tide of siege warfare, allowing besieging armies to punch through enemy walls, rather than needing to wait for their rivals to either starve or receive reinforcements. The previously-mentioned siege of Saint-Suzanne is a clear example of this, with the English using a cannon barrage to pressure the French into surrendering.¹³

Rogers notes that there were some strange side effects which resulted from this type of warfare. Namely, the actual strength of armies involved in sieges did not matter as much as one might expect.¹⁴ Without the ability to break through walls, a besieging army, regardless of how many troops it had, would usually be forced to negotiate for the castle’s surrender, in turn negating any advantages they might have had in a direct engagement. The violent upset to this system brought about by cannons, Rogers argues, meant that battles became much more common, and martial prowess more relevant.¹⁵ The Artillery Revolution also had a few other interesting impacts - it allowed powerful regional players to consolidate power over their

¹³ Ibid, p. 56.

¹⁴ Ibid, p. 74.

¹⁵ Ibid, pp 74-75

neighbors (owing to the high cost barrier imposed by cannons), increasing tax revenue and shifting the political playing field.¹⁶

Rogers' study of this topic provides a fantastic launchpad for studying how these new weapons of war impacted soldiers, because if one can surmise how soldiers felt about long siege warfare - whether positive or negative - then they can in turn deduce how soldiers felt about quickening of siege warfare. Although Rogers does not explore this subject, the fact that battles became more frequent must have impacted soldiers, who had previously been used to the slower, less exciting form of warfare that had been dominant. In other words, Rogers' exploration into the large-scale impacts of new artillery paves the way for an investigation of small-scale impacts.

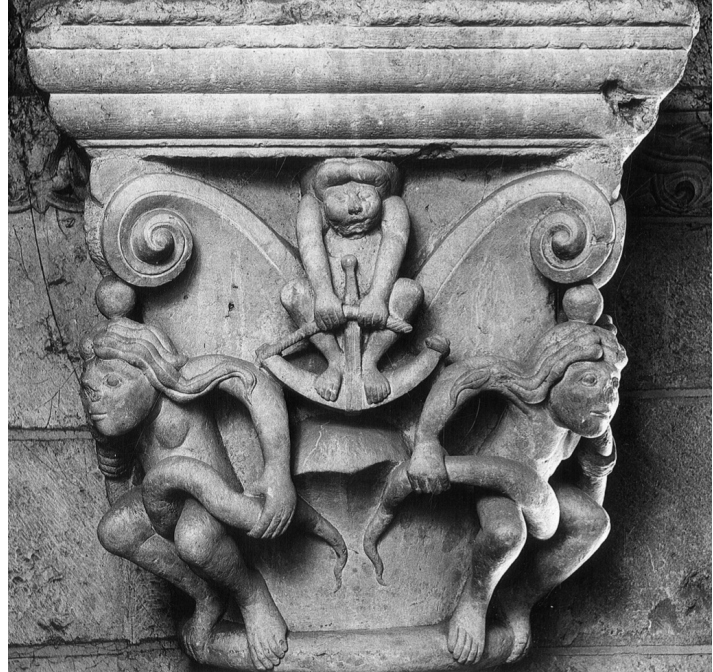
Historical studies of crossbows, despite the fact that they are handheld, mechanically powered weapons (as opposed to large, chemically-operated cannons) actually provide an excellent model for how cannons might have been seen, as both weapons brought a similar set of advantages (and therefore deadliness) to the field of battle. Both technologies allowed soldiers, regardless of physical strength and (perhaps to a lesser extent) skill, to fire missiles from safe positions that could kill with great effectiveness. Thus, historical studies on medieval reactions to crossbows could prove quite useful for historians trying to piece together responses to cannons.

One such example of these studies is Therese Martin's investigation of the 'crouching crossbowman' archetype which briefly took hold in eleventh-and-twelfth-century Europe. This artistic style, observed in Spain and France, saw the sculpting of a crossbowman in a particularly compromising position - crouched down, with the bow skeleton tucked under their feet, and their hands near their groin in order to draw the bowstring back.¹⁷ In this way, the crossbowman is

¹⁶ Ibid, p. 75.

¹⁷ Therese Martin. "Crouching Crossbowmen in Early Twelfth-Century Sculpture: A Nasty, Brutish, and Short(-Lived) Iconography." *Gesta* 54, no. 2 (2015): 143–64. p. 144.

depicted in an inhuman, monstrous form which undoubtedly would have been tremendously insulting to crossbowmen at the time.



Twelfth-century depictions of the crouching crossbowman in Saint-Sernin, Toulouse (left) and San Isidoro, León (right)¹⁸

It's certainly clear that these depictions are meant to be derogatory, with the animalistic nudity and apelike body position of the soldiers being used to insinuate barbarism.¹⁹ Additionally, the subjects' hand positions are reminiscent of sexually explicit behavior, with the sculptures also coinciding with a twelfth-century church crackdown on masturbation.²⁰ Why the crossbowmen were depicted in such a degrading way is an entirely different question. Martin theorizes that one possible explanation is dishonor associated with the profession, citing as part of her evidence a number of ecclesiastical writings which implicitly condemn their use, for instance Orderic Vitalis' depiction of Henry I's daughter using one to attempt to betray her

¹⁸ Ibid, pp 144, 151

¹⁹ Ibid, p. 150.

²⁰ Ibid, p. 148.

father,²¹ as well as a twelfth-century Spanish chronicle portraying them as the weapon of choice for outlaws.²² Martin also cites Pope Innocent II's ban of both bows and crossbows in the Second Lateran Council of 1139, arguing that their use was discouraged for subverting the 'fairness' of hand-to-hand combat.²³

Crossbows do not provide a perfect analogy for examining cannonry through a *nouvelle histoire* lens during the Hundred Years' War, as although high-power cannons were similarly new and deadly, they would not have been as accessible to the average soldier as crossbows. Indeed, the common soldier might have actually liked crossbows for the same reason an elite troop might have despised them: Hand-to-hand combat is most appealing to someone who is skilled at hand-to-hand combat, and the average low-ranking man-at-arms probably was far less savvy at this endeavor than his aristocratic counterpart. Still, the crossbow provides an interesting yardstick for the studying cannons, as it represents a new ranged weapon entering the medieval landscape and resulting in measurable social change.

This historiographical understanding of crossbows being illegitimate weapons during the Middle Ages ties into a much wider narrative of new or particularly effective tools of war cultivating resentment within militaries. This understanding of battlefield psychology can be traced back even to the field of history in its most primordial state, with Plutarch having once recorded an alleged quote by a Spartan soldier, who remarked as he was dying that, "I am not troubled because I must die, but because my death comes at the hands of a womanish archer, and before I have accomplished anything."²⁴

²¹ Ibid, p. 158.

²² Ibid, pp 157-158

²³ Ibid, p. 156.

²⁴ "P395 Sayings of Spartans." Plutarch • Sayings of Spartans - Anonymous. Accessed December 2, 2022.

An interview with an elderly World War I veteran named William Lake by Richard Rubin in *The Last of the Doughboys* reveals a particular distaste among soldiers for snipers, with the veteran recalling “They didn’t take him prisoner, not a sniper, no. He was up in a tree when they found him, and they let him have it. And he fell out of the tree, dead. And that’s all there was to it.”²⁵ Lake went on to elaborate that “They didn’t take a sniper prisoner. They was dirty. They would shoot you in the back as soon as they would in the face, you know. They didn’t care as long as they got you.”²⁶ Although sources such as this and Plutarch do not directly relate to the Middle Ages, they indicate that feelings of resentment at excessively effective weaponry could be a natural human response to wartime environments, which adds a level of support to the plausibility of the cannonry theory.

One final aspect of existing literature on this subject of critical importance is the previously-mentioned *nouvelle histoire*, a term associated with the medieval historian Jacques Le Goff and which overlaps greatly with the history of mentalities.²⁷ Both of these fields deal, essentially, with the same thing: studying history from the perspective of the everyday lives of unassuming people. Although these are relatively recent methodologies (having first entered the academic scene in the twentieth century), their use has grown and they have been recognized by the mainstream historical community for some time.²⁸

One of the most prominent historians of this field, Philippe Ariès, began to adopt this philosophy during his time living under the Vichy regime in France during World War II,²⁹

²⁵ Richard Rubin. *The Last of the Doughboys: The Forgotten Generation and Their Forgotten World War*. Boston, MA: Mariner Books, 2014, p. 659.

²⁶ Ibid, p. 659.

²⁷ M. Rubin (1997). *The work of Jacques Le Goff and the challenges of medieval history*. Boydell Press, pp 79-81, 246

²⁸ Susan Reynolds. “Social Mentalities and the Cases of Medieval Scepticism.” *Transactions of the Royal Historical Society* 1 (1991): 21–41, p. 21.

²⁹ Patrick H. Hutton. “Philippe Ariès and the Secrets of the History of Mentalities.” *Historical Reflections/Réflexions Historiques* 28, no. 1 (2002): 1–19, pp 3-5

wherein he became fascinated by the unseen, silent, secretive parts of people's lives which, aside from being spoken of to close friends and confidants, would have never seen the light of day: family histories, taboo medical procedures, and other topics which were thoroughly uninteresting to prominent, upper-class historians.³⁰ In a 1978 lecture, Ariès identified this field's criticality for understanding contemporary states of affairs - mentalities not openly discussed could shed light on societal evolutions not readily explained by explicit, recorded beliefs and culture.³¹ To explain this idea, he established a spectrum of three states of mind: the collective unconscious, hidden consciousness, and conscious awareness. The first refers to common sense, the second to common knowledge restricted to particular groups, and the third relates to openly discussed matters.³² Collective unconsciousness and hidden consciousness are both critical subjects for the study of the history of mentalities, as they deal with hard-to-discern factors and ideas that impacted the everyday lives and motivations of people in the past.

Although figuring out what people in the past were thinking without actually hearing them openly discuss it is a difficult task for someone studying any time period, some historians approaching their craft via the history of mentalities have explicitly identified the Middle Ages as a time period in which this perspective is particularly needed. The reason for this, Patrick Hutton writes, is that a great deal of medieval study exemplifies the fundamental issue with cultural history which is fixed by the history of mentalities - for a very long time, the culture of the Middle Ages was understood to be the family of ideas and cultural practices created by members of privileged upper classes, with commoners merely absorbing these lofty practices rather than contributing to them.³³ This new discipline, Hutton explains, allows historians to not

³⁰ Ibid, p. 5.

³¹ Ibid, pp 1-2

³² Ibid, pp 1-2

³³ Patrick H. Hutton. "The History of Mentalities: The New Map of Cultural History." *History and Theory* 20, no. 3 (1981): 237-259, pp 238-239

only look at the ideas peasants in the past had but also at how they processed these ideas: their state of mind.³⁴ This is without question an ambitious way to digest the past, but it is for this reason that this holistic approach is of immense value. As Alfred Andrea puts it, the history of mentalities is cultural history “most broadly envisioned,”³⁵ a unified force of sentiments, mindsets, ideas, and class.³⁶

Susan Reynolds takes this idea a step further, arguing in 1991 that attempts at studying mentalities during the Middle Ages suffered from fundamental flaws, namely historians being tempted to assume that people alive during this time period were less advanced³⁷ than them.³⁸ A great example to illustrate this is religion - Reynolds explains that, in studying the history of mentalities, far too many historians take for granted that medieval peoples were all devoutly religious, ignoring the possibility of quiet skepticism, or even atheism.³⁹ She does acknowledge several historians that have pushed back against this idea, but nevertheless makes it clear that they are in the minority.⁴⁰ Another instance of historians misunderstanding past mentalities involve miracle stories, in which monks would write about particular miracles to advertise shrines and religious spots.⁴¹ Reynolds compares using such stories to prove public faith to using television commercials to prove public opinion: both misunderstand the sources being looked at in order to make claims that are simply unsupported.⁴²

This collective literature is important to researching cannons and psychosocial study because it provides both an impetus for such work, as well as important lessons regarding pitfalls

³⁴ Ibid, pp 238-239

³⁵ Andrea, Alfred J. “Mentalities in History.” *The Historian* 53, no. 3 (1991): 605–8, p. 606.

³⁶ Ibid, p. 606.

³⁷ “Advanced” does not refer to technology or knowledge, but instead to a general belief that people in the Middle Ages were more naive or immature than modern human beings.

³⁸ Reynolds. “Social Mentalities.” *Transactions of the Royal Historical Society* 1 (1991), p. 22.

³⁹ Ibid, p. 25.

⁴⁰ Ibid, p. 27.

⁴¹ Ibid, p. 29.

⁴² Ibid, p. 29.

which past historians exploring similar subjects have fallen into. Although in recent decades mainstream historians seem to have shifted their study of the Middle Ages to be more oriented towards the lower classes, this era is still for the most part seen by the wider public as a miserable, backwards, barbaric time (hence the misunderstood term Dark Ages⁴³). Even with fewer great man-oriented perspectives being touted by historians, the Middle Ages are overwhelmingly studied from the perspective of upper class nobles and thinkers because this is simply where most contemporary writing came from. As such, despite the important role that ordinary people played in society and at war, it is very difficult to study them. Moreover, when attempting to study the minds and ideas of these people, the risk of falling into the trap of seeing them as less developed or civilized than twenty-first century humans is ever present. Therefore, to truly understand the impacts of cannons on the minds of troops, one must always be conscious of the fact that a twenty-first century person and a fourteenth century person both have the same brain - they just live in different centuries.

⁴³ 'Dark Ages' is usually understood by the public as meaning a time period with low quality of life, when in reality it most often refers to eras with few sources from which to draw information.

Chapter II

Before the Hundred Years' War

Deducing the psychological changes brought about by new artillery during and after the Hundred Years' War requires an understanding of the pre-war environment in which soldiers had been living and fighting. This enables holistic analysis of the extent to which technological advancements shook the battlefield paradigm.

The best way to contextualize the structure of medieval warfare is to start at the beginning - and there is no better source for this purpose than the Byzantine emperor Maurice's *Strategikon*, a (likely) sixth-century manual of war, considered to be among the most influential medieval Byzantine texts on this subject. In it, practical tips and instructions are given on virtually every aspect of maintaining an army, from command structure to inspirational speech giving. Perhaps the most tantalizing section from the *Strategikon* is that which instructs on siege warfare.

It is thoroughly stressed that attempting to end a siege through violence (for instance, using sixth-century siege engines) is a bad idea, and that psychological and guerilla tactics are optimal - such as attempting to cut off a besieged castle's access to supply chains (thereby limiting their ability to replenish food and other necessities),⁴⁴ tricking an enemy by making it

⁴⁴ Maurice. "Book X [Sieges]." Essay. In *Maurice's Strategikon: Handbook of Byzantine Military Strategy*, translated by George T. Dennis, 106–12. Philadelphia, Pennsylvania: University of Pennsylvania Press, 1984, p. 106.

difficult to determine the size of a besieging army,⁴⁵ and using incendiary weapons to set fire to buildings within fortresses.⁴⁶ Even employing these tactics, however, it is clear from Emperor Maurice's writings that engaging a well-stocked castle is an uphill battle. He recommends initiating a siege by offering the enemy generous terms of surrender (note that this exact strategy was used by the Earl of Salisbury, mentioned in chapter one, centuries later⁴⁷).

If the terms are too severe the defenders may think that risk of fighting is the lesser of two evils and may become desperate and united. But try to make terms lighter and more acceptable, such as the surrender of their horses, weapons, or some other possessions. Such a moderate approach with its hopes of safety may lead them to differences of opinion, and they may become more hesitant to resist and face danger.⁴⁸

To be sure, there are strategies outlined for ending a siege through direct fighting - such as the use of siege towers, battering rams, and grappling hooks, but these are all presented as last-resort options, as most of this chapter of the *Strategikon* is focused on preventing this scenario from happening in the first place.⁴⁹ Emperor Maurice also lists means by which these techniques can be repelled and resisted, all the while preventing besieged troops from actually needing to exit their castle and fight, which would only serve to get the bravest soldiers killed.⁵⁰

Emperor Maurice repeatedly emphasizes that direct combat is, generally speaking, not ideal, and that in most scenarios opting for unconventional tactics over pitched battle is a good idea. One such instance would be facing an enemy force that could be larger than available friendly forces, "In such cases it is better, as has been said, to try to employ different surprises

⁴⁵ Ibid, p. 106

⁴⁶ Ibid, pp. 106-107

⁴⁷ Basset, Hanson, Worcester, Curry, and Rémy. "English Translation." Essay. In *A Soldiers' Chronicle of the Hundred Years War*. Cambridge, 2022, p. 351.

⁴⁸ Maurice. "Book X [Sieges]." Essay. In *Maurice's Strategikon*, trans. by Dennis, 106–12. University of Pennsylvania Press, 1984, p. 107.

⁴⁹ Ibid, pp 109-110

⁵⁰ Ibid, pp 109-110

and tricks as much as possible rather than engage in a pitched battle which involves dangers which could prove fatal.”⁵¹ But according to this manual, fighting a larger enemy is not the only time it is appropriate to resort to less conventional tactics - Emperor Maurice includes an analogy which presents hunting as the best comparison for ideal warfare.

In waging war we should proceed in the same way [as in hunting], whether the enemy be many or few. To try to simply overpower the enemy in the open, hand to hand and face to face, even though you might appear to win, is an enterprise that is very risky and can result in serious harm. Apart from extreme emergency, it is ridiculous to try to gain a victory which is so costly and brings only empty glory.⁵²

One downside of the *Strategikon* is its rather agnostic perspective on honor and proper conduct during battle. For instance, during a section outlining surprise attacks, a strategy is outlined in which “some commanders”⁵³ had in the past tricked their enemy into sending diplomats, which would be initially treated well but subsequently ambushed during their return home. Emperor Maurice explains that “Archers are essential for an operation of this sort.”⁵⁴ He does not explicitly condone, reject, or justify this style of subversive warfare, simply outlining that it had been done and what would be necessary to do it. In another section, he advises that, when occupying a castle in preparation for a siege, the defending force eject women, children, those with disabilities, and the elderly - dismissing them as “useless.”⁵⁵ Thus, it is difficult to

⁵¹ Maurice. “Book IX [Surprise Attacks].” Essay. In *Maurice's Strategikon: Handbook of Byzantine Military Strategy*, translated by George T. Dennis, 93–105. Philadelphia, Pennsylvania: University of Pennsylvania Press, 1984, p. 93.

⁵² Maurice. “Book VII [Strategy. The Points Which the General Must Consider].” Essay. In *Maurice's Strategikon: Handbook of Byzantine Military Strategy*, translated by George T. Dennis, 64–78. Philadelphia, Pennsylvania: University of Pennsylvania Press, 1984, p. 65.

⁵³ Maurice. “Book IX [Surprise Attacks].” Essay. In *Maurice's Strategikon*, translated by Dennis, 93–105. University of Pennsylvania Press, 1984, pp 93-94

⁵⁴ Ibid, pp 93-94

⁵⁵ Maurice. “Book X [Sieges].” Essay. In *Maurice's Strategikon*, trans. by Dennis, 106–12. University of Pennsylvania Press, 1984, pp 107-108

glean information about early chivalric notions and a sense of right and wrong in battle (especially from the perspective of lower ranking troops) from the *Strategikon*.

Regardless, the *Strategikon* presents an invaluable resource for contextualizing early medieval siege warfare. Sieges were long, expensive, and very difficult to end through conventional engagement, meaning victory required creativity and concessions. Occasionally, cutting off supplies or use of advanced tactics could force an enemy's hand, but ultimately the most effective strategy was negotiation - the *Strategikon* illuminates the fact that the most realistic way to end a siege quickly was to offer the enemy a good enough deal. Manuscripts from the second millennium such as *A Soldier's Chronicle of the Hundred Years War: College of Arms Manuscript m 9* demonstrate that not only was this tactic useful for centuries after Emperor Maurice's writings, but that it was employed well beyond the borders of the Byzantine empire.

Emperor Maurice's aversion to direct combat is also particularly illuminating - this was an aim consistently repeated in many of the martial manuscripts and doctrines written before and after his time. One such example is the late Roman Vegetius' fourth-century text *Epitome of Military Science*, wherein Vegetius explains that "It is preferable to subdue an enemy by famine, raids and terror, than in battle where fortune tends to have more influence than bravery."⁵⁶ In *Taktika* (ca. 900), the Byzantine emperor Leo VI echoes similar sentiments, cautioning that "You should never be enticed into a pitched battle. For the most part, we observe that success is a matter of luck rather than of proven courage."⁵⁷ Leo VI's disdain for direct combat in the tradition of previous Byzantine emperors signifies that this idea persisted throughout the first millennium.

⁵⁶ Vegetius. (1996). *Epitome of Military Science*. (N. P. Milner, Trans.). Liverpool University Press, p. 116.

⁵⁷ Leo IV. (2014). *The Taktika of Leo VI*. (G. T. Dennis, Ed.). Dumbarton Oaks, p. 555.

Based on these writings, it is clear that there was a general hierarchy of battle by war scholars of the early medieval world. Direct engagements were to be avoided at all costs due to their uncertainty, and sieges were also considered risky due to the struggle associated with winning them and their tendency to become prolonged. The ideal strategy, then, was unconventional tactics built upon surprise attacks and asymmetrical warfare. Since most of these documents were written centuries (in the case of Vegetius close to a millennia) before the Hundred Years' War, they cannot be relied upon to understand wartime conditions immediately prior to the fourteenth century. A large part of why this is the case is because medieval culture developed and matured over the latter half of the first millennium and the beginning of the second, ultimately becoming very different from what it was in its original form.

Most notably, it seems that the fears of early medieval strategists regarding direct combat were no longer as warranted, as combat death rates appear to have been exceptionally low in the centuries prior to the Hundred Years' War. Clifford J. Rogers explains that "War under the feudal regimes of Western Europe in the twelfth and thirteenth centuries often seemed more like sport than serious business,"⁵⁸ with some battles involving thousands of troops only leading to a couple of deaths. Rogers attributes this to the ransom system, in which troops (a large chunk of whom were members of nobility) could hold captured enemies hostage for large payouts.⁵⁹

There are a few other possible explanations for why this shift might have occurred. One is that writers like Vegetius, Emperor Maurice and Emperor Leo VI were either residing within or leading empires more akin to those of the ancient world than the smaller states of feudal Europe. Larger empires, and in turn their larger battles, might have encouraged more caution on the part of commanding nobles. Another compelling possibility is Christianity, which would

⁵⁸ Rogers. "The Military Revolutions of the Hundred Years War." Essay. In *The Military Revolution Debate*, edited by Rogers, 55–93. 1995, p. 62.

⁵⁹ Ibid, pp. 62-63

have unquestionably influenced the nature of warfare as it spread throughout Europe. Although emperors like Maurice were Christian, during their lives Christianity was still a relatively young religion, and they emerged from the strong military tradition of Rome, which would have taken time for martial philosophers to Christianize. The primary reasoning for many early medieval arguments against pitched battle is that luck plays too important a role, and as fortune is out of a commander's control, they should not put themselves in a situation in which they must rely on it.

Among Christianity's greatest effects on the evolution of war throughout the Middle Ages was its ability to seemingly remove luck as an uncontrollable factor. This ties into a much wider historical narrative in which concepts like trial by combat and ordeal as well as battles were actually viewed as a way to allow God to select a winner and a loser in a given conflict. In *The Verdict of Battle*, Yale historian James Whitman describes medieval pitched battle as a "conflict resolution mechanism."⁶⁰ He explains that it was essentially seen as a sort of courtroom, with the outcome understood to be as legitimate as a judiciary ruling.⁶¹

Whitman also makes it clear that this was not merely a theoretical principle, but that it legitimately impacted how battle was fought, acting as a means by which to concentrate and control extreme aggression in order to prevent the spillage of violence outside of the battlefield.⁶² Interestingly, Whitman contrasts this style of fighting with what he describes as more destructive styles of war such as the siege⁶³ (an entirely different question not tackled by this paper).

The importance of God to combat outcomes was a very popular idea in the Middle Ages. *The Song of Roland*, an eleventh-century poem, features Charlemagne as a side character. At one

⁶⁰ J. Q. Whitman (2014). *The verdict of battle, the law of victory and the making of Modern War*. Harvard University Press, p. 3.

⁶¹ Ibid, pp 2-3

⁶² Ibid, p. 3.

⁶³ Ibid, p. 3.

point, Charlemagne duels Baligant, Emir of Babylon, and, on the brink of losing, is visited by the Angel of Gabriel, who gives him the strength to win.

When Charles heard the sacred voice of the angel,
He has no fear or dread of death;
Strength and awareness return to him.
He strikes the emir with his sword from France;
He breaks his helmet glittering with gems,
Slicing through his head and spilling out his brains⁶⁴

This is, of course, a fictional story likely meant to entertain and inspire, but the principle it is outlining does an excellent job of highlighting major philosophical changes during the Middle Ages regarding the waging of war. The main takeaway regarding Christianity and medieval battle from stories like *The Song of Roland* and Whitman's arguments is that belief in God reshaped the nature of luck on the battlefield in tangible ways. Whereas previous authors from the ancient world cautioned those seeking to fight using sieges of the dangers associated with such unpredictable tactics, the Christian-influenced war culture of the High Middle Ages would have considered this instability to be an important and necessary aspect of war, thus eliminating a key factor in the discouraging of sieges.

⁶⁴ Anonymous, *The Song of Roland*, Translated by Glyn S. Burgess. London, England: Penguin Classics, 1990, p. 143.

Chapter III

Quality of life during sieges before and after the Hundred Years' War

Unfortunately, due to the dearth of documents written from the perspective of lower-ranking soldiers, understanding quality of life during sieges requires some amount of extrapolation from more abstract writings on war. One fact that is clear from available literature is that how miserable or tolerable conditions were for armies involved in sieges throughout the Middle Ages largely depended (unsurprisingly) on preparation - and the effectiveness of preparation in turn was overwhelmingly dependent on food and water availability.

Illustrating the extreme importance of food during sieges, Vegetius' earlier mentioned *Epitome of Military Science* divides siege warfare strategy into two camps: the first through suppression of water shipments, and the second through the instigation of famine. On this latter point Vegetius explains that "By this strategy he himself remains at leisure and safe, while he wears down the enemy."⁶⁵ Vegetius' choice of language to describe a properly-executed besiegement as providing the attacking force with leisure and safety makes sense - it would enable the besieging force to circumvent risky, less effective strategies like siege engine use, and in the process to avoid exposure to deadly and gruesome defensive weapons such as hot oil.

⁶⁵ Vegetius. (1996). *Epitome of Military Science*. (N. P. Milner, Trans.). Liverpool University Press, p. 123.

Such properly-executed strategy could therefore certainly make life easier for a besieging force's soldiers, but the question remains of how this would impact those within the defensive walls. At least in popular thought, sieges are often understood to be particularly grim and brutal for those surrounded. For example, the Siege of Vicksburg, one of the most infamous conflicts of the American Civil War, saw besieged Confederate civilians and soldiers living under squalid conditions, with dwindling resources skyrocketing food prices triggering nighttime raids by southern soldiers within the city.^{66 67}

But it is important to note that in contrast to situations like Vicksburg in the nineteenth century (wherein sieges had been uncommon in contemporary warfare), siegecraft during the Hundred Years' War was the product of highly refined, field tested, cutting edge strategy. While starvation certainly would not have been painless, it is very easy to imagine why a besieged soldier might prefer it to their alternatives. If famine-based warfare left an enemy content to sit back and wait, besieged troops might be spared the psychological and physical risk of siege weapons hurling missiles over castle walls, incendiary weapons lighting them on fire, and the very real risk of being deployed over the walls to fight back (a strategy discouraged by Emperor Maurice for its heavy casualties.)⁶⁸ In those situations where shelling might have occurred, examples such as Vicksburg demonstrate that even for those unaccustomed to besiegement it is possible to rapidly tune out such attacks in daily life.⁶⁹ Furthermore, while in the case of Vicksburg it was a sense of Confederate patriotism that pushed troops to hold on indefinitely,⁷⁰

⁶⁶ Michael B. Ballard. *Vicksburg: The Campaign that Opened the Mississippi*. Chapel Hill, North Carolina: University of North Carolina Press, 2004, p. 385.

⁶⁷ Bruce Catton. *The Centennial History of the Civil War: Never Call Retreat*. 3. Vol. 3. New York City, New York: Doubleday & Co., 1965, p. 205.

⁶⁸ Maurice. "Book X [Sieges]." Essay. In *Maurice's Strategikon*, trans. by Dennis, 106–12. University of Pennsylvania Press, 1984, pp 109-110

⁶⁹ Catton. *The Centennial History of the Civil War*. Vol. 3, 1965, p. 204.

⁷⁰ Ballard. *Vicksburg: The Campaign that Opened the Mississippi*. Chapel Hill, North Carolina: University of North Carolina Press, 2004, pp 383-384

medieval troops might have been motivated by their knowledge that most prolonged sieges ended through negotiation rather than open battle, a consistent trend dating back to the Roman Empire. This might have provided a light at the end of the tunnel to temper concerns of slowly dwindling resources.

Cannon advancement quite dramatically shifted this paradigm. To restate Rogers' argument once more, in the 1420's accounts begin appearing of castles surrendering because of excessive bombardment, as opposed to the traditional cause of starvation and lack of provisions.⁷¹ This, therefore, meant that sieges became dramatically shorter (in cases such as Saint-Suzanne in 1423, cannons could break down fortresses that might otherwise have taken months to seize through besiegement).⁷²

This dramatic shift in the nature of siege warfare due to advanced cannonry is corroborated by letters dictated by Joan of Arc, who explicitly stressed the criticality of cannons for winning sieges. In one letter dated November 9, 1429 she underscored this idea in a request to the people of the French city Riom for artillery components in order to wage a siege against a place called La Charité.

But because so much gunpowder, projectiles, and other war materials had been expended before this town, and because myself and the lords who are at this town are so poorly supplied for laying siege to La Charité, where we will be going shortly, I pray you, upon whatever love you have for the well-being and honor of the King and also all the others here, that you will immediately send and donate for the siege gunpowder, saltpeter, sulfur, projectiles, arbalestes and other materials of war. And do well enough in this matter that the [siege] will not be prolonged for lack of gunpowder and other war materials, and that no one can say you were negligent or unwilling.⁷³

⁷¹ Rogers. "The Military Revolutions of the Hundred Years War." Essay. In *The Military Revolution Debate*, edited by Rogers, 55–93. London: Routledge, 1995, p. 66.

⁷² Ibid, p. 66.

⁷³ Jeanne D'Arc, (1429, November 9). Joan of Arc's Letter to the People of Riom; (A Williamson, Trans.). November

She expressed a similar sentiment in another letter written prior to the siege of La Charité, addressed to the people of Clermont-Ferrand, wherein she requested saltpeter, sulfur, and projectiles, among other provisions.⁷⁴ The urgency clear in Joan of Arc's words (particularly in the last rather passive aggressive sentence of her letter to the people of Riom) betrays the desperate situation her army was in. As the nineteenth-century British parliamentarian and historian Lord Ronald Gower explains in his biography of Joan of Arc, La Charité was exceptionally well equipped for a siege, with robust fortifications, stable, long-term leadership and fully stocked food stores.⁷⁵

Based on the earlier-established rules of siege warfare it would seem that at any other period of medieval history this would have been a virtually unwinnable fight. And to be clear, Joan of Arc did not emerge victorious - although this may have been the result of her not receiving supplies in time from Riom, as the details of whether or not her request was met are murky.⁷⁶ Regardless, her forces at the time were quite small, and she was in all likelihood undermined by the politicking of those on her side of the war.⁷⁷ The desperate situation Joan of Arc was in at the time is actually a testament to the potency of recently-developed cannons during the war. She (likely in addition to the officers advising her on the battlefield) recognized that their one chance for ending the siege swiftly was with artillery - and that a lack of ammunition material for this purpose was enough to gum up siege progress.

Joan of Arc's background as a peasant woman in a position normally filled by educated men also adds to the usefulness of this source. Having not been formally educated in the waging of war, it stands to reason that she would not have been as liable to put her trust in more

9, 1429.

⁷⁴ Jeanne D'Arc, (1429, November 9). Joan of Arc's letter to Clermont-Ferrand, 7 November 1429; (A Williamson, Trans.). November 9, 1429.

⁷⁵ R. S. Gower, (1893). *Joan of Arc*. J.C. Nimmo, p. 116.

⁷⁶ Ibid, p. 117.

⁷⁷ Ibid, p. 117.

antiquated siege tactics as the old guard of western Europe's military brass, nor would she be resistant to trying new methods. In other words, Joan of Arc presents a perspective shaped entirely by real-life experiences and observations, not necessarily tradition and teaching, and her faith in gunpowder and saltpeter for winning an extremely one-sided fight (a grim proposition even considering her divinely-inspired zeal) could very well have been a reflection of this.

With the idea in mind that soldiers at the end of the Hundred Years' War entered an era of more frequent battle and bigger cannons, it is possible to extrapolate how these troops might have reacted to their new environment. This requires some use of anachronistic material - specifically twentieth and twenty-first century psychological research, which presents the most accurate possible way to cut through the machismo and lack of detail which clouds the clarity of medieval sources. As *nouvelle histoire* and the history of mentalities schools of thought would suggest, times have changed, but not the human brain. Indeed, the impact of cannonfire on soldiers' minds is relatively well-studied in psychological literature, likely the result of the medical world's desire to understand and treat war-related PTSD better. The first medical term for this condition, 'shell-shock,' coined following the Battle of Loos in 1915,⁷⁸ conveys the perception by World War One doctors that a physical injury brought about by artillery was responsible for battlefield fatigue.⁷⁹

This ultimately was puzzling to early twentieth-century doctors, however, because many cases arose during World War One of troops who were shell shocked despite not being anywhere near sites of explosions, forcing them to conclude that a purely physiological explanation was not enough to describe the symptoms of shell shock.⁸⁰ Despite the fact that there have been

⁷⁸ Stuart Robson. (1998). *The First World War*. Longman, pp 28-29

⁷⁹ E. Jones, Fear, N. T., & Wessely, S. (2007). Shell shock and mild traumatic brain injury: A historical review. *American Journal of Psychiatry*, 164 (11), 1641-1645.

⁸⁰ Ibid

decades upon decades of research on the condition since World War One, the exact cause of this type of PTSD⁸¹ remains mysterious even today. The issue is extremely relevant, at least in the United States' medical community, because of the high rates of traumatic brain injury experienced by soldiers during twenty-first century US invasions of the Middle East.⁸² One model of battlefield PTSD onset adopted by some researchers is that it is a combination of concussive injury and psychological trauma, with both factors having the potential to play a role in the condition's symptoms.⁸³

If one assumes that this model is at least somewhat accurate, and therefore that so-called shell shock is the result of both physical, blast-related injury as well as traumatic experience, then the ramifications of fifteenth-century advancements are much more significant. Bigger missiles with more potential to crack through the castle walls mean more risk for troops to be exposed to shockwaves, potentially worse injuries after such exposures and increased frequency of battle. Alongside the artillery revolution, Rogers suggests that there was an infantry revolution which unfolded during the Hundred Years' War.⁸⁴ This paradigm shift saw an increasing focus on deploying non noble men-at-arms, as opposed to the highborn knights who had been at the forefront of past military engagements.⁸⁵ These commoner troops were understandably less desirable for ransom than nobles were, which eliminated the most potent incentive for minimizing deaths during engagements and in turn added a new layer of brutality to combat.⁸⁶ Thus, not only were direct engagements more common following the introduction of cannons,

⁸¹ "PTSD" in this case and in all other mentions during this paper refer specifically to PTSD brought on by combat (the phenomenon observed in shell shocked patients) rather than post traumatic stress disorder more broadly, which can be caused by a wide variety of situations.

⁸² E. Jones, Fear, N. T., & Wessely, S. (2007). Shell shock and mild traumatic brain injury: A historical review. *American Journal of Psychiatry*, 164 (11), 1641–1645.

⁸³ Ibid

⁸⁴ Rogers. "The Military Revolutions of the Hundred Years War." Essay. In *The Military Revolution Debate*, edited by Rogers, 55–93. London: Routledge, 1995, p. 58.

⁸⁵ Ibid, pp 62–63

⁸⁶ Ibid, p. 63.

but they would have been more bloody as well. All of these factors created a dangerous mixture of potential causes for shell shock. It is also worth pointing out that soldiers very well might have been more fearful if they knew that their enemies had stronger guns with more potential to do damage. In short, cannon advancements would have exacerbated many of the risk factors for shell shock, or similar wartime stress conditions.

Chapter IV

Tales from the field

The idea that the advancements in cannonry of the fifteenth century would have harmed the mental and physical well-being of troops certainly seems to be plausible, but the question remains: Does the historical record corroborate this hypothesis?

Stories of low-level soldiers reacting to cannonry are few and far between, and any medieval medical records capable of shedding light on the physical and mental effects of combat involving powerful artillery - if such records even exist - would undoubtedly suffer from a lack of detail and be generally ineffective at identifying these illnesses in a manner relatable to twenty-first century readers, whose understanding of mind and body illnesses are informed by years of medical research.

However, there are anecdotes, embellished stories, rudimentary diagnoses, and logistical reports which, when examined together, do indicate that some of the earlier-predicted impacts of new cannons did in fact play out. The first comes from a digital database of English payment records from the war, compiled jointly by researchers from Henley Business School and the University of Southampton. Combing these archives for records of cannoneers yields nineteen results from 1369 to 1453.

English cannoneers from 1369 to 1453, per military financial records⁸⁷

Name	Station	Captain	Service Date	Source
Richard Silby	Garrison of Calais	N/A	06/01/1386	Letters of protection
John Favereaulx	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
Raulyn Cordonemer	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
John Petit	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
John de la Courtson	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
John Marrybeynes	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
Awnet Wanet	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
Perrin Regnart	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
Denisot Coupper	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
John Hennequin	Ordnance Company, siege of Louviers	Philibert de Moulant	09/28/1431	Muster roll
Guyot Maupailler	Garrison of Pontoise	Sir Richard Merbury	08/12/1435	Muster roll
Gillet Le Clerc	Garrison of Pontoise	Sir Richard Merbury	08/12/1435	Muster roll
Jehan Cluchelay	Garrison of Rouen	Richard Beauchamp, Earl of Warwick	03/28/1439	Muster Roll
Thibault Lemertier	Garrison of Rouen	Richard Beauchamp, Earl of Warwick	03/28/1439	Muster Roll
William Petel	Garrison of Rouen	Richard Beauchamp, Earl of Warwick	03/28/1439	Muster Roll
Jehan Chichelay	Garrison of Rouen castle	Edmund Beaufort, Duke of Somerset	10/01/1439	Muster Roll
Willaume Potel	Garrison of Rouen castle	Edmund Beaufort, Duke of Somerset	10/01/1439	Muster Roll
Thibault Le Mercier	Garrison of Rouen castle	Edmund Beaufort, Duke of Somerset	10/01/1439	Muster Roll
Jehan Cauchois	Garrison of Gournay / Gerberoy	Sir William Chamberlain	10/24/1445	Muster Roll

⁸⁷ Medieval soldier - database. (n.d.). Retrieved February 24, 2023, from <https://medievalsoldier.org/database/>

These records certainly do not represent all artillerymen who participated in the Hundred Years' War (it does not even have an exhaustive list of English cannoneers, to speak nothing of France's), but nonetheless, they are among rather few examples of well-organized ordinance service records from the war.

Of note is the fact that the archival records suggest an initial spike in the number of cannoneers within England's ranks at the Siege of Louviers, with their service dated to September 28, 1431. The Siege of Louviers is one of the less commonly discussed battles of the Hundred Years' War (as opposed to more famous clashes like the Battle of Crécy), despite the fact that it was a bitter, long, and violent fight. The logistically-valuable city of Louviers, control of which was key to accessing Paris by water, had previously been seized by the English, and was recaptured by France in 1429.⁸⁸ The English responded by mounting a massive counter offensive, raising up some 400 men-at-arms and 1,200 archers, drawing this manpower from stations across Normandy.⁸⁹ Unlike many previous sieges, which generally seemed to wane over time and ultimately end unceremoniously, the English foot soldiers participating at Louviers had personal disdain for the city and its leader, an associate of Joan of Arc named La Hire (La Hire had previously used Louviers to launch raids against the English).⁹⁰

The siege lasted around five months, from the end of May to October 25, 1431,⁹¹ and was in many ways exceptional. Aside from the personal animosity between the sides involved, Louviers was well fortified, and La Hire had been captured before the siege started.⁹² This meant that, although it was well-equipped to withstand attack, it had lost its main commander, which undoubtedly contributed to a lack of centralized leadership within the fortress' walls. Although

⁸⁸ Barker, J. R. V. (2009). *Conquest: The English Kingdom of France, 1417-1450*. Little, Brown Book Group, pp 169-170

⁸⁹ Ibid, p. 169.

⁹⁰ Ibid, p. 169.

⁹¹ Ibid, p. 169.

⁹² Ibid, p. 169.

Louviers ultimately ended via negotiation, in contrast to many past sieges English soldiers did not respect this agreement - the town was mercilessly pillaged once the French gave it up.⁹³

In addition to these factors, the overall political environment of the war at this point was particularly chaotic. Ever since the reign of Edward III, English kings had maintained that they had the blood right to rule France,⁹⁴ which simultaneously would have provided an excuse for seizing French territory, while also leaving them honor-bound to not abandon this mission (lest they admit that the blood already spilled in the name of this goal was wasted).⁹⁵ In the early 1400's, a French civil war broke out between two factions: the Armagnacs and the Burgundians. The former group remained staunchly opposed to the English - indeed, it was Armagnac forces that recaptured Louviers in 1429.⁹⁶ The Burgundians, however, allied with the English from 1419 to 1435,⁹⁷ and this union helped encourage England's Henry V to make efforts to actually seize the territory he claimed was his, rather than follow Edward III's precedent of claiming dominion over France but not acting upon it.⁹⁸

With these factors in mind, the Henley Business School-University of Southampton records are quite fascinating. Although these soldier records are pulled from English payrolls, the names of the ordinance team's members are French, including their commander. Furthermore, the nature of this source means that these men were all paid for their work - despite the fact that England notoriously refused to pay many of its troops at Louviers, depriving them of their wages on technicalities.⁹⁹ This suggests that this group of cannoneers was actually a Burgundian team

⁹³ Ibid, p. 170.

⁹⁴ C. J. Rogers (2018). The formation and significance of the Anglo-Burgundian alliance. In *Grand strategy and military alliances* (pp. 216–253). essay, Cambridge University Press, p. 216.

⁹⁵ Ibid, p. 218.

⁹⁶ Barker, (2009). *Conquest*. p. 169.

⁹⁷ Rogers (2018). The formation and significance of the Anglo-Burgundian alliance. In *Grand strategy and military alliances* (pp. 216–253), p. 216.

⁹⁸ Ibid, p. 216.

⁹⁹ J. R. V. Barker (2009). *Conquest*. Little, Brown Book Group, p. 170.

sent to assist the English - this would explain their French lineage and leadership, as well as the fact that they received payment (it is doubtful that the English would have risked their diplomatic ties with Burgundy to save the wages of nine men). Also worth noting is the time at which they first appear, just one month prior to the end of the siege. Although it is possible that these men appear on earlier payrolls from the siege which have been lost or destroyed, considering the fact that the conflict at Louviers occurred right around when cannons began consistently ending sieges it does not seem coincidental that they showed up right before the Armagnacs were forced into submission. Notably, these cannoneers were likely the first of their kind to appear at this siege - if there were any ordinance specialists present earlier on, one would expect them to appear in other muster rolls from the siege. Evidently, they do not.

This moment in the war subtly lends credence to the capacity of the fifteenth-century cannon as a weapon capable of inflicting terror, and thereby provides evidence for the cannon's psychosocial impacts. Louviers was a unique siege in that ideology and emotion played a major role on virtually all levels of the battlefield. At the top of the command pyramid, it represented a struggle for rightful control of France by three separate factions (the English, the Burgundians, and the Armagnacs). In the field, Armagnac troops had rallied around La Hire, undoubtedly on a pedestal due to his connection with Joan of Arc, and clearly were strongly motivated considering how long they lasted within Louviers despite losing him. At the same time, English troops were furious because of a personal hatred of the soldiers at Louviers for their past raids against English-held villages in France.

If the ordinance team which appears in records at the end of the siege did indeed provide the killing blow to Louviers' defense, then this speaks immensely to how new cannons affected soldiers. The troops at Louviers were able to hold out for four months without their main

commander against a very large opposing English force. The English likely would have realized that their best bet at reclaiming the town would be better firepower and undermining the Armagnac troops' morale. Cannons would have achieved both of these aims, and indeed the records suggest that one month of assault supercharged by a skilled ordinance team was enough to force them to give up.

The Chronicles of Jean Froissart are among the most important narratives written about the first half of the Hundred Years' War. Although Froissart's writings as an historical source are often criticized due to his tendency to record events inaccurately (at least by modern standards), historians such as Stephen Nichols have pointed out that his work, though not objective, portrays a useful view of the world from his perspective.¹⁰⁰ Indeed, Froissart intended for his chronicles to celebrate chivalry and highlight examples of proper behavior, a motive about which he is very forthcoming.¹⁰¹ So although Froissart's account of the war is not impartial, this does not mean that his accounts are fabricated. At one point, Froissart makes reference to the psychological impacts of cannonry. One instance of this actually occurred during a conflict in Flanders in 1381 and 1382 between the forces of Ghent and Bruges. The soldiers of Ghent are described as utilizing heavy firepower - three hundred separate cannons - as a tool to terrify their enemies, to devastating effect.

In spite of the orders of the men-at-arms, of whom the Count had a large number, more than eight hundred lances, the Bruges townsmen went forward and began to fire cannons. Then the Ghent men came together and closed their ranks and fired off over three hundred cannons at once. They wheeled round the pond, so that the men of Bruges had the sun in their eyes, to their great disadvantage, and charged at them, shouting 'Ghent!'

¹⁰⁰ S.G. Nichols (1964). Discourse in Froissart's Chroniques. *Speculum*, 39(2), 279–287. p. 279.

¹⁰¹ Ibid, p. 279.

No sooner did the men of Bruges hear these battle-cries and the sound of the cannons, and see the enemy coming straight at them in a determined way, than they broke like cowards, puffed up with nothing but false courage. They allowed the Ghent men to drive into them without resistance, threw down their pikes and turned to run.¹⁰²

Of course, the conflict in Flanders occurred well before the extreme battle paradigm shift of the early 1400s, and is slightly out of the geographical scope of the Hundred Years' War (for the most part). However, there are two aspects of this account which make it very useful in gauging the psychosocial impacts of cannons. Firstly there is no reason to predict that soldiers elsewhere in western Europe would have reacted differently when faced with larger cannons than those used in Flanders - in fact, the opposite is true. Bigger cannons with more widespread use and more capacity for damage would only serve to be more effective at psychological warfare. The second very important point to note is that many of the expert ordinance teams employed by the English army throughout the war were Dutch.¹⁰³ It is very possible that some of these men were recruited from Flanders (considering its high Dutch-speaking population and geographical situation). This, in turn, suggests that this region of Europe was on the cutting edge of cannonry, and an anecdote from the 1380's could therefore be a good predictor of the impacts of this technology elsewhere in later decades, as other European states caught up.

There is also the useful story of the Earl of Salisbury after the Siege of Saint-Suzanne, mentioned in chapter one and originally found in *A Soldier's Chronicle of the Hundred Years War: College of Arms Manuscript m 9*. To recap, following the negotiated end of a siege, the earl demanded a particularly gruesome punishment, solely for the fortress' ordinance team.

¹⁰² Jean Froissart and John Jolliffe. *Froissart's Chronicles*. London: Faber and Faber, 2012, pp 368-369

¹⁰³ *Footsoldiers [People of the hundred years' war - royal armouries collections]*. RA header. (n.d.). Retrieved February 24, 2023

Within a fortnight the [enemy commander] came to an agreement and surrendered the town and castle to the earl, on the condition that they (i.e. the defenders) would make an oath not to make war or take up arms against the English for a year. By this means they departed with their goods, save for the cannoneers who were kept back and delivered to my lord the earl to do with them what he wished. He had them all hanged with a cannonball tied to their leg.¹⁰⁴

What appears at first to be a drawback of the Earl of Salisbury's wrathful justice - the fact that it deals with the antics of a noble, not a foot soldier - actually serves to help illuminate how lower-ranking troops might have viewed this act. Curry and Ambühl note that the chronicler who made note of the affair does not seem to have been particularly upset by this punishment (and indeed is perhaps supportive of it).¹⁰⁵ Part of why this chronicle is such a fascinating historical source is that two of its primary contributors, Peter Basset and Christopher Hanson, were soldiers - as opposed to lofty, highly-educated academics.¹⁰⁶ Hanson, present at the Siege of Saint-Suzanne, likely recorded this event.¹⁰⁷ His subtle endorsement of the Earl of Salisbury's action, although possibly an attempt to keep the chronicle's high-born audience happy (the text may have been commissioned for the English noble Sir John Fastolf),¹⁰⁸ could also be taken as a sign that they too detested cannoneers, in turn indicative of more widespread views held by common troops.

Such resentment would not have been without precedent, as there were other previous instances of operators of ranged weaponry being looked down upon in the Middle Ages. One

¹⁰⁴ Basset, Hanson, Worcester, Curry, and Ambühl. "English Translation, Identifications and Commentary." Essay. In *A Soldiers' Chronicle of the Hundred Years War*, 231–374. p. 351.

¹⁰⁵ Curry and Ambühl. "The Portrayal of War in the M9 Chronicle." Essay. In *A Soldiers' Chronicle of the Hundred Years War*, 75–102. Cambridge: D. S. Brewer, 2022, p. 89.

¹⁰⁶ Curry, Anne, and Ambühl Rémy. "1 The M9 chronicle and its authors." Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 75–102. Cambridge: D. S. Brewer, 2022, pp 18, 25

¹⁰⁷ Curry and Ambühl. "The Portrayal of War in the M9 Chronicle." Essay. In *A Soldiers' Chronicle of the Hundred Years War*, 75–102. Cambridge: D. S. Brewer, 2022, p. 89.

¹⁰⁸ Curry, Anne, and Ambühl Rémy. "1 The M9 chronicle and its authors." Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 75–102. Cambridge: D. S. Brewer, 2022, p. 42.

example of this is the crouching crossbowman motif discussed in Chapter One of this thesis. Another can be seen in a piece of art dated to centuries before the Hundred Years' War: the Bayeux Tapestry, which depicts William I's conquest of England in 1066. The tapestry is divided into three sections - a center, surrounded by fringe areas above and below it. The center area, largest of the three, appears to be reserved for knights and those engaging in hand-to-hand combat (the exception is spears, which are depicted as being both thrown and carried). The fringes appear to be meant primarily for depictions of the undesirable elements of the conquest, such as corpses.¹⁰⁹ Archers, essentially nonexistent in the center of the tapestry, are also depicted in these fringes.¹¹⁰



Note the tiny stature of the archers compared to the cavalymen, as well as the corpse appearing prior to their

lineup¹¹¹

¹⁰⁹ "Bayeux Tapestry," 1070. Musée de la Tapisserie de Bayeux. Bayeux, France.

¹¹⁰ Ibid

¹¹¹ Ibid

A charitable interpretation of this artistic choice would be that the tapestry's creators or commissioner considered the archers to have been unimportant in the conquest. They are, however, depicted as quite numerous and for this reason it is difficult to imagine that they did not play a sizable role in William I's victory. A more reasonable explanation for their portrayal, therefore, is that they were seen as lesser than the soldiers on horseback - their tiny stature compared to the large majestic cavalrymen and placement among corpses and abandoned weaponry suggests that the tapestry's creators looked down on them. Usage of the bow, a purely ranged weapon, is the most plausible motivation for this decision because that is the main factor separating them from all of the characters in the center, all of whom are shown as using bladed close-range weapons during combat (and who display a wide range of transportation methods and, presumably, social statuses).¹¹²

Of course, the Bayeux Tapestry is far from a perfect representation of how the average foot soldier would have viewed archers in the eleventh century - it was most likely commissioned by Odo of Bayeux, the half brother of William I, and therefore is best employed as tool to understand blue-blooded views of honor and warfare during the High Middle Ages.¹¹³ Still, it is helpful (alongside the crouching crossbowman) in establishing the strong possibility that there was some sort of general societal disdain for those who killed from a distance, and the writings within *A Soldier's Chronicle of the Hundred Years War* suggest that some of these resentments were shared between military classes, at least during the Hundred Years' War.

Surprisingly, battle-related mental trauma appears to exist in the historical record, albeit conditioned by contemporary understandings of honor and soldiering. Geoffroi de Charny, born in 1306, was a French knight who fought during the beginning of the Hundred Years' War,

¹¹² Ibid

¹¹³ S. A. Brown (1988). *The bayeux tapestry: History and bibliography*. Boydell & Brewer.

eventually dying during the infamous battle of Poitiers.¹¹⁴ Today, he is remembered for his writings on chivalry, and for embodying the archetypal medieval knight.¹¹⁵ In *Charny's Book*, he discusses some of the dark sides of battle.

And it's no good expecting easy reward – quite the contrary: you'll have plenty to cope with, including fear, as you see your enemies bearing down on you, lances lowered, ready to strike, and returning to attack with swords while bolts and arrows rain down on you – you don't know which to defend against first! You witness men slaughtering each other; some flee while others stay and die; your friends are struck dead: their bodies lie before you¹¹⁶

At another point in this same text Charny mimics those he considers afraid of knighthood, saying “Oh (I hear you say), what fun for a man! Cruising around day and night waiting for someone to kill him! It's not for me! By God, if I were in his shoes, I'd go mad with the fear that fills my heart at the very thought.”¹¹⁷

In these instances, Charny is describing the absolute worst elements of war - witnessing friends' deaths, constant fear of surprise attack, and more. One might be hesitant to take Charny's experiences seriously in light of Clifford J. Rogers' characterization of warfare in medieval Europe in the centuries prior to the Hundred Years War, as he pointed out that battle during (at least some of) Charny's life might have been characterized by relatively little lethality. However, aside from the fact that Rogers mainly ascribes this trait to the twelfth and thirteenth, not fourteenth, centuries, it is critical to note that Charny's experience as a knight was most certainly action-packed. For instance, although at one point he was captured in battle (seemingly a testament to Rogers' characterization of the era), the battle which he had lost involved leading

¹¹⁴ R. W. Kaeuper, & Charny, G. D. (2005). Introduction. In E. Kennedy (Trans.), *A Knight's Own Book of Chivalry* (pp. 1–46). University of Pennsylvania Press, p. 1.

¹¹⁵ *Ibid*, p. 1.

¹¹⁶ G. de Charny, Wilson, I. D., & Bryant, N. (2021). The Oxford Text of the Livre Charny. In *The book of Geoffroi de Charny: With the "Livre Charny"* (pp. 53–128). essay, Boydell & Brewer, Boydell Press, p. 113.

¹¹⁷ *Ibid*, p. 117.

a cavalry charge against English forces in September of 1342, one year before he was knighted.¹¹⁸ This maneuver failed, resulting in the deaths of fifty French knights - no doubt men he was personally close to.¹¹⁹ Indeed, evidence suggests that Charny went out of his way to put himself in perilous situations. During a truce which paused the Hundred Years' War in 1453, Charny decided to enlist in the French noble Humbert II's forces during the Smyrniote crusades, which meant he was up against large armies unaccustomed to the delicate military traditions of western Europe during the High Middle Ages.¹²⁰

All of this is to say that Charny's vivid descriptions of the horrors of battle are certainly based on real experiences, rather than the result of him exaggerating. While this does not by any means enable a diagnosis or official recognition of combat-related PTSD, it does help contextualize the fact that the medieval person was capable of experiencing and recognizing the horror of these sorts of fears, and that these were understood to be an unavoidable part of war. In other words, there probably weren't cultural or environmental factors in this period that made people entirely mentally resilient in the face of wartime stress.

Charny's testimony, although clearly still meant to encourage young men to go to war, is of particular value because many of the statistics associated with military PTSD in the twenty-first century would have been highly underreported in the Middle Ages. Suicidal tendencies, for instance, are reported by the U.S. Department of Veterans Affairs to be three times more likely than average in those with PTSD.¹²¹ While in theory this might be a useful means by which to measure battle related mental trauma during the Middle Ages, suicide was

¹¹⁸ Kaeuper, & Charny (2005). Introduction. In Kennedy (Trans.), *A Knight's Own Book of Chivalry* (pp. 1–46), p. 5.

¹¹⁹ Ibid, p. 5.

¹²⁰ Ibid, pp 5-6

¹²¹ *The Relationship Between PTSD and Suicide*. The U.S. Department of Veterans Affairs. (2018, August 28). Retrieved February 24, 2023

also extremely taboo - those who had committed it were denied burial by the Catholic Church,¹²² and their families were not permitted to own their possessions.¹²³ As a result, historians like Seaborne and Seaborne have suggested that many medieval suicides were frequently reported as accidents by well-intentioned coroners.¹²⁴ Charny's testimony even supports this - he is clearly describing that he has seen absolutely horrific acts of violence, but his desire to be honorable pushes him to sugarcoat these experiences. In other words, while the medieval soldier almost certainly experienced trauma not unlike that of the twenty-first century warfighter, contemporary social norms make it extremely difficult to identify how this manifested itself.

There is another important caveat to Charny's writings, which is that current medical science has identified that a given soldier's military community plays a critical role in their processing of stress. Perhaps the best example of this are special forces communities, which regardless of national origin essentially always display better mental and physical well-being than their conventional military peers despite higher exposure to battle trauma.¹²⁵ The US Army has described these elite troops as being more resilient to stress than the vast majority of soldiers,¹²⁶ and scientific study has supported this observation. One analysis of stress reactions found that troops within the special forces community display much higher spikes in Neuropeptide-Y, a chemical which has been demonstrated in clinical settings to blunt the effects of stress on the human mind when faced with nerve-wracking situations.¹²⁷

¹²² C. M. Cusack (2018). Self-murder, sin, and crime: Religion and suicide in the Middle Ages. *Journal of Religion and Violence*, 6(2), 206–224, p. 207.

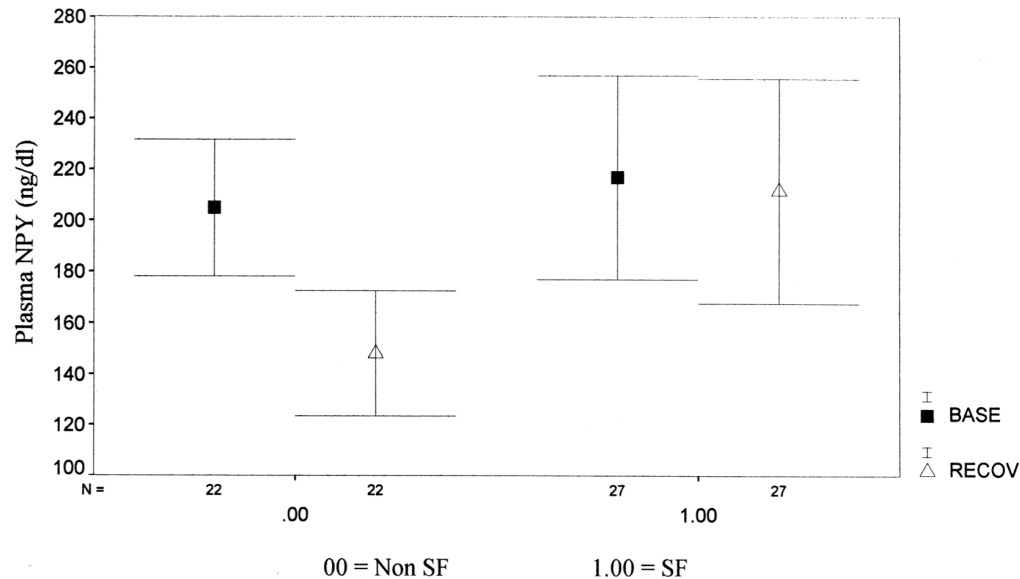
¹²³ Seaborne, A., & Seaborne, G. (2001). Suicide or accident – self-killing in medieval England. *British Journal of Psychiatry*, 178(1), 42–47, p. 45.

¹²⁴ Ibid, pp 44-45

¹²⁵ C. J. Bryan, Stephenson, J. A., Morrow, C. E., Staal, M., & Haskell, J. (2014). Posttraumatic stress symptoms and work-related accomplishment as predictors of general health and medical utilization among Special Operations Forces personnel. *Journal of Nervous & Mental Disease*, 202(2), p. 105.

¹²⁶ C. A. Morgan, Wang, S., Southwick, S. M., Rasmusson, A., Hazlett, G., Hauger, R. L., & Charney, D. S. (2000). Plasma neuropeptide-y concentrations in humans exposed to military survival training. *Biological Psychiatry*, 47(10), p. 908.

¹²⁷ Ibid, p. 908.



Special Forces troops demonstrated higher-than-average baseline levels of Neuropeptide-Y, with levels remaining elevated 24 hours later. Conventional troop NPY levels dropped significantly faster.¹²⁸

This suggests that elite troop communities like the US Army's Special Forces objectively and measurably react to battlefield trauma differently than the average soldier. This provides a compelling alternative to the assumption that Charny's optimistic attitude was molded by exposure to medieval culture. Knights were elite, well-trained soldiers within a military class that inherited centuries of celebrated tradition - the Special Forces operators of their day.

Of course, there remains the question of whether these Neuropeptide-Y levels are genetically inherited or learned: in other words, does being part of the special forces community make warfighters more resilient to stress, or are soldiers who are already more inclined to adapt to stress more likely to be selected for membership? If the latter case is true then the usefulness of these findings for the Middle Ages is quite limited, as this model requires that the elite soldier

¹²⁸ Ibid, p. 907.

be selected largely by merit, rather than the doctrines of lineage and genealogy dominant in medieval times (Charny's career, for example, was undoubtedly boosted by his being born into a noble family).¹²⁹ Other studies of special forces communities have indicated that their heightened ability to handle these problems is a trait imparted by their culture. An article published in the *Journal of Nervous and Mental Disease* has suggested that the tight-knit nature of these groups, far more pronounced than in less elite military circles, helps immensely in blunting the symptoms of PTSD (as well as the condition itself).¹³⁰

In other words, Charny's example actually presents strong evidence that wartime PTSD not only existed in the Middle Ages, but that it manifested itself similarly to twenty-and-twenty-first-century models. Indeed, based on current medical research, Charny's attitude towards his gruesome experiences exactly matches what one would predict for someone in his situation. Following this line of reasoning, one would not expect the average soldier to react to their experiences like Charny did. Just as modern elite troops are more resilient than their conventional peers in the face of violent horrors, so would Charny have been better suited to handle these situations than the typical man-at-arms.

Anthropological studies are a very useful tool for understanding PTSD in the Middle Ages as well, owing to their examination of culture informing emotion and behavior. The social scientist Joshua Breslau, for example, identifies that while PTSD does exist across cultures, it is often applied too loosely and too broadly (perhaps in order to use the authority of medical language), with many invoking it to describe the effects of war crimes and disasters, regardless of how accurate the term actually is in context.¹³¹ Other researchers, observing characteristics

¹²⁹ Kaeuper, & Charny (2005). Introduction. In Kennedy (Trans.), *A Knight's Own Book of Chivalry* (pp. 1–46), pp 3-4

¹³⁰ Bryan, Stephenson, Morrow, Staal, & Haskell (2014). Posttraumatic stress symptoms and work-related accomplishment. *Journal of Nervous & Mental Disease*, 202(2), p. 109.

¹³¹ J. Breslau (2004). Introduction: Cultures of trauma: Anthropological views of posttraumatic stress disorder in international health. *Culture, Medicine and Psychiatry*, 28(2), pp 120, 123

typical of PTSD (such as flashbacks) in various settings, have noted that a major point of deviation across cultures is in how people with this condition approach medical intervention.¹³²

The example in this case was PTSD in Indonesia, where most sufferers initially consulted doctors by presenting their condition as entirely physical, refusing to share their experiences until after many visits.¹³³

These studies present useful support for the legitimacy of medieval PTSD as a subject of study, while also enumerating helpful caveats. The cross-cultural nature of this condition lends credence to the idea that it is a universal human experience, and therefore that people of the past also suffered from it. Although Breslau points out that it may be an overused phrase, the military context of the Hundred Years' War mirrors many undisputed modern cases of PTSD. Findings regarding self-perception of its symptoms such as in Indonesia do not take away from the reality of this condition, but instead help contextualize why PTSD might be so difficult to find in medieval records - even with modern medical and psychological advancements, many people are inclined by their cultures and communities to obfuscate their experiences.

There is some direct evidence that artillery usage during the fifteenth century directly led to PTSD. William Shakespeare's *Henry IV* sees Lady Percy, speaking to Sir Henry Percy (the real life knight on whom he was based had fought during the Hundred Years' War) and describing conditions that strongly point to some sort of battle-related PTSD.

¹³² M. T. Tull, Kimbrel, N. A., Chiovenda, A., Hinton, D. E., & Good, B. J. (2020). Chapter 21: Culture, PTSD, and emotion regulation: An anthropological perspective. In *Emotion in posttraumatic stress disorder: Etiology assessment, neurobiology and treatment* (pp. 597–613). essay, Academic Press, pp 605-606

¹³³ Ibid, p. 606.

<p>For what offence haue I this fortnight bin A banish'd woman from my Harries bed? Tell me (sweet Lord) what is't that takes from thee Thy stomacke, pleasure, and thy golden sleepe? Why dost thou bend thine eyes vpon the earth? And start so often when thou sitt'st alone? Why hast thou lost the fresh blood in thy cheekes? And giuen my Treasures and my rights of thee, To thicke-ey'd musing, and curst melancholly? In my faint-slumbers, I by thee haue watcht, And heard thee murmore tales of Iron Warres: Speake tearmes of manage to thy bounding Steed, Cry courage to the field. And thou hast talk'd</p>	<p>Of Sallies, and Retires; Trenches, Tents, Of Palizadoes, Frontiers, Parapets, Of Basiliskes, of Canon, Culuerin,¹³⁴ Of Prisoners ransome, and of Souldiers slaine, And all the current of a headdy fight. Thy spirit within thee hath beene so at Warre, And thus hath so bestirr'd thee in thy sleepe, That beds of sweate hath stood vpon thy Brow, Like bubbles in a late-disturbed Streame; And in thy face strange motions haue appear'd, Such as we see when men restraine their breath On some great sodaine hast¹³⁴</p>
--	---

Lady Percy discusses a multitude of symptoms that her husband has been facing: spousal alienation, lack of sleep, depression, nightmares of battle, combat flashbacks, and nausea. These conditions are striking in how perfectly they match twenty-first-century medical documentation of military PTSD. Triggers and symptoms for this condition include poor sleep, antisocial behavior, emotional unrest, paranoid vigilance, and exacerbation of symptoms after being reminded of war.¹³⁵ The fact that Shakespeare so accurately enumerates the symptoms of military service related PTSD as they're understood by the twenty-first century medical community strongly indicates that these were not creative liberties or fabrications - his depiction is too

¹³⁴ Shakespeare, W. (n.d.). Henry IV, Part I. *Project Gutenberg*. Retrieved from gutenberg.org, pp 58-59

¹³⁵ *Va.gov: Veterans Affairs*. Trauma Reminders: Triggers. (2018, September 11). Retrieved March 24, 2023

precise and dead-on to be coincidental. It seems exceedingly likely that he either witnessed these conditions firsthand, or at the very least learned about them from people who had.

The fact that cannons are explicitly mentioned as one of the subjects of the flashbacks is very telling. Shakespeare was alive in the mid-to-late sixteenth century, a little over a century after the Hundred Years' War concluded. While it seems unlikely that he would have personally known any veterans, his parents' peers might have and his grandparents' generation almost certainly did. And since his description of PTSD is so accurate, it stands to reason that he based his depiction of Henry Percy on real life Hundred Years' War veterans whom he heard stories about first or secondhand.

Perhaps the only issue raised by his depiction is the fact that, as earlier analysis of Geoffroi de Charny showed, knights like Sir Henry Percy would have likely been more able to handle stress than the average soldier. Two points are worth mentioning on this subject. First, a knight being better at managing trauma does not necessarily mean that they would have been entirely immune to its effects. Second, it is very possible that the stories Shakespeare heard about veterans of the war suffering from PTSD were passed down from people who interacted with retired common troops, not knights. Shakespeare had no way of knowing about the biological mechanisms for stress management among elite troops, and there is no reason to believe he had an intimate understanding of the inner workings of military brotherhoods and their effects on troops' psyches. He therefore also would have had no reason to believe that knights suffered from these conditions any less than common troops. It makes perfect sense, then, that Shakespeare would apply trauma-related conditions like PTSD to figures such as Sir Henry Percy in his plays as a way to create realistic, multidimensional characters.

One can contrast Shakespeare's post-war characterization of battle trauma with Geoffroi de Charny's early-war description. Despite its grim descriptiveness, at no point does *Charny's Book* ever mention the cannon at all, much less as a contributor to the terrors of war.¹³⁶ Thus, in addition to entering western European popular culture as an element of battle during the Hundred Years' War, it is also introduced as a factor in wartime psychological trauma.

¹³⁶ G. de Charny, Wilson, I. D., & Bryant, N. (2021). The Oxford Text of the Livre Charny. In *The book of Geoffroi de Charny: With the "Livre Charny"* (pp. 53–128). essay, Boydell & Brewer, Boydell Press.

Conclusion

Advancements in cannonry during the latter half of the Hundred Years' War century were, in every sense of the word, revolutionary. They completely shocked the military culture of the time, and radically changed a tactical paradigm that had been carefully cultivated over the course of centuries. Sieges that once took months to complete could be won in weeks. Troops accustomed to fighting alongside (and against) catapults, bladed weapons, bows, arrows and other typical tools of the Early and High Middle Ages now had to contend with an entirely new class of loud, terrifying weapons capable of firing screaming projectiles strong enough to reduce previously impenetrable stone walls to rubble.

These weapons helped usher in new norms of shorter battles, quicker progress, and military hegemony.¹³⁷ To a medieval king or general whose regime had spent nearly a century fighting a single war, such a development probably seemed like a godsend. But these cannons would not have benefited everyone. In spearheading these massive changes, cannons also unquestionably harmed quality of life for lowly troops on the front lines of the Hundred Years War. This pain and suffering ultimately arrived through multiple channels: reduction in siege lengths, increased risk of shell shock (and higher rates of PTSD), more effective use of terror as a weapon, and greater social tension within communities of soldiers.

Just as a highborn commander during the Late Middle Ages might have seen the cannon's impact on hastening warfare as a positive development, siege culture undoubtedly presented a

¹³⁷ Rogers. "The Military Revolutions of the Hundred Years War." Essay. In *The Military Revolution Debate*, edited by Rogers, 55–93. London: Routledge, 1995, p. 66.

source of frustration. Sieges were long, drawn out and predictable, with a besieging army spending months attempting to chip away at the enemy fortress' defenses, usually to no avail. Indeed, although some of the most prominent and commonly-circulated guides on how to conduct a siege attempted to provide useful advice on how to win one, they all generally agreed that the most effective tactic was to simply strike a deal with the besieged army and end things peacefully.¹³⁸ Compared to the alternatives, this style of warfare probably would have been among the least stressful for the medieval soldier. The tough fortresses of the High Middle Ages meant that the advantage was essentially always with the defender, and in most cases the best an attacker could do was wait. Although siege engines and fortress defenses would have posed a constant threat to troops on both sides of a given battle,¹³⁹ castles were generally too advanced for the sides to have to clash directly, meaning troops could rest easy knowing that direct battle was extremely unlikely.

While troops within a besieged fort might eventually run low on provisions (although siege manuals note that a well-prepared fort could last for months comfortably)¹⁴⁰ these fights occurred at a time in which essentially everyone in the military community was on the same page about how these fights should be concluded. As opposed to sieges conducted in the modern world, wherein they represent an aberration in the traditional military paradigm, siegecraft in the Middle Ages was a taught discipline. The average soldier would know that even if food supplies were running low, the odds of them leaving the siege with their life intact were quite high. Undoubtedly, this provided a major cause of comfort.

¹³⁸ Maurice. "Book X [Sieges]." Essay. In *Maurice's Strategikon*, trans. by Dennis, 106–12. University of Pennsylvania Press, 1984, p. 107.

¹³⁹ Maurice. "Book X [Sieges]." Essay. In *Maurice's Strategikon: Handbook of Byzantine Military Strategy*, translated by George T. Dennis, 106–12. Philadelphia, Pennsylvania: University of Pennsylvania Press, 1984, p. 106.

¹⁴⁰ Vegetius. (1996). *Epitome of Military Science*. (N. P. Milner, Trans.). Liverpool University Press, p. 123.

As historians have noted, the artillery developments of the fifteenth century dramatically reduced the length of sieges. In turn, the predictability of sieges - ending peacefully with little direct combat - would have evaporated. Watching a surrounding enemy roll a cannon into their camp from a castle's arrow loop would tell a soldier that not only was their protection in imminent danger, but that there was a good chance they would have to fight in open combat very soon. This knowledge undoubtedly weighed heavily on soldiers used to a very different established norm.

Alongside this radical change to siege warfare, soldiers would have faced new and alien sources of injury. Perhaps the best example of this is 'shell shock' - the common vernacular for a very particular type of combat-related PTSD. Despite having first been identified in the early twentieth century, shell shock remains somewhat of a medical mystery, with researchers unsure of the roles that psychological and physical damage play in its acquisition.¹⁴¹ The current consensus is that it is some combination of both of these factors - stress induced by the trauma of combat, and concussive injury caused by close proximity to exploding artillery shells.¹⁴² Soldiers during the Hundred Years' War would have been trapped in relatively confined stone buildings while these new cannons quickly battered down the walls surrounding them. Not only would this have certainly been a thoroughly terrifying experience, but it would have exposed these fighters to significant risk of being hit by concussive blasts. This deadly combination of factors meant that even a man-at-arms unscathed by the direct battles ushered in by cannons would be at risk of developing a serious long-term condition like shell shock.

PTSD more broadly also presents an interesting question within the context of this topic. It is a difficult topic to study clearly: as anthropologists have noted, although PTSD exists

¹⁴¹ E. Jones, Fear, N. T., & Wessely, S. (2007). Shell shock and mild traumatic brain injury: A historical review. *American Journal of Psychiatry*, 164 (11), 1641–1645.

¹⁴² Ibid

essentially everywhere, the way it manifests and is reacted to widely varies, with some cultures typically very hesitant to address its existence.¹⁴³ Considering how unforgiving authorities in the Middle Ages were of mental illness and disorders (with practices like suicide having extreme repercussions for a deceased person's family), finding records of a subject as intimate and sensitive as PTSD would seem to be wishful thinking.¹⁴⁴ However, there are some clues that battlefield trauma not only existed in the medieval era, but that it was quite similar to the elements of the condition recognized in the twenty first-century medical world. The famed French knight Geoffroi de Charny, alive about a century before the Hundred Years' War, described in great detail the horrors of battle and losing one's friends, somehow using a lighthearted tone.¹⁴⁵ While this seems to be an example of a person reacting to stress in a particular way owing to the time period and culture from which they came, it actually perfectly matches what one would predict after viewing modern-day models of PTSD. Special forces and other elite military communities, owing to their distinct traditions and social structures, are invariably better at handling stress - a distinct biological phenomenon that is very likely teachable to anyone entering such an organization.^{146 147} Charny, being part of the fourteenth-century equivalent of such a group, has the resiliency of someone in a small, proud class of fighters.

¹⁴³ M. T. Tull, Kimbrel, N. A., Chiofenda, A., Hinton, D. E., & Good, B. J. (2020). Chapter 21: Culture, PTSD, and emotion regulation: An anthropological perspective. In *Emotion in posttraumatic stress disorder: Etiology assessment, neurobiology and treatment* (pp. 597–613). essay, Academic Press, p. 606.

¹⁴⁴ Seabourne, A., & Seabourne, G. (2001). Suicide or accident – self-killing in medieval England. *British Journal of Psychiatry*, 178(1), 42–47, pp 44-45

¹⁴⁵ G. de Charny, Wilson, I. D., & Bryant, N. (2021). The Oxford Text of the Livre Charny. In *The book of Geoffroi de Charny: With the "Livre Charny"* (pp. 53–128). essay, Boydell & Brewer, Boydell Press, p. 113.

¹⁴⁶ Bryan, Stephenson, Morrow, Staal, & Haskell (2014). Posttraumatic stress symptoms and work-related accomplishment. *Journal of Nervous & Mental Disease*, 202(2), p. 109.

¹⁴⁷ C. A. Morgan, Wang, S., Southwick, S. M., Rasmusson, A., Hazlett, G., Hauger, R. L., & Charney, D. S. (2000). Plasma neuropeptide-y concentrations in humans exposed to military survival training. *Biological Psychiatry*, 47(10), p. 908.

Charny, therefore, presents a compelling case for why PTSD might have existed in the Middle Ages in a way quite similar to its current form. Notably, however, he makes no mention of cannons in his vivid descriptions of the horrors of war. This contrasts strikingly with accounts of trauma from after the war, such as in Shakespeare's *Henry IV*, wherein Hundred Years' War veteran Sir Henry Percy is described by his wife as having all of the main symptoms of militarily-acquired PTSD, with striking accuracy to modern day medical descriptions of the condition.¹⁴⁸ This indicates that Shakespeare, alive not all that long after the war, heard real-life anecdotes about veterans which informed his writing. In her soliloquy, Sir Henry Percy's wife explicitly refers to him mentioning cannons as an element of his trauma. This is a powerful indicator that the cannon entered common consciousness during the war as useful for perpetuating terror.

Indeed, evidence from the war suggests that the cannon was likely a highly effective means to instill fear into an enemy. Based on fifteenth-century muster rolls from the English army, it seems like the seldom-discussed Siege of Louviers took a major turn after a team of Burgundian artillerymen arrived to assist the English army in September of 1431.¹⁴⁹ Not only does this lend credence to the idea that the cannon was effective at ending sieges by physically damaging fortresses, but it suggests that the cannon was immensely useful in scaring opponents. The troops on both sides of the castle walls at Louviers were motivated by personal animosity, with the besieged troops standing strong even though their main commander had been captured before the siege started.¹⁵⁰ In contrast to many earlier sieges, wherein it almost seems as though the troops involved were simply going through the motions until an agreement could be reached,

¹⁴⁸ Shakespeare, W. (n.d.). *Henry IV, Part I*. *Project Gutenberg*. Retrieved from gutenberg.org, pp 58-59

¹⁴⁹ Medieval soldier - database. (n.d.). Retrieved February 24, 2023, from <https://medievalsoldier.org/database/>

¹⁵⁰ Barker, J. R. V. (2009). *Conquest: The English Kingdom of France, 1417-1450*. Little, Brown Book Group, pp 169-170

this fight was personal for many involved and lasted months. The fact that one month of bombardment by the artillerymen was enough to get the besieged Armagnacs to surrender to invading Englishmen and traitorous Burgundians (as they likely would have viewed them) speaks volumes to the cannon's ability to frighten in battle. Correspondingly, earlier accounts from Froissart about advanced cannons in other regions also provide examples of these weapons functioning extremely well at inflicting terror.¹⁵¹

It would seem that development of advanced cannons led to strong feelings of resentment on the ground of battles. Perhaps the best example of this occurred during the Siege of Saint-Suzanne in 1423, wherein the Earl of Salisbury brutally killed the besieged fortress' cannoneers in an ironic fashion while sparing everyone else as part of their negotiated surrender.¹⁵² Though there is disagreement about why exactly he did this, one thing that is clear is that he was fueled by a true hatred of these artillerymen, a sentiment which is palpable when reading the account. Although Curry and Ambühl suspect that they personally harmed him in some way during the siege,¹⁵³ a more plausible explanation is a more general hatred of cannoneers among troops (which is rather ironic, as the reason the siege ended so quickly was because of the English cannoneers involved). This would explain why the writers of the chronicle, themselves soldiers, seem to tacitly support his brutality. In other words, they don't attempt to make his actions look cruel because they agree that the cannoneers deserve it.

Analyzing the emotions of mostly-illiterate, low-ranking soldiers in the Middle Ages is a difficult task made challenging by a dearth of sources, their culture (radically different from the twenty-first-century world), and the ever-present struggle for medieval historians of all writings

¹⁵¹ Jean Froissart and John Jolliffe. *Froissart's Chronicles*. London: Faber and Faber, 2012, pp 368-369

¹⁵² Basset, Hanson, Worcester, Curry, and Ambühl. "English Translation, Identifications and Commentary." Essay. In *A Soldiers' Chronicle of the Hundred Years War*, 231–374. p. 351.

¹⁵³ Curry, Anne, and Ambühl Rémy. "The Portrayal of War in the M9 Chronicle." Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 75–102. Cambridge: D. S. Brewer, 2022, p. 351.

having come from high born, privileged people. However, as was demonstrated originally by the founders of *nouvelle histoire*, by proponents of the history of mentalities, and now by mainstream historians, understanding these mundane individuals is critical to assembling a full, complete picture of the Middle Ages. Advancements that seem to be, from the perspective of an overarching historical timeline, examples of humanity progressing technologically did not necessarily represent positive developments for the contemporary masses on the ground. There is no better example of this than the cannon. Although advancements in artillery were revolutionary at the time, and indeed were a watershed moment in the history of warfare itself, it is vital to understand just how shocking - and painful - these shifts were for so many since-forgotten people.

Bibliography

Primary

Anonymous, *The Song of Roland*, Translated by Glyn S. Burgess. London, England: Penguin Classics, 1990

Basset, Peter, Christopher Hanson, William Worcester, Anne Curry, and Ambühl Rémy. “English Translation, Identifications and Commentary.” Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 231–374. Cambridge: D. S. Brewer, 2022.

“Bayeux Tapestry,” 1070. Musée de la Tapisserie de Bayeux. Bayeux, France.

Charny, G. de, Wilson, I. D., & Bryant, N. (2021). The Oxford Text of the Livre Charny. In *The book of Geoffroi de Charny: With the "Livre Charny"* (pp. 53–128). essay, Boydell & Brewer, Boydell Press.

D'Arc, J., (1429, November 9). Joan of Arc's letter to Clermont-Ferrand, 7 November 1429; (A Williamson, Trans.). November 9, 1429.

D'Arc, J., (1429, November 9). Joan of Arc's Letter to the People of Riom; (A Williamson, Trans.). November 9, 1429.

Froissart, Jean, and John Jolliffe. Froissart's Chronicles. London: Faber and Faber, 2012.

Leo IV. (2014). *The Taktika of Leo VI*. (G. T. Dennis, Ed.). Dumbarton Oaks.

Maurice. *Maurice's Strategikon: Handbook of Byzantine Military Strategy*. Translated by George T. Dennis. Philadelphia, Pennsylvania: University of Pennsylvania Press, 1984.

Medieval soldier - database. (n.d.). Retrieved February 24, 2023, from <https://medievalsoldier.org/database/>

“P395 Sayings of Spartans.” Plutarch • Sayings of Spartans - Anonymous. Accessed December 2, 2022.

Shakespeare, W. (n.d.). Henry IV, Part I. *Project Gutenberg*. Retrieved from gutenberg.org.

Vegetius. (1996). *Epitome of Military Science*. (N. P. Milner, Trans.). Liverpool University Press.

Secondary

Andrea, Alfred J. "Mentalities in History." *The Historian* 53, no. 3 (1991): 605–8.

Ballard, Michael B. *Vicksburg: The Campaign that Opened the Mississippi*. Chapel Hill, North Carolina: University of North Carolina Press, 2004.

Barker, J. R. V. (2009). *Conquest: The English Kingdom of France, 1417-1450*. Little, Brown Book Group.

Breslau, J. (2004). Introduction: Cultures of trauma: Anthropological views of posttraumatic stress disorder in international health. *Culture, Medicine and Psychiatry*, 28(2), 113–126.

Brown, S. A. (1988). *The bayeux tapestry: History and bibliography*. Boydell & Brewer.

Bryan, C. J., Stephenson, J. A., Morrow, C. E., Staal, M., & Haskell, J. (2014). Posttraumatic stress symptoms and work-related accomplishment as predictors of general health and medical utilization among Special Operations Forces personnel. *Journal of Nervous & Mental Disease*, 202(2), 105–110.

Catton, Bruce. *The Centennial History of the Civil War: Never Call Retreat*. 3. Vol. 3. New York City, New York: Doubleday & Co., 1965.

Curry, Anne, and Ambühl Rémy. "The Portrayal of War in the M9 Chronicle." Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 75–102. Cambridge: D. S. Brewer, 2022.

Curry, Anne, and Ambühl Rémy. "1 The M9 chronicle and its authors." Essay. In *A Soldiers' Chronicle of the Hundred Years War: College of Arms Manuscript m 9*, 75–102. Cambridge: D. S. Brewer, 2022.

Cusack, C. M. (2018). Self-murder, sin, and crime: Religion and suicide in the Middle Ages. *Journal of Religion and Violence*, 6(2), 206–224.

Footsoldiers [People of the hundred years' war - royal armouries collections]. RA header. (n.d.). Retrieved February 24, 2023, from <https://collections.royalarmouries.org/hundred-years-war/people.html>

Gower, R. S. (1893). *Joan of Arc*. J.C. Nimmo.

Hutton, Patrick H. "Philippe Ariès and the Secrets of the History of Mentalities." *Historical Reflections/Réflexions Historiques* 28, no. 1 (2002): 1–19.

Hutton, Patrick H. "The History of Mentalities: The New Map of Cultural History." *History and Theory* 20, no. 3 (1981): 237–259.

Jones, E., Fear, N. T., & Wessely, S. (2007). Shell shock and mild traumatic brain injury: A historical review. *American Journal of Psychiatry*, 164(11), 1641–1645.

Kaeuper, R. W., & Charny, G. D. (2005). Introduction. In E. Kennedy (Trans.), *A Knight's Own Book of Chivalry* (pp. 1–46). University of Pennsylvania Press.

Martin, Therese. "Crouching Crossbowmen in Early Twelfth-Century Sculpture: A Nasty, Brutish, and Short(-Lived) Iconography." *Gesta* 54, no. 2 (2015): 143–64.

Morgan, C. A., Wang, S., Southwick, S. M., Rasmusson, A., Hazlett, G., Hauger, R. L., & Charney, D. S. (2000). Plasma neuropeptide-y concentrations in humans exposed to military survival training. *Biological Psychiatry*, 47(10), 902–909.

Nichols, S. G. (1964). Discourse in Froissart's Chroniques. *Speculum*, 39(2), 279–287. p. 279.

Pew Research Center. (2020, May 30). *Public continues to back U.S. drone attacks*. Pew Research Center - U.S. Politics & Policy. Retrieved April 5, 2023, from <https://www.pewresearch.org/politics/2015/05/28/public-continues-to-back-u-s-drone-attacks/>

The Relationship Between PTSD and Suicide. The U.S. Department of Veterans Affairs. (2018, August 28). Retrieved February 24, 2023, from [https://www.ptsd.va.gov/professional/treat/cooccurring/suicide_ptsd.asp#:~:text=With%20respect%20to%20OIF%2FOEF,those%20without%20PTSD%20\(18\).](https://www.ptsd.va.gov/professional/treat/cooccurring/suicide_ptsd.asp#:~:text=With%20respect%20to%20OIF%2FOEF,those%20without%20PTSD%20(18).)

Reynolds, Susan. “Social Mentalities and the Cases of Medieval Scepticism.” *Transactions of the Royal Historical Society* 1 (1991): 21–41.

Roach, N. T., Venkadesan, M., Rainbow, M. J., & Lieberman, D. E. (2013). Elastic energy storage in the shoulder and the evolution of high-speed throwing in homo. *Nature*, 498(7455), 483–486. <https://doi.org/10.1038/nature12267>

Robson, S. (1998). *The First World War*. Longman.

Rogers, C. J. (2018). The formation and significance of the Anglo-Burgundian alliance. In *Grand strategy and military alliances* (pp. 216–253). essay, Cambridge University Press.

Rogers, Clifford J. “The Military Revolutions of the Hundred Years War.” Essay. In *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe*, edited by Clifford J. Rogers, 55–93. London: Routledge, 1995.

Rubin, M. (1997). *The work of Jacques Le Goff and the challenges of medieval history*. Boydell Press.

Rubin, Richard. *The Last of the Doughboys: The Forgotten Generation and Their Forgotten World War*. Boston, MA: Mariner Books, 2014.

Seabourne, A., & Seabourne, G. (2001). Suicide or accident – self-killing in medieval England. *British Journal of Psychiatry*, 178(1), 42–47.

Tull, M. T., Kimbrel, N. A., Chiovenda, A., Hinton, D. E., & Good, B. J. (2020). Chapter 21: Culture, PTSD, and emotion regulation: An anthropological perspective. In *Emotion in posttraumatic stress disorder: Etiology assessment, neurobiology and treatment* (pp. 597–613). essay, Academic Press.

Va.gov: *Veterans Affairs*. Trauma Reminders: Triggers. (2018, September 11). Retrieved March 24, 2023, from https://www.ptsd.va.gov/understand/what/trauma_triggers.asp

Whitman, J. Q. (2014). *The verdict of battle, the law of victory and the making of Modern War*. Harvard University Press.